



**PURE WATER PROJECT**  
**LAS VIRGENES-TRIUNFO**

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Bringing Our Water Full Circle

**Public Review Draft Final**

**Programmatic Environmental Impact Report**

Prepared by

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Las Virgenes-Triunfo Joint Powers Authority

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## Executive Summary

The Las Virgenes-Triunfo Joint Powers Authority (JPA) is proposing the Pure Water Project – Las Virgenes-Triunfo (Pure Water Project or project), which addresses new stringent water quality standards for discharge to Malibu Creek through a new Advanced Water Purification Facility (AWPF). The AWPF would treat recycled water for indirect potable reuse through reservoir augmentation.

The Pure Water Project is a series of interrelated projects that collectively function to meet the JPA's objectives to:

- 1) Comply with more stringent regulatory requirements for discharge to Malibu Creek
- 2) Balance seasonal variation of recycled water demand
- 3) Create a valuable, drought-resistant resource to supplement the region's water supplies, supported by California's reservoir water augmentation regulations<sup>1</sup>

Chapter 1, Introduction, elaborates on the need for the project and provides additional background information.

Pursuant to the California Environmental Quality Act (CEQA), the JPA has prepared this Program Environmental Impact Report (EIR) to analyze the potential environmental impacts of constructing and operating the Pure Water Project.

## Project Description

The project consists of treating effluent from the Tapia Water Reclamation Facility (WRF) at an AWPF, discharging the purified water to Las Virgenes Reservoir, and sending the filtered reject stream ("concentrate") for ocean disposal using the Calleguas Salinity Management Pipeline. This Program EIR evaluates all Pure Water Project features, including the AWPF, pipelines, a source water augmentation project, and other ancillary facilities. Chapter 2, Project Description, provides additional detail on the individual project components, including expected construction methods and timing.

The Program EIR evaluates two AWPF alternatives:

- Under Alternative 1 Agoura Road AWPF, Tapia WRF effluent would be conveyed by the recycled water system to a new AWPF located along Agoura Road in Agoura Hills.
- Under Alternative 2 Reservoir AWPF, Tapia WRF effluent would be conveyed by the recycled water system to a new AWPF located next to Las Virgenes Reservoir in Westlake Village. The Reservoir AWPF would require construction of a new access road between Triunfo Canyon Road and Las Virgenes Reservoir.

The JPA will select a preferred alternative following public and agency review of this Program EIR.

Under both Alternative 1 and Alternative 2, a new discharge pipeline would be installed in Las Virgenes Reservoir. The new pipeline would discharge purified water into the reservoir, where it would mix with the existing drinking water supply and, following a 6-month detention time in the reservoir, be pumped into the Westlake Filtration Plant, treated, and discharged into the drinking water system. The Pure Water Project also includes a source water augmentation program, which would potentially include pumping from an existing well at Los Robles Greens golf course in Thousand Oaks.

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<sup>1</sup> California Water Code Section 13562

The Pure Water Project requires a series of interrelated pipelines; and for most, several alignment options are under consideration and are analyzed in this Program EIR:

- A source water pipeline connecting the existing recycled water pipeline system to the AWPf
- A purified water pipeline connecting the AWPf to Las Virgenes Reservoir
- A pipeline disposing the concentrate from the AWPf into the Calleguas Salinity Management Pipeline
- A sewer pipeline disposing residuals and domestic waste streams from the facility
- Potentially, a source water augmentation pipeline from the Los Robles well

Overall project construction is expected to start in late 2025, with all project features fully operational before 2030 in time to meet the compliance schedule for Tapia WRF discharges into Malibu Creek (Chapter 1, Introduction, discusses this objective).

### **Impact and Mitigation Measure Summary**

Chapters 3 through 17 provide evaluations of the potential environmental impacts, which are summarized in Table ES-1. Several types of impacts have the potential to occur during Pure Water Project construction and operation, and most of these potential impacts can be mitigated to less than significant either by following standard regulatory requirements or by following the detailed mitigation measures prescribed in this Program EIR where needed.

There are two impacts that cannot be mitigated to less than significant: loss of special-status plants and native plant habitat, and recreation access and opportunities. Mitigation measures include implementing a Special-status Plant Mitigation Plan and a Trail Closure and Restoration Plan.

### **Areas of Controversy and Issues to be Resolved**

CEQA requires that the Program EIR identify areas of controversy and issues to be resolved; for this project, this includes:

- Selection of either the Agoura Road or Las Virgenes Reservoir site as the preferred alternative
- The community's and agency acceptance of the loss of oak trees and impacts to special-status plants as a consequence of building the Pure Water Project
- The community's acceptance of impacts during construction activities and project operations at either AWPf site
- The community's acceptance of traffic pattern disruptions, temporary construction noise, and changes to (or loss of) recreational access during pipeline construction

**Table ES-1. Impact and Mitigation Measure Summary**

Impact	Mitigation Measure		Level of Significance
<b>Chapter 3. Aesthetics</b>			
Impact 3-1: Scenic Vistas	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact No impact
Impact 3-2: Visual Character and Quality	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 3-3: Light or Glare	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
<b>Chapter 4. Air Quality</b>			
Impact 4-1: Short-term Criteria Air Pollutant Emissions	None required	All Project Features	Less than significant impact Less than significant impact Less than significant impact
Impact 4-2: Long-term Criteria Air Pollutant Emissions	None required	Agoura Road AWP Reservoir AWP	Less than significant impact Less than significant impact Less than significant impact
Impact 4-3: Pollutant Concentrations	None required	All Project Features	Less than significant impact Less than significant impact Less than significant impact
Impact 4-4: Odors	None required	Agoura Road AWP Reservoir AWP	Less than significant impact Less than significant impact Less than significant impact

**Table ES-1. Impact and Mitigation Measure Summary**

Impact	Mitigation Measure		Level of Significance
<b>Chapter 5. Biological Resources</b>			
Impact 5-1: Special-status Species	Measure 5-1: Prepare and implement a mitigation plan for special-status plants and plant communities Measure 5-2: Prepare preconstruction surveys for special-status wildlife species	Agoura Road AWP Reservoir AWP Pipelines Malibu Creek	Significant and Unavoidable Significant and Unavoidable Significant and Unavoidable Less than significant impact
Impact 5-2: Riparian Habitat	None required	Agoura Road AWP Reservoir AWP Pipelines Malibu Creek	Less than significant impact Less than significant impact Less than significant impact Less than significant impact
Impact 5-3: Wetlands	Measure 5-3: Avoid and minimize impacts to jurisdictional waters, including wetlands	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 5-4: Wildlife Corridors	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 5-5: Oak Trees	Measure 5-2: Prepare and implement a mitigation plan for oak trees and oak tree natural communities	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
<b>Chapter 6. Cultural Resources</b>			
Impact 6-1: Archaeological Resources	Measure 6-1a: Perform archaeological survey prior to construction in high and medium archaeological sensitivity zones. Measure 6-1b: Halt construction if archaeological resources are discovered	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 6.2: Historic Structures or Buildings	None required	Agoura Road AWP Reservoir AWP Pipelines	No impact No impact No impact

**Table ES-1. Impact and Mitigation Measure Summary**

Impact	Mitigation Measure	Level of Significance	
Impact 6.3: Paleontological Resources	Measure 6-3a: Prepare a Paleontological Resources Monitoring and Mitigation Plan Measure 6-3b: Halt construction if paleontological resources are discovered. Measure 6-3c: Prepare a Paleontological Resources Worker Environmental Awareness Program	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
<b>Chapter 7. Energy</b>			
Impact 7-1: Wasteful, Inefficient, or Unnecessary Energy Consumption	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 7-2: Policy Consistency	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
<b>Chapter 8. Geology and Soils</b>			
Impact 8.1: Seismic Risk	Measure 8-1: Review regulation requirements, perform site-specific geotechnical and engineering studies, and implement recommendations	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 8.2: Substantial Erosion or Loss of Topsoil	Measure 8-2: Comply with regulations and policies for erosion control	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 8.3: Unstable Geologic Unit or Soil	Measure 8-1: Review regulation requirements, perform site-specific geotechnical and engineering studies, and implement recommendations Measure 8-2: Comply with regulations and policies for erosion control	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 8.4: Expansive Soils	Measure 8-1: Review regulation requirements, perform site-specific geotechnical and engineering studies, and implement recommendations	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 8.5: Soils and Wastewater	None required	Agoura Road AWP Reservoir AWP Pipelines	No impact No impact No impact

**Table ES-1. Impact and Mitigation Measure Summary**

Impact	Mitigation Measure	Level of Significance	
Impact 8.6: Unique Geologic Features	None required	Agoura Road AWPf Reservoir AWPf Pipelines	No impact No impact No impact
<b>Chapter 9. Greenhouse Gas Emissions</b>			
Impact 4-1: Greenhouse Gas Emissions	None required	All Project Features	Less than significant impact
Impact 4-2: Policy Consistency	None required	All Project Features	Less than significant impact
<b>Chapter 10. Hazardous and Hazardous Materials</b>			
Impact 10-1: Transport, Use, or Disposal of Hazardous Materials	None required	Agoura Road AWPf Reservoir AWPf Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 10-2: Exposure to Hazardous Materials	Measure 10-1: Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate	Agoura Road AWPf Reservoir AWPf Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 10-3: Hazardous Emissions within 0.25 mile of Schools	Measure 10-1: Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate	Agoura Road AWPf Reservoir AWPf Pipelines	No impact No impact Less than significant with mitigation
Impact 10-4: Hazardous Sites	Measure 10-1: Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate Measure 10-2: Los Robles Well Monitoring Program	Agoura Road AWPf Reservoir AWPf Water Augmentation Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
<b>Chapter 11. Hydrology and Water Quality</b>			
Impact 11-1a: Water Quality Standards and Waste Discharge Requirements (during Construction)	Measure 8-2: Comply with regulations and policies for erosion control	Agoura Road AWPf Reservoir AWPf Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 11-1b: Water Quality Standards and Waste Discharge Requirements (during Operation)	None required	Agoura Road AWPf Reservoir AWPf Pipelines	Less than significant impact Less than significant impact Less than significant impact

**Table ES-1. Impact and Mitigation Measure Summary**

Impact	Mitigation Measure	Level of Significance	
Impact 11-2: Drainage and Flood Risk	None required	Agoura Road AWPf	Less than significant impact
		Reservoir AWPf	Less than significant impact
		Pipelines	No impact
		Malibu Creek	Less than significant impact
Impact 11-3: Groundwater	None required	Agoura Road AWPf	No impact
		Reservoir AWPf	No impact
		Water Augmentation	Less than significant impact
		Pipelines	No impact
<b>Chapter 12. Land Use and Planning</b>			
Impact 12.1: Physically Divide an Established Community	None required	Agoura Road AWPf	Less than significant impact
		Reservoir AWPf	Less than significant impact
		Pipelines	No impact
Impact 12.2: Conflict with Land Use Plans, Policies, or Regulations	None required	Agoura Road AWPf	Less than significant impact
		Reservoir AWPf	Less than significant impact
		Pipelines	No impact
<b>Chapter 13. Noise</b>			
Impact 13-1: Construction Noise and Vibration	Measure 13-1. Noise Control Plan	Agoura Road AWPf	Less than significant impact
		Reservoir AWPf	Less than significant with mitigation
		Pipelines	Less than significant with mitigation
		Pump Station	Less than significant impact
Impact 13.2: Noise and Vibration from Operation	None required	Agoura Road AWPf	Less than significant impact
		Reservoir AWPf	Less than significant impact
		Pipelines	Less than significant impact
		Pump Station	Less than significant impact
<b>Chapter 14. Recreation</b>			
Impact 14-1: Recreation Access and Opportunities	Measure 14-1: Prepare Trail Closure and Restoration Plan	Agoura Road AWPf	Less than significant impact
		Reservoir AWPf	Significant and Unavoidable
		Pipelines	Significant and Unavoidable
		Malibu Creek	Less than significant impact

**Table ES-1. Impact and Mitigation Measure Summary**

Impact	Mitigation Measure		Level of Significance
<b>Chapter 15. Transportation and Traffic</b>			
Impact 15-1: Consistency with Programs, Plans, Ordinances, and Policies	Measure 15-1: Transportation Management Plan	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
Impact 15.2: Vehicle Miles Traveled	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 15.3: Design Hazards	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 15.4: Emergency Access	Measure 15-1: Transportation Management Plan	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
<b>Chapter 16. Tribal Cultural Resources</b>			
Impact 16-1: Changes to a Tribal Cultural Resource	Mitigation Measure 6-1b, Halt construction if archaeological resources are discovered	Agoura Road AWP Reservoir AWP Pipelines	Less than significant with mitigation Less than significant with mitigation Less than significant with mitigation
<b>Chapter 17. Wildfire</b>			
Impact 17-1: Emergency Response or Emergency Evacuation Plan	None required	Agoura Road AWP Reservoir AWP Pipelines	No impact No impact Less than significant impact
Impact 17-2: Wildfire Risks	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 17-3: Associated Infrastructure	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact
Impact 17-4: Runoff, Slope Instability, or Drainage Changes	None required	Agoura Road AWP Reservoir AWP Pipelines	Less than significant impact Less than significant impact Less than significant impact



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## Acronyms and Abbreviations

°F	degree(s) Fahrenheit
µg/m <sup>3</sup>	microgram(s) per cubic meter
µN/m <sup>2</sup>	micronewton(s) per square meters
µPa	micropascal(s)
AADT	average annual daily traffic
AB	Assembly Bill
AF	acre-foot (feet)
AFY	acre-foot (feet) per year
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
AQMP	Air Quality Management Plan
ASCE	American Society of Civil Engineers
ASTM	ASTM International
<u>ATCM</u>	<u>airborne toxic control measure</u>
AWPF	Advanced Water Purification Facility
<u>Basin Plan Amendment</u>	<u>Resolution No. R16-009, an amendment to the Water Quality Control Plan for the Los Angeles Region</u>
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practice
BP	Before Present
c.	circa
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
Calleguas MWD	Calleguas Municipal Water District
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife

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CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CEQA Guidelines	California Code of Regulations Title 14, Division 6, Chapter 3
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
cfs	cubic foot (feet) per second
CGP	General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities
CGS	California Geological Survey
CH <sub>4</sub>	methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
COS	Conservation and Open Space Element
COSCA	Conejo Open Space Conservation Agency
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
DDW	State Water Resources Control Board – Division of Drinking Water
DO	dissolved oxygen
DPS	distinct population segment
DTSC	California Department of Toxic Substance Control
EIR	Environmental Impact Report
EO	Executive Order
EO 13990	Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis
EPA	U.S. Environmental Protection Agency
FESA	Federal Endangered Species Act

FHWA	Federal Highway Administration
fps	foot (feet) per second
FR	Federal Register
ft <sup>2</sup>	square foot (feet)
FTA	Federal Transit Administration
FTA manual	Transit Noise and Vibration Assessment Manual
GHG	greenhouse gas
gpm	gallon(s) per minute
GPS	global positioning system
GWP	global warming potential
H:V	horizontal to vertical
H <sub>2</sub> S	hydrogen sulfide
HAP	hazardous air pollutant
HAZ	Hazards and Safety Element
HFHSZ	High Fire Hazard Severity Zone
hp	horsepower
IPCC	Intergovernmental Panel on Climate Change
JPA	Las Virgenes-Triunfo Joint Powers Authority
kVA	kilovolt(s)-ampere
kWh	kilowatt-hour(s)
kWh/AF	kilowatt-hour(s) per acre-foot
LA Metro	Los Angeles County Metropolitan Transportation Authority
LACDRPG	Los Angeles County Department of Regional Planning
LACM	Natural History Museum of Los Angeles County
Las Virgenes-Malibu COG	Las Virgenes-Malibu Council of Governments
Las Virgenes MWD	Las Virgenes Municipal Water District
lb/d	pound(s) per day
Ldn	day-night noise level
LEED	Leadership in Energy and Environmental Design
Leq	equivalent noise level
Lmax	maximum sound level
Ln	percentile noise level
LOS	level of service
Los Angeles DOT	City of Los Angeles Department of Transportation
Los Angeles FCD	Los Angeles County Flood Control District
LRA	Local Responsibility Area
LST	localized significance threshold

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MBTA	Migratory Bird Treaty Act
Metropolitan	Metropolitan Water District of Southern California
mg/L	milligram(s) per liter
MGD	million gallons per day
MMT	million metric ton(s)
mph	mile(s) per hour
MRCA	Mountains Recreation and Conservation Authority
MS4	Municipal Separate Storm Sewer System
MT	metric ton(s)
MW	megawatt(s)
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NASA	National Aeronautics and Space Administration
NEHA	National Earthquake Hazards Act
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
No.	number
NO <sub>2</sub>	nitrogen dioxide
NOP	Notice of Preparation
NO <sub>x</sub>	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	operations and maintenance
O <sub>3</sub>	ozone
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	lead
PCE	tetrachloroethylene
PM <sub>10</sub>	particulate matter with aerodynamic diameter equal to or greater than 10 micrometers
PM <sub>2.5</sub>	particulate matter with aerodynamic diameter equal to or greater than 2.5 micrometers
ppb	part(s) per billion
ppm	part(s) per million
ppmv	part(s) per million by volume
PPV	peak particle velocity

ppt	part(s) per trillion
PRC	Public Resources Code
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
project	Pure Water Project – Las Virgenes-Triunfo
Pure Water Project	Pure Water Project – Las Virgenes-Triunfo
Rarefind 5	<i>California Natural Diversity Database Rarefind 5</i> application
Regional Board	Regional Water Quality Control Board
Regional MS4 Permit	National Pollutant Discharge Elimination System Permit for Municipal Separate Storm Sewer System Discharges Within the Coastal Watersheds of Los Angeles and Ventura Counties
RO	reverse osmosis
ROG	reactive organic gases
ROW	right-of-way
SB	Senate Bill
SCCIC	South Central Coastal Information Center
SDS	Safety Data Sheet
SDC	Seismic Design Category
SEA	significant ecological area
SF <sub>6</sub>	sulfur hexafluoride
SIP	State Implementation Plan
SLCP	short-lived climate pollutant
SLF	Sacred Lands File
SMARA	State Mining and Reclamation Act
SMP	Calleguas Salinity Management Pipeline
SO <sub>2</sub>	sulfur dioxide
SoCal Edison	Southern California Edison
South Coast AQMD	South Coast Air Quality Management District
SOx	sulfur oxide
SR-118	State Route 118
SR-23	State Route 23
SRA	State Responsibility Area
<del>State Board</del>	<del>California Water Quality Control Board</del>
State Water Board	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology
SWP	California State Water Project
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TCE	trichloroethylene

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TDM	Transportation Demand Management
TMDL	total maximum daily load
TMP	Transportation Management Plan
Triufo WSD	Triufo Water & Sanitation District
TOT	Thousand Oaks Transit
U.S.	United States
U.S. 101	U.S. Highway 101
UCLA	University of California, Los Angeles
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
Ventura County APCD	Ventura County Air Pollution Control District
Ventura County Watershed District	Ventura County Watershed Protection District
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle-mile(s) traveled
VOC	volatile organic compound
vpd	vehicle(s) per day
WDR	Waste Discharge Requirement
WEAT	Worker Environmental Awareness Training
WRF	Water Reclamation Facility
WWTP	wastewater treatment plant



# 1. Introduction

The Las Virgenes-Triunfo Joint Powers Authority (JPA) is proposing the Pure Water Project – Las Virgenes-Triunfo (Pure Water Project or project), which addresses new stringent water quality standards for discharge to Malibu Creek through a new Advanced Water Purification Facility (AWPF). The AWPF will treat recycled water for indirect potable reuse through reservoir augmentation. The Pure Water Project is a series of interrelated projects – described in Chapter 2, Project Description – that collectively function to meet the JPA’s objectives (as described in Section 1.2).

Pursuant to the California Environmental Quality Act (CEQA), the JPA has prepared this Program Environmental Impact Report (EIR) to analyze the potential environmental impacts of constructing and operating the Pure Water Project.

## 1.1 Background

The project background describes the need for the Pure Water Project, focusing on two areas: (1) Tapia Water Reclamation Facility (WRF) operations, especially in relation to Malibu Creek discharges, and (2) overall Las Virgenes Municipal Water District (Las Virgenes MWD) water supply system and operations.

### 1.1.1 Las Virgenes-Triunfo Joint Powers Authority

The JPA is a partnership between Las Virgenes MWD and Triunfo Water & Sanitation District (Triunfo WSD), established in 1964 to cooperatively treat wastewater for these two neighboring water districts within the Malibu Creek watershed. The JPA collects, conveys, and treats wastewater from residents in western Los Angeles and eastern Ventura counties, including in the cities of Agoura Hills, Calabasas, Hidden Hills, Thousand Oaks, and Westlake Village (Figure 1-1). Las Virgenes MWD serves as the administering agent for the JPA facilities.

### 1.1.2 Tapia Water Reclamation Facility Operations

The JPA owns and operates the Tapia WRF, located in the Santa Monica Mountains along Malibu Canyon Road. The Tapia WRF has a permitted capacity of 12 million gallons per day (MGD) for average daily wastewater flow from primarily domestic sources. The current average dry weather flow is approximately 7.5 MGD.

The facility treats wastewater to *California Code of Regulations* (CCR), Title 22 standards<sup>1</sup> for recycled water, for use primarily for nonresidential landscape irrigation, such as roadway medians, school yards, and golf courses within Calabasas, Agoura Hills, and Westlake Village. Excess recycled water is either discharged to Malibu Creek, used in nearby sprayfields, or sent to the Los Angeles River. The Tapia WRF has an authorized discharge point at an open-channel storm drain along U.S. 101 near the Parkway Calabasas interchange. This storm drain is part of a system that discharges to Calabasas Creek and subsequently to the Los Angeles River. All of the recycled water produced at the Tapia WRF is used for irrigation during summer months; however, surplus recycled water is discharged to Malibu Creek in winter months.

The recycled water distribution system includes three open reservoirs, three storage tanks, four pump stations, and 62 miles of pipelines, serving 661 individual connections. In 2020, the JPA provided 5,892 acre-feet (AF) of recycled water within its the Las Virgenes MWD service area (Las Virgenes MWD 2021). ~~Some recycled~~ Recycled water is also provided ~~outside of the service area,~~ to the Triunfo WSD Calleguas Municipal Water District (Calleguas MWD).

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<sup>1</sup> CCR Title 22, Social Security, Division 4, Environmental Health

Demand for recycled water varies seasonally, with summertime demand peaks that are significantly higher than typical spring and fall demands. For this reason, the recycled water system is supplemented from the drinking water system and from groundwater wells that discharge into the sewer system for treatment at Tapia WRF (Las Virgenes MWD 2021).

The Tapia WRF operates pursuant to a federal National Pollutant Discharge Elimination System (NPDES) permit and state Waste Discharge Requirements (WDRs). Collectively, the Los Angeles Regional Water Quality Control Board (Regional Board) adopted the WDRs and NPDES Permit CA0056014 and Order R4-2017-0124 on June 1, 2017. The NPDES waste discharge permit for Tapia WRF prohibits discharge to Malibu Creek from April 15 to November 15, except under an operational emergency or qualifying storm event, for protection of habitats in Malibu Creek and Lagoon. The NPDES permit also requires discharge from the Tapia WRF to Malibu Creek to maintain a minimum stream flow of 2.5 cubic feet per second (cfs) to help support steelhead habitat.

Regional Board Resolution Number (No.) R16-009 (May 16, 2017) amended the Water Quality Control Plan for the Los Angeles Region (*Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* [Regional Board 2020]) to incorporate more stringent seasonal nitrogen and phosphorus total maximum daily loads (TMDLs) for discharge to Malibu Creek. This amendment addressed benthic community impairments to accord with U.S. Environmental Protection Agency (EPA)-established *Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments* (EPA 2013).

### 1.1.3 Las Virgenes Municipal Water District Water System

The Las Virgenes MWD serves a 74,640-acre area encompassing the cities of Agoura Hills, Westlake Village, Calabasas, and Hidden Hills, as well as unincorporated areas of Los Angeles County (Figure 1-1). The drinking water distribution system is complex, especially because of the mountainous terrain, including 25 storage tanks, 24 pump stations, and nearly 400 miles of pipelines (Las Virgenes MWD 2021).

Almost all drinking water is imported from the California State Water Project (SWP), provided to the Las Virgenes MWD by the Metropolitan Water District of Southern California (Metropolitan). Several other local sources support the SWP supply, but most drinking water is from the SWP (about 96% on average). In 2020, Las Virgenes MWD provided a total of 20,817 AF of imported water within its service area (Las Virgenes MWD 2021).

SWP supply is based on rainfall and snowpack conditions in Northern California, and demands are usually met in wet years. However, dry conditions have impacts on drinking water deliveries; for example, Las Virgenes MWD was required to reduce consumption by 36% in 2016. In the long-term, Las Virgenes MWD assumes more uncertainty in SWP deliveries, potentially worsened by climate change (Las Virgenes MWD 2021).

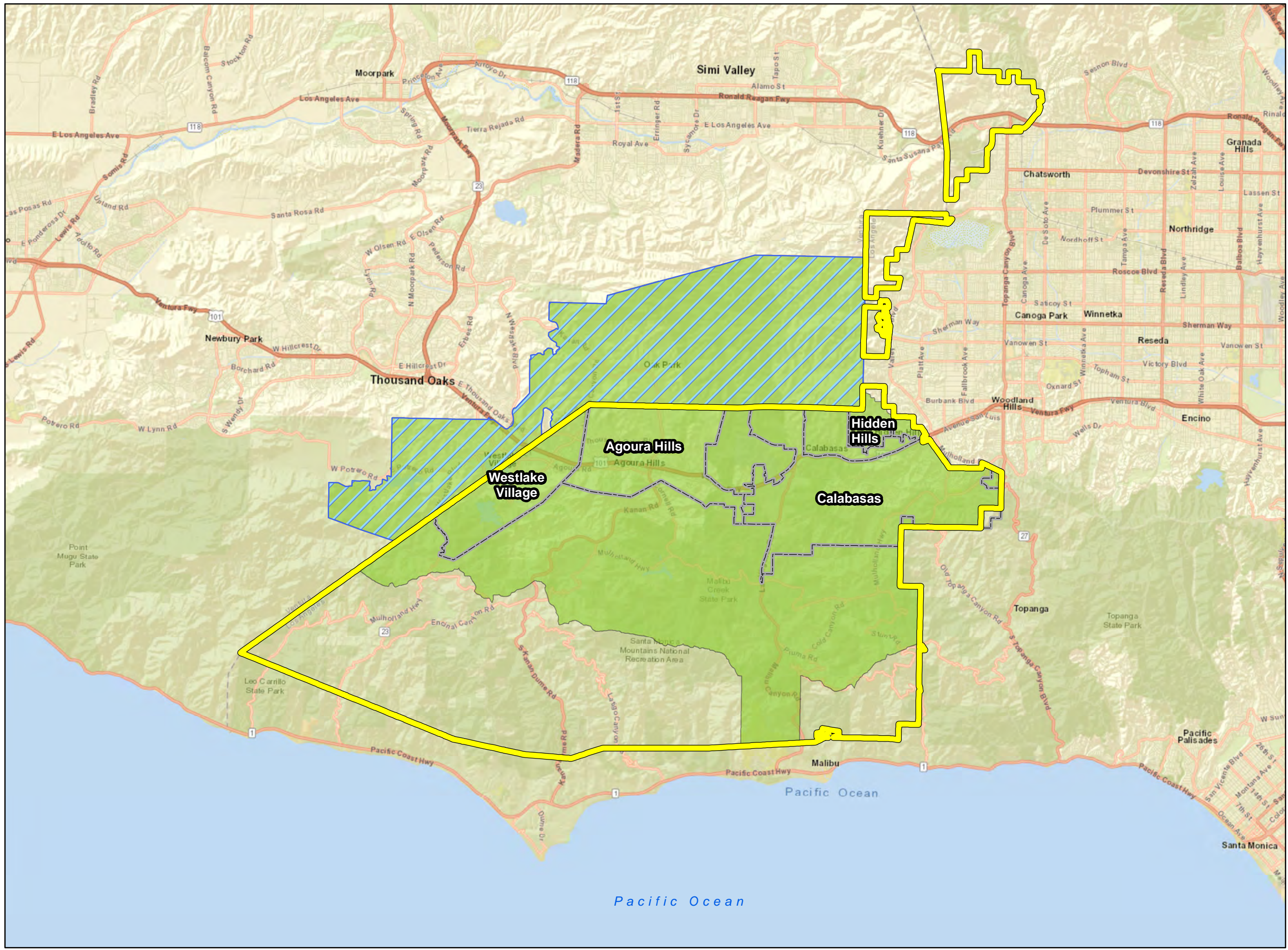
## Climate Change

The Las Virgenes MWD has been impacted by climate change in several ways:

- Reduction in Sierra Nevada snowpack and availability of imported supply
- Increase in intensity and frequency of extreme weather events
- Increase in frequency and duration of extreme heat, including associated increased water demands to fight wildfires

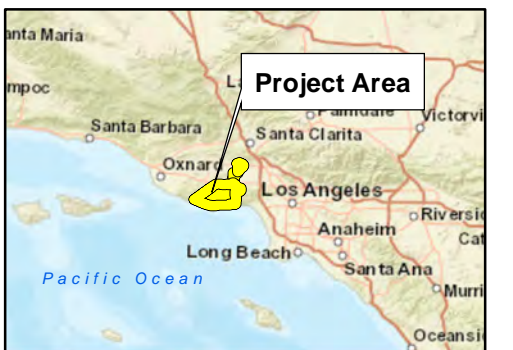
(Las Virgenes MWD 2021)



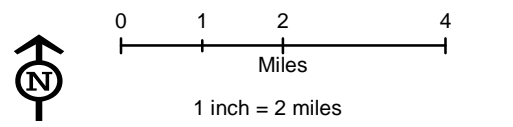


**Legend**

- LVMWD Potable Water Service
- LVMWD Sewer Service
- Trifuno Water and Sanitation District
- City Limits



Sources:  
ESRI World Street Map; LVMWD, 2022



**Figure 1-1**  
Las Virgenes Municipal Water District Service Area



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Metropolitan considers the system to be reliable because they secure their imported water supplies and build local supplies. In 1990, local supplies accounted for 41% of total supply within the Metropolitan service area. As a result of ongoing and planned future efforts, Metropolitan is planning for local supplies to account for 64% of total supplies by 2035, including sources such as water recycling, groundwater recovery, and stormwater capture (Metropolitan 2021). To support this goal, Metropolitan provides funding support to help build local supplies through a variety of incentive programs available to its member agencies.

## 1.2 Pure Water Project Objectives

The JPA's objectives for the Pure Water Project are to:

- Comply with more stringent regulatory requirements for discharge to Malibu Creek
- Balance seasonal variation of recycled water demand
- Create a valuable, drought-resistant resource to supplement the region's water supplies, supported by California's reservoir water augmentation regulations

## 1.3 Intended Uses of the Environmental Impact Report

The Program EIR will be used by decision-makers with authority over the Pure Water Project so that the environment is considered prior to taking action.

### 1.3.1 Lead Agency

The JPA is the Lead Agency for the Pure Water Project and will be responsible for project implementation, including:

- Hiring a contractor to design and build the project
- Acquiring real estate and easements for project facilities
- Applying for permits

The JPA Board of Directors will consider the Program EIR for certification in advance of taking action to build the Pure Water Project. Consistent with CEQA requirements, the JPA will use the Program EIR to identify the potential environmental impacts of constructing and operating the Pure Water Project and describe alternatives to the project and mitigation measures that avoid potentially significant impacts or reduce them to a less than significant level. In addition to these official actions, distribution and review of the Program EIR will inform the public about the Pure Water Project.

### 1.3.2 Responsible Agencies

Several other agencies will have responsibility for carrying out approvals for the Pure Water Project or for individual activities within the project. These agencies are known as CEQA Responsible Agencies. Two agencies with important regulatory roles in permitting the Pure Water Project are:

- 1) State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW) and Division of Water Rights – DDW is responsible for the regulation of public drinking water systems and will review the Pure Water Project to confirm consistency with reservoir water augmentation standards for continued use of Las Virgenes Reservoir water for potable use. In addition, the Division of Water Rights considers a Wastewater Change Petition that will be submitted for a proposed change in Tapia WRF's treated effluent point of discharge, place of use, or purpose of use of treated effluent.
- 2) Regional Board – Responsible for protecting water quality and will review the Pure Water Project for discharge of AWPf purified water into Las Virgenes Reservoir, consistent with reservoir augmentation standards.

Other CEQA Responsible Agencies are expected to include:

- Santa Monica Mountains Conservancy (a State of California agency) and the Mountains and Recreation Conservation Authority for overland access to Las Virgenes Reservoir
- California Department of Fish and Wildlife (CDFW) for construction activities affecting streams and other natural areas
- California Department of Transportation (Caltrans) for construction activities across state highways
- Local governments (for example, the City of Agoura Hills, City of Thousand Oaks, and Westlake Village) for construction along city streets
- Calleguas MWD for discretionary approval authority over the concentrate disposal pipeline connection to the Calleguas Salinity Management Pipeline (SMP)

### 1.4 Environmental Review Process and Organization

The Program EIR is the primary environmental compliance document for Pure Water Project implementation. Additional, focused environmental review may be required for specific project features. Pursuant to CEQA, a public agency should prepare a Program EIR:

- When it proposes a program or series of actions that are linked geographically
- When the actions are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program
- When individual activities carried out under the same authorizing statutory or regulatory authority have generally similar environmental effects that could be mitigated in similar ways

Program EIRs generally analyze broad environmental effects of a program, acknowledging that site-specific environmental review may be required for portions of the program.

The Program EIR is focused on potentially significant environmental impacts from Pure Water Project construction and operation. To solicit input on the scope of the Program EIR, a Notice of Preparation (NOP) was issued on September 9, 2021, and a Scoping Meeting was held on September 23, 2021. The NOP was broadly distributed to state agencies using the California State Clearinghouse, and to potentially affected local agencies, organizations, and interested parties via letters and email. In addition, the availability of the NOP and the Scoping Meeting was advertised in both print and digital media.

Agencies and the public were invited to provide comments on the scope of the Program EIR through the end of the scoping period (October 11, 2021). Three public comments were provided by the participants during the Scoping Meeting, and 94 individual written comments were received from 11 letters and emails sent in response to the NOP. All comments received were evaluated and were helpful in determining the scope of the Program EIR.

Based on the scoping process and preliminary technical review of potential impacts, the Program EIR was developed to focus on the environmental resources of concern.

The Program EIR is organized into the following sections:

- **Executive Summary:** Summarizes the Program EIR by providing an overview of the Pure Water Project, the environmental impacts that could result from project construction and operation, mitigation measures that could reduce or eliminate those impacts, and alternatives considered.
- **Chapter 1 Introduction:** Provides background information on the Pure Water Project, and describes the intended use and organization of the Program EIR.

#### Scoping

Information about the Pure Water Project scoping process is available online: [Project Updates | Pure Water Project Las Virgenes-Triunfo \(ourpureh2o.com\)](#)

- **Chapter 2 Program Description:** Describes the individual project features of the Pure Water Project and how they will be constructed and operated.
- **Chapter 3 Aesthetics:** Discusses potential visual impacts on the surrounding environment, including from new buildings and structures.
- **Chapter 4 Air Quality:** Discusses the potential for the Pure Water Project to emit air quality pollutants of concern and how the project will maintain consistency with federal, state, and local air quality plans.
- **Chapter 5 Biological Resources:** Discusses biological resources potentially present in the project area, applicable state and federal regulations, results of surveys, and potential impacts on biological resources.
- **Chapter 6 Cultural Resources:** Discusses potential impacts to archaeological, historical, and paleontological resources.
- **Chapter 7 Energy:** Discusses Pure Water Project energy demands in the context of state and local requirements for energy conservation.
- **Chapter 8 Geology and Soils:** Describes the geology and soils in the project area and related impacts.
- **Chapter 9 Greenhouse Gases:** Discusses Pure Water Project consistency with state and local plans and policies related to greenhouse gases (GHGs).
- **Chapter 10 Hazards and Hazardous Materials:** Discusses known hazardous materials in the area, potential disruptions from construction activity, and hazardous materials that will be used in AWPf operations.
- **Chapter 11 Hydrology and Water Quality:** Discusses regulations and standards for water quality and hydrology in the project area and potential impacts on those resources.
- **Chapter 12 Land Use and Planning:** Discusses the potential issues related to zoning and local general plan consistency.
- **Chapter 13 Noise:** Describes local codes and policies related to noise and potential noise impacts from Pure Water Project construction and operation.
- **Chapter 14 Recreation:** Discusses the locations of and potential impacts on parks and recreation resources.
- **Chapter 15 Transportation and Traffic:** Discusses potential impacts on roadways, traffic, and alternative transportation in the project area.
- **Chapter 16 Tribal Cultural Resources:** Describes ongoing consultation with Native American Tribes and potential measures to help protect Tribal cultural resources.
- **Chapter 17 Wildfire:** Describes Pure Water Project construction and operation in the context of wildfire risks.
- **Chapter 18 Other Required CEQA Considerations:** Discusses potential cumulative and growth-inducing impacts of the Pure Water Project.
- **Chapter 19 Alternatives:** Presents a reasonable range of alternatives to the Pure Water Project and an explanation of how those alternatives were considered, and compares the relative impacts of each alternative to the Pure Water Project.
- **Chapter 20 Report Preparation:** Lists the contributors to the Program EIR.
- **Chapter 21 References:** Lists the reference sources used to develop the Program EIR.
- **Appendices:** Includes documents relevant to preparation of the Program EIR.

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## 2. Project Description

The JPA proposes to implement the Pure Water Project to meet the objectives described in Chapter 1. The project consists of treating the Tapia WRF effluent at an AWPf, discharging the purified water to Las Virgenes Reservoir, and sending the filtered reject stream (“concentrate”) for ocean disposal. This Program EIR evaluates all Pure Water Project features, including the AWPf, pipelines, a source water augmentation project, and other ancillary facilities. Chapters 3 through 17 describe the project construction and operational impacts.

Two alternatives for the AWPf are evaluated: Alternative 1, with the AWPf site located along Agoura Road; and Alternative 2, with the AWPf site located at Las Virgenes Reservoir. Several pipeline alignment options are still under consideration – all options are described in this chapter and evaluated in this Program EIR. Section 2.1 describes the individual project components, and Section 2.2 describes the typical construction methods and expected timing.

Table 2-1 summarizes the project features by alternative.

**Table 2-1. Project Features**

Project Feature	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf
Tapia WRF and Malibu Creek Discharge	Minor upgrades at Tapia WRF. Malibu Creek discharges eliminated, except under an operational emergency or qualifying storm event. <u>The required instream flow requirement of 2.5 cfs will continue to be met.</u>	Same as Alternative 1.
AWPF	Located along Agoura Road in Agoura Hills.	Located at Las Virgenes Reservoir in Westlake Village.
AWPF Access Road	Not needed.	New access road between Triunfo Canyon Road and Las Virgenes Reservoir.
Las Virgenes Reservoir and Westlake Filtration Plant	Install discharge pipeline and hypolimnetic oxygenation system.	Same as Alternative 1.
Source Water Augmentation	Refurbish well at Los Robles Greens golf course and installing additional pipelines.	Same as Alternative 1.
Pipelines	Install source water, purified water, concentrate disposal, and sewer pipelines totaling approximately 20 miles.	Install source water, purified water, concentrate disposal, and sewer pipelines totaling approximately 23 miles.
Other Ancillary Features	Upgrade the recycled water pump station (west).	Same as Alternative 1.

### 2.1 Project Components

This section describes the individual project components.

#### 2.1.1 Tapia Water Reclamation Facility and Malibu Creek Discharges

The Tapia WRF is an existing WRF located on Malibu Canyon Road in the Santa Monica Mountains (Figure 2-1). The facility treats wastewater from nearby areas; plant capacity is 12 MGD for average daily flow, with current operations of approximately 7.5 MGD. Discharges from the Tapia WRF are as follows (Las Virgenes MWD 2022):

- As much as possible, treated effluent is reused for landscape irrigation and similar uses. There is less demand during the wet season, when there is less demand for recycled water.
- Treated effluent not used for recycled water is discharged to Malibu Creek; or when discharge to Malibu Creek is prohibited, recycled water is discharged to nearby sprayfields or the Los Angeles River via Arroyo Calabasas.



**Legend**

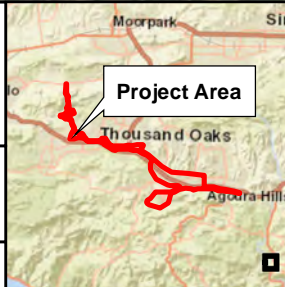
 Tapia WRF

Basemap Sources:  
ESRI World Imagery;  
ESRI World Street Map

NAD83 UTM Zone 11

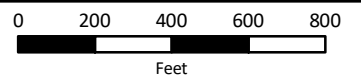


June 23, 2022



**Figure 2-1**  
**Tapia WRF**

**Jacobs** Pure Water Project  
Las Virgenes – Triunfo





The Pure Water Project does not include substantial changes at the Tapia WRF, and its capacity is not expected to increase. To operate the project efficiently, some minor upgrades to existing facilities would be required within the existing plant footprint, such as changes to optimize disinfection practices. The primary change is operational – all treated effluent would be sent to the recycled water system and the new AWPF.<sup>1</sup> The JPA will continue to meet the minimum instream flow requirement (2.5 cfs) from its Malibu Creek summer flow augmentation project, which is under construction.

**2.1.2 Alternative 1 Agoura Road Advanced Water Purification Facility**

Under Alternative 1 Agoura Road AWPF, Tapia WRF effluent is conveyed by the recycled water system to the new purification facility located along Agoura Road in Agoura Hills (Figure 2-2). The facility would have a capacity of 7.5 MGD.

**2.1.2.1 Treatment Process**

Tapia WRF effluent is highly treated and sufficient for recycled water uses, such as landscape irrigation. The AWPF would further treat recycled water from the Tapia WRF to a higher standard that allows discharge into a surface water reservoir that can be used as a drinking water source. The primary steps in advanced water purification are:

- Microfiltration or ultrafiltration
- Reverse osmosis (RO)
- Ultraviolet disinfection advanced oxidation process

The Las Virgenes MWD operates this proposed system at its Pure Water Demonstration Facility, located adjacent to the District’s headquarters in Calabasas. The AWPF would use the same processes at scale.

In addition to the primary water purification steps, the AWPF would include:

- Pumps to operate the filtration systems
- Chemical facilities (such as storage, pumps, and pipes)
- Large pumps to help convey purified water to Las Virgenes Reservoir and effluent (concentrate) to the ocean
- Electrical facilities, including emergency generators
- Extensive piping to convey water from one process to the next

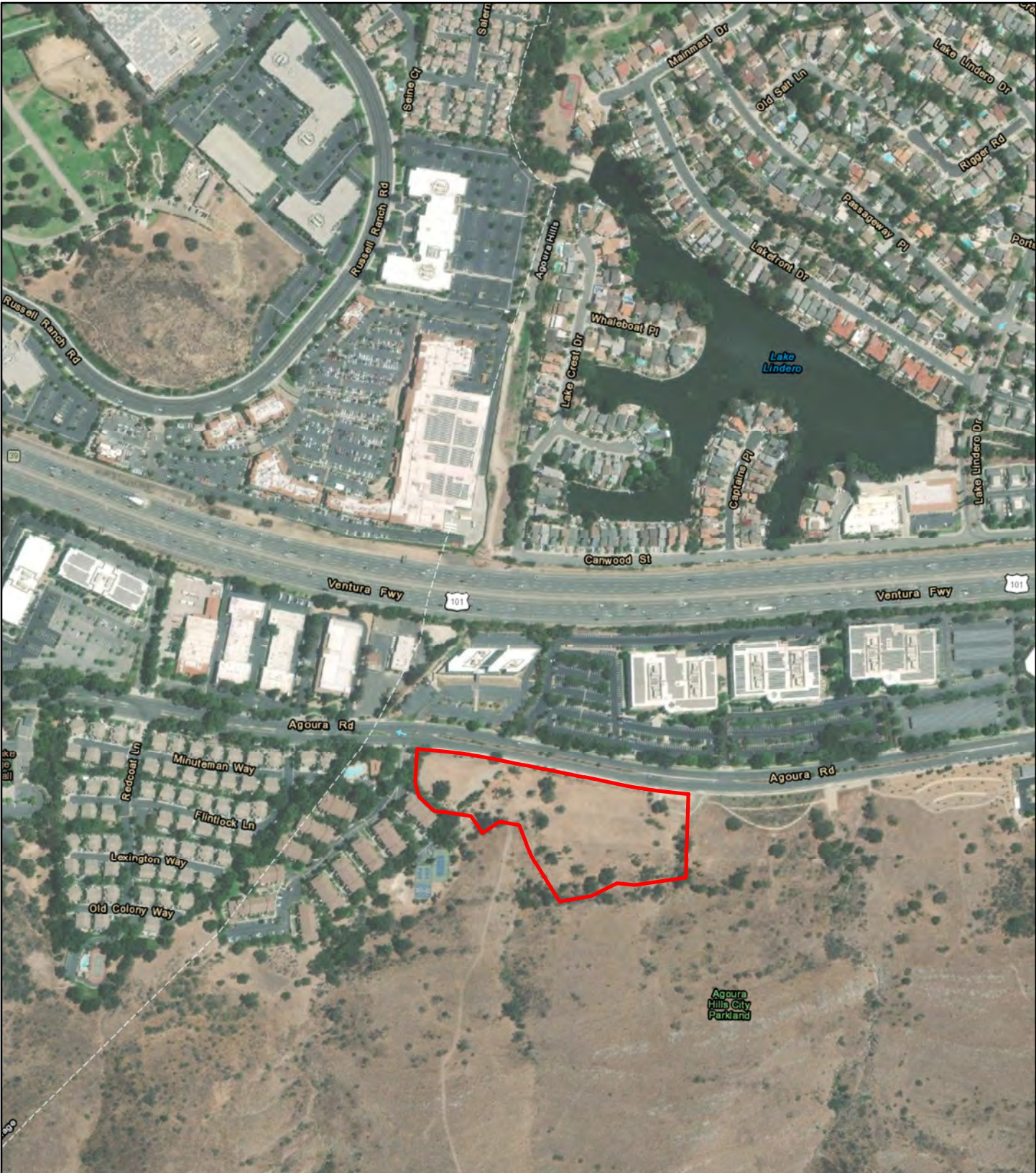
The AWPF would include an area for onsite staff use, including maintenance and laboratory facilities. Figure 2-3 shows the proposed site layout.

**Surface Water Augmentation**

California Water Code Section 13562 authorized the State Water Board to adopt uniform water recycling criteria for indirect potable reuse through surface water augmentation. Criteria were developed and reviewed through the mid-2010s, including peer review by an expert panel.

The State Water Board adopted the new surface water augmentation regulations on March 6, 2018. The regulatory process, including peer review, is documented online: [SBDDW-16-02 Surface Water Augmentation \(SWA\) Regulations | California State Water Resources Control Board.](#)

<sup>1</sup> Although all Tapia WRF discharges are needed for the Pure Water Project and the existing recycled water system, there may be occasional discharges to Malibu Creek and the Los Angeles River under an operational emergency or qualifying storm event.



**Legend**

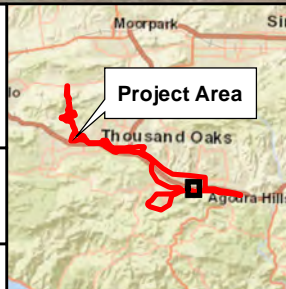
 Agoura Road AWPf Site

Basemap Sources:  
ESRI World Imagery;  
ESRI World Street Map

NAD83 UTM Zone 11

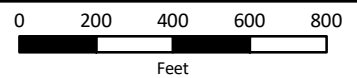


June 23, 2022



**Figure 2-2**  
Agoura Road AWPf Site

**Jacobs** Pure Water Project  
Las Virgenes – Triunfo





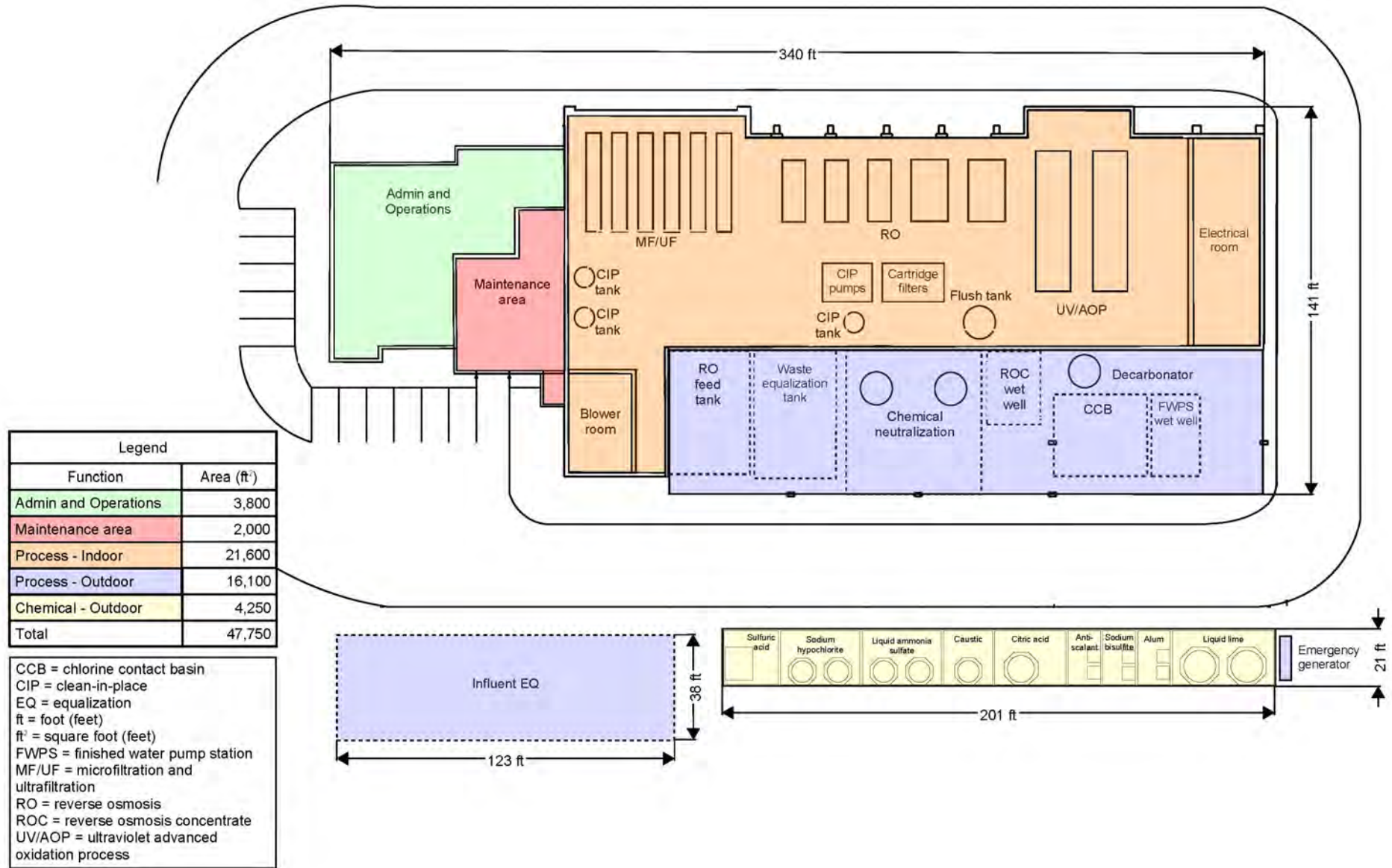


Figure 2-3 Site Layout  
Pure Water Project Las Virgenes-Triunfo

### 2.1.2.2 Site Plan and Architectural Design

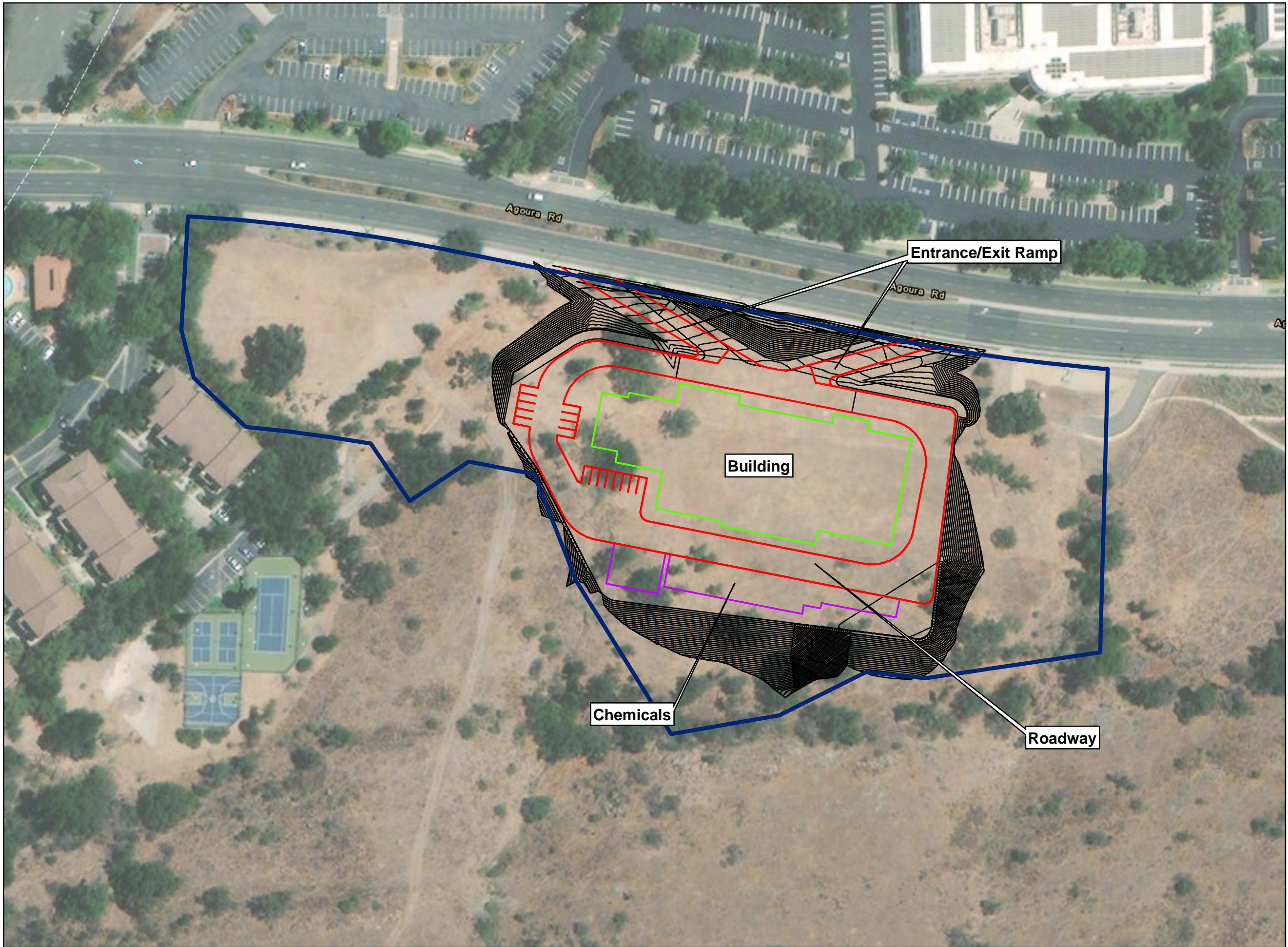
Alternative 1 Agoura Hills AWPf, would occupy a vacant parcel (Assessor's Parcel No. 2061-1-25) owned by the Las Virgenes MWD along Agoura Road in Agoura Hills. A conceptual site plan has been developed to optimize how the required process facilities fit onto the undeveloped property (Figure 2-4).

The AWPf would occupy 2.8 acres of the 7.1-acre site, with a facility footprint of 47,750 square feet (ft<sup>2</sup>). In addition to the process facilities described, the site would contain access driveways from Agoura Road; paved areas for internal circulation, including materials deliveries; and approximately 16 parking spaces. The site has been designed to comply with local and regional stormwater management regulations, including an infiltration trench to capture and treat site runoff.

The AWPf would occupy the main, eastern portion of the site in the largest open area to minimize tree removal. The smaller, western portion of the site would be used during construction for materials and equipment storage, contractor parking, and construction administration, with a temporary road connection for construction access across the site. Following construction, the western portion of the site would be restored to a natural condition and as a restoration area for impacts caused by site development.

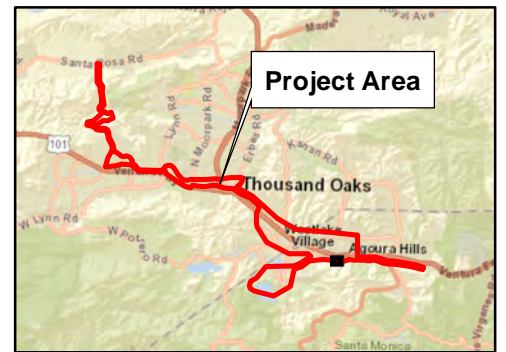
Conceptual designs have been prepared to show the AWPf architectural features. Architectural design is based on general styles common in Southern California and consistent with nearby commercial and multi-family residential development and would follow City of Agoura Hills standards, including the *Agoura Hills Architectural Design Standards & Guidelines* (City of Agoura Hills 2015) and the *Ladyface Mountain Specific Plan* (City of Agoura Hills 1991). Figure 2-5 shows the proposed design concept from two street perspectives. The conceptual designs reflect guiding principles and may be updated and refined as the project advances through the design and construction contractor selection steps.



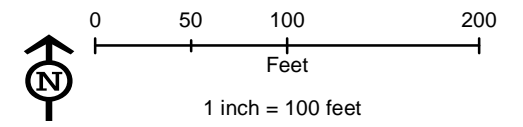


**Legend**

- ▭ Agoura Road AWP Site
- Roadway
- Building
- Chemicals
- Grading Countours



Sources:  
ESRI World Topo Map; ESRI World Street Map



**Figure 2-4**  
**Agoura Road AWP Site Plan**

Pure Water Project Las Virgenes – Triunfo



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**Figure 2-5. Agoura Road Advanced Water Purification Facility Architectural Concepts**

### 2.1.2.3 Operations

The facility would operate when excess Tapia WRF recycled water supply or supplemental supplies are available. At startup, the facility is likely to operate about 6 months per year, from late fall through early spring, producing up to 2,100 acre-feet per year (AFY). As supplemental supplies are developed and become available, the facility may operate year-round, potentially producing up to 5,000 AFY. Some year-to-year variation is expected, depending on factors such as rainfall amounts and recycled water demand.

When the Pure Water Project is operational, it would operate 24 hours per day, with a total staff of about 10 (2 or 3 operators per shift). Administration and operations and maintenance (O&M) facilities (approximately 5,800 ft<sup>2</sup>) would be provided for site workers.

In addition to the new facility, the JPA would continue to operate the existing recycled water system similar to current operations. Landscape irrigation system demands would continue to be met by the Tapia WRF effluent source and potable supplement.

### **2.1.3 Alternative 2 Reservoir Advanced Water Purification Facility**

Under Alternative 2 Reservoir AWPf, Tapia WRF effluent discharged into the recycled water system would be sent to a new treatment facility located next to Las Virgenes Reservoir in Westlake Village (Figure 2-6). Like Alternative 1 Agoura Road AWPf, the facility would have a capacity of 7.5 MGD. All treatment process, site layout, and operations information is the same as described for Alternative 1 Agoura Road AWPf (Figure 2-3). Like Alternative 1, conceptual designs have been prepared (Figure 2-7). If the Alternative 2 Reservoir AWPf is selected as the preferred alternative, the conceptual designs would be updated and refined as the project advances through the design and construction contractor selection steps.

Because the Alternative 2 Reservoir AWPf site is not adjacent to an existing road, a new access road would need to be built. This new, paved access road would connect to the eastern end of Triunfo Canyon Road. The road would be approximately 3,200 feet long and would be sized to accommodate construction vehicles and materials delivery trucks during facility operation.

Figure 2-6 shows the conceptual design for the new access road. Additional details about new access road are expected to be developed over time if Alternative 2 Reservoir AWPf is selected as the preferred alternative. The JPA would collaborate with the property owner and recreation interests to explore how the new access road can coexist with recreation uses within Triunfo Canyon Park, such as the Pentachaeta Trail.

### **2.1.4 Las Virgenes Reservoir and Westlake Filtration Plant**

Under both Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf, a new discharge pipeline would be installed in Las Virgenes Reservoir. The new pipeline would discharge purified water into the reservoir, where it would mix with the existing drinking water supply and, following a 6-month detention time in the reservoir, be pumped into the Westlake Filtration Plant, treated, and discharged into the drinking water system.

Las Virgenes Reservoir is currently filled with potable water purchased from Metropolitan – the sole source of drinking water within the Las Virgenes MWD service area. The Westlake Filtration Plant treats and disinfects the reservoir supply prior to discharge into the drinking water system, to supplement when Metropolitan is offline.

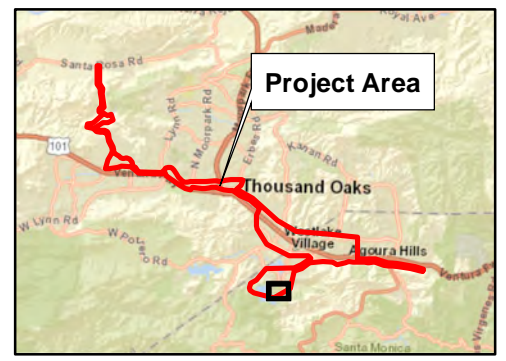
The project includes a hypolimnetic oxygenation system, with a linear diffuser placed at the bottom of the reservoir to improve withdrawal to the lowest depth. The hypolimnetic oxygen system would include a liquid oxygen tank installed on a new concrete pad at the Westlake Filtration Plant site. The Pure Water Project would not require any upgrades to the Westlake Filtration Plant treatment and disinfection system, and no other plant upgrades would be required.



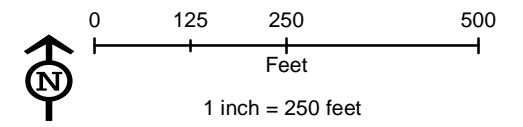


**Legend**

- Purified Water Pipeline
- Access Road
- Building
- Chemicals
- Grading Contours



Sources:  
ESRI World Topo Map; ESRI World Street Map



**Figure 2-6**  
**Reservoir AWP Site Plan**

Pure Water Project Las Virgenes-Triunfo



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**Figure 2-7. Reservoir Advanced Water Purification Facility Architectural Concepts**

### **2.1.5 Source Water Augmentation**

Full operation of the AWPf would require an additional source water supply to supplement the Tapia WRF recycled water supply. A potential source is an existing groundwater well located at the Los Robles Greens golf course. ~~At this time, the~~ ~~The well is~~ ~~has mostly not in use~~ ~~been used~~ for golf course irrigation because of poor quality over the past several years due to high mineral content in the water. The Pure Water Project would retrofit the well by installing new piping and valves, a flow meter, and a blow-off system; and a perimeter fence would be placed around the well.

The Los Robles well would be operated within the safe yield of the underlying groundwater basin. Based on recent pump tests, the well is expected to produce between 400 and 700 AFY of water, with continuous pumping of between 250 and 435 gallons per minute (gpm).

### 2.1.6 Pipelines

The Pure Water Project would require a series of interrelated pipelines:

- A source water pipeline connecting the existing recycled water pipeline system to the AWPf
- A purified water pipeline connecting the AWPf to Las Virgenes Reservoir
- A pipeline disposing the reject stream (concentrate) from the AWPf RO systems
- A sewer pipeline disposing of waste streams from the facility
- Potentially, source water augmentation pipeline from the Los Robles Well

For most of these pipelines, several alignment options are under consideration and are analyzed in this EIR. The following discussion is for Alternative 1 Agoura Road AWPf. Section 2.1.6.5 discusses how the pipelines would be different under Alternative 2 Reservoir AWPf.

#### 2.1.6.1 Source Water Pipeline

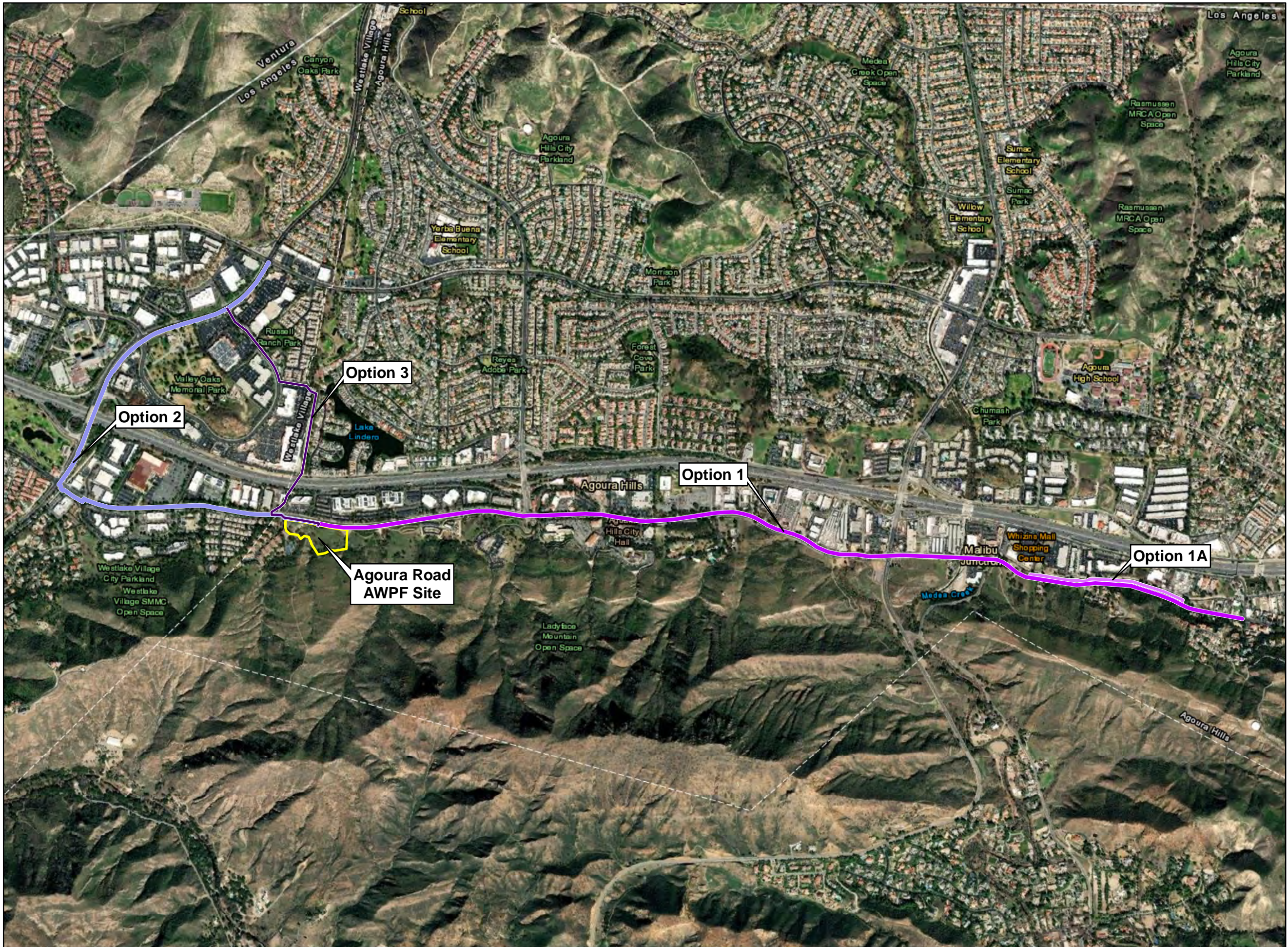
A source water pipeline (up to 24 inches in diameter) would connect the existing recycled water distribution pipelines to the new AWPf. Two points of connection are being evaluated: Agoura Road at Lewis Road, and Lindero Canyon Road at Thousand Oaks Boulevard. These two optional connection points have route options as well. Figure 2-8 shows the following various source water pipeline options under consideration:

- Source Water Pipeline Alignment Option 1, Agoura Road and Lewis Road to Agoura Road AWPf: The alignment follows Agoura Road all the way to the AWPf, a total distance of 15,210 feet. This option has one suboption:
  - Option 1A, Flood Control Channel Alignment Option: Because of expected difficult site conditions, a 2,641-foot segment of this pipeline would be constructed along the side of a flood control channel parallel to Agoura Road.
- Source Water Pipeline Alignment Option 2, Lindero Canyon Road and Thousand Oaks Boulevard to AWPf: The alignment would follow Lindero Canyon Road and Agoura Road, a total distance of 9,590 feet.
- Source Water Pipeline Alignment Option 3, Lindero Canyon Road and Thousand Oaks Boulevard to AWPf: This alignment would follow Russell Ranch Road, through an office complex parking lot, along a flood control channel, under U.S. 101, and through a small commercial development to connect to Agoura Road and the AWPf site (total distance of 6,070 feet).

#### 2.1.6.2 Purified Water Pipeline

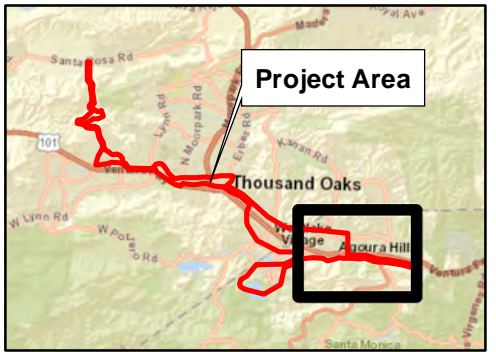
A 20-inch-diameter purified water pipeline would connect the new AWPf to Las Virgenes Reservoir. Figure 2-9 shows the various purified water pipeline options under consideration. The primary alignment is along Agoura Road, Lindero Canyon Road, and Triunfo Canyon Road, and then within Triunfo Creek Park within an easement generally following the Westlake Vista Trail (total distance of 16,190 feet). Because of the potential for purified water from the AWPf to not meet quality specifications, a bypass valve would be installed along Triunfo Canyon Road to direct flows, if needed, to the storm drain and to Potrero Creek.



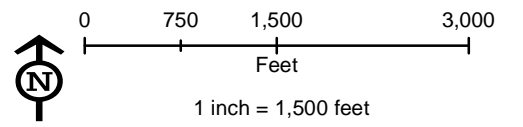


**Legend**

- Source Water Alignment, Option 1
- Source Water Alignment, Option 1A
- Source Water Alignment, Option 2
- Source Water Alignment, Option 3
- Agoura Road AWP Site



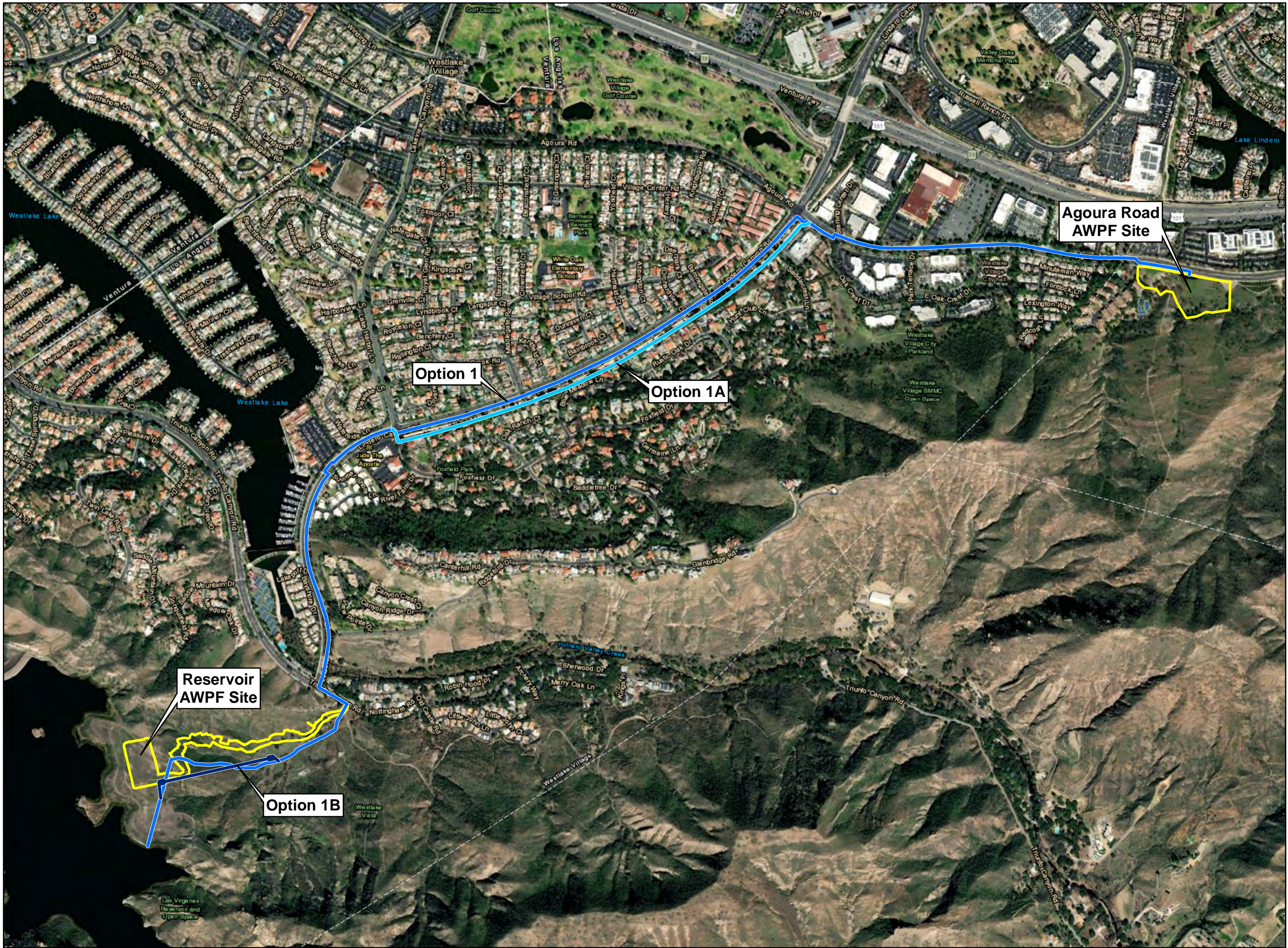
Sources:  
ESRI World Imagery; ESRI World Street Map



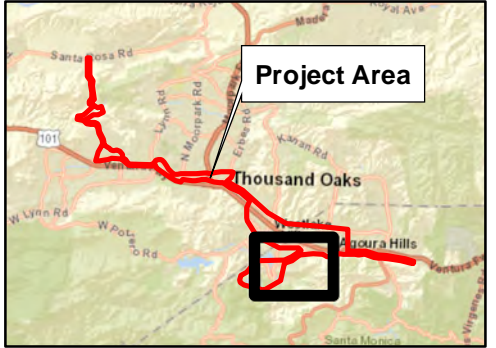
**Figure 2-8**  
**Source Water Pipeline**

Pure Water Project Las Virgenes – Triunfo

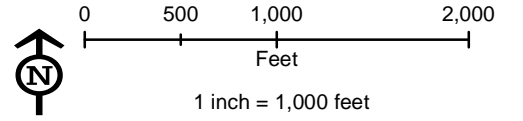




- Legend**
- Purified Water Alignment, Option 1
  - Purified Water Alignment, Option 1A
  - Purified Water Alignment, Option 1B
  - AWP Site



Sources:  
 ESRI World Imagery; ESRI World Street Map



**Figure 2-9**  
 Purified Water Pipeline  
 Pure Water Project Las Virgenes – Triunfo



This route is referred to as Purified Water Pipeline Alignment Option 1. Along this alignment, two options are being considered:

- 1) Option 1A, Flood Control Channel Alignment Option: Along Lindero Canyon Road between Agoura Road and Foxfield Drive, the alignment would be constructed along the side of the flood control channel parallel to Lindero Canyon Road, rather than along the road itself.
- 2) Option 1B, Trenchless Option in Triunfo Creek Park. A 1,250-foot portion of the alignment within Triunfo Creek Park could be built with trenchless methods, such as horizontal direction drilling.

Like the access road described for the Reservoir AWPf, the JPA intends to collaborate with the Mountains and Recreation Conservation Authority and recreation interests to explore how pipeline construction and restoration of the pipeline construction zone can minimize environmental impacts and support continued use of the Westlake Vista Trail, while allowing limited access to inspect and maintain the reservoir discharge pipeline.

### 2.1.6.3 Concentrate Disposal Pipeline

The longest pipeline project is the concentrate disposal pipeline, which would be a 10-inch-diameter pipeline connecting the AWPf to the ~~Calleguas Salinity Management Pipeline (SMP)—an ocean discharge pipeline being constructed and operated by the Calleguas MWD.~~ SMP. The SMP is an existing pipeline that discharges through an existing ocean outfall and is owned and operated by the Calleguas MWD. Calleguas MWD is planning to extend the SMP from its current terminus just east of Camarillo northeast through Santa Rosa Valley to the western Simi Valley area. The concentrate disposal pipeline would connect to the SMP along the planned extension. Depending on the alignment option, the concentrate disposal pipeline would range from 13.2 to 14.1 miles in length, most of which is within Thousand Oaks (Figure 2-10).

The primary alignment follows Agoura Road and Hampshire Road to Thousand Oaks Boulevard, along Thousand Oaks Boulevard to just past Moorpark Road, then along Hillcrest Road, Ventu Park Road, and Rancho Conejo Boulevard to the City of Thousand Oaks Municipal Service Center. From this location, the pipeline would follow an existing Conejo Canyons Open Space recreation trail and fire road, cross Arroyo Conejo, and then follow the Hill Canyon Fire Road to the SMP on Santa Rosa Road in unincorporated Ventura County.

## Conejo Canyons Bridge Project

The City of Thousand Oaks and the Conejo Recreation and Park District Open Space Conservation Agency are proposing to construct a new bridge across Arroyo Conejo, with associated access roads, to improve access for City staff and to improve recreation access. Information about the project can be found here: [Conejo Canyon Bridge | Thousand Oaks, CA \(toaks.org\)](https://www.thoaks.org/conejo-canyon-bridge).

The Pure Water Project concentrate disposal pipeline would be attached to the new bridge.

This route is referred to as Concentrate Pipeline Alignment Option 1. Several alignment options are being considered, including alignment options that may lessen some community impacts within Thousand Oaks. The final alignment selection will be based on optimal technical feasibility and lowest public impact to roadways, adjacent properties, homes, schools, and other sensitive uses.

- Option 1A, Thousand Oaks Boulevard Option: Between Lindero Canyon Road and Hampshire Road, follow Thousand Oaks Boulevard instead of Agoura Road and Hampshire Road.
- Option 1B, Lakeview Canyon Road Option: Connect to Thousand Oaks Boulevard along Lakeview Canyon Road rather than continuing along Agoura Road and Hampshire Road.
- Option 1C, Hillcrest Drive Option: Between Hampshire Road and Moorpark Road, follow Hillcrest Drive, Conejo School Road, and Willow Lane instead of following Thousand Oaks Boulevard.
- Option 1D, The Oaks Option: Between Moorpark Road and ~~Lynn~~ Lynn Road, construct the pipeline along Thousand Oaks Boulevard and behind The Oaks shopping center.

#### 2.1.6.4 Sewer Pipeline

The Agoura Road AWWP would require a sewer pipeline for onsite wastewater (process waste, toilets and sinks, lab facilities, and floor drains) and process waste. The sewer pipeline would connect with an existing sewer pipeline on Agoura Road.

#### 2.1.6.5 Alternative 2 Reservoir Advanced Water Purification Facility

For Alternative 2 Reservoir AWWP, the general pipeline corridors would be the same as Alternative 1 Agoura Road AWWP. However, the specific pipeline alignments would be somewhat different:

- The source water pipeline would be longer under this alternative. It would connect one of the two recycled water system connection points to the Reservoir AWWP, following the Lindero Canyon Road and Triunfo Creek Park alignment described for the Alternative 1 purified water pipeline.
- The Alternative 2 Reservoir AWWP would only require a short, purified water pipeline (Figure 2-6) to discharge into Las Virgenes Reservoir.
- The concentrate disposal pipeline would be longer under this alternative. It follows the same route options through Thousand Oaks, but also would run through Triunfo Creek Park and along Lindero Canyon Road, as described for the Alternative 1 purified water pipeline.
- The sewer pipeline would follow the source water and concentrate disposal pipelines to connect to an existing sewer pipeline on Triunfo Canyon Road.

Under Alternative 2 Reservoir AWWP, the source water pipeline would require a pump station to meet hydraulic requirements. The pump station would be an aboveground structure with a masonry block control building, surge tank, pumps, and ancillary facilities on a small footprint of approximately 40 feet wide by 90 feet long. The pump station would be located within Westlake Village at one of two optional sites along Lindero Canyon Road:

- 1) Within the Westlake Village Marketplace shopping center, near the corner of Lindero Canyon Road and Russell Ranch Road
- 2) Within the Westlake Golf Course between Agoura Road and U.S. 101

Pump station design would be consistent with other Las Virgenes MWD facilities in the area.

#### 2.1.6.6 Source Water Augmentation Pipeline

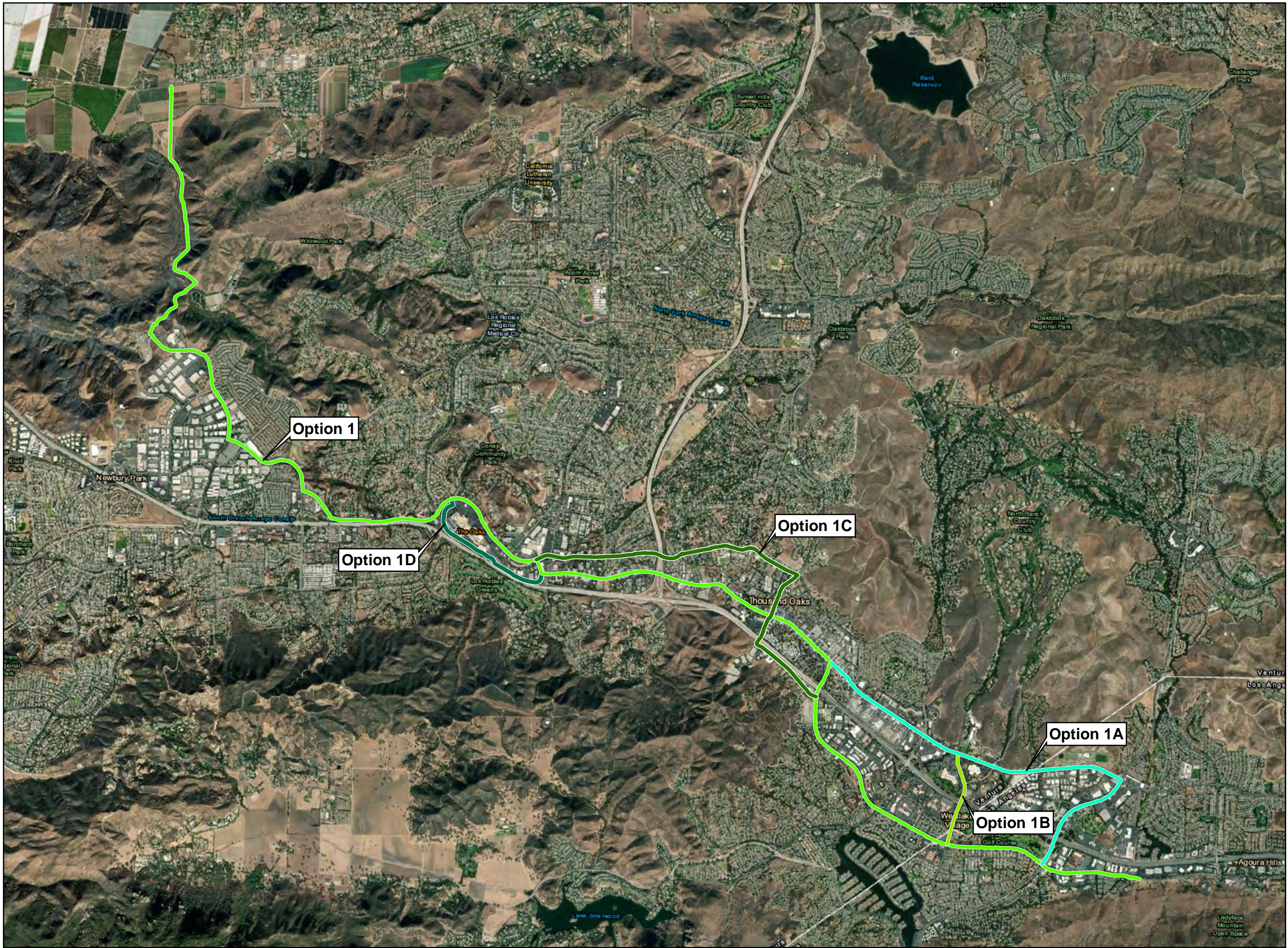
If selected for source water augmentation, groundwater produced by the Los Robles well would be conveyed to the AWWP using new pipelines. At this time, two options are being considered:

- 1) A new pipeline would be installed within the Los Robles Greens golf course to South Moorpark Boulevard (approximately 2,650 feet) to connect with ~~an existing~~ the nearest JPA sewer pipeline with the required capacity. The sewer pipeline would discharge to the Tapia WRF; therefore, indirectly to the AWWP.
- 2) As in option 1, a new pipeline would connect the well to South Moorpark Boulevard, with an additional, direct connection to either the Alternative 1 Agoura Road AWWP or Alternative 2 Reservoir AWWP. The pipeline alignment would follow the selected concentrate disposal pipeline alignment (Figure 2-10) and is expected to be installed within the same trench at the same time the concentrate pipeline is installed.

#### 2.1.7 Other Ancillary Facilities

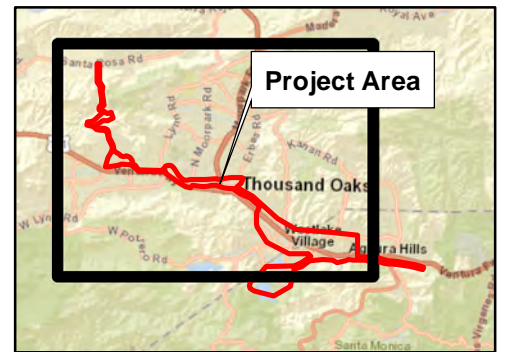
The project also includes upgrades to the existing recycled water pump station (west).



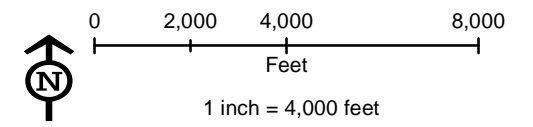


**Legend**

- Concentrate Alignment, Option 1
- Concentrate Alignment, Option 1A
- Concentrate Alignment, Option 1B
- Concentrate Alignment, Option 1C
- Concentrate Alignment, Option 1D



Sources:  
ESRI World Imagery; ESRI World Street Map



**Figure 2-10**  
**Concentrate Water Pipeline**

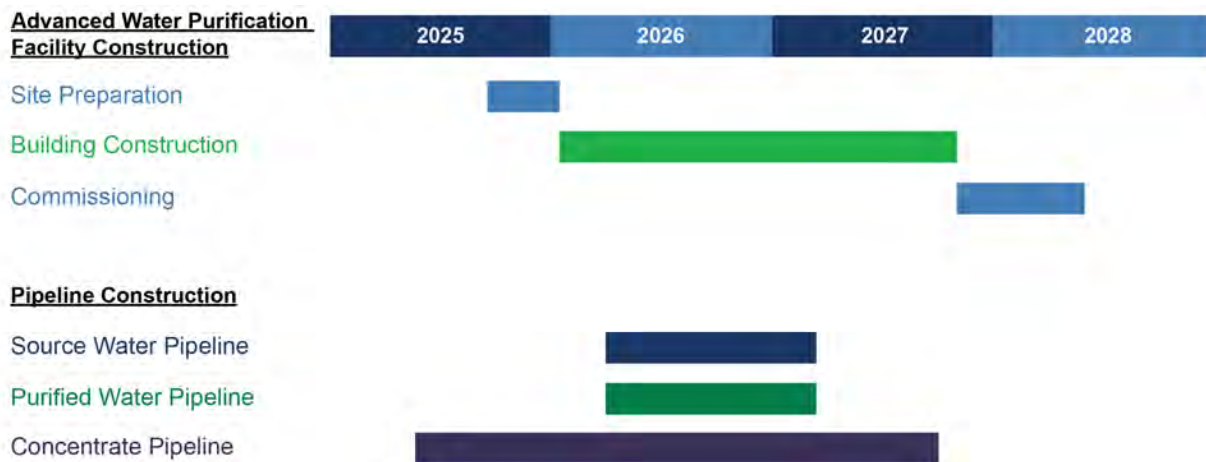
Pure Water Project Las Virgenes – Triunfo



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## 2.2 Project Construction

Overall project construction is expected to start in late 2025, with all project features fully operational before 2030 in time to meet the NPDES compliance schedule for Tapia WRF discharges into Malibu Creek. Expected construction processes for both the AWPf alternatives and the pipeline options are described in this section and shown on Figure 2-11. The specific timing of the surface water augmentation project (Los Robles well improvements and pipelines) and other ancillary facilities has not been determined.



**Figure 2-11. Expected Construction Processes**

### 2.2.1 Advanced Water Purification Facility Construction

The two construction phases are site preparation and building construction. The Alternative 1 Agoura Road AWPf expected construction sequence is as follows:

- 1) Site Preparation (August 2025 through January 2026). Site preparation involves mass grading to create the 2.8-acre building pad. Major features of the site preparation work include:
  - Excavating the rear portion of the site and installing the retaining wall
  - Laying fill material on the front portion of the site to balance the earth work as much as possible
  - Creating the driveways and access points on Agoura Road
  - Grading other site features, such as the bioswale along Agoura Road

The smaller, western portion of the site would be used for materials and equipment storage, contractor parking, and construction administration, with a temporary road connection for construction access across the site. Use of this onsite staging area along with the temporary road would minimize in-and-out movements onto Agoura Road. All site preparation work is expected to use standard construction methods; no specialized construction, such as pile driving, is expected.

- 2) Building Construction (January 2026 through November 2027). Following onsite grading activities to create the pad, the building itself would be constructed. When the building is ready, all water treatment process and ancillary equipment would be installed. This work is expected to occur mostly within the finished building, with materials and equipment deliveries using the new driveways on Agoura Road.

Construction of the Alternative 2 Reservoir AWPf site would follow a similar construction process. For Alternative 2, the initial phase of construction also would include construction of the access road from Triunfo Canyon Road. For this reason, construction of this alternative is expected to take longer than Alternative 1 Agoura Road AWPf.

Once equipment installation inside the new building is complete, the staging areas would be restored to pre-project conditions, including site stabilization, hydroseeding, and required landscape plantings. For Alternative 1, the staging area would be further restored to mitigate for onsite loss of oak trees and sensitive

plants. For Alternative 2, little restoration is expected to be required given the large and generally unvegetated area along Las Virgenes Reservoir.

Following the completion of all construction activities, the AWPf would go through a commissioning period (expected to be November 2027 through May 2028) when all processes would be thoroughly tested to verify that the product water meets the State Water Board standards for indirect potable reuse through reservoir augmentation.

### 2.2.2 Pipeline Construction

Pipeline construction methods would be the same for both alternatives. Most pipeline construction would occur along city streets following standard methods for pipeline installation in a vertical trench. Within city streets, typical pipeline installation usually progresses at a rate of approximately 200 feet per day. For active construction zones, traffic control, including necessary vehicle, bicycle, and pedestrian detours, would be installed pursuant to industry standards and subject to review and approval of City of Agoura Hills, City of Westlake Village, City of Thousand Oaks, or Ventura County.

The pipeline alignments also include several major facility crossings not likely to be installed using open-cut construction. Primarily, these crossings are at U.S. 101 and State Route 23 (SR-23), but may also include other areas where open-trench construction is infeasible, such as crossings of major drainage features. In these areas, trenchless construction is most likely to be required. Trenchless construction options include horizontal directional drilling and bore-and-jack tunneling. For some U.S. 101 crossings, installing the pipeline within the existing overcrossing structure (in available utility conduits) is assumed.

Specialized construction also would be used in two areas that present special challenges: in Triunfo Creek Park and within the Rancho Conejo Open Space area. Both areas are undeveloped and difficult to access, and contain rocky ground that makes open-trench construction very difficult. Pipeline installation is expected to occur at a rate of approximately 50 feet per day in these areas. Within these areas, the following construction methods may be used:

- **Rockwheel Trencher:** A rockwheel is a specialized trench excavation tool that can be used where ground conditions are too rocky for standard excavators. Rockwheels grind the native material into smaller pieces that can be removed with a standard excavator or backhoe.
- **Jackhammering:** In areas where standard or specialized construction equipment, such as a rockwheel, are not sufficient to break up hard rock and create the necessary trench width, jackhammering may be needed.
- **Blasting:** If necessary, blasting would be used if other methods are infeasible. Highly localized blasting would be used, with small charges placed into drilled holes.

A portion of the purified water pipeline alignment within Triunfo Creek Park could be built with trenchless methods, such as horizontal directional drilling. This construction option would require small insertion and extraction pits at either end of the trenchless section.

Pipeline construction is expected to occur on the following schedule:

- Source Water to AWPf: April 2026 through April 2027
- Purified Water to Las Virgenes Reservoir: April 2026 through April 2027<sup>2</sup>
- Concentrate to SMP: May 2025 through October 2027

Prior to operation, all pipelines would be tested, with all test water discharged to local sewers or, potentially, to local surface waters subject to permit.

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<sup>2</sup> This phase of pipeline construction would not be needed under Alternative 2, Reservoir AWPf.

## 3. Aesthetics

Aesthetic resources, or visual resources, are the natural and cultural features that can be seen and contribute to the public's enjoyment of the environment. Visual resource impacts or impacts on the aesthetics of the natural and cultural environment are generally defined in terms of a project's physical characteristics and potential visibility, and the extent that the project would change the visual character and quality of the environment where it is located. This chapter discusses the existing visual character of the Pure Water Project area and analyzes the potential for the two AWPf alternatives to affect the existing visual character and visual quality as seen from the surrounding area.

Concepts and terminology used in this analysis are summarized in Section 3.1. As defined primarily by the Federal Highway Administration (FHWA) (1988) and the Bureau of Land Management (BLM) (1984), these concepts are used throughout this chapter to describe existing conditions in representative views toward the AWPf sites and relevant portions of the project area. In concert with CEQA significance criteria, this chapter describes the potential effects on aesthetic resources.

### 3.1 Concepts and Terminology

Identifying visual resources and conditions involves three steps:

- 1) Objective identification of the visual features (visual resources) of the landscape
- 2) Assessment of the character and quality of those resources relative to overall regional visual character
- 3) Determination of the importance to people, or sensitivity, of views of visual resources in the landscape

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (FHWA 1988). Scenic quality could best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (BLM 1984). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These concepts and terms are described in detail in the following sections and are incorporated into this chapter's discussions of existing conditions and potential effects on aesthetic resources.

#### 3.1.1 Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character could vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (USFS 1995; FHWA 1988). The appearance of the landscape is described in terms of the dominance of each of these components.

### 3.1.2 Visual Quality

Visual quality is evaluated using the well-established approach to visual analysis adopted by FHWA, which employs the following concepts (FHWA 1988; Jones et al. 1975):

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

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

### 3.1.3 Visual Exposure and Sensitivity

The measure of a view's quality must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the following factors:

- Visibility of resources in the landscape
- Proximity of viewers to the visual resource
- Elevation of viewers relative to the visual resource
- Frequency and duration of views
- Number of viewers
- Type and expectations of individuals and viewer groups

The importance of a view is related, in part, to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all the surface area visible from a particular location (for example, an overlook) or sequence of locations (for example, a roadway or trail) (FHWA 1988).

To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middle-ground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic regions or types of terrain, the standard foreground zone is 0.25 to 0.5 mile from the viewer, the middle-ground zone from the foreground zone to 3 to 5 miles from the viewer, and the background zone from the middle-ground to infinity (Jones et al. 1975).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure; people engaging in recreational activities, such as hiking, biking or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USFS 1995; FHWA 1988; SCS 1978). Commuters and nonrecreational travelers generally have fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity.

Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are also typically assumed to have high visual sensitivity.



Judgments of visual quality and viewer response must be made based in a regional frame of reference (SCS 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality or sensitivity in each setting. For example, a small hill may be a significant visual element within a relatively flat landscape but have very little significance in mountainous terrain.

## **3.2 Existing Setting**

The Pure Water Project area is in the northwestern portion of the greater Los Angeles region, within portions of the cities of Agoura Hills, Westlake Village, and Thousand Oaks, and within unincorporated Ventura County (Figure 1-1). Most of the project area is located within an urban setting; however, there are portions located within open space areas, specifically near Las Virgenes Reservoir and near Hill Canyon Road. Major transportation corridors in the project area include U.S. 101 and SR-23. No airports or railways are in the vicinity.

### **3.2.1 Regional Setting**

Although the project area is mostly developed, there is a balance of commercial and residential uses, public parklands, and undeveloped private lands dispersed throughout the area. Portions of the project area:

- Provide open space
- Support wildlife habitat
- Offer recreational opportunities
- Have relatively expansive views in some locations

Visual character, quality, and sensitivity is discussed in the following subsections in the context of Pure Water Project features.

### **3.2.2 Existing Visual Character, Visual Quality, and Visual Sensitivity**

Pure Water Project features that may affect the visual setting are the Agoura Road AWPf, Reservoir AWPf, and pipeline construction, including the pump station that would be constructed under Alternative 2 Reservoir AWPf. The existing visual character, quality, and sensitivity of each is described in this section. New development on parcels within the viewshed of roads or trails is an opportunity for design that protects the existing scenic qualities or improves on those qualities.

#### **3.2.2.1 Views Toward the Agoura Road Advanced Water Purification Facility Site**

Visibility of the Agoura Road AWPf site is primarily from foreground vantage points along Agoura Road, with some middle-ground views look down from along trails within Ladyface Mountain area. Views described here demonstrate the existing visual character and quality associated with the site and are representative of the range of viewer exposure and sensitivity. Most viewpoints are from less than 0.5 mile from the AWPf site and considered foreground views. At a maximum height of 35 feet, the conceptual layout (Figure 2-3), site plan (Figure 2-4), and architectural renderings (Figure 2-5) provide dimensions, character, perspective, and foreground views of the AWPf site from the eye of an observer. Additionally, there are vantage points along trails within the Ladyface Mountain area that provide middle-ground views of the AWPf site from above.

Visual sensitivity is moderate, as primarily extended views of the site would be from adjacent developed residential and commercial properties, passersby traveling along Agoura Road, and hikers traveling along nearby trails at higher elevations. The visual quality of this view is also moderate, which reflects the duration of exposure and visual sensitivity of commuters, patrons of local businesses, nearby residents, and recreational users. Visible features would include the AWPf structure, parking area, access road, lighting, and landscaping. While structures are visible, their presence would not obscure views of

background scenery; and individual components comprise an overall view with a moderate degree of visual coherence and compositional harmony.

### **3.2.2.2 Views Toward the Reservoir Advanced Water Purification Facility Site**

The Reservoir AWPf site would offer foreground and middle-ground views from several locations within Westlake Village and along recreational trails. A band of linear features (trails, exclusion fencing surrounding the reservoir, and transmission facilities), in addition to AWPf associated infrastructure, would be visible in the foreground if selected, as a new access road is required to develop the site (Figure 2-6). Located at low elevations compared to the surrounding environment, the moderate degree of visual integrity and sensitivity is concentrated primarily from residential properties above and recreational viewing from Triunfo Creek Park trails.

Visual sensitivity is moderate, as primarily extended views of the site would be middle-ground from developed residential properties and in the foreground and middle-ground for passersby traveling along recreational trails. The visual quality of this view is also moderate, which reflects the duration of exposure and visual sensitivity of recreational users and adjacent residents. Visible features would include the AWPf structure, parking area, access road, lighting, and landscaping. While structures may be visible, their presence would not obscure views; and individual components comprise an overall view with a moderate degree of visual coherence and compositional harmony.

### **3.2.2.3 Pipeline Corridors**

Locations of proposed pipeline alignment options for the source water pipeline (Figure 2-8), purified water pipeline (Figure 2-9), and concentrate pipeline (Figure 2-10) would occur mostly along existing city streets in Agoura Hills, Westlake Village, Thousand Oaks, and in unincorporated Ventura County. Pipelines would be located subsurface or included alongside existing road crossing and bridge infrastructure. The pipelines include appurtenant facilities in some areas and, for Alternative 2 Reservoir AWPf, a pump station along the source water pipeline that would be visible primarily by adjacent landowners, commuters, and pedestrians along existing roadways.

For Alternative 2 Reservoir AWPf, the pump station would either be located at the intersection of Lindero Canyon Road and Russell Ranch Road in Westlake Village or along Lindero Canyon Road at the Westlake Golf Course. Within Westlake Village, the pump station would either be within a commercial development located approximately 850 feet from the nearest residence or at a golf course in a commercial area. Pump station visibility would be minimal and likely only visible in the foreground, complying with footprint restrictions and height of less than a single story. Other appurtenant facilities along pipeline corridors would be access ports with near-ground-surface relief and visible only at short distances; therefore, view sensitivity is low.

## **3.3 Regulatory Framework**

This section lists laws, ordinances, and regulations regarding aesthetics and visual resources that are directly applicable to the Pure Water Project. These regulations are based on local guidelines; there are no applicable federal or state regulations regarding aesthetics or visual resources.

Applicable local regulations include relevant sections of the Agoura Hills and Westlake Village general plans (City of Agoura Hills 2010b; City of Westlake Village 2020). There are no aboveground project features within Thousand Oaks and in unincorporated Ventura County that would affect the visual setting; therefore, there are no applicable general plan goals and policies.

### **3.3.1 General Plans – Policies and Guidance**

Policies and guidance related to aesthetics and visual resources found in sections of each general plan are discussed in this section.

**3.3.1.1 City of Agoura Hills**

Table 3-1 provides the aesthetics and visual goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to the project.

**Table 3-1. City of Agoura Hills Aesthetics and Visual Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Goal LU-3: City of Open Spaces	<i>Open space lands that are preserved to maintain the visual quality of the City and provide recreational opportunities, protect the public from safety hazards, and conserve natural resources.</i>
Policy LU-3.1: Scenic and Natural Areas	<i>Provide for the preservation of significant scenic areas and corridors, significant plant and animal habitat and riparian areas, and physiographic features within the City.</i>
Policy LU-3.6: Development Respect for Environmental Setting	<i>Encourage development to be located and designed to respect Agoura Hills’ natural environmental setting and preserve public views, including scenic hillside areas. Regulate building height and location to avoid obtrusive breaks in the natural skyline.</i>
Policy LU-3.7: Public Viewsheds	<i>Whenever possible, preserve vistas of the community from public use areas.</i>
Policy LU-3.8: Night Sky	<i>Preserve view of the night sky through control of outdoor lighting.</i>
Goal LU-16: Well-Designed and Attractive Business Parks	<i>Business park and light industrial districts that are designed as an attractive working environment and valuable place to do business.</i>
Policy LU-16.1: Site Planning	<p><i>Require that new and renovated business park development projects are designed to accommodate safe and convenient walking, biking, and transit, and exhibit a high-quality, attractive, and cohesive “campus environment,” characterized by the following:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Location of buildings around common plazas, courtyards, walkways, and open spaces, including amenities for the comfort of employees, such as outdoor seating areas.</i></li> <li>▪ <i>Incorporation of landscape that enhances a park-like setting along property edges, building frontages, and to break the visual continuity of surface parking lots.</i></li> <li>▪ <i>Common signage program for tenant identification and wayfinding.</i></li> <li>▪ <i>Readily observable site access, entrance drives, building entries, and pedestrian paths through parking lots to create a safe haven for pedestrians and minimize conflict between service vehicles, private automobiles, and pedestrians.</i></li> </ul>
Policy LU-18.5: Coordination with Non-City Public Service Providers	<i>Coordinate, partner with, and encourage school and utility districts and other government and independent agencies that may be exempt from City land use control and approval to plan and improve their properties and design buildings at a high level of visual and architectural quality that maintains the character of the neighborhood or district in which they are located.</i>
Goal LU-19: Maintenance of Open Spaces	<i>Open space lands that provide an attractive environmental setting for Agoura Hills and visual relief from development, protect the viability of natural resources and habitat, offer passive recreational opportunities for residents and visitors, and protect residents from the risks of natural hazards.</i>
Policy LU-21.3: Streetscape Improvements	<i>Improve the public streets and sidewalks that enhance the visual character and quality of the neighborhood commercial district, considering such elements as landscape; well-designed benches, trash receptacles, and other street furniture; decorative sidewalk and crosswalk paving; and pedestrian-oriented lighting; wayfinding signage.</i>
Policy LU-23.2: Site Development	<i>Require that buildings be located and designed to reflect the area’s hillside topography and natural landscapes, with building footprints conforming to topographic contours, setbacks of upper stories to conform to slope, and orientation to preserve view corridors.</i>

Source: City of Agoura Hills 2010b

**3.3.1.1.1 City of Westlake Village**

Table 3-2 provides excerpts of the goal, objective, and policy language established by the *City of Westlake Village General Plan (City of Westlake Village 2019a)* relative to aesthetics and visual resources that are applicable to the project.

**Table 3-2. City of Westlake Village Aesthetics and Visual Goals, Objectives, and Policies**

Chapter, Goal, Objective, or Policy	Goal, Objective, or Policy Language
Chapter 1, Goal 1	<i>Preserve and maintain the natural character and visual amenities of hillsides as a scenic resource.</i>
Chapter 1, Goal 3, Objective 3.1	<i>Ensure that sufficient lands are designated to accommodate a balance of uses which (a) provide for the housing, commercial, employment, educational, recreational, cultural, social, and aesthetic needs of City residents, and (b) preserve the City's significant environmental resources.</i>
Chapter 1, Goal 6, Objective 6.1, Policy 6.1.5	<i>Require that structures and sites be designed to convey visual interest and character and be compatible with adjacent uses, including:</i> <i>a. differentiation of building facades by materials, color, architectural details (columns, recessed or projecting windows, articulated beams or spandrels, etc.), offset planar surfaces, and modulated building volumes;</i> <i>b. architectural treatment of all prominent building elevations;</i> <i>c. enclosure of storage areas with decorative screening or walls;</i> <i>d. location of site entries to minimize conflicts with adjacent uses and residential neighborhoods; and</i> <i>e. mitigation of noise, odor, lighting, and other impacts</i>
Chapter 1, Goal 8	<i>Preserve and protect the City's open space resources as important scenic, environmental, and recreational amenities for all City residents and visitors.</i>
Chapter 1, Goal 8, Objective 8.2	<i>Ensure that adequate open space is provided to protect significant visual and environmental resources.</i>
Chapter 1, Goal 8, Objective 8.2, Policy 8.2.2	<i>Require that significant ridgelines be preserved as a visual and open space resource in accordance with the Visual Resources and Scenic Highways Elements' policies.</i>
Chapter 1, Goal 11	<i>Preserve and maintain the natural character and visual amenities of hillsides as a scenic resource.</i>
Chapter 1, Goal 11, Objective 11.1	<i>Minimize development and development impacts on scenic hillsides and prominent ridgelines.</i>
Chapter 1, Goal 16, Objective 16.1, Policy 16.1.1	<i>Require that parcels developed for commercial and industrial uses incorporate buffers between abutting residential properties which adequately protect the residential use from the impacts of noise, light, visual intrusion, and vehicular traffic; including the use of horizontal and vertical setbacks, structural or landscape buffers, and other appropriate techniques.</i>
Chapter 1, Goal 16, Objective 16.1, Policy 16.1.2	<i>Require that the on-site lighting of commercial and industrial uses be unobtrusive and designed or located so that only the intended area is illuminated, off-site glare is minimized, and adequate safety is provided.</i>
Chapter 1, Goal 17	<i>Ensure that the City's built environment, including its architecture, landscape, public open spaces, and rights-of-way maintain a high quality of design which is compatible with the City's established suburban character and environmental setting.</i>
Chapter 1, Goal 17, Objective 17.1, Policy 17.1.1	<i>Limit the use of reflective glass, bright colors, expansive metal skins and other materials and designs which detract from the community's established character.</i>

**Table 3-2. City of Westlake Village Aesthetics and Visual Goals, Objectives, and Policies**

Chapter, Goal, Objective, or Policy	Goal, Objective, or Policy Language
Chapter 1, Goal 17, Objective 17.1, Policy 17.1.2	<i>Require that air conditioning and other mechanical equipment located on the rooftop of a structure be visually screened from public view and adjacent properties.</i>
Chapter 3, Goal 1	<i>Maintain and enhance the visual quality and character of the community's urban and natural environments.</i>
Chapter 3, Goal 1, Objective 3	<i>Provide for the preservation and maintenance of the visual quality of the Community's natural landforms and water bodies.</i>
Chapter 3, Goal 1, Objective 3, Policy 3.3	<i>Require new and relocated utilities to be located underground, when possible; all above ground utilities shall be located and screened to minimize their aesthetic impact.</i>
Chapter 3, Goal 1, Objective 3, Policy 3.5	<i>Protect the visual quality of the community's water bodies through the maintenance of building setbacks and landscape treatments, and effective control of erosion and urban runoff.</i>

Source: City of Westlake Village 2019a

### **3.3.2 Land Use, Zoning, Specific Plans, and Resource Management Overlays**

In addition to general plans, the zoning designation may regulate specific characteristics, such as specific development standards with the intent to protect the character and stability of neighborhoods and reduce land use conflicts. Highlights of Agoura Hills and Westlake Village land use and zoning designations within the Pure Water Project area as applied to aesthetic needs are described in this section and are further discussed in Chapter 12, Land Use and Planning.

Project activities within Thousand Oaks and Ventura County are limited to underground pipelines. Although temporary construction impacts would occur (as discussed in Section 12.3), no specific plans or resource management overlays are applicable.

#### **3.3.2.1 City of Agoura Hills and Ladyface Mountain Plan**

The Agoura Road AWPf site is within Ladyface Mountain Overlay District. Permitted use information is summarized in Table 12-5, and Table 12-6 summarizes the development standards for the Agoura Road AWPf site, within the Business Park Sub Area of the *Ladyface Mountain Specific Plan* (City of Agoura Hills 1991).

#### **3.3.2.2 City of Westlake Village and Resource Management Overlays**

The Reservoir AWPf site has a land use designation of Open Space and a zoning designation of Open Space. Per Section 93.313.020 of the City of Westlake Village Municipal Code, water treatment plants, including filtration systems, gauging stations, pumping stations, and any use related to the obtainment, storage, and distribution of water, are a conditionally permitted use requiring visual preservation and maintenance. Refer to Table 12-7 for permitted use information and Table 12-8 for development standards related to the Reservoir AWPf site and potential pump station within City of Westlake Village.

Resource management overlay areas that apply to the area include Hillside Management, Cultural Reconnaissance Watershed, and Significant Habitat. These designations are intended to further the preservation and maintenance of the natural character and visual amenities while minimizing negative effects of development.

### 3.4 Assessment Methods and Thresholds of Significance

Based on existing conditions within the Pure Water Project area, potential impacts on aesthetic and visual resources were identified and compared to CEQA thresholds of significance. These criteria state that impacts on aesthetic resources may occur if the project would result in the following:

- A substantial adverse effect on a scenic vista
- Substantial damage to scenic resources, including trees, rock outcroppings, and historical buildings within a state scenic highway
- Substantial degradation to the existing visual character or quality of the site and its surroundings or conflict with applicable zoning and other regulations governing scenic quality
- Creation of a new source of substantial light or glare

There are no officially designated state scenic highways or county-designated scenic routes in the project area (Caltrans 2022a); therefore, this topic is not discussed further.

Potential impacts and corresponding mitigation measures developed to reduce any identified impacts are described in the following sections.

### 3.5 Environmental Impacts

This section describes the environmental impacts related to aesthetics as a result of the Pure Water Project.

#### 3.5.1 Overview

The analysis of aesthetic impacts is primarily concerned with the introduction of permanent, potentially visible features into the existing environment. Table 3-3 summarizes the impacts identified.

**Table 3-3. Summary of Aesthetics Impacts**

Impact	Alternative 1 Agoura Road AWWP	Alternative 2 Reservoir AWWP	Pipelines
Impact 3-1: Scenic Vistas	Less than significant impact	Less than significant impact	No impact
Impact 3-2: Visual Character and Quality	Less than significant impact	Less than significant impact	Less than significant impact
Impact 3-3: Light or Glare	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation

#### 3.5.2 Impact 3-1: Scenic Vistas

With mitigation, the effects of Pure Water Project infrastructure on scenic vistas would be less than significant or have no impact.

##### 3.5.2.1 Alternative 1 Agoura Road Advanced Water Purification Facility

Alternative 1 Agoura Road AWWP would be developed within 2.8 acres of the 7.1-acre site, with the 48,000-ft<sup>2</sup> building as the most prominent feature. The site would also contain access driveways from Agoura Road, paved areas for internal circulation, and parking spaces for staff and visitors. To comply with local and regional stormwater management regulations, a detention basin and infiltration trench is proposed within the site to capture and treat site runoff. Figure 2-3 shows the proposed site layout, and Figure 2-4 shows the site plan.



Figure 2-5 shows the proposed design concept from two street perspectives. Conceptual designs have been prepared to illustrate architectural features that may be updated and refined as the project advances through the design and construction contractor selection steps. Architectural design was developed to be consistent with City of Agoura Hills standards, including the *Architectural Design Standards & Guidelines* (City of Agoura Hills 2015) and the *Ladyface Mountain Specific Plan* (City of Agoura Hills 1991).

The AWPf would be apparent in the foreground vistas from Agoura Road and middle-ground views from vantage points along recreational trails. Scenic vistas of Ladyface Mountain would remain visible with development of the AWPf; and viewpoint locations providing expansive, relatively long-distance (vista) views would be maintained. Therefore, impacts to scenic vistas would be less than significant.

### **3.5.2.2 Alternative 2 Reservoir Advanced Water Purification Facility**

The Alternative 2 Reservoir AWPf site is currently a vacant, undeveloped property and not adjacent to an existing road. A new, approximately 3,200-foot-long paved access road would connect to the eastern end of Triunfo Canyon Road, and new power lines would be installed along the new road to provide electrical service to the new AWPf.

Surrounding land uses include the Las Virgenes Reservoir to the west and open space to the north, east, and south. The new access road would have foreground views from the new intersection at Triunfo Canyon Road. The AWPf site and portions of the new access road would have foreground and middle-ground views from vantage points within select West Lake Village neighborhoods and recreational areas within Triunfo Canyon Park. Due to the low-lying proximity to its surroundings, the AWPf site would not obstruct scenic vistas. Therefore, impacts would be less than significant.

### **3.5.2.3 Pipelines**

Nearly all aboveground permanent structures that would be constructed as part of the Pure Water Project would be located at the AWPf site. The only permanent aboveground structures that would be expected to be constructed outside the AWPf site are minor appurtenances, such as access hatches and vents associated with conveyance pipelines and a pump station. Therefore, impacts to scenic vistas would be less than significant.

### **3.5.3 Impact 3-2: Visual Character and Quality**

As discussed in Section 3.5.1, constructed elements of Pure Water Project infrastructure are similarly not expected to affect local visual character or quality, resulting in less than significant or no impact.

### **3.5.4 Impact 3-3: Light or Glare**

Implementation of the Pure Water Project would have a potentially significant impact from lighting during both construction and operation. During evening construction, operational and safety requirements would likely require the installation of night lighting. This could result in increased ambient night light for short durations. Structures to be constructed as part of the Pure Water Project could create new sources of nighttime light in views from nearby residences or recreational areas, as well as from nearby roads. Although design and construction would comply with local requirements to protect safety, both AWPf alternatives sites and some portions of the pipeline corridors are in undeveloped areas, such that all project-related lighting would be new, with some potential that lighting could spill over to adjacent areas. This impact would be reduced to less than significant with implementation of Mitigation Measure 3-1.

As shown on Figures 2-5 and 2-7, the AWPf alternatives have been designed based on general styles common in Southern California, including colors that minimize visual intrusion and by blending with the landscape. Therefore, their surfaces do not create glare.



### 3.6 Mitigation Measures

Impacts 3-1 through 3-2 would be less than significant; therefore, no mitigation is needed. Impact 3-3 would be reduced to less than significant with implementation of Mitigation Measure 3-1.

#### **Mitigation Measure 3-1. Design lighting to minimize impacts on adjacent areas.**

**Construction Lighting.** Prior to site mobilization, the construction manager will confirm that construction lighting is used in a manner that minimizes potential night lighting impacts, as follows:

- All lighting will be of minimum necessary brightness consistent with worker safety.
- All fixed-position lighting will be shielded, hooded, and directed downward to minimize backscatter to the night sky and prevent light trespass (direct lighting extending outside the boundaries of the construction area).
- Where feasible and safe, lighting will be turned off when not in use, and motion detectors will be used.
- A lighting complaint resolution form will be maintained by construction management to record all lighting complaints received and to document resolutions.
- All construction-related lighting will be completely shielded or screened so it is not visible to adjacent residents with direct views of the construction site.
- Maintain all construction-related lighting to be shielded or screened to minimize any inadvertent lighting spillover onto the open-space area south of the construction site.

**Project Operation Lighting.** New permanent lighting will be designed and installed such that light bulbs are not visible from public viewing areas and illumination of the night sky is minimized. To meet these requirements, the JPA will:

- Design lighting so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. Lighting will be designed such that the luminescence or light source is shielded to prevent light trespass outside the facility boundary.
- All lighting will be of minimum necessary brightness consistent with worker safety.
- Where feasible and safe, lighting will be turned off when not in use.
- A lighting complaint resolution form will be used by AWPf staff to record all lighting complaints received and document resolutions.
- Maintain all lighting to be shielded or screened to minimize any inadvertent lighting spillover onto the open-space area south of the AWPf site.

## 4. Air Quality

This chapter describes air quality conditions in the project area, the regulatory setting for maintenance and improvement of air quality conditions, and the potential air pollution impacts of the Pure Water Project.

### 4.1 Existing Setting

This section describes the existing air quality setting in the project area, including climate and topography, the area's attainment status for air quality standards, and locally sensitive receptors.

#### 4.1.1 Climate and Topography

Air quality is affected by both the pollutant emission rates and locations, and by meteorological conditions that influence movement and dispersal of pollutants in the atmosphere. The proposed AWPf locations are in Agoura Hills (Alternative 1) and Westlake Village (Alternative 2). Pipelines would be constructed in Agoura Hills, Westlake Village, and Thousand Oaks, and in a small area of unincorporated Ventura County.

All these areas, as stated in the *City of Agoura Hills General Plan 2035 EIR* (City of Agoura Hills 2010a):

*“...[are] situated within a relatively narrow east/west-trending valley corridor between the rolling foothills of the Simi Hills to the north, and the steep slopes of the Las Virgenes region of the Santa Monica Mountains to the south. Six major ridgelines and five canyon features characterize the City of Agoura Hills. The highest feature within Agoura Hills is Ladyface Mountain, which towers over the southwestern portions of the City and has a peak elevation of 2,036 feet above mean sea level (amsl).”*

The range is of moderate height, with no particularly craggy or prominent peaks outside the Sandstone Peak and Boney Mountains area. While often rugged and wild, the range hosts a substantial amount of human activity and development. Houses, roads, businesses, and recreational centers are located throughout the Santa Monica Mountains.

The Santa Monica Mountains have dry summers with frequent coastal fog on the ocean (southern) side of the range, and rainy, cooler winters. In the summer, the climate is quite dry except for the coastal fog, which makes the range prone to wildfires, especially during dry Santa Ana wind events. Snow is unusual in the Santa Monica Mountains. The nearest climate monitoring station is located in Canoga Park, which is approximately 9 miles northeast of Agoura Hills (WRCC 2016a).

The annual average high temperature in Agoura Hills is 80.4 degrees Fahrenheit (°F), although temperatures can occasionally exceed 100°F (WRCC 2016b). The annual average low temperature in the city is 47.3°F. Typically, the hottest and coldest months in Agoura Hills are in August and December, respectively. Most annual rainfall in Agoura Hills occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions (WRCC 2016a).

#### 4.1.2 Attainment Status

California is divided geographically into air basins to manage the state's air resources regionally (CARB 2022a). The project would occur in two air basins depending on the locations of the activities. The AWPf and approximately 7.7 miles of the pipeline alignments would be located in the portion of Los Angeles County within the South Coast Air Basin; and approximately 11.5 miles of pipeline alignments would be in Ventura County within the South Central Coast Air Basin.

The portion of Los Angeles County within the South Coast Air Basin has been designated by EPA as in nonattainment status for ozone (O<sub>3</sub>), particulate matter with aerodynamic diameter equal to or greater than 2.5 micrometers (PM<sub>2.5</sub>), and lead (Pb), meaning the area does not meet *National Ambient Air*

*Quality Standards* (NAAQS). The area is in maintenance status for particulate matter with aerodynamic diameter equal to or greater than 10 micrometers (PM<sub>10</sub>), carbon monoxide (CO), and nitrogen dioxide (NO<sub>2</sub>) (EPA 2022a), meaning it was previously in nonattainment but is currently meeting the national standards under a maintenance plan.

Under *California Ambient Air Quality Standards* (CAAQS) (CARB 2016), the area is designated as nonattainment for O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>; and as attainment for CO, NO<sub>2</sub>, and Pb. Los Angeles County is also in attainment of the CAAQS for sulfates and hydrogen sulfide (H<sub>2</sub>S).

Ventura County is designated as in nonattainment for O<sub>3</sub> under NAAQS, and in nonattainment for O<sub>3</sub> and PM<sub>10</sub> under CAAQS. Ventura County is in attainment for all other pollutants. Table 4-1 summarizes the attainment status of each pollutant under the federal and state standards.

**Table 4-1. State and National Attainment Status for Los Angeles County<sup>a</sup> and Ventura County**

Pollutant	Los Angeles County (South Coast Air Basin)		Ventura County	
	CAAQS Status	NAAQS Status	CAAQS Status	NAAQS Status
CO	Attainment	Attainment (Maintenance)	Attainment	Attainment/Unclassifiable
NO <sub>2</sub>	Attainment	Attainment (Maintenance)	Attainment	Attainment/Unclassifiable
O <sub>3</sub>	Nonattainment	Nonattainment (Extreme)	Nonattainment	Nonattainment (Serious)
Pb	Attainment	Nonattainment	Attainment	Attainment/Unclassifiable
PM <sub>10</sub>	Nonattainment	Attainment (Maintenance)	Nonattainment	Attainment/Unclassifiable
PM <sub>2.5</sub>	Nonattainment	Nonattainment (Serious for 2006 and 2012 NAAQS, Moderate for 1997 NAAQS)	Attainment	Attainment/Unclassifiable
SO <sub>2</sub>	Attainment	Unclassifiable/Attainment	Attainment	Attainment/Unclassifiable

Source: CARB 2019a; EPA 2022a

<sup>a</sup> Portion of Los Angeles County within the South Coast Air Basin.

SO<sub>2</sub> = sulfur dioxide

### 4.1.3 Sensitive Receptors

A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. Certain population groups, such as children, the elderly, and acutely and chronically ill persons (especially those with cardiorespiratory diseases), are considered more sensitive to the potential effects of air pollution than others. Some examples of sensitive receptors include (South Coast AQMD 2019):

- Athletic facilities
- Childcare centers
- Convalescent centers
- Long-term health care facilities
- Playgrounds
- Rehabilitation centers
- Residences
- Retirement homes
- Schools

The project’s AWPf and pipeline alignments are within portions of the cities of Agoura Hills, Westlake Village, Thousand Oaks, and unincorporated Ventura County. The areas have mixed residential and commercial land uses, with open spaces south of the Agoura Road and near the Reservoir AWPf location.

The proposed Agoura Road AWP alternative would be located to the south of Agoura Road in Agoura Hills, with residential areas located to the west, commercial land uses to the north across Agoura Road, and open space to the east and south of the site. The nearest school is the Lindero Canyon Middle School approximately 0.9 mile to the east.

The Reservoir AWP alternative would be located next to the Las Virgenes Reservoir in Westlake Village. The Reservoir AWP is surrounded by the reservoir and open spaces. The nearest sensitive receptors are residences approximately 1,000 feet northwest of the site. Lindero Canyon Middle School is approximately 3 miles from the Reservoir AWP.

## **4.2 Regulatory Framework**

This section describes the project's regulatory air quality framework.

### **4.2.1 Federal Regulations**

This section describes the federal air quality regulations relevant to the project.

#### **4.2.1.1 Federal Clean Air Act and NAAQS**

Federal air quality policies are regulated through the federal Clean Air Act (CAA). EPA adopted the CAA in 1970 and its amendments in 1977 and 1990. Pursuant to the CAA, EPA has established nationwide air quality standards to protect public health and welfare with an adequate margin of safety. These federal standards, known as the NAAQS, represent the maximum allowable atmospheric concentrations and were developed for the criteria pollutants:

- CO
- NO<sub>2</sub>
- O<sub>3</sub>
- Pb
- PM<sub>10</sub> and PM<sub>2.5</sub>
- SO<sub>2</sub>

The NAAQS represent safe levels of each pollutant to avoid specific adverse effects to human health and the environment. Table 4-2 provides a summary of the NAAQS.

EPA classifies areas as being in attainment or nonattainment with the NAAQS for each criteria pollutant. A region that constantly meets the NAAQS for a pollutant is designated as being in attainment for that pollutant. A region that does not meet the NAAQS for a pollutant is designated as being in nonattainment for that pollutant. An area that was previously designated as a nonattainment area but has met the standard and has been reclassified by EPA as attainment with a maintenance plan is designated as a maintenance area.

For nonattainment areas, the states are required to formulate and submit a State Implementation Plan (SIP) to EPA to detail how the state would attain and maintain the NAAQS within the required time frame. The SIP serves as a tool to help avoid and minimize emissions of nonattainment criteria pollutants and their precursor pollutants and achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen the regulation of both stationary and mobile emission sources.

**Table 4-2. Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	CAAQS <sup>b</sup>	NAAQS <sup>a</sup>	
			Primary <sup>c</sup>	Secondary <sup>d</sup>
CO	8 hours 1 hour	9.0 ppmv 20 ppmv	9 ppmv 35 ppmv	– –
H <sub>2</sub> S	1 hour	0.03 ppmv	–	–
NO <sub>2</sub>	Annual arithmetic mean 1 hour	0.03 ppmv 0.18 ppmv	0.053 ppmv 0.100 ppmv	0.053 ppmv –
O <sub>3</sub>	8 hours 1 hour	0.070 ppmv 0.09 ppmv	0.070 ppmv –	0.070 ppmv –
Pb <sup>e</sup>	Calendar quarter Rolling 3-month average 30-day average	– – 1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup> (certain areas) 0.15 µg/m <sup>3</sup> –	1.5 µg/m <sup>3</sup> – –
PM <sub>2.5</sub>	Annual arithmetic mean 24 hours	12 µg/m <sup>3</sup> –	12 µg/m <sup>3</sup> 35 µg/m <sup>3</sup>	15 µg/m <sup>3</sup> 35 µg/m <sup>3</sup>
PM <sub>10</sub>	Annual arithmetic mean 24 hours	20 µg/m <sup>3</sup> 50 µg/m <sup>3</sup>	– 150 µg/m <sup>3</sup>	– 150 µg/m <sup>3</sup>
SO <sub>2</sub>	24 hours 3 hours 1 hour	0.04 ppmv – 0.25 ppmv	– – 0.075 ppmv <sup>f</sup>	– – 0.5 ppmv
Sulfates	24 hours	25 µg/m <sup>3</sup>	–	–
Vinyl chloride <sup>e</sup>	24 hours	0.01 ppmv	–	–
Visibility-reducing particles	8 hours	– <sup>g</sup>	–	–

Source: CARB 2016

<sup>a</sup> NAAQS other than for O<sub>3</sub> and particulate matter, based on annual averages or annual arithmetic means are not to be exceeded more than once a year, as follows:

- For O<sub>3</sub>, the 8-hour standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard.
- For PM<sub>10</sub>, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration exceeding 150 µg/m<sup>3</sup> is equal to or less than 1.
- For PM<sub>2.5</sub>, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

<sup>b</sup> CAAQS for O<sub>3</sub>, CO (except Lake Tahoe), SO<sub>2</sub> (1 hour and 24 hours), NO<sub>2</sub>, and suspended particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility-reducing particles) are not to be exceeded. All others are not to be equaled or exceeded.

<sup>c</sup> NAAQS Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

<sup>d</sup> NAAQS Secondary Standards: The levels of air quality necessary to protect the public welfare from known or anticipated adverse effects of a pollutant.

<sup>e</sup> CARB has identified Pb and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. CARB made this determination following the implementation of control measures at levels less than the ambient concentrations specified for these pollutants.

<sup>f</sup> Final Rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

<sup>g</sup> In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "...extinction of 0.23 per kilometer" and "...extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

– = not applicable

µg/m<sup>3</sup> = microgram(s) per cubic meter

CARB = California Air Resources Board

ppb = part(s) per billion

ppmv = part(s) per million by volume

TAC = toxic air contaminant

#### 4.2.1.2 Hazardous Air Pollutants

Controlling toxic air emissions became a national priority with the passage of the 1990 CAA Amendments, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants (HAPs).

Prior to the 1990 CAA Amendments, EPA created a program to establish national emission standards for HAPs (EPA 2021a). National emission standards were established for the following pollutants:

- Asbestos
- Benzene
- Beryllium
- Coke oven emissions
- Inorganic arsenic
- Mercury
- Radionuclides
- Radon 222
- Vinyl chloride

In 1994, EPA began issuing the new standards, while national emission standards set before 1991 remain applicable (EPA 1994). In addition, in February 2007, EPA finalized the rule *Control of Hazardous Air Pollutants from Mobile Sources*, to reduce HAPs from mobile sources (EPA 2007).

#### 4.2.2 State Regulations

This section describes the state air quality regulations relevant to the project.

##### 4.2.2.1 California State Ambient Air Quality Standards

CARB oversees California air quality policies. CAAQS were first established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent than the NAAQS and include four additional pollutants: sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates. Table 4-1 list the CAAQS relevant to this project.

The California CAA, which was approved in 1988, requires each local air district, where ambient concentrations violate the CAAQS, to prepare an air quality management plan (AQMP) to achieve compliance with the CAAQS as a part of the SIP. CARB has ultimate responsibility for the SIP for nonattainment pollutants but relies on each local air district to adopt mandatory statewide programs and provide additional strategies for sources under their jurisdiction. The SIPs are a compilation of new and previously submitted plans, programs (for example, monitoring, modeling, permitting), district rules, state regulations, and federal controls.

##### 4.2.2.2 Toxic Air Contaminants

California regulates TACs through its Air Toxics Program, which is mandated in Chapter 3.5 of the Health and Safety Code – Toxic Air Contaminants, and Part 6 – Air Toxics Hot Spots Information and Assessment (California Health and Safety Code, Sections 39660 et seq. and 44300 et seq., respectively). The California Environmental Protection Agency (CalEPA), Office of Environmental Health Hazard Assessment, completed a comprehensive health assessment of diesel exhaust in 1998. The assessment formed the basis for a CARB decision to formally identify particulate matter in diesel exhaust as a TAC that may pose a threat to human health (CARB 1998).

CARB has adopted a series of airborne toxic control measures (ATCMs) for mobile and stationary sources that are intended to reduce overall diesel exhaust emissions in California. CARB also adopted two airborne toxic control measures ATCMs for controlling naturally occurring asbestos: (1) the Asbestos Airborne Toxic Control Measure ATCM for Surfacing Applications and (2) the Asbestos Airborne Toxic Control Measure ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. CARB and local air

districts have the authority to enforce the federal National Emission Standards for HAPs regulations for asbestos (CARB 2022b).

### **4.2.3 Local Regulations**

This section describes local air quality regulations relevant to the project.

#### **4.2.3.1 South Coast Air Quality Management District**

The project area in Los Angeles County is in the South Coast Air Basin under the jurisdiction of the South Coast Air Quality Management District (South Coast AQMD). South Coast AQMD is the local agency responsible for ensuring that federal and state ambient air quality standards are attained and maintained in the basin. South Coast AQMD has developed air quality plans for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> to establish strategies to attain the air quality standards. The latest approved regional air quality plan, the 2016 AQMP, was adopted by South Coast AQMD in March 2017. The 2016 AQMP identifies strategies and control measures needed to achieve attainment of the 8-hour ozone standard and federal annual and 24-hour standard for PM<sub>2.5</sub> in the South Coast Air Basin (South Coast AQMD 2017).

The South Coast AQMD is the regional agency responsible for rulemaking, permitting, and enforcement activities affecting stationary sources in the South Coast Air Basin. Specific rules and regulations adopted by the South Coast AQMD limit the emissions that can be generated by various activities and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the criteria air pollutants, but also air toxic emissions and acutely hazardous nonradioactive materials emissions. Any sources of stationary emissions constructed as part of a project would be subject to South Coast AQMD rules and regulations. Applicable rules include:

- Rule 401: Visible Emissions
- Rule 402: Nuisance
- Rule 403: Fugitive Dust

#### **4.2.3.2 Ventura County Air Quality Control District**

Project areas of concentrate pipeline alignments in Ventura County are under Ventura County Air Pollution Control District (Ventura County APCD) jurisdiction. The Ventura County APCD is the agency principally responsible for comprehensive air pollution control in the county, and it develops rules and regulations to reduce emissions, protect public health and agriculture, and achieve and maintain state and federal air quality standards. The 2016 AQMP was adopted in 2017 (Ventura County APCD 2017) and presents Ventura County's strategy to attain the 2008 federal 8-hour ozone standard by 2020, as required by the federal 1990 CAA Amendments and applicable EPA regulations.

Ventura County APCD establishes regulations for stationary sources, inspects emissions sources, and enforces such measures through educational programs or fines, when necessary. Applicable rules include:

- Rule 51: Nuisance
- Rule 55: Fugitive Dust Control
- Rule 62: Hazardous Materials and Airborne Toxics

## **4.3 Assessment Methods and Thresholds of Significance**

The significance thresholds used to evaluate the project impacts associated with air quality are outlined in Appendix G of CCR Title 14, Division 6, Chapter 3 (CEQA Guidelines). According to these guidelines, a significant impact related to air quality would occur if a project would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard



- Expose sensitive receptors to substantial pollutant concentrations
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

**4.3.1.1 South Coast Air Quality Management District CEQA Air Quality Significance Thresholds**

The air quality impacts in Los Angeles County were evaluated following the South Coast AQMD’s *CEQA Air Quality Analysis Guidance Handbook* (1993), and South Coast AQMD air quality significance thresholds were used to determine whether the project would have significant impacts on air quality.

The South Coast AQMD’s air quality significance thresholds set quantitative emissions significance thresholds for criteria pollutants and health risk thresholds for TACs; if a project results in air quality impacts less than these thresholds, it would not have a significant impact on ambient air quality under project level and cumulative conditions (South Coast AQMD 2019). Project emissions from construction and operation were estimated and compared to the significance thresholds, as shown in Table 4-3. If the estimated daily project emissions would be less than the significance thresholds, impacts would be considered less than significant. If the daily emissions would be greater than the significance thresholds, impacts would be considered significant. While South Coast AQMD also has thresholds for Pb emissions, the project is not expected to have meaningful Pb emissions; therefore, Pb emissions are not further discussed.

**Table 4-3. South Coast AQMD Air Quality CEQA Significance Thresholds**

Air Pollutant	Construction Threshold (lb/d)	Operation Threshold (lb/d)
NO <sub>x</sub>	100	55
VOC or ROG	75	55
PM <sub>10</sub>	150	150
PM <sub>2.5</sub>	55	55
SO <sub>x</sub>	150	150
CO	550	550
<u>TACs (including carcinogens and noncarcinogens)</u>	<u>Maximum Incremental Cancer Risk ≥ 10 in 1 million</u> <u>Cancer Burden &gt; 0.5 excess cancer cases (in areas ≥ 1 in 1 million)</u> <u>Chronic and Acute Hazard Index ≥ 1.0 (project increment)</u>	

Source: South Coast AQMD 2019

Notes:

ROG and VOC are interchangeable in this report.

> = greater than

≥ = greater than or equal to

lb/d = pound(s) per day

NO<sub>x</sub> = nitrous oxide

ROG = reactive organic gases

SO<sub>x</sub> = sulfur oxide

VOC = volatile organic compound

**4.3.1.2 South Coast AQMD Localized Significance Thresholds**

The localized significance thresholds (LSTs) methodology was developed by South Coast AQMD to assist CEQA lead agencies in analyzing localized air quality impacts from proposed projects (South Coast AQMD 2008a). It is a screening methodology that allows users to determine whether a project would cause or contribute to an exceedance of the NAAQS or CAAQS for each source receptor area instead of

conducting a dispersion modeling analysis. The LST is set up as a series of lookup tables for emissions of NOx, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>.

The use of South Coast AQMD's LSTs is voluntary, and it is used for this study as reference levels to evaluate the localized impacts on nearby receptors. The project is located within source receptor area 6, in West San Fernando Valley. The most stringent LSTs at a receptor distance of 27 yards from the 2-acre site, representing the AWPf and pipeline construction area, were used for this study to be conservative (Table 4-4). If proposed construction and operational emissions would be less than LST levels, the project would not cause significant localized impacts on nearby receptors.

**Table 4-4. Localized Significance Thresholds for West San Fernando Valley (Source Receptor Area 6)**

Activity	Site Size (acres)	Receptor Distance (yards)	CO (lb/d)	NOx (lb/d)	PM <sub>10</sub> (lb/d)	PM <sub>2.5</sub> (lb/d)
Construction	2	27	644	147	6	4
Operation	2	27	644	147	2	1

Source: South Coast AQMD 2008a

#### 4.3.1.3 Ventura County APCD CEQA Air Quality Significance Thresholds

The *Ventura County Air Quality Assessment Guidelines* (Ventura County APCD 2003) indicate that a proposed project's criteria pollutant emissions would be considered to have adverse significant impact if the project would generate daily operational emissions exceeding 25 pounds of ROG or NOx for areas outside of the Ojai Planning Area in Ventura County, where the project is located. In addition, Ventura County APCD requires a project to determine consistency with the AQMP. However, projects with operation emissions less than 2 lb/d of ROG and 2 lb/d of NOx emissions are considered to have a less than significant cumulative adverse air quality impact and are exempt from the consistency assessment.

Emission thresholds in the *Ventura County Air Quality Assessment Guidelines* are not intended to be applied to construction emissions because these emissions are temporary. In addition, the guidelines are not applicable to equipment or operations required to have Ventura County permits (Authority to Construct or Permit to Operate). The emissions from equipment or operations requiring Ventura County permits are not counted toward the air quality significance thresholds (Ventura County APCD 2003).

Ventura County APCD has not established quantitative emission thresholds for fugitive dust from construction activities, but considers a project to have significant impacts if it would (California Health and Safety Code, Division 26, Section 41700):

- Generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to a considerable number of persons or to the public
- Endanger the comfort, repose, health, or safety of any such person or the public
- Cause or have a natural tendency to cause injury or damage to business or property

## 4.4 Environmental Impacts

This section describes air quality environmental impacts that could result from the project.

### 4.4.1 Overview

Air quality impacts associated with project construction were analyzed according to the anticipated construction activities. As summarized in Table 4-5, the project would cause temporary, less than significant air quality impacts from construction emissions. Operation emissions from either the Alternative 1 Agoura Road AWPf or Alternative 2 Reservoir AWPf are anticipated to be negligible from the treatment process. The only emission source during project operation would be the limited number of

vehicle trips to the AWPf and the diesel-powered emergency generator. The project would not expose sensitive receptors to substantial pollution concentrations, and would not affect a substantial number of people with objectionable odor. The project is not expected to conflict with the regional air quality plans or cause new violations to the NAAQS and CAAQS. Detailed impact discussions are presented in the following subsections.

**Table 4-5. Summary of Air Quality Impacts**

Impact	AWPF and Pipelines (South Coast AQMD)	Pipeline (Ventura County APCD)
Impact 4-1: Short-term Criteria Air Pollutant Emissions	Less than significant impact	Less than significant impact
Impact 4-2: Long-term Criteria Air Pollutant Emissions	Less than significant impact	Less than significant impact
Impact 4-3: Pollutant Concentrations	Less than significant impact	Less than significant impact
Impact 4-4: Odors	Less than significant impact	Less than significant impact

**4.4.2 Impact 4-1: Short-term Criteria Air Pollutant Emissions**

The project involves construction of either Alternative 1 Agoura Road AWPf or Alternative 2 Reservoir AWPf and associated pipelines that have the potential to generate temporary air pollutants, including exhaust emissions from construction equipment and vehicles, as well as fugitive dust emissions from earthmoving activities or vehicles traveling on both paved and unpaved roads.

Construction emissions of NO<sub>x</sub>, ROG, CO, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> were estimated using California Emission Estimator Model (CalEEMod) (CAPCOA 2021). Construction emissions included those from the following sources:

- Exhaust emissions of ROG, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from off-road construction equipment
- Exhaust emissions ROG, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, from onroad vehicle trips, including worker commute, vendor trips, and haul truck trips
- Fugitive dust emissions of PM<sub>10</sub> and PM<sub>2.5</sub> from onsite earthmoving activities and offsite vehicle travel

AWPF construction emission calculations were based on the projected construction schedule and durations, and anticipated equipment and vehicle usage. Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf construction schedule and equipment activities would be similar, thus the emissions were estimated using one set of construction information and assumptions. Pipeline construction methods and alignment length would be similar for Alternatives 1 and 2. Pipeline emissions were estimated based on construction activities of one crew working on a 1,000-foot-long pipeline segment.

Construction emissions were estimated separately for pipeline construction activities in Los Angeles and Ventura counties. CalEEMod default values were used when project-specific information was not available. Appendix A provides information on the construction calculations and CalEEMod modeling outputs.

**4.4.2.1 Construction Emissions in Los Angeles County**

Both AWPf alternatives and approximately 7.7 miles of pipelines would be constructed within Los Angeles County under the jurisdiction of South Coast AQMD. To be conservative, it was assumed multiple components of the project may be under construction simultaneously, including the construction of the AWPf, with up to three crews working on different pipeline segments in any given day. Table 4-6 summarizes the estimated maximum daily construction emissions in Los Angeles County.

**Table 4-6. Estimated Maximum Daily Construction Emissions in Los Angeles County**

Site	ROG (lb/d)	NOx (lb/d)	CO (lb/d)	SO <sub>2</sub> (lb/d)	PM <sub>10</sub> (lb/d)	PM <sub>2.5</sub> (lb/d)
AWPF 2025	1.31	12.69	12.94	0.04	1.25	0.59
AWPF 2026	2.61	20.89	25.10	0.08	3.59	1.44
AWPF 2027	1.43	10.53	11.92	0.04	2.10	0.81
Pipelines (3 crews)	5.03	58.11	55.20	0.25	8.16	2.95
Total Emissions in South Coast AQMD	7.64	79.00	80.30	0.33	11.75	4.39
South Coast AQMD CEQA Thresholds	75	100	550	150	150	55

As shown in Table 4-6, project construction emissions in Los Angeles County would be less than the South Coast AQMD CEQA thresholds. In addition, the project would comply with fugitive dust control requirements as specified in South Coast AQMD Rule 403 and implement best management practices (BMPs) to minimize construction emissions. Fugitive dust emission control measures would include:

- General: Implement applicable requirements in Tables 1 through 3 of South Coast AQMD Rule 403 to minimize fugitive dust emissions.
- Backfilling:
  - Stabilize backfill material and soil.
  - Empty loader buckets slowly so that no dust plumes are generated.
  - Minimize the drop height from loader buckets.
- Bulk Materials Handling and Stockpiles: Stabilize stockpile materials, and maintain storage piles to avoid steep sides or faces.
- Disturbed Soil: Stabilize disturbed soil throughout the construction site.
- Earthmoving Activities: Pre-apply and re-apply water to disturbed areas as necessary.
- Off-road Traffic and Parking Areas: Stabilize all off-road traffic and parking areas, and direct construction traffic over established routes. Use barriers so that vehicles only drive on established parking areas and routes.
- Staging Areas:
  - Stabilize staging areas during use, and stabilize staging area soils at project completion.
  - Limit the size of staging areas.
  - Limit vehicle speeds to 15 miles per hour (mph).
  - Limit the number and size of staging area entrances and exits.
- Track-out Control: Remove dust and dirt that is disturbed during construction and settles on nearby public roadways (track-out) at the conclusion of each workday.
- Trenching:
  - Stabilize surface soils where trencher or excavator and support equipment would operate, and stabilize soils at the completion of trenching activities.
  - For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench, and resume trenching.
  - Wash mud and soils from equipment at the conclusion of trenching activities to prevent soil from crusting and drying on equipment.
- Truck Loading and Material Transport:
  - Use tarps or suitable enclosures on haul trucks.
  - Pre-water material prior to loading.
  - Provide 6 inches of freeboard.

**4.4.2.2 Construction Emissions in Ventura County**

Because the AWPf would be located in Los Angeles County, construction emissions in Ventura County would only be from constructing portions of the concentrate water pipeline. There would be one crew working on pipeline construction in Ventura County at any given time. Table 4-7 summarizes the maximum daily construction emissions in Ventura County within Ventura County APCD jurisdiction.

**Table 4-7. Estimated Maximum Daily Construction Emissions in Ventura County**

Site	ROG (lb/d)	NOx (lb/d)	CO (lb/d)	SO <sub>2</sub> (lb/d)	PM <sub>10</sub> (lb/d)	PM <sub>2.5</sub> (lb/d)
Pipelines (1 crew)	1.68	19.12	18.52	0.08	2.73	0.98

There are no applicable CEQA thresholds for construction emissions from Ventura County APCD. The construction emissions in Ventura County are temporary, and the project would implement the applicable mitigation measures as required in Rule 55 and *Ventura County APCD Guidelines* (Ventura County APCD 2003), including:

- Fugitive Dust Mitigation Measures, such as:
  - Watering and using chemical dust control agents for soil stabilization
  - Implementing track-out prevention and removal
  - Implementing vehicle speed control
- ROG and NOx Construction Mitigation Measures, such as:
  - Minimizing equipment idling time
  - Maintaining equipment engines in good condition and in proper tune per manufacturers’ specifications
  - Lengthening the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time
  - Using alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, if feasible

In summary, construction of the project would take approximately 2.5 years, and construction emissions would be temporary. The project would be constructed in compliance with the applicable South Coast AQMD and Ventura County APCD regulations and policies, and BMPs would be implemented to reduce emissions from construction. The project construction emissions would cause temporary and less than significant air quality impacts for Alternatives 1 and 2.

**4.4.3 Impact 4-2: Long-term Criteria Air Pollutant Emissions**

Operation of either Alternative 1 Agoura Road AWPf or Alternative 2 Reservoir AWPf would cause air emissions from the vehicles trips made by workers commuting and material delivery, as well as from testing and operation of the emergency engine. Emissions from water purifying processes and from pipeline maintenance are expected to be negligible.

Emissions from either AWPf alternative would be the same, and both alternatives would be located in Los Angeles County. Maximum daily emissions during AWPf operation were estimated based on the number of worker commute trips, delivery truck trips, and routine maintenance and testing of the emergency generators at the AWPf. Vehicle emissions factors were obtained from CARB’s model EMFAC2017 (2021a). Emissions from emergency engine routine testing and maintenance were assumed to be tested for 1 hour, estimated using emission factors from CalEEMod and a 100% load. Table 4-8 summarizes AWPf operation emissions.



**Table 4-8. Estimated Maximum Daily Operation Emissions in Los Angeles County**

Activity	ROG (lb/d)	NOx (lb/d)	CO (lb/d)	SO <sub>2</sub> (lb/d)	PM <sub>10</sub> (lb/d)	PM <sub>2.5</sub> (lb/d)
Emergency Generator Testing and Maintenance	0.13	2.85	2.53	0.00	0.09	0.09
Worker Commute and Delivery Trucks	0.01	0.54	0.34	0.00	0.05	0.02
Total Operation	0.14	3.39	2.87	0.01	0.14	0.11
South Coast AQMD CEQA Thresholds	55	55	550	150	150	55

As shown in Table 4-8, operation emissions from the AWPf would be minimal due to the limited vehicle trips per day (6 workers and 1 truck) and the infrequent operation of the two small emergency generators rated at 155 hp each. The two emergency generators will be required to obtain South Coast AQMD permits for the installation and operation, and demonstrate compliance to applicable federal, state, and local air district rules, including CARB's ATCM for stationary diesel generators and South Coast AQMD's new source review rules in Regulation XIII and air toxic rules in Regulation XIV.

Once permitted, operation of the emergency generators will comply with the permit conditions in terms of emission levels, nonemergency testing and maintenance hours, and emergency operating hours. Because the operation emissions would not exceed the South Coast AQMD CEQA thresholds of significance. Therefore, project operation would not result in a cumulatively considerable contribution to a significant impact. The air impact from the project's operational emissions would be less than significant.

Operation emissions in Ventura County would be negligible from the infrequent pipeline maintenance or repair, therefore, would have a less than significant impact.

#### 4.4.4 Impact 4-3: Pollutant Concentrations

With mitigation, Impact 4-3 would be less than significant.

##### 4.4.4.1 Emissions and Exposure in Los Angeles County

The project's construction sites are located in populated areas and near sensitive receptors, such as residential areas near both Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf, and along some of the pipeline alignments. For emissions from project construction and operation in Los Angeles County, South Coast AQMD's LST methodology was used to further evaluate localized ambient air quality impacts to nearby receptors due to criteria pollutants. Equipment and vehicle exhaust emissions and fugitive dust emissions from the project's construction sites were compared to the LST thresholds appropriate to the source receptor area, site acreage, and distance to the nearest receptor per the South Coast AQMD policy (South Coast AQMD 2008a).

Onsite construction emissions were evaluated for two sites: one for the AWPf and the other for a pipeline segment. The total area of daily disturbance was conservatively set at 2 acres, although actual construction may occur over a larger area. This is a conservative assumption because emissions spread over 2 acres would be more concentrated and would produce the worst-case scenario as compared to emissions spread over a larger area. The closest sensitive residential and offsite worker receptors were set at 27 yards, which is the shortest distance to sensitive receptors in the South Coast AQMD LSTs that has the most stringent thresholds.

Onsite operation emissions from the AWPf would be from the routine testing and maintenance of the emergency generators, which would only occur once or twice a month and typically last less than an hour. Exposure of diesel emissions to the sensitive receptors in the area would be minimal because the emissions from the emergency testing would not occur every day.

Table 4-9 summarizes the onsite construction emissions and the comparisons to LSTs. The table shows that construction emissions from the AWPf and pipelines would not exceed South Coast AQMD LSTs. Because the LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest receptors, the project construction emissions would not expose nearby sensitive receptors to substantial concentrations of criteria pollutants. The impacts are expected to be less than significant.

**Table 4-9. Onsite Construction Emissions in Los Angeles County**

Site	ROG (lb/d)	NOx (lb/d)	CO (lb/d)	SO <sub>2</sub> (lb/d)	PM <sub>10</sub> (lb/d)	PM <sub>2.5</sub> (lb/d)
AWPF Construction 2025	1.19	10.33	11.47	0.03	0.41	0.35
AWPF Construction 2026	2.15	16.76	20.26	0.04	0.65	0.62
AWPF Construction 2027	1.15	8.83	8.96	0.02	0.35	0.33
Pipelines Construction (1 crew)	1.48	11.16	15.55	0.04	0.97	0.46
South Coast AQMD LSTs for West San Fernando Valley (Source Receptor Area 6)	-	147	644	-	6	4

Exhaust emissions from construction equipment would also contain TACs, such as diesel particulate matter, that have potential cancer and noncancer chronic health effects. Although some of the project's construction activities may be near residential areas, construction activities would be short term and limited to a relatively small area where only a few pieces of construction equipment would be operating at a time. The project's construction emissions are not expected to expose the nearby sensitive receptors to substantial pollutant concentrations. Prevailing wind directions in the Agoura Hills and Westlake Village areas are from the west during March to October, and from the north the rest of the months. Sensitive receptors located closest to AWPf are on the western side of the site boundary, and other residential areas are located approximately 850 feet to the north. Because sensitive receptors are all located upwind of the construction site, exposure of the nearest sensitive receptors to construction site TAC emissions are expected to be minimal. Downwind of the construction site are open spaces and mountains without any receptors within approximately 1.5 miles.

A quantitative health risk assessment would not be necessary to evaluate the impacts from the construction TAC emissions. Exposures from the construction activity-TAC emissions would be short term in nature, with minimal effects to the nearby sensitive receptors; and long-term exposure to diesel particulate matter from construction would not occur. Health risks caused by project construction are not expected to cause substantial exposure of the sensitive receptors to exceed the South Coast AQMD TAC thresholds.

In addition, project construction is required to implement BMPs and follow the emission control measures described in the South Coast AQMD and Ventura County APCD CEQA guidelines, including minimizing idling times and maintaining equipment in good condition. These measures would help minimize exposure of nearby sensitive receptors to construction-related pollutants.

**4.4.4.2 Emissions and Exposure in Ventura County**

Maximum daily onsite emissions from a pipeline construction site in Ventura County would be similar to those in Los Angeles County. Because of the similar emission levels and settings of sensitive receptors near the project sites in Ventura and Los Angeles counties, potential impacts to sensitive receptors in Ventura County would be similar to those in Los Angeles County. Therefore, the emissions from the pipeline construction in Ventura County APCD areas are not expected to expose nearby sensitive receptors to substantial concentrations of criteria pollutants. The impacts are expected to be less than significant.

### 4.4.5 Impact 4-4: Odors

Types of land uses that typically pose potential odor problems include:

- Agriculture
- Chemical plants
- Composting facilities
- Dairies
- Food processing and rendering facilities
- Landfills
- Waste transfer stations
- Wastewater treatment plants

In addition, the occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors.

During project construction, the diesel-fueled engines that power both on- and off-road vehicles and heavy construction equipment could result in project-related odor. However, such emissions would be localized to the immediate area under construction and would be short in duration. The project would comply with the BMPs to minimize construction emissions and impacts. As feasible, construction equipment and truck traffic would be located or routed away from local neighborhoods or sensitive receptor areas. Emissions associated with construction activities would be dispersed over the construction site, would be short term and transient, and would not create objectionable odors affecting a substantial number of people. Alternative 1 Agoura Road AWPf or Alternative 2 Reservoir AWPf would not cause odorous emissions from water purifying processes. Therefore, odor impacts would be less than significant during project operation.

## 4.5 Mitigation Measures

Impacts 4-1 through 4-4 would be less than significant; therefore, no mitigation is needed. Mitigation measures are not required because the project would have less than significant impacts during construction and operation. During construction, the project will comply with applicable regulatory standards, including the fugitive dust control and tailpipe emissions BMPs listed in South Coast AQMD Rule 403, Ventura County Rule 55, and the *Ventura County APCD Guidelines*. No additional mitigation measures are required.

## 5. Biological Resources

This chapter describes biological resources present or potentially present within the project area; discusses federal, state, and local regulations that may affect biological resources; and identifies potential impacts and proposes mitigation measures to reduce significant impacts, where possible, to a less than significant level.

### 5.1 Existing Setting

The Pure Water Project is located in southeastern Ventura County and northwestern Los Angeles County, including the cities of Agoura Hills, Westlake Village, and Thousand Oaks. The project is primarily located south of the Simi Valley Hills and north of the Santa Monica Mountains, within the Malibu Creek watershed. The project area includes open space, undeveloped areas, and densely populated and developed suburban areas.

#### 5.1.1 Project Area

This section considers those plant and animal species that require special consideration and protection pursuant to the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), or CEQA. Special-status species either have:

- Unique biological significance
- Limited distribution
- Restricted habitat requirements
- Particular susceptibility to human disturbance
- A combination of these factors

Figure 5-1 shows the locations of special-status plant and wildlife species listed in the *California Natural Diversity Database* (CNDDB) *Rarefind 5* application (Rarefind 5) (CDFW 2022b) within 5 miles of Pure Water Project features. Special-status species with the potential to occur within the project area are described in this section, followed by discussions of focused surveys for special-status species and communities at the Alternative 1 Agoura Road AWPf site, the Alternative 2 Reservoir AWPf site, and along the Conejo Canyon Open Space Trail. In addition, Section 5.1.5 describes the physical habitat characteristics and biological and water quality conditions in Malibu Creek.

##### 5.1.1.1 Special-status Plants and Plant Communities

Special-status plant species are those plants listed, proposed for listing, or candidates for listing as Threatened or Endangered by the U.S. Fish and Wildlife Service (USFWS) under FESA; species listed as Endangered, Threatened, or Rare by CDFW under CESA; and plants on the California Native Plant Society (CNPS) *Rare Plant Inventory* (2022) with a California Rare Plant Rank (CRPR) of:

- 1B: Plants considered rare, threatened, or endangered in California and elsewhere
- 2B: Plants considered rare, threatened, or endangered in California, but common elsewhere
- 4: A watch list for plants that are of limited distribution in California

The potential for special-status plants to occur within the project area was determined through a search of the following sources:

- USFWS *IPaC Information for Planning and Consultation* database (USFWS 2022)
- *Rare Plant Inventory* (CNPS 2022)
- Calflora online database (Calflora 2022)
- Rarefind 5 (CDFW 2022b) for sensitive plants

Most special-status plants species identified during the database queries that are known to occur in the region are not expected to occur within the project footprint due to lack of suitable habitat. The following



species were determined to have at least some potential to occur at undeveloped sites within the project area:

- Agoura Hills dudleya (*Dudleya cymosa* ssp. *agourensis*) - CRPR 1B.2; Federally Threatened
- Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*) - CRPR 1B.1
- Braunton's milk-vetch (*Astragalus brauntonii*) - CRPR 1B.1; Federally Endangered
- California orcutt grass (*Orcuttia californica*) - CRPR 1B.1; State Endangered; Federally Endangered
- Lyon's pentachaeta (*Pentachaeta lyonii*) - CRPR 1B.1; State Endangered; Federally Endangered
- Ojai navarretia (*Navarretia ojaiensis*) - CRPR 1B.1
- Plummer's mariposa lily (*Calochortus plummerae*) - CRPR 4.2
- Santa Catalina mariposa lily (*Calochortus catalinae*) - CRPR 4.2
- Southern tarplant (*Centromadia parryi* ssp. *australis*) - CRPR 1B.1
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) - CRPR 1B.2
- Southern California black walnut (*Juglans californica*) - CRPR 4.2

Botanical surveys were performed in undeveloped project areas to determine the potential presence of special-status plants. Botanical surveys were completed in accordance with CDFW protocols (CDFW 2018). Surveys were performed at the Alternative 1 Agoura Road AWPf site, the Alternative 2 Reservoir AWPf site, and along the Conejo Canyon Open Space Trail on the following dates:

- Early-season survey April 12–15, 2022
- Mid-season survey on May 21 – June 1, 2022
- Late-season survey on July 6–7, 2022

Survey results are reported in this section for the individual project areas.

In addition, vegetation types were characterized and mapped concurrent with the botanical surveys in the undeveloped project areas to determine the presence and extent of sensitive natural communities. Survey results are reported in the following subsections for the individual project areas.

### 5.1.1.2 Special-status Wildlife

Special-status wildlife species are those animals:

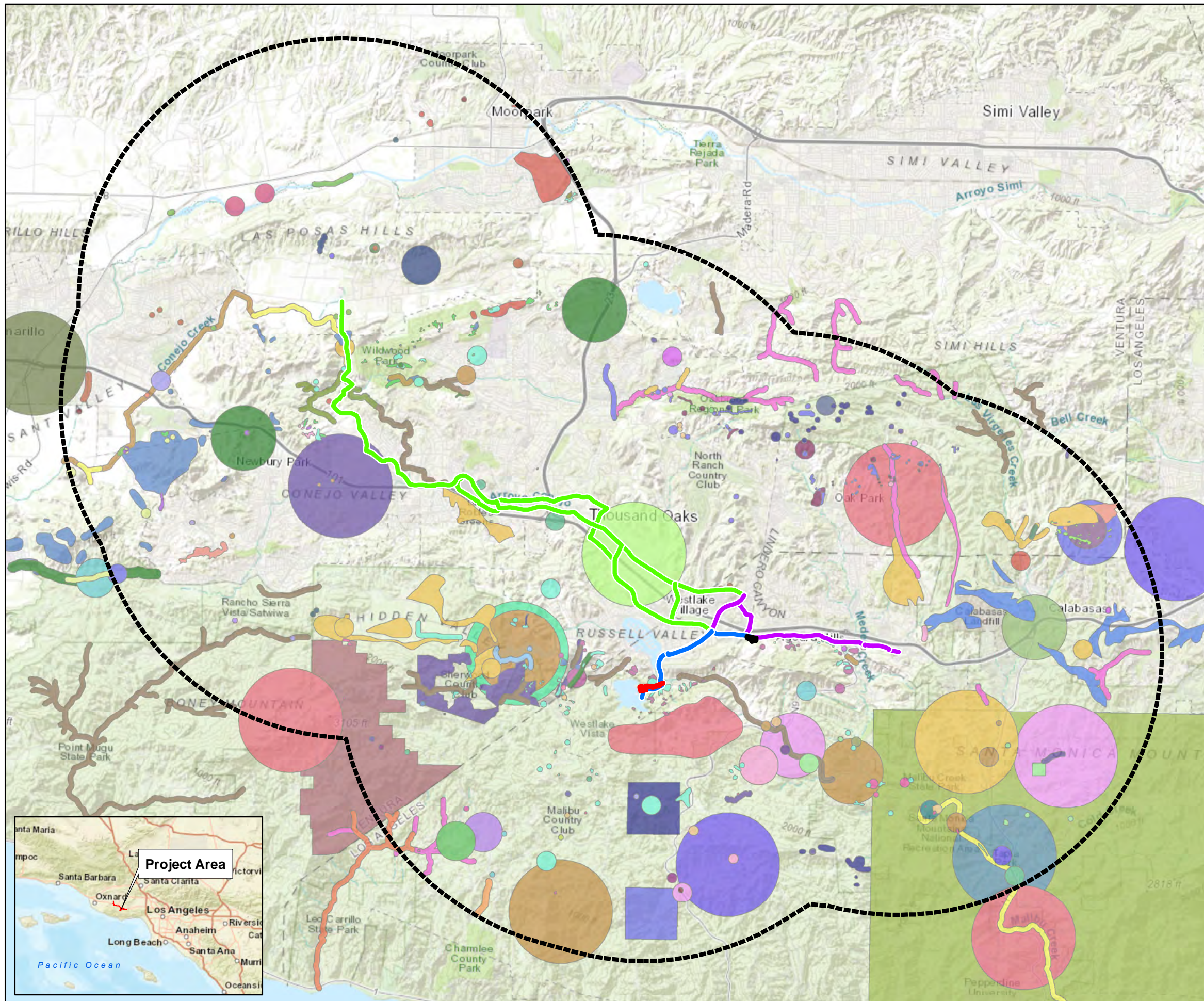
- Listed, proposed for listing, or candidates for listing as Threatened or Endangered by USFWS under FESA and by CDFW under CESA
- Considered by the CDFW as Species of Special Concern
- Listed as Fully Protected under the California Fish and Game Code
- Listed on the CDFW Watch List

The potential for special-status wildlife to occur within the project area was determined through a search of Rarefind 5 (CDFW 2022b) for sensitive wildlife within the project area.

Most special-status wildlife species known to occur in the region are not expected to occur within the project footprint due to lack of suitable habitat. The following species were determined to have some potential to occur within the project area:

- Coastal California gnatcatcher (*Polioptila californica californica*) - Federally Endangered and CDFW Species of Special Concern
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) - CDFW Species of Special Concern
- Southern California legless lizard (*Anniella stebbinsi*) - CDFW Species of Special Concern
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) - CDFW Watch List
- Western pond turtle (*Emys marmorata*) - CDFW Species of Special Concern





### Legend

Alternative 1 Agoura Road AWP	Nuttall's scrub oak	coast horned lizard
Alternative 2 Reservoir AWP	Ojai navarretia	coastal California gnatcatcher
Concentrate Alignment Options	Plummer's mariposa-lily	coastal whiptail
Purified Water Alignment Options	Riverside fairy shrimp	conejo buckwheat
Source Water Alignment Options	San Bernardino ringneck snake	dune larkspur
5-Mile Radius	San Diego desert woodrat	golden eagle
<b>CNDB Listed Species</b>	San Fernando Valley spineflower	hoary bat
Agoura Hills dudleya	Santa Monica dudleya	least Bell's vireo
American badger	Santa Monica grasshopper	marcescent dudleya
American peregrine falcon	Santa Susana tarplant	mesa horkelia
Blochman's dudleya	Sonoran maiden fern	pallid bat
Branton's milk-vetch	Southern California legless lizard	quino checkerspot butterfly
California Orcutt grass	Southern Coast Live Oak Riparian Forest	slender mariposa-lily
California Walnut Woodland	Southern Riparian Forest	southern California rufous-crown... sparrow
California legless lizard	Southern Riparian Scrub	southern tarplant
California red-legged frog	Sycamore Alder Riparian Woodland	spotted bat
California screw moss	Valley Needlegrass Grassland	steelhead - southern California DPS
Conejo dudleya	Valley Oak Woodland	tricolored blackbird
Cooper's hawk	Verity's dudleya	two-striped gartersnake
Crotch bumble bee	Yuma myotis	western mastiff bat
Gerry's curly-leaved monardella	arroyo chub	western pond turtle
Lyon's pentachaeta	bank swallow	western red bat
Malibu baccharis	burrowing owl	western small-footed myotis
	chaparral nolina	white-veined monardella
	chaparral ragwort	

0 1 2 4  
Miles  
1 inch = 2 miles

FIGURE 5-1  
California Natural Diversity Database  
Pure Water Project Las Virgenes – Triunfo



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### 5.1.2 Alternative 1 Agoura Road Advanced Water Purification Facility

The Alternative 1 Agoura Road AWPf site is located on an undeveloped 7.1-acre parcel on the southern side of the street within Agoura Hills, just east of the Westlake Village city limits. The site is within the western portion of the *Ladyface Mountain Specific Plan* area (City of Agoura Hills 1991). The site is vacant, undeveloped land with oak trees, native vegetation, non-native vegetation, and waters of the United States. An undeveloped parcel is located adjacent to the east of the site, with the Conrad N. Hilton Foundation headquarters to the east of that property. An office building with an associated surface parking lot is located north of the site across from Agoura Road. The Lexington Apartments are adjacent to the site's western boundary. To the south is undeveloped open space in the foothills of Ladyface Mountain. In November 2018, the site was partially burned by the Woolsey Fire (NPS 2022).

General biological surveys were conducted on January 13 and 14, 2022 to assess the habitat suitability for special-status species occurrence on the site. In addition, results of prior surveys were reviewed to help further determine the potential for presence of special-status species.

Ojai navarretia is a CRPR 1B.1 special-status plant species that was potentially observed at the site in 2010 and 2013 (Envicom Corporation 2014). Three small populations of an undetermined species of the *Navarretia* genus were observed within the western portion of the site in November 2010 by Impact Sciences. Additionally, six dead *Navarretia* plants were found at the site in June 2013 by Envicom Corporation. This species of *Navarretia* could not be positively identified in 2010 or 2013 as the special-status species; however, it was presumed likely to be the Ojai navarretia.

Botanical surveys were performed in spring and summer 2022 to identify whether special-status plant species were present and to map vegetation communities. These surveys confirmed the presence of Ojai navarretia at the site, with 19 subpopulations consisting of over 680 individual plants (Figure 5-2 Agoura Road AWPf Ojai Navarretia Subpopulations).

The only other special-status species observed near the site was Agoura Hills dudleya (also known as canyon liveforever), with 6 small subpopulations consisting of 19 individual plants. Agoura Hills dudleya were observed on rocky outcrops outside of the site boundary and well outside of the proposed AWPf footprint.

On May 31, 2022, vegetation community mapping was conducted for the site. The Alternative 1 Agoura Road AWPf site contains 11 natural vegetation alliances and associations, 4 seminatural vegetation alliances and associations, and 3 land cover types (Rincon 2022) (Figure 5-3 Agoura Road AWPf Vegetation Communities). Sensitive and riparian communities observed at the Agoura Road AWPf site included:

- Arroyo willow – Mulefat thickets association (0.1 acre)
- California rose briar patches association (0.02 acre)
- Clustered tarweed – Annual grass fields association (0.03 acre)
- Mulefat thickets association (0.04 acre)
- Needle grass – Melic grass grassland association (0.02 acre)
- Poison oak – Sticky monkeyflower scrub association (0.01 acre)
- Valley oak – Coast live oak woodland association (1.97 acres)

These seven sensitive natural communities, including riparian habitats, total 2.19 acres within the 7.1-acre site, with the largest vegetation type consisting of the valley oak – coast live oak woodland association. The remainder of the site contains vegetation communities that are not sensitive.

Tree surveys were performed in 2022 to evaluate the presence and size of native trees at the site (Figure 5-4 Agoura Road AWPf Oak Trees). During the surveys on January 13 and 14, 2022, the following native trees were identified:

- Coast live oak
- Fremont cottonwood (*Populus fremontii*)



## Programmatic Environmental Impact Report

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- Valley oak
- Western sycamore (*Platanus racemosa*)
- Willow (*Salix* sp.)

The following trees and shrubs were observed on the site:

- 57 coast live oak individuals or clusters
- 1 Fremont cottonwood
- 54 valley oak individuals or clusters
- 3 Western sycamore trees
- 3 willow shrubs

A wetland delineation was performed at the site on April 15, 2022, which identified one wetland area (0.177 acre) at the northwestern corner of the site, south of Agoura Road (Figure 5-5 Agoura Road AWPF Wetland Features). The wetland appears to have been created by site drainage pooling against Agoura Road, which was recently upgraded. Other waters of the United States were also identified and delineated. Two of these Other waters are adjacent to the wetland and consist of approximately 455 linear feet of intermittent stream. An additional 95 linear feet of intermittent stream serves as an extension of the stream identified along the western edge of the site. There is an approximately 0.08-acre detention basin at the northeastern corner of the site, drained by an approximately 250-foot-long channel, that is also considered Other waters of the United States.

During the general biological surveys conducted on January 13 and 14, 2022, wildlife observed were recorded, and photographs were taken of the general site condition (Appendix B). There is a trail through the western portion of the site and three natural drainages. During the site visit, the drainages had flowing water, and a pool had formed below the Agoura Road earthen berm. Some of the oak trees onsite showed evidence of fire damage.

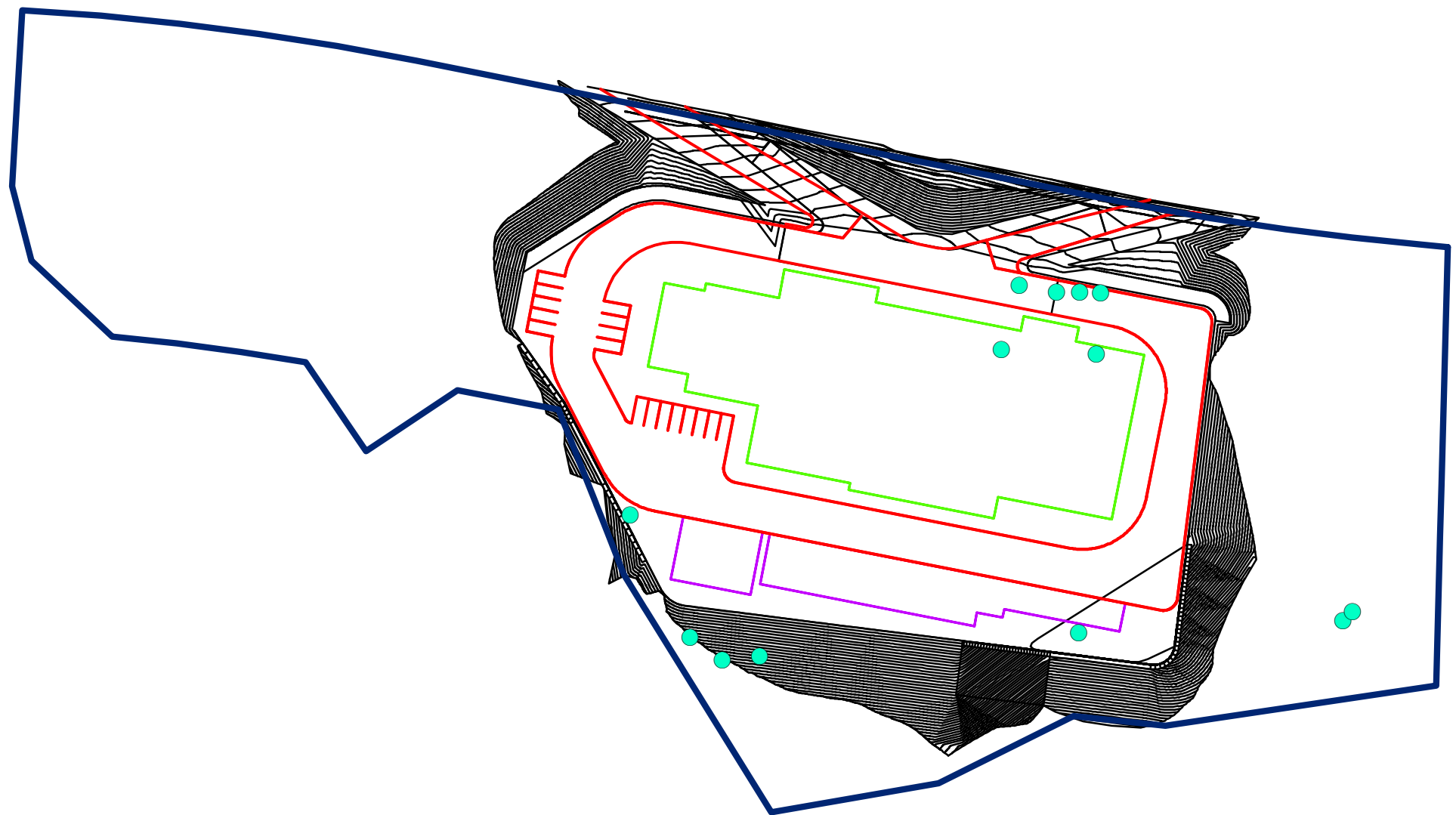
Most of the wildlife observed onsite were birds, including:

- Acorn woodpecker (*Melanerpes formicivorus*)
- American crow (*Corvus brachyrhynchos*)
- Anna's hummingbird (*Calypte anna*)
- Cassin's kingbird (*Tyrannus vociferans*)
- European starling (*Sturnus vulgaris*)
- Great blue heron (*Ardea herodias*)
- Mallard (*Anas platyrhynchos*)
- Mourning dove (*Zenaida macroura*)
- Nuttall's woodpecker (*Dryobates nuttallii*)
- Red-tailed hawk (*Buteo jamaicensis*)
- Spotted towhee (*Pipilo maculatus*)

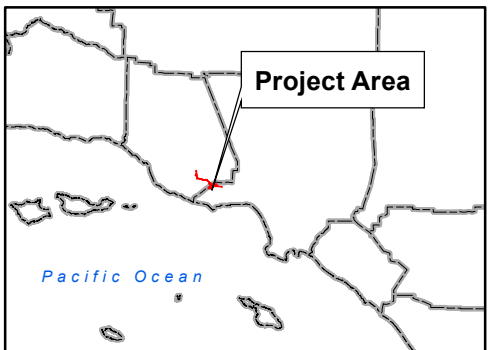
Other wildlife observed included:

- California ground squirrel (*Otospermophilus beecheyi*)
- Domestic dog (*Canis familiaris*)
- Mule deer (*Odocoileus hemionus*)
- Pacific tree frog (*Pseudacris regilla*)
- Raccoon (*Procyon lotor*)

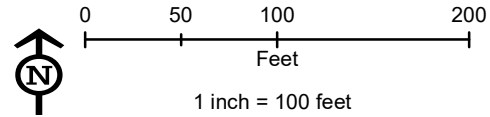
No special-status wildlife were observed during the general wildlife surveys.



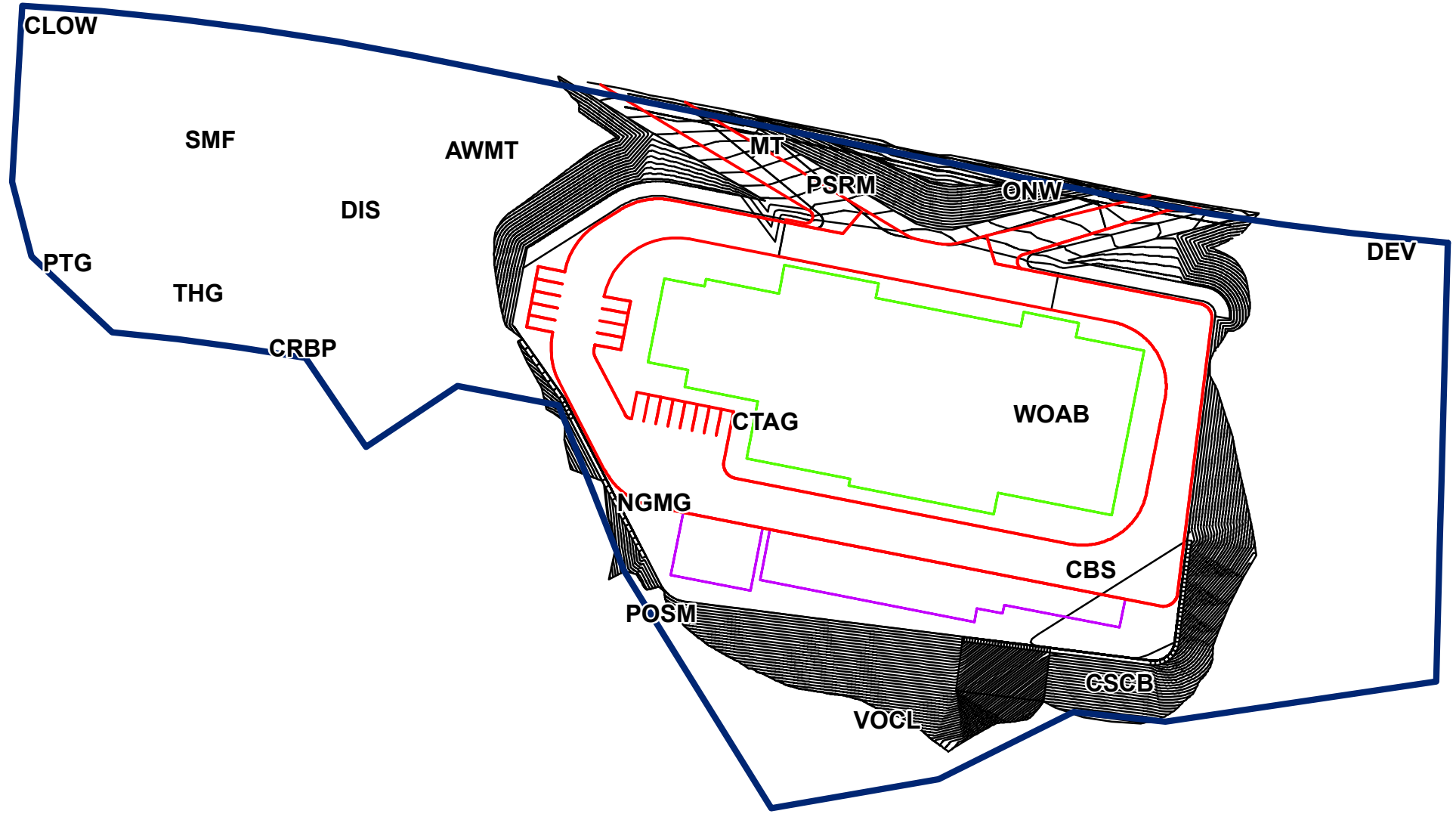
- Legend**
- ▭ Agoura Road AWP
  - Ojai Navarretia
  - ▭ Building
  - ▭ Roadway
  - ▭ Chemicals
  - ▭ Grading Contours



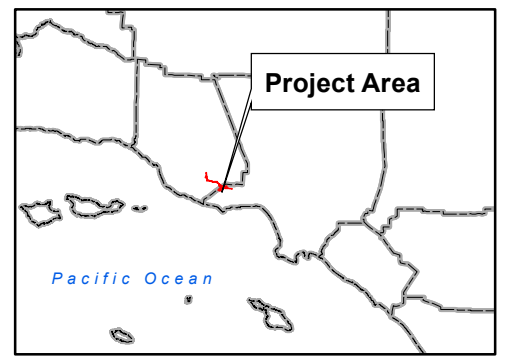
Sources:  
ESRI World Street Map; ESRI World Topo Map



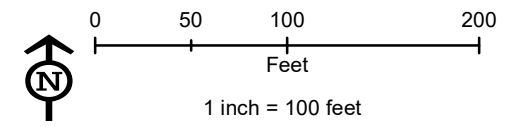
**Figure 5-2**  
**Agoura Road AWP**  
**Ojai Navarretia Subpopulations**  
*Pure Water Project Las Virgenes – Triunfo*



- Legend**
- Agoura Road AWP
  - Building
  - Roadway
  - Chemicals
  - Grading Contours
- Vegetation Type**
- Arroyo Willow – Mulefat Thickets, AWMT
  - California Buckwheat Scrub, CBS
  - California Rose Briar Patches, CRBP
  - California Sagebrush - California Buckwheat Scrub, CSCB
  - Clustered Tarweed – Annual Grass Fields, CTAG
  - Coast Live Oak Woodland and Forest, CLOW
  - Developed, DEV
  - Disturbed, DIS
  - Mulefat Thickets, MT
  - Needle Grass – Melic Grass Grassland, NGMG
  - Ornamental Woodland, ONW
  - Pale Spike Rush Marshes, PSRM
  - Pepper tree groves, PTG
  - Poison Oak – Sticky Monkeyflower Scrub, POSM
  - Summer Mustard Fields, SMF
  - Tree of heaven groves, THG
  - Valley Oak – Coast Live Oak Woodland and Forest, VOCL
  - Wild Oats and Annual Brome Grasslands, WOAB

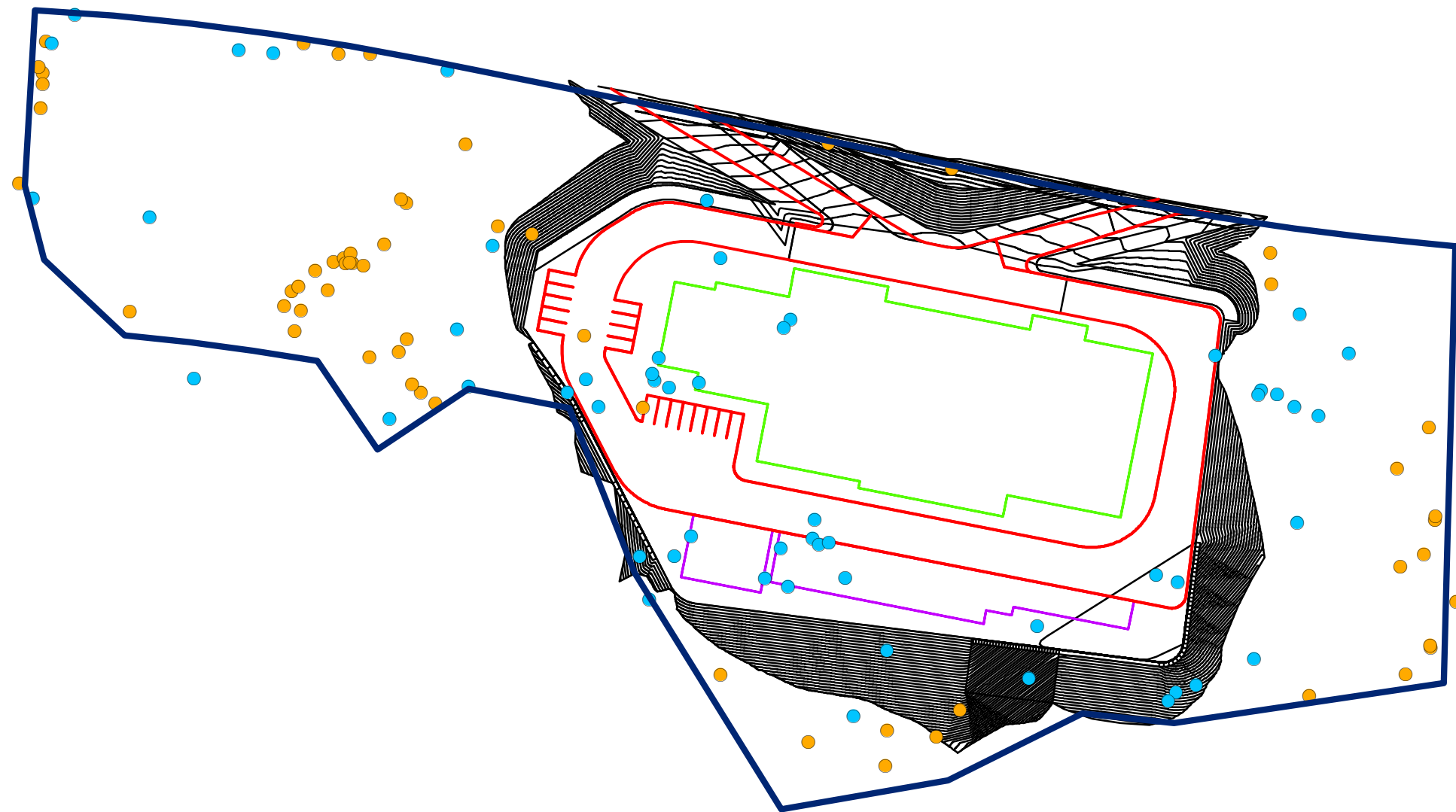


Sources:  
ESRI World Street Map; ESRI World Topo Map

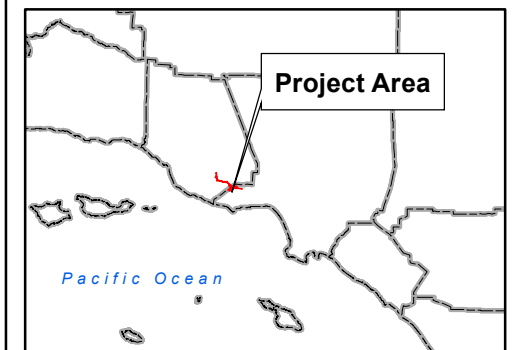


**Figure 5-3**  
**Agoura Road AWP**  
**Vegetation Communities**  
*Pure Water Project Las Virgenes – Triunfo*

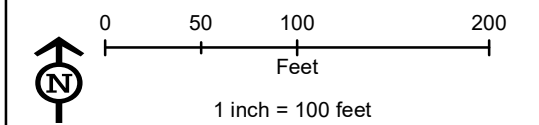




- Legend**
- Agoura Road AWP
  - Coast live oak
  - Valley oak
  - Building
  - Roadway
  - Chemicals
  - Grading Contours



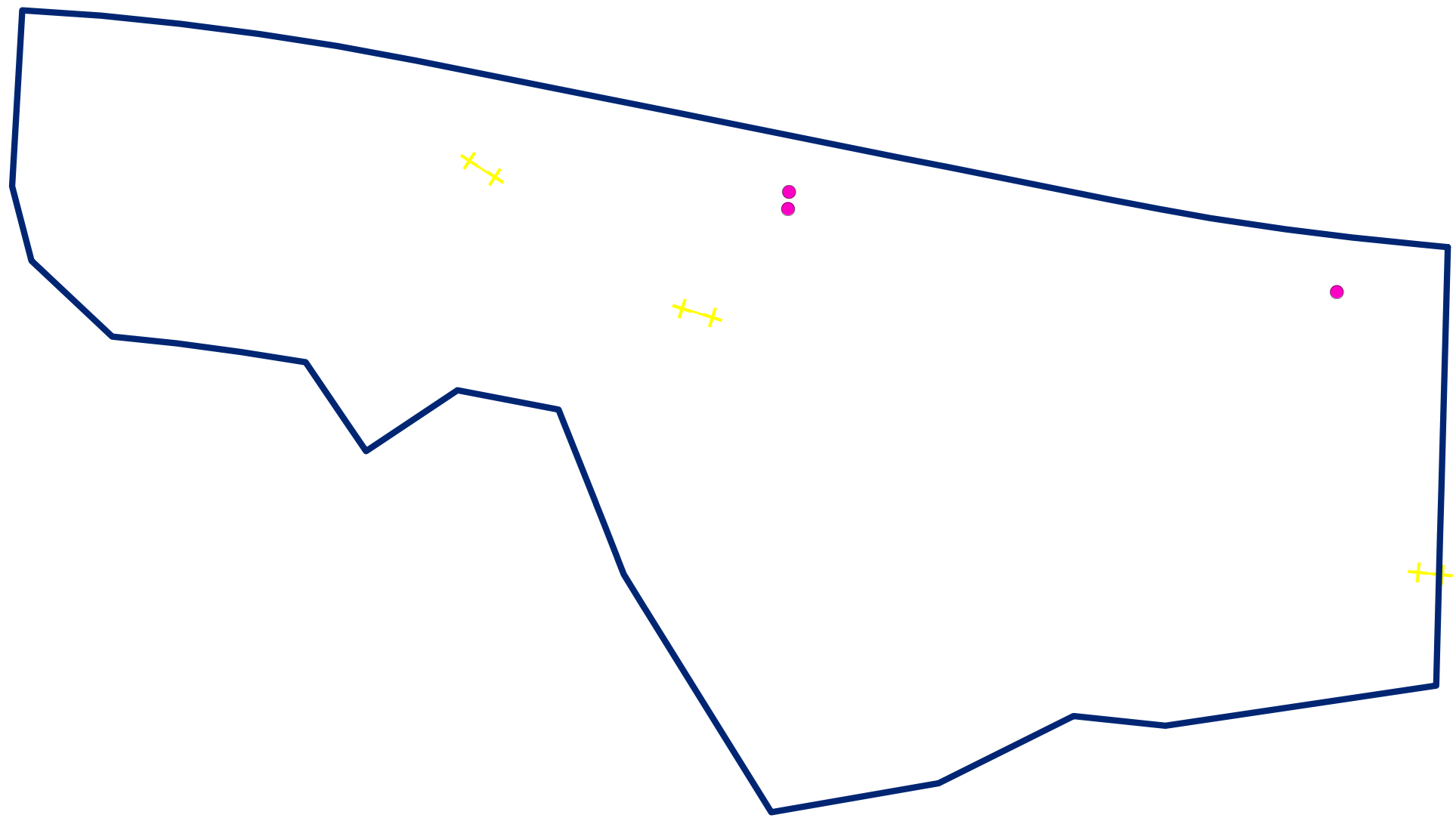
Sources:  
 ESRI World Street Map; ESRI World Topo Map



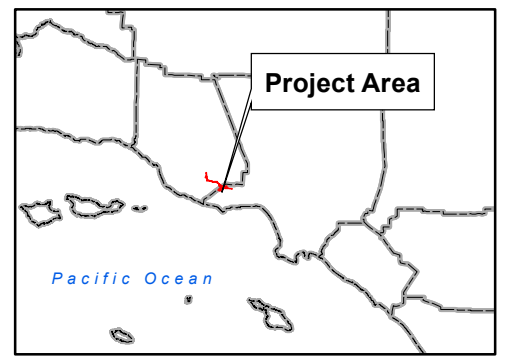
**Figure 5-4**

**Agoura Road AWP  
 Oak Trees**

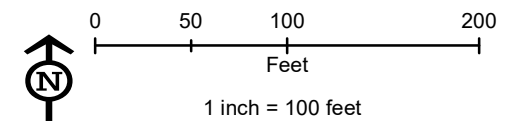
*Pure Water Project Las Virgenes – Triunfo*



- Legend**
- Agoura Road AWP
  - Sample Point
  - OHWM Transect
  - Building
  - Roadway
  - Chemicals
  - Grading Contours
- Aquatic Resources**
- Other Waters (0.130 AC, 976 LF)
  - Wetland (0.178 AC)



Sources:  
 ESRI World Street Map; ESRI World Topo Map



**Figure 5-5**  
**Agoura Road AWP**  
**Wetland Features**  
 Pure Water Project Las Virgenes – Triunfo

### 5.1.3 Alternative 2 Reservoir Advanced Water Purification Facility

The Alternative 2 Reservoir AWPf site is located on an undeveloped site adjacent to Las Virgenes Reservoir on its eastern shore. The area is currently flat due to prior grading to create the impoundment in the early 1970s. However, the site is not currently accessible by vehicle, and would require creating a new access road from Triunfo Canyon Road, within Triunfo Creek Park roughly along the alignment of the Westlake Vista Trail within lands owned by the Mountains and Recreation and Conservation Authority. Overall, this area includes the AWPf site, the access road alignment, and the pipeline corridor along Westlake Vista Trail.

Several special-status plant species have potential to occur in this area. The adjacent chaparral and scrub vegetation bordering and surrounding the Westlake Vista Trail could potentially provide suitable habitat for:

- Braunton's milk-vetch
- Chaparral ragwort (*Senecio aphanactis*)
- Lyon's pentachaeta

The rocky outcrops along the trail leading up to the reservoir are suitable habitat for Blochman's dudleya and Agoura Hills dudleya. Additionally, seasonally flooded aquatic resource complexes were observed at the flattened portion of the AWPf site, where vernal pool associates, such as the southern tarplant and California orcutt grass, could occur; however, deep vernal pools with clay soils, required for California orcutt grass, were not observed.

The 2022 botanical surveys confirmed the presence of Lyon's pentachaeta along the Westlake Vista Trail, with 5 subpopulations consisting of over 800 individual plants. Other special-status species observed were:

- Agoura Hills dudleya (6 subpopulations, at least 23 plants)
- Catalina mariposa lily (6 subpopulations, 19 plants)
- Slender mariposa lily (3 subpopulations, six plants)

On May 31 and June 2, 2022, vegetation community mapping was conducted within this area. The area contains 11 natural vegetation alliances and associations and 2 seminatural vegetation alliances consisting of 5 associations. Two land cover types were mapped within the site (Rincon 2022). Sensitive communities, including riparian, that were observed included:

- California bulrush marshes association (0.05 acre)
- Clustered tarweed – Annual grass fields association (3.82 acres)
- Longstem buckwheat fields association (0.18 acre)
- Mulefat thickets association (0.02 acre)
- Valley oak – Coast live oak woodland association (0.77 acre)

Sensitive and riparian natural communities total 4.84 acres within the 26.33-acre area, with clustered tarweed – annual grass fields association the most extensive vegetation type. The remainder of the site contains natural or seminatural vegetation communities that are not sensitive land cover types.

Tree surveys were performed in 2022 to evaluate the presence of native trees. On January 13 and 14, 2022, the following trees were found in the area:

- Coast live oak - 20 coast live oaks (individual trees or clusters)
- Valley oak - 10 valley oaks

A wetland delineation was performed in the area on April 15, 2022, which identified and delineated intermittent channels, drainages, and ephemeral streams as Other waters of the United States. Most of these delineated features are less than 6 feet wide and, collectively, they account for over 1,900 feet of Other waters of the United States. No wetland areas were identified; however, seasonally flooded aquatic resource complexes were observed at the flattened portion of the AWPf site, including vernal pool



associates, such as the southern tarplant. During the survey, conditions were very dry at the AWPf site, which may have limited vegetation development.

During the general biological surveys conducted on January 14, 2022, wildlife observed were recorded, and photographs were taken of the general site condition (Appendix B). The AWPf site is a plateau adjacent to the Las Virgenes Reservoir, containing shallow channels that flow east, converging downslope to the south of Westlake Vista Trail. The natural drainage continues east, crossing the Westlake Vista Trail, toward the intersection of Triunfo Canyon Road and Lindero Canyon Road. During the site visit, the channels and low spots at the AWPf site were holding water and had significant algae growth. In addition, the natural drainage had flowing water and evidence of recent high flow.

The Westlake Vista Trail leads to the site from Triunfo Canyon Road. The trail is moderately sloped leading to the site and transitions to a gradual slope closer to Triunfo Canyon Road. Some of the oak trees and shrubs onsite showed evidence of fire damage. Most of the wildlife observed onsite were birds, including:

- Acorn woodpecker
- American crow
- California quail (*Callipepla californica*)
- California towhee (*Melospiza crissalis*)
- Gull (*Larus* sp.)
- Red-tailed hawk
- Turkey vulture (*Cathartes aura*)
- Western scrub-jay (*Aphelocoma californica*)

Other wildlife or their signs observed included:

- Domestic dog
- Mule deer (tracks and scat)
- Seed shrimp (*Ostracod species*)

### 5.1.4 Pipelines

Two portions of the pipeline alignment occur within undeveloped, natural areas:

- 1) Under Alternative 1 Agoura Road AWPf, a portion of the purified water pipeline would be installed within Triunfo Creek Park between Triunfo Canyon Road and Las Virgenes Reservoir, a distance of approximately 3,150 feet. Under Alternative 2 Reservoir AWPf, this alignment would be used for the source water, concentrate, and sewer pipelines and other utilities.
- 2) A portion of the concentrate pipeline would be installed along the Conejo Canyon Open Space Trail between Rancho Conejo Boulevard and Arroyo Conejo, a distance of approximately 2,750 feet.

Section 5.1.3 describes the biological features of the pipelines within Triunfo Creek Park. The remainder of this section discusses the pipeline along the Conejo Canyon Open Space Trail.

The botanical surveys performed in spring and summer 2022 evaluated the potential occurrence of special-status plant species and mapped vegetation communities. No special-status plants occur on the Conejo Canyon Open Space Trail. Approximately 23 subpopulations (over 80 individual plants) of Agoura Hills dudleya and 14 Southern California black walnut trees were observed near the trail. Other special-status species observed on the site were Catalina mariposa lily (one subpopulation, with seven plants).

On June 3, 2022, vegetation community mapping was conducted within this area. This site contains 10 natural vegetation alliances consisting of 11 associations and 2 seminatural vegetation alliances and associations. Five land cover types were mapped within the site (Rincon 2022). Sensitive and riparian communities observed along the Conejo Canyon Open Space Trail included:

- Arroyo willow – Mulefat thickets association (0.14 acre)
- Ashy buckwheat scrub association (0.72 acre)

- California walnut – Toyon groves association (0.19 acre)
- Longstem buckwheat fields association (0.14 acre)
- Mulefat thickets association (0.1 acre)

Sensitive and riparian natural communities total 1.29 acres along the 7.63-acre Conejo Canyon Open Space Trail area, primarily the ashy buckwheat scrub association. The remainder of the area contains vegetation communities that are not sensitive.

No oak trees are present along the Conejo Canyon Open Space Trail. A linear wetland feature (approximately 140 feet long) was observed along the side of the trail.

### 5.1.5 Malibu Creek

As described in Chapter 11 (Hydrology), the Pure Water Project is located within the Malibu Creek watershed, which encompasses approximately 110 square miles in Los Angeles and Ventura counties. The Malibu Creek watershed is one of the largest discrete watersheds draining into Santa Monica Bay, second only to the Ballona Creek Watershed (RCDSMM 2021). The watershed extends from the Santa Monica Mountains and adjacent Simi Hills to Santa Monica Bay at Malibu State Beach.

Although portions of the watershed are modified by residential development, reservoirs, and agricultural operations, a large portion of the land remains in public ownership as part of the Santa Monica Mountains National Recreation Area, which includes Malibu Creek State Park. Open land is the predominant land cover in the Malibu Creek watershed. Other land uses include urbanized areas, particularly in the upper portion of the watershed and a small amount of agricultural land (Malibu Creek Watershed Management Group 2015).

A variety of streambed modifications have occurred throughout the watershed, particularly in the upper, urbanized areas. However, most of the streambed downstream of Cold Creek remains unchannelized (that is, is not armored with stone or concrete on bank or bed); at times, the stream's natural meander is constricted by roads and other development. The Malibu Creek watershed contains two major dams on Malibu Creek: the Rindge Dam and the Malibu Lake Dam. Rindge Dam is located approximately 2 stream miles upstream of Malibu Lagoon and blocks access to over 90% of the spawning and rearing habitat for steelhead (*anadromous Oncorhynchus mykiss*) within Malibu Creek. Malibu Lake Dam is approximately 10 stream miles upstream of the lagoon and forms the private Malibu Lake (USACE and CDPR 2017).

The Tapia WRF is located at approximately river mile 4.5 upstream from the mouth of Malibu Creek at Malibu Lagoon. Between the Tapia WRF and Malibu Lagoon lies Rindge Dam. Rindge Dam, built in 1926, is the largest disruption to stream flow and aquatic and terrestrial habitat connectivity on Malibu Creek between Malibu Dam and the Pacific Ocean. The current reservoir area behind Rindge Dam is completely filled with sediment. The area is highly disturbed, with sparse riparian vegetation. Malibu Lagoon occupies around 30 acres behind the beach at the mouth of Malibu Creek. Malibu Lagoon has been the focus of remediation efforts that have restored much of the naturally functioning wetland (The Bay Foundation 2019).

Tapia WRF discharges are currently regulated by an NPDES permit issued by the Regional Board. As reported in Chapter 11, the Tapia WRF contributes only a small percentage of the flow during storm events but makes up a considerable portion of the flow during dry periods. Malibu Creek also receives flow from Las Virgenes Creek and Cold Creek. Stokes Creek and Liberty Canyon Creek are tributaries to Las Virgenes Creek, while Dark Canyon Creek is tributary to Cold Creek.

Aquatic Bioassay and Consulting Laboratories, Inc. has conducted Bioassessment Monitoring for the Las Virgenes MWD since 2006. There are currently eight stations in the Malibu Creek watershed: six in Malibu Creek, one in Las Virgenes Creek, and one in Malibu Lagoon. Two stations (R-3 and R-4) are located between Rindge Dam and the lagoon; Stations R-2 and R-13 are located in Malibu Creek downstream of the Tapia WRF discharge, and stations R-1 and R-9 are located upstream of the Tapia WRF discharge. Results of these surveys, specifically the Bioassessment Monitoring Reports for

2018 through 2020 (Aquatic Bioassay and Consulting Laboratories 2019, 2020, 2021) form the basis of the description of the existing setting for aquatic resources in Malibu Creek.

As part of the long-term management plan for the Malibu Lagoon Restoration and Enhancement Project, monitoring was conducted in the lagoon from 2013 to 2016. Results of these efforts, specifically the *Final Comprehensive Monitoring Report* (The Bay Foundation 2019), form the basis of the description of the existing setting for aquatic resources in Malibu Lagoon.

### 5.1.5.1 Physical Habitat Characteristics

Summer flows in Malibu Creek are generally low. During these dry periods, the wetted channel is typically around 16 feet in width, ranging from around 3 to 33 feet, and average depths range from around 2 to 14 inches, with the lowest average depths in the most downstream reaches upstream of the lagoon. Average velocities are generally less than 0.5 foot per second (fps).

Aquatic habitats are represented by combinations of predominately riffles, glides, and pools. Upstream of the Tapia WRF discharge, the pool and glide habitats predominate, generally comprising more than 75% of the aquatic habitat. Below the Tapia WRF discharge, glide habitat is the dominant aquatic habitat (greater than 50%), followed by riffle habitat. Pool habitat proportions decrease in a downstream direction from around 25% immediately downstream of the Tapia WRF discharge to less than 5% just upstream of Malibu Lagoon.

The most vegetative canopy cover is found in the upper reaches around the Tapia WRF discharge (approximately 75%) and decreases in a downstream direction to less than 50% just upstream of the lagoon. The bank is less stable (more potential to erode) just upstream of the Tapia WRF discharge, with most (greater than 70%) of the streambank rated as vulnerable. The lower reaches between Rindge Dam and the lagoon are rated as being more stable than the upper reaches.

Substrate size class is an indicator of available habitat for benthic invertebrates. Mixtures of gravel, sands, and fines are prevalent throughout Malibu Creek. Although the proportion changes from year to year within reaches, gravel substrates tend to dominate, and there is more gravel in the upper reaches around the Tapia WRF and in the lowest reaches just upstream of the lagoon. The middle reaches tend to have more boulder substrates. Sand and fine substrates comprise a substantial proportion of the creek bed, particularly in the middle reaches downstream of the Tapia WRF discharge point.

Physical and Habitat scores in Malibu Creek ranged from marginal to optimal in 2020 but were typically marginal or suboptimal in prior years. The reach immediately upstream of the Tapia WRF discharge remains marginal, and the reach upstream is often dry during the summer. Downstream of the Tapia WRF discharge, the Physical and Habitat scores tend to be suboptimal, improving to optimal in the reaches just upstream of the lagoon in 2020.

Restoration efforts in Malibu Lagoon, completed in 2013, reconfigured the three channels into a single, wider, main channel with three tributary channels or branches. The profile of the reconfigured lagoon was significantly lowered, and the main channel was oriented to face more directly into the tide. Four islands were created to enhance bird habitat and bird nesting opportunities, and to focus prevailing winds to increase wind-driven circulation during closed conditions. A primary restoration target was to increase tidal energy to suspend and scour fine sediments to limit sedimentation during open lagoon conditions. Monitoring of physical conditions in the lagoon indicate that restoration is meeting success criteria, and the restored lagoon is experiencing improved circulation.

Sediment grain sizes fluctuate based on the open or closed condition of the lagoon. Because there have been no large-scale shifts in channel cross sections in the lagoon following restoration, it appears that sediment grain sizes fluctuate regularly in response to variations in the hydrologic and sediment input regimes.



Postrestoration sampling of canopy cover along transects reaching from the shoreline across the channels to the islands in Malibu Lagoon indicate that restoration success criteria are being met. All transects have shown a general trend toward increasing native vegetation cover and decreasing areas of bare ground. The average absolute native plant cover across all transects was between 78 and 80% in 2019; non-native plant cover was less than 1%. Vegetation cover is expected to continue to develop and become more complex over time as plants mature and continue to spread.

### 5.1.5.2 Water Quality Measures

Water quality measures in Malibu Creek are within ranges typical of many Southern California streams. Summer water temperatures in Malibu Creek tend to exceed 69°F, reaching nearly 81°F during bioassessment monitoring. The pH of the water in Malibu Creek is generally slightly alkaline, with a pH between 7.5 and 8.5. Dissolved oxygen (DO) content is generally greater than 5 milligrams per liter (mg/L) during the summer and is greatest in the reaches downstream of Rindge Dam. Salinity in Malibu Creek is elevated over typical freshwater streams (less than 0.5 parts per thousand [ppt]) at around 1 ppt. Malibu Lagoon is subject to tidal flushing and has more salinity than the upstream reaches in Malibu Creek.

During open-berm conditions, the lagoon is subject to tidal influence. Water temperatures in Malibu Lagoon follow expected patterns, with the warmest temperatures (up to 79°F) occurring during the spring and summer closed-berm conditions and the coolest (down to 55°F) during winter open-berm conditions. There is little stratification by depth.

Salinity during open-berm conditions generally stratifies, with a brackish layer of lower-salinity water (5 to 15 ppt) on the surface, with more saline, oceanic water (20 to 35 ppt) occurring near the bottom. During closed-berm conditions, little to no salinity stratification occurs; and values ranged from 5.2 to 5.4 ppt in 2017 and 17.4 to 17.9 ppt in 2016, indicating good mixing.

DO levels were consistently high and exhibited little stratification, especially during closed-berm conditions. DO levels never fell to less than 4 mg/L at any station during postrestoration monitoring.

### 5.1.5.3 Biological Conditions

This section describes the biological conditions of Malibu Creek.

#### Fish

Numerous fish species, both native and non-native, have been documented in previous surveys within Malibu Creek and Lagoon (Swift et al. 1993; Dagit and Abramson 2007; The Bay Foundation 2019). Native freshwater species found in these areas include:

- Arroyo chub (*Gila orcutti*)
- California killifish (*Fundulus parvipinnis*)
- Pacific lamprey (*Entosphenus tridentata*)
- Prickly sculpin (*Cottus asper*)
- Southern California steelhead distinct population segment (DPS) (*Onchorhynchus mykiss*)

Non-native freshwater species in Malibu Creek include:

- Black bullhead (*Ameiurus melas*)
- Bluegill (*Lepomis macrochirus*)
- Channel catfish (*Ictalurus punctatus*)
- Common carp (*Cyprinus carpio*)
- Fathead minnow (*Pimephalas promelas*)
- Green sunfish (*Lepomis cyanellus*)
- Largemouth bass (*Micropterus salmoides*)
- Mosquitofish (*Gambusia affinis*)

The Malibu Lagoon serves as an important primary and nursery habitat for several fish species. Native estuarine species include:

- Long-jawed mudsucker (*Gillichthys mirabilis*)
- Northern anchovy (*Engraulis mordax*)
- Staghorn sculpin (*Leptocottus armatus*)
- Striped mullet (*Mugil cephalus*)
- Tidewater goby (*Eucyclogobius newberryi*)
- Topsmelt (*Atherinops affinis*)

Non-native fishes found in the lagoon include (The Bay Foundation 2019):

- Common carp
- Mississippi silversides (*Menidia berylina*)
- Mosquitofish

### **Special-status Species**

Southern California steelhead were listed as an endangered evolutionarily significant unit on August 18, 1997 (62 Federal Register [FR] 43937) and relisted as an endangered DPS on January 5, 2006 (71 FR 833). Critical habitat was designated on September 2, 2005 (70 FR 52487).

Malibu Creek from its mouth up to Rindge Dam is designated critical habitat for the Southern California steelhead DPS. Malibu Creek has been identified as a “high value” recovery planning area in the *Southern California Steelhead Recovery Plan* (NMFS 2012). Currently, the 3-mile stretch of Malibu Creek downstream of Rindge Dam is suitable steelhead habitat. Good quality habitat is located downstream of the dam (Abramson 1998; Dagit and Abramson 2007; Dagit and Krug 2011). Few steelhead were observed through 2004 in Malibu Lagoon, but they are known to occur upstream within Malibu Creek (Dagit et al. 2005). Adults would use the lagoon as a migratory corridor to upstream spawning areas after the lagoon breaches in the winter. Juvenile steelhead would also use the lagoon as a downstream migratory corridor to enter the ocean during a breach.

Tidewater goby was federally listed as endangered on March 7, 1994 (59 FR 5496). The USFWS designated revised critical habitat for tidewater goby on February 6, 2013 (78 FR 8746) that includes Malibu Lagoon. The tidewater goby historically existed in Malibu Lagoon but died out in the 1950s. A tidewater goby population was successfully reintroduced in 1991. Population surveys conducted by the Resource Conservation District of the Santa Monica Mountains and University of California, Los Angeles (UCLA) show that the goby population has remained stable since their reintroduction. Tidewater goby are known to occur in the Malibu Lagoon, and the lagoon is considered a source population (USACE 2013).

The arroyo chub is a California Species of Special Concern. This species was native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers and Malibu and San Juan Creeks. The species is now absent from much of its native range and is abundant only in the west fork of the San Gabriel River. This species is known to occur in Malibu Creek (O'Brien and Barabe 2022).

Pacific lamprey is a California Species of Special Concern. Under this designation, the status was identified by (Moyle et al. 2015) as “moderate concern” because the species still occupies much of its native range but in much smaller numbers. Evidence suggests that large declines may have occurred in the last 50 years. The USFWS has also designated Pacific lamprey as a Species of Concern. In Malibu Creek, Pacific lampreys are limited to the lower 2.5 miles downstream of the Rindge Dam. Small numbers of lamprey were documented in 1981, 1982, 1987, 1991, and 1993 (Swift and Howard 2009). Subsequent sampling efforts for Pacific lampreys in Malibu Creek have resulted in negative results, including electroshocking efforts in August of 2005 (Goodman et al. 2008) in Malibu Creek and near the lagoon interface. This species appears to be rare, difficult to detect, and only sporadically present in Malibu Creek.

## 5.2 Regulatory Framework

This section describes the regulatory framework relevant to biological resources in the Pure Water Project area.

### 5.2.1 Federal Regulations

This section describes the federal regulations relevant to biological resources in the Pure Water Project area.

#### 5.2.1.1 Endangered Species Act

Provisions of the FESA, as amended (16 United States Code [USC] 1531), protect federally listed threatened and endangered species and their habitats from unlawful take. “Take” under FESA includes activities that “...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or...attempt to engage in any such conduct.” USFWS regulations define “harm” to include some types of “...significant habitat modification or degradation.” In the case of *Babbitt, Secretary of Interior, et al., Petitioners v. Sweet Home Chapter of Communities for a Great Oregon, et al.* (No. 94-859), the U.S. Supreme Court ruled on June 29, 1995, that “harm” may include habitat modification “...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”

For projects with a federal nexus, FESA Section 7 requires that federal agencies, in consultation with the USFWS or National Marine Fisheries Service (NMFS), use their authority to further the purpose of FESA and to reduce the likelihood that their actions would jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. Section 7 applies to the management of federal lands and other federal actions, such as federal approval of private activities through the issuance of federal permits, licenses, funding, or other actions that may affect listed species. Section 7 directs all federal agencies to use their existing authority to conserve threatened and endangered species and, in consultation with the USFWS, reduce the likelihood that their actions would jeopardize listed species or destroy or adversely modify critical habitat. Critical habitat is defined as specific areas that are essential to the conservation of federally listed species.

FESA Section 10(a)(1)(B) allows nonfederal entities to obtain permits for incidental taking of Threatened or Endangered species through consultation with USFWS or NMFS. In general, NMFS is responsible for protection of federally listed marine species and anadromous fish; other listed species are under USFWS jurisdiction. FESA Section 10 provides a means for nonfederal entities (that is, states, local agencies, and private parties) that are not permitted or funded by a federal agency to receive authorization to disturb, displace, or kill (that is, take) threatened and endangered species. It allows USFWS or NMFS to issue an incidental take permit authorizing take resulting from otherwise legal activities, if the take would not jeopardize the continued existence of the species.

Section 10 requires the applicant to prepare a Habitat Conservation Plan addressing project impacts and proposing mitigation measures to compensate for those impacts. The Habitat Conservation Plan is subject to USFWS or NMFS review and must be approved by the reviewing agencies before the proposed project could be initiated. Because issuance of the incidental take permit is a federal action, USFWS and NMFS must also comply with the requirements of FESA Section 7 and the National Environmental Policy Act (NEPA).

#### 5.2.1.2 Clean Water Act, Section 404

The objective of the Clean Water Act (CWA), as amended, is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters. Discharge of fill material into waters of the United States, including wetlands, is regulated by the U.S. Army Corps of Engineers (USACE) under CWA Section 404 (33 USC 1251–1376). USACE regulations implementing Section 404 define waters of the United States to include intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce.



Wetlands are defined for regulatory purposes as:

*“...areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”*

33 Code of Federal Regulations [CFR] 328.3; 40 CFR 230.3

The jurisdictional boundaries for Other waters of the United States are based on the presence of an ordinary high water mark, as defined in 33 CFR 328.3(e). The placement of structures in navigable waters of the United States is also regulated by USACE under Section 10 of the federal Rivers and Harbors Act (33 USC 401 et seq.). Projects are permitted under either individual or general (for example, nationwide) permits. The specific applicability of the permit type is determined by USACE case by case.

In 1987, USACE published a manual that standardized the manner in which wetlands were to be delineated nationwide (USACE 1987). To determine whether areas that appear to be wetlands are subject to USACE jurisdiction (that is, jurisdictional wetlands), a wetlands delineation must be performed. Under normal circumstances, positive indicators from three parameters must be present to classify a feature as a jurisdictional wetland:

- 1) Wetland hydrology
- 2) Hydrophytic vegetation
- 3) Hydric soils

More recently, USACE developed a series of Regional Supplements for identifying wetlands and distinguishing them from aquatic habitats and other nonwetlands. The supplements present wetland indicators, delineation guidance, and other information specific to regional areas. For any wetland delineations submitted after June 5, 2007, USACE requires that the site be surveyed in accordance with the 1987 manual and the appropriate Regional Supplement (USACE 2008).

In addition to verifying wetlands for potential jurisdiction, USACE is responsible for issuing permits for projects that propose filling of wetlands. Any permanent loss of a jurisdictional wetland as a result of project construction activities is considered a significant impact. The applicable Regional Supplement for California is the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

### **5.2.1.3 Clean Water Act, Section 401**

CWA Section 401 requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States obtain a certification that the discharge would comply with the applicable effluent limitations and water quality standards. The appropriate Regional Board regulates Section 401 requirements (as described in Section 5.2.2.3).

The EPA established the Malibu Creek Watershed Nutrients TMDL on March 21, 2003, to address impairments due to ammonia, nutrients, DO, algae, scum, and odor in Malibu Lagoon, Malibu Creek and its tributaries, and four lakes in the watershed. On July 2, 2013, EPA established the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments to address impairments of Malibu Creek and its tributaries related to impacted benthic macroinvertebrates, and sedimentation and siltation and impairments of Malibu Lagoon related to adverse benthic community effects. Upon establishment of TMDLs by the State or EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7).

### **5.2.1.4 Migratory Bird Treaty Act**

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 USC 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10,

including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Most birds found in the project area are protected under the MBTA.

## **5.2.2 State Regulations**

This section describes the state regulations relevant to biological resources in the Pure Water Project area.

### **5.2.2.1 California Endangered Species Act**

Under CESA, CDFW has responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code Section 2070). CDFW maintains a list of Candidate Species that are under review for addition to the list of endangered or threatened species. CDFW also maintains lists of Species of Special Concern, which serve as species watch lists. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project would have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may affect a Candidate Species; however, this consultation is not required.

Project-related impacts on species on the CESA endangered or threatened list would be considered significant. State-listed species are Fully Protected under the mandates of CESA. Take of protected species, incidental to otherwise lawful management activities, may be authorized under California Fish and Game Code Section 206.591. Authorization from CDFW would be in the form of an Incidental Take Permit.

### **5.2.2.2 Porter-Cologne Water Quality Control Act**

Water quality in California is governed by the Porter-Cologne Water Quality Control Act. This law assigns overall responsibility for water rights and water quality protection to the State Water Board and directs the nine Regional Boards to develop and enforce water quality standards within their boundaries.

### **5.2.2.3 California Regional Water Quality Control Boards**

This section describes the Regional Board regulations relevant to biological resources in the Pure Water Project area.

## **Section 401 Water Quality Certification**

CWA Section 401 (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States obtain a certification that the discharge would comply with the applicable effluent limitations and water quality standards. In California, the Regional Boards regulate Section 401 requirements.

The Los Angeles Regional Board is responsible for enforcing water quality criteria and protecting water resources within the project area. The Regional Board is responsible for controlling discharges to surface waters of the state by issuing WDRs or commonly by issuing conditional waivers to WDRs. The Regional Board requires that a project proponent obtain a Section 401 water quality certification for Section 404 permits granted by USACE. A request for water quality certification (including WDRs) by the Regional Board and a Notice of Intent application for a General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) are submitted after completion of the CEQA environmental document and submittal of the wetland delineation to USACE.

On December 8, 2016, the Los Angeles Regional Board adopted Resolution No. R16-009, an amendment to the Water Quality Control Plan for the Los Angeles Region (Basin Plan amendment), to establish an Implementation Plan for the Malibu Creek Nutrients TMDL and the Malibu Creek and Lagoon

TMDL for Sedimentation and Nutrients to address Benthic Community Impairments. The State Water Board approved the Basin Plan amendment adopted under Los Angeles Regional Board Resolution No. R16-009 on Feb 22, 2017. The Office of Administrative Law approved this regulatory action pursuant to section 11353 of the Government Code on May 16, 2017.

## **Waters of the State**

Under California law, “waters of the state” means “...any surface water or groundwater, including saline waters, within the boundaries of the state.” Therefore, water quality laws apply to surface water and groundwater. Discharges to wetlands and Other waters of the State are subject to state regulation, including isolated wetlands. In general, the Regional Boards regulate discharges to isolated waters in much the same way they do for federal-jurisdictional waters, using the Porter-Cologne Water Quality Control Act rather than CWA authority.

### **5.2.2.4 California Department of Fish and Wildlife Streambed Alteration Agreement (Sections 1600–1607 of the California Fish and Game Code)**

State and local public agencies are subject to Section 1602 of the California Fish and Game Code, which governs construction activities that would substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW. Under Section 1602, a discretionary Streambed Alteration Agreement must be issued by CDFW prior to construction activities on lands under CDFW jurisdiction. As a general rule, this requirement applies to work within the 100-year floodplain of a stream or river containing fish or wildlife resources.

### **5.2.2.5 Native Plant Protection Act**

The Native Plant Protection Act (California Fish and Game Code Sections 1900–1913) prohibits take, possession, or sale within the state of any plants with a CDFW designation of rare, threatened, or endangered. An exception in the act allows landowners, under specified circumstances, to take listed plant species, provided the owners first notify CDFW and give that agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Game Code Section 1913 exempts “...the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way.” Impacts of a project on these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

### **5.2.2.6 Birds of Prey**

Under Section 3503.5 of the California Fish and Game Code, it is unlawful to take, possess, or destroy any birds in the orders of 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 to it.

## **5.2.3 Local Regulations**

Policies and guidance related to biological resources found in sections of each general plan and oak tree ordinances are discussed in this section.

### **5.2.3.1 City of Agoura Hills**

This section describes the City of Agoura Hills regulations relevant to biological resources in the Pure Water Project area.



**General Plan**

Table 5-1 provides the Biological Resources goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to the project. These goals and policies address the preservation and maintenance of Agoura Hills’ environmental resources, not only to benefit current residents, but also to protect the sustainability of these resources for future generations.

**Table 5-1. City of Agoura Hills Biological Resources Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>Goal NR-1: Open Space System</b>	<i>Preservation of open space to sustain natural ecosystems and visual resources that contribute to the quality of life and character of Agoura Hills.</i>
NR-1.1: Open Space Preservation	<i>Continue efforts to acquire and preserve open space lands for purposes of recreation, habitat protection and enhancement, resource conservation, flood hazard management, public safety, aesthetic visual resource, and overall community benefit.</i>
NR-1.2: New Development	<i>Require new development to create a transition area between open space resources and development to minimize the impacts affecting these resources.</i>
NR-1.3: Slope Preservation	<i>Require that uses involving grading or other alteration of land maintain the natural topographic character and ensure that downstream properties and watercourses are not adversely affected by siltation or runoff.</i>
NR-1.4: Wildlife Habitat	<i>Prioritize preservation of open space in its natural form to support sensitive, endangered, threatened, or otherwise protected species as part of a contiguous system that allows the movement of wildlife from one habitat area to another.</i>
NR-1.5: Funding	<i>Pursue and apply for grant funding from existing and anticipated county, state, federal, private, and other funding sources to support the purchase of open space and the restoration of open space resources.</i>
<b>Goal NR-4: Natural Areas</b>	<i>Protection and enhancement of open space resources, other natural areas, and significant wildlife and vegetation in the City as an integral component of a sustainable environment.</i>
NR-4.1: Resource Protection	<i>Preserve Agoura Hills’ two significant ecological areas (SEAs) from incompatible development through City policies and coordination with Los Angeles County and other relevant agencies to protect habitats of sensitive plants and animals.</i>
NR-4.2: Conserve Natural Resources	<i>Ensure that the development and environmental review process is sensitive to the preservation and protection of sensitive wildlife and plant species, wildlife corridors, significant ecological areas (SEAs), and other sensitive habitat communities.</i>
NR-4.4: Cluster Development	<i>Encourage clustered development in sensitive areas to preserve and reduce the impact to natural lands.</i>
NR-4.5: Open Space Preservation	<i>Place a high priority on acquiring and preserving open space lands for purposes of recreation, habitat preservation and enhancement, resource conservation, flood hazard management, public safety purposes, and overall community benefits.</i>
NR-4.6: Connected Open Space System	<i>Ensure that new development does not create barriers or impede the connection of the City’s open space systems.</i>
NR-4.7: Green Infrastructure	<i>Maintain a multi-functional “green infrastructure,” consisting of natural areas, open spaces, urban forest, and parklands, that serves as a defining physical character of Agoura Hills, provides visitors and residents with access to open spaces and recreation, and is designed for environmental sustainability.</i>
NR-4.8: Open Space and Activity Centers	<i>Link open space to activity centers, parks, other open space, and scenic routes to help define urban form and beautify the City.</i>
NR-4.9: Landscaping	<i>Encourage landscaping that minimizes the need for herbicides and pesticides and that provides food, water, shelter, and nesting sites for birds, butterflies, beneficial insects, and other creatures that both help maintain the landscape and restore the larger</i>

**Table 5-1. City of Agoura Hills Biological Resources Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
	<i>ecosystem. Landscape design can re-create habitat lost to urban development and attract resident and migratory wildlife.</i>
NR-4.10: Tree Preservation	<i>Continue to sustain the City's oak trees, which are an integral part of the character of the City, and continue to plant and maintain these trees in a manner that will allow them to mature and thrive.</i>
NR-4.11: Creeks and Natural Resources	<i>Support the restoration of creeks and other natural resources. Activities include creek cleanup, erosion and urban runoff control, and weeding of non-native plants.</i>
NR-4.12: Wildlife Corridors	<i>Protect and maintain wildlife corridors, particularly the Liberty Canyon wildlife corridor, and adjacent areas as appropriate, to help the continued survival of wildlife.</i>
<b>Goal NR-6 Water Quality</b>	<i>Protection of the water quality of local watersheds and groundwater resources.</i>
NR-6.1: Riparian Habitat	<i>Protect and enhance the natural qualities of riparian habitat.</i>
NR-6.4: Protect Open Space Areas and Water Resources	<i>Conserve undeveloped open space areas and drainage courses and channels for the purpose of protecting water resources in the City's watershed. For construction and post-development runoff, control sources of pollutants and improve and maintain urban runoff water quality through stormwater protection measures consistent with the City's National Pollution Discharge Elimination System (NPDES) Permit.</i>
NR-6.8: New Development	<i>The City shall require new development to protect the quality of waterbodies and natural drainage systems through site design, stormwater treatment, and best management practices (BMPs) consistent with the City's NPDES Permit.</i>

Source: City of Agoura Hills 2010b

**Oak Tree Ordinance**

Oak trees are protected under a special section of the Agoura Hills Municipal Code, specifically Article XI (Zoning), Part 2: Special Regulations, Division 7: Oak tree Preservation Guidelines. The purpose of these sections is to protect and preserve oak trees in recognition of their historical, aesthetic, and environmental value to the citizens of Agoura Hills, present and future, and to provide regulatory measures designed to accomplish this purpose. Table 5-2 summarizes the policies applicable to the project.

**Table 5-2. City of Agoura Hills Oak Tree Preservation Policies**

Policy Name	Goal or Policy Language <sup>a</sup>
<b>Section 9657.1. Oak tree preservation</b>	<i>No person, partnership, firm, corporation, government agency, or other legal entity shall cut, prune, remove, relocate, endanger or damage any tree protected by this section [appendix] on any public or private land located within the incorporated areas of the City of Agoura Hills except in accordance with the conditions of a valid oak tree permit issued by the department of planning and community development or the planning commission pursuant to the provisions of sections 9657 through 9657.5 of the city zoning ordinance.</i>
<b>9657.2. Oak tree policy</b>	<i>It is the policy of the City of Agoura Hills to require the preservation of all healthy oak trees unless compelling reasons justify the removal of such trees. This policy shall apply to the removal, pruning, cutting and/or the encroachment into the protected zone of oak trees. The department of planning and community development shall have the primary and overall responsibility to administer, evaluate and monitor this policy.</i>

Source: Agoura Hills Municipal Code, Article XI (Zoning), Part 2: Special Regulations, Division 7: Oak tree Preservation Guidelines

**5.2.3.2 City of Westlake Village**

This section describes the City of Westlake Village regulations relevant to biological resources in the Pure Water Project area.

**General Plan**

Table 5-3 provides the biological resources goals and policies established by the *City of Westlake Village General Plan* that are applicable to the project (City of Westlake Village 2019a). The plan contains a Natural Resources chapter that includes goals, objectives, and policies for Biological Resources and Watershed Areas in Westlake Village.

**Table 5-3. City of Westlake Village Biological Resources Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>Biological Resources Goal</b>	<i>It shall be the goal of the City of Westlake Village to preserve and enhance the City's biological resources by assuring that development occurs in a manner which reflects the characteristics, sensitivities and constraints of these resources.</i>
<i>Objective 2: Minimize the impacts of new development on sensitive biological resources</i>	
Policy 2.1	<i>Require development to blend indigenous/native plants into new development landscaping which abut natural vegetation.</i>
Policy 2.2	<i>Require the clustering of development to ensure open space connectiveness and facilitate wildlife movement, where appropriate.</i>
Policy 2.3	<i>Pursue the voluntary dedication open space or conservation easements to protect sensitive species and their habitats.</i>
Policy 2.4	<i>Minimize the overall reduction of oak trees throughout the community, where appropriate, based on the biological resource survey.</i>
Policy 2.5	<i>Prohibit development in riparian habitats to the greatest extent feasible.</i>
Policy 2.6	<i>Review proposed projects in the "Sensitive Biological Communities" to evaluate their conformance with the following standards: a. The development plan shall retain watercourses, riparian habitat and wetlands in their natural condition to the maximum extent feasible. b. Development shall incorporate habitat linkages (wildlife corridors) to adjacent open spaces where appropriate. c. Roads and utilities shall be located and designed such that conflicts with biological resources, habitat areas, linkages or corridors are minimized.</i>
<b>Watershed Area Goal</b>	<i>It shall be the goal of the City of Westlake Village to protect the quality of water contained in Las Virgenes Reservoir and Westlake Lake.</i>
<i>Objective 1: Protect and enhance the water quality of Westlake Lake by effectively managing erosion and urban runoff within its extended watershed area.</i>	
Policy 1.2:	<i>Limit the impacts of development on Triunfo Canyon Creek and other riparian habitat areas through interagency coordination and development review.</i>
<i>Objective 2: Protect the drinking water quality of the Las Virgenes Reservoir through the preservation and effective management of its tributary watershed area.</i>	
Policy 2.1:	<i>Regulate development of properties adjacent to the Las Virgenes Reservoir to assure that all new urban uses are located outside of the Reservoir watershed area.</i>

Source: City of Westlake Village 2019a

**Oak Tree Ordinance**

Oak trees are protected under a special section of the Westlake Village Municipal Code, specifically Article 9 (Zoning Regulations), Chapter 9.21: Oak Tree Preservation Standards. The purpose of that chapter is to protect and preserve oak trees in recognition of their historical, aesthetic, and environmental



value to the citizens of Agoura Hills, present and future, and to provide regulatory measures designed to accomplish this purpose. Table 5-4 summarizes the policies applicable to the project.

**Table 5-4. City of Westlake Village Oak Tree Preservation Policies**

Policy Name	Goal or Policy Language <sup>a</sup>
<b>9.21.010. Purpose</b>	<i>The City Council finds that oak trees are a significant historical, aesthetic, and ecological resource in the City of Westlake Village and that the preservation and propagation of this unique, irreplaceable plant heritage is in the best interests of the residents of the City. Regulation of such trees so as to prevent indiscriminate removal and inappropriate maintenance will preserve the distinctive ecological character of the City and will allow for development in a manner consistent with the health and welfare of the community.</i>
<b>9.21.020. Permit Required</b>	<i>Except as otherwise provided in Section 9.21.030, no person shall destroy, remove, relocate, or otherwise inflict damage on any tree of the oak genus which is twelve and one-half (12.5) inches or more in circumference (four (4) inches in diameter) as measured four and one-half (4.5) feet above mean natural grade, or, in the case of an oak with more than one trunk, whose combined circumference of any two (2) trunks is at least eighteen (18) inches (six (6) inches in diameter) as measured four and one-half (4.5) feet above mean natural grade, on any lot or parcel of land within the City, unless an oak tree permit is first obtained in accordance with the provisions of this Chapter 9.21. As used in this Chapter, the word "damage" shall include any act causing injury to the root system or other parts of a tree including but not limited to cutting, nailing, burning, application of toxic substances, operation of equipment or machinery, or by paving, changing the natural grade, trenching, excavating, or building within the dripline or ten (10) feet of trunk, whichever is greater.</i>

Source: Westlake Village Municipal Code, Article 9 (Zoning Regulations), Chapter 9.21: Oak Tree Preservation Standards

### 5.2.3.3 City of Thousand Oaks

This section describes the City of Thousand Oaks regulations relevant to biological resources in the Pure Water Project area.

#### General Plan

The *Thousand Oaks General Plan* (City of Thousand Oaks 2022b) provides a long-range comprehensive guide for the physical development of the City's Planning Area. The *Thousand Oaks General Plan* comprises a statement of goals and policies related to the community's development, and various elements that provide more detailed policies and standards in certain topic areas. The Conservation Element contains the goals and policies relevant to the Pure Water Project concentrate pipeline sections located within Thousand Oaks.

Table 5-5 provides the Biological Resources goals and policies established by the *Thousand Oaks General Plan* that are applicable to the project (City of Thousand Oaks 2013a).

**Table 5-5. City of Thousand Oaks Biological Resources Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>Conservation Element</b>	<i>It shall be the goal of the City of <del>Westlake Village</del> Thousand Oaks to preserve and enhance the City's biological resources by assuring that development occurs in a manner which reflects the characteristics, sensitivities and constraints of these resources.</i>
<b>B. Landform Features</b>	
Policy CO-3	<i>The steeper the slope, the greater the proportion of the land that should remain in an undisturbed, undeveloped state, as provided by the City's Hillside Planned Development (HPD) Ordinance.</i>
Policy CO-4	<i>The most suitable forms of development for steeply sloping terrain are passive recreation areas, open space and very low density residential which can be developed in natural pockets of land less than 25% slope.</i>
Policy CO-5	<i>Hillside development criteria should promote high standards and encourage site design, grading and architecture appropriate to hillside terrain.</i>
Policy CO-6	<i>There should be no grading in slopes over 25% natural grade and the vertical height of manufactured slopes should be no higher than 25 feet.</i>
<b>D. Streams and Creeks</b>	
Policy CO-10	<i>Streams and creeks should be protected as open space and maintained in as natural a state as possible, and appropriate measures taken to manage urban runoff, in order to protect the City's and other downstream communities' water quality, wildlife diversity, native vegetation, and aesthetic value. This will contribute to the regional effort to improve the quality of Calleguas Creek, Malibu Creek and Mugu Lagoon.</i>
Policy CO-11	<i>Degraded sections of streams and creeks should be restored or enhanced as opportunities arise and financial resources become available.</i>
Policy CO-12	<i>Major barrancas should be protected in a natural state. Appropriate land uses for these natural features include recreation trails and open space.</i>
Policy CO-13	<i>Use of concrete for flood control improvements in natural drainage courses should occur only when no reasonable alternatives can be found that would maintain natural hydrological and ecological functions.</i>
<b>H. Native Plant and Wildlife Resources</b>	
Policy CO-21	<i>The City shall encourage the proper management, conservation and protection of native plant communities throughout the City's Planning Area, including developed areas and undeveloped open space lands.</i>
Policy CO-22	<i>Critical wildlife habitat resources such as movement corridors, surface water impoundments, streams and springs should be given special consideration for protection, restoration or enhancement, in order to maintain biodiversity, biological productivity and ecological integrity of natural open space areas.</i>
Policy CO-23	<i>Critical wildlife habitat resources such as movement corridors, surface water impoundments, streams and springs should be given special consideration for protection, restoration or enhancement, in order to maintain biodiversity, biological productivity and ecological integrity of natural open space areas.</i>
Policy CO-24	<i>In order to reduce the potential for devastating wildfires and the resulting damage they cause to both natural ecosystems and urban environments, appropriate, science-based fuel management programs should be conducted on a selective basis, and include the periodic monitoring of any potentially adverse effects on animal habitats and air quality.</i>
Policy CO-25	<i>The City should foster a holistic approach to conservation of wildlife resources including consideration of biological crusts and pollinator species in recognition of the many important functions they perform in a healthy ecosystem.</i>

**Table 5-5. City of Thousand Oaks Biological Resources Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
I. Wildlife Movement Corridors	
Policy CO-26	<i>Isolation and fragmentation of natural open space areas should be prevented wherever possible.</i>
Policy CO-27	<i>Since natural stream drainages often serve as important movement corridors for wildlife, they should be preserved wherever it is feasible to do so.</i>
Policy CO-28	<i>Urban land uses adjoining natural open space areas should be designed in a manner that is sensitive to the needs of wildlife and avoids or minimizes any potentially adverse impacts to movement corridors.</i>
K. Wetland and Riparian Areas	
Policy CO-30	<i>Preserve wetlands and associated wetland buffers as open space and maintain these areas in a natural state to protect the community's water quality, biodiversity and aesthetic value.</i>
Policy CO-31	<i>Encourage the restoration and enhancement of degraded wetland and riparian habitats in order to conserve and protect native plant and animal species, increase biological diversity and productivity, and maintain permanent access for wildlife to surrounding open space.</i>
L. Rare, Threatened or Endangered Species	
Policy CO-32	<i>The City shall encourage and promote the conservation and protection of all rare, threatened, endangered or sensitive species listed by State and Federal agencies (United States Fish and Wildlife Service and California Department of Fish and Wildlife), the California Native Plant Society (CNPS), the County of Ventura and the City of Thousand Oaks.</i>

Source: City of Thousand Oaks 2013a

**Oak Tree Ordinance**

Oak trees are protected under a special section of both the *Thousand Oaks General Plan* and the Thousand Oaks Municipal Code, specifically Article 9 (Zoning Regulations), Article 42: Oak Tree Preservation and Protection. Table 5-6 provides the Biological Resources goals and policies established by the *Thousand Oaks General Plan* that are applicable to the project (City of Thousand Oaks 2013a).



**Table 5-6. City of Thousand Oaks Oak Tree Preservation Policies**

Policy Name	Goal or Policy Language <sup>a</sup>
<b>General Plan Section J, Oak and Landmark Trees</b>	
Policy CO-29	<i>Continue to protect oak and landmark trees and their habitat in recognition of their historic, aesthetic and environmental value to the citizens of Thousand Oaks, in particular Valley Oak habitat.</i>
<b>Oak Tree Ordinance</b>	
Section 9-4.4201. Purpose	<i>The City lies in the Conejo Valley, the beauty of which is greatly enhanced by the presence of large numbers of majestic oak trees. At one time, the area was almost completely covered by an oak forest, however, development of the City has resulted in the removal of a great number of these trees. Further uncontrolled and indiscriminate destruction of oak trees would detrimentally affect the safety and welfare of the citizens of Thousand Oaks. The preservation program outlined in this chapter contributes to the welfare and aesthetics of the community and retains the great historical and environmental value of these trees. This chapter sets forth the policy of the City to require the preservation of all healthy oak trees, unless otherwise exempt from this chapter or reasonable and conforming use of the property justifies the removal, cutting, pruning and/or encroachment into the protected zone of an oak tree.</i>
Section 9-4.4203. Oak Tree Preservation	<i>Any person who owns, controls, has custody or possession of any real property within the City that is improved or has been approved for development, or which is part of or associated with the City approved development of another piece of property, such as any parcel to be maintained as permanent open space or for recreational purposes, shall maintain all oak tree(s) located thereon in a state of good health pursuant to this chapter and the Oak Tree Preservation and Protection Guidelines adopted by City Council resolution. Failure to do so will constitute a violation of this chapter.</i>
Section 9-4.4204. Permit Required	<i>(a) Permit required. No person shall cut, remove, encroach into the protected zone, or relocate any oak tree on any public or private property within the City, unless a valid oak tree permit has been issued by the City pursuant to the provisions of this chapter and the oak tree preservation and protection guidelines. (b) Scope of permit approval. An oak tree permit may authorize the removal, cutting, or encroachment within the protected zone of one (1) or more oak trees subject to the conditions set forth in said permit. An oak tree permit may also authorize future maintenance of oak trees within the permit area, such as pruning, within parameters established in an oak tree maintenance program approval in conjunction with the oak tree permit. Activities included within an approved oak tree maintenance program may be undertaken in compliance with said program without the filing and approval of a separate tree permit application. Provided, however, an oak tree not covered by the initial oak tree permit may not be encroached upon without approval of a subsequent oak tree permit or modification to the original permit.</i>

Source: City of Thousand Oaks 2013a

**5.2.3.4 Ventura County**

The *Ventura County 2040 General Plan* (Ventura County 2020) is a long-range plan that guides decision making; establishes rules and standards for development and county improvements; and helps to inform residents, developers, and decision-makers in Ventura County. The general plan is made up of a collection of elements, or topic categories. The Conservation and Open Space Element contains the goals and policies relevant to the small section of the Pure Water Project concentrate pipeline located within unincorporated Ventura County. This element provides guidance and programs for the following:

- Conservation, management, development, and use of natural and cultural resources
- Long-term preservation and conservation of open space lands, including the preservation of natural resources and scenic resources, and the provision of land for outdoor recreation
- Energy resources and planning for climate change impacts

Table 5-7 provides the Biological Resources goals and policies established by the *Ventura County 2040 General Plan* that are applicable to the project (Ventura County 2020).

**Table 5-7. Ventura County Biological Resources Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>Goal COS-1: Biological Resources</b>	<i>To identify, preserve, protect, and restore sensitive biological resources, including federal and state-designated endangered, threatened, rare, or candidate species and their supporting habitats; wetland and riparian habitats; coastal habitats; habitat connectivity and wildlife corridors; and habitats and species identified as “locally important” by the County.</i>
Policy COS-1.1: Protection of Sensitive Biological Resources	<i>The County shall ensure that discretionary development that could potentially impact sensitive biological resources be evaluated by a qualified biologist to assess impacts and, if necessary, develop mitigation measures that fully account for the impacted resource. When feasible, mitigation measures should adhere to the following priority: avoid impacts, minimize impacts, and compensate for impacts. If the impacts cannot be reduced to a less than significant level, findings of overriding considerations must be made by the decision-making body.</i>
Policy COS-1.4: Consideration of Impacts to Wildlife Movement	<i>Consideration of Impacts to Wildlife Movement. When considering proposed discretionary development, County decision-makers shall consider the development’s potential project-specific and cumulative impacts on the movement of wildlife at a range of spatial scales including local scales (e.g., hundreds of feet) and regional scales (e.g., tens of miles).</i>
Policy COS-1.5: Development Within Habitat Connectivity and Wildlife Corridors	<i>Development within the Habitat Connectivity and Wildlife Corridors overlay zone and Critical Wildlife Passage Areas overlay zone shall be subject to the applicable provisions and standards of these overlay zones as set forth in the Non-Coastal Zoning Ordinance.</i>
Policy COS-1.7: Balancing Resource Preservation and Flood Protection	<i>The County shall require that discretionary development and County-initiated projects balance the preservation of streams, wetlands, and riparian habitats with the need to adequately protect public safety and property from flooding hazards by incorporating natural or nature-based flood control infrastructure, (e.g., wetland restoration, soil conservation, vegetated levees), when feasible.</i>
Policy COS-1.9: Agency Consultation Regarding Biological Resources	<i>The County shall consult with the California Department of Fish and Wildlife, the Regional Water Quality Control Board, the U.S. Fish and Wildlife Service, National Audubon Society, California Native Plant Society, National Park Service for development in the Santa Monica Mountains or Oak Park Area, and other resource management agencies, as applicable during the review of discretionary development applications to ensure that impacts to biological resources, including rare, threatened, or endangered species, are avoided or minimized.</i>
Policy COS-1.10: Evaluation of Potential Impacts of Discretionary Development on Wetlands	<i>The County shall require discretionary development that is proposed to be located within 300 feet of a wetland to be evaluated by a County-approved biologist for potential impacts on the wetland and its associated habitats pursuant to the applicable provisions of the County’s Initial Study Assessment Guidelines.</i>
Policy COS-1.11: Discretionary Development Sited Near Wetlands	<i>The County shall require discretionary development to be sited 100 feet from wetland habitats, except as provided below. The 100-foot setback may be increased or decreased based upon an evaluation and recommendation by a qualified biologist and approval by the decision-making body based on factors that include, but may not be limited to, soil type, slope stability, drainage patterns, the potential for discharges that may impair water quality, presence or absence of endangered, threatened or rare plants or animals, direct and indirect effects to wildlife movement, and compatibility of the proposed development with use of the wetland habitat area by wildlife. Discretionary development that would have a significant impact on a wetland habitat shall be prohibited unless mitigation measures are approved that would reduce the impact to a less than significant level. Notwithstanding the foregoing, discretionary development that would have a significant impact on a wetland habitat on land within a designated Existing community may be approved in conjunction with the adoption of a statement of overriding considerations by the decision-making body.</i>

Source: Ventura County 2020

### 5.3 Assessment Methods and Thresholds of Significance

This impact analysis focuses on potential effects on biological resources associated with implementation of the Pure Water Project. The analysis used available information regarding the biological resource characteristics of the project area and applicable regulations and guidelines. Pursuant to the CEQA Guidelines, impacts on biological resources may occur if the program or project would result in the following:

- 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 CDFW or USFWS
- 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 CDFW or USFWS
- A substantial adverse effect on state or federally protected wetland (including marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state Habitat Conservation Plan

The project area is not within the approved plan area of a Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state Habitat Conservation Plan; therefore, impacts associated with habitat conservation plans are not discussed further.

### 5.4 Environmental Impacts

Table 5-8 summarizes potential biological resource impacts, which are described after the table.

**Table 5-8. Summary of Biological Resources Impacts**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Pipelines	Malibu Creek
Impact 5-1: Special-status Species	Plants: Significant and Unavoidable Wildlife: Less than Significant with Mitigation	Plants: Significant and Unavoidable Wildlife: Less than Significant with Mitigation	Plants: Significant and Unavoidable Wildlife: Less than Significant with Mitigation	Less than significant
Impact 5-2: Riparian Habitat	Less than significant	Less than significant	Less than significant	Less than significant
Impact 5-3: Wetlands	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	-
Impact 5-4: Wildlife Corridors	Less than significant	Less than significant	Less than significant	-
Impact 5-5: Oak Trees	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	-



#### 5.4.1 Impact 5-1: Special-status Species

This section describes potential impacts to special-status species that may occur at the Alternative 1 Agoura Road AWPf site or the Alternative 2 Reservoir AWPf site, or along pipeline corridors. The discussion separately addresses both special-status plants (along with plant communities) and special-status wildlife. Additionally, this section discusses the potential impact to special-status species in Malibu Creek.

##### 5.4.1.1 Alternative 1 Agoura Road Advanced Water Purification Facility

The only special-status plant species observed at the Agoura Road AWPf site was the Ojai navarretia. Agoura Hills dudleya were observed on rocky outcrops outside of the site boundary and outside of the proposed development footprint. No other special-status species are expected to occur at this project site.

Project grading and development would result in the loss of 11 subpopulations, containing approximately 500 individual Ojai navarretia plants that may serve as a seed bank for this species. In addition, the site contains 0.11 acre of sensitive natural communities (excluding oak trees, which are discussed under Impact 5-5). The Pure Water Project will implement *Mitigation Measure 5-1, prepare and implement a mitigation plan for special-status plants and plant communities*, but project impacts would remain significant and unavoidable.

Although no special-status wildlife species have been found at the site, potentially occurring special-status wildlife includes:

- Coastal California gnatcatcher
- Coastal whiptail
- Southern California legless lizard
- Western pond turtle
- Bats
- Other migratory birds

Habitat loss from the development of the proposed project is not anticipated to significantly impact special-status wildlife species due to the relatively low acreage, proximity to existing development, and the amount of remaining suitable habitat in the surrounding area. Potential impacts to special-status wildlife, including migratory birds, could occur during construction activities. With the implementation of *Mitigation Measure 5-2, preconstruction surveys for special-status wildlife that potentially occur within construction areas*, the impact would be less than significant.

##### 5.4.1.2 Alternative 2 Reservoir Advanced Water Purification Facility

There are no special-status plants within the footprint and grading area for the Reservoir AWPf, but the AWPf site is mostly within a sensitive natural community (clustered tarweed – annual grass fields association). There are an undetermined number of special-status plant subpopulations and native plant communities along the access road that would be removed during grading and road construction. The Pure Water Project will implement *Mitigation Measure 5-1, prepare and implement a mitigation plan for special-status plants and plant communities*. However, until the number and species of the special-status plants to be removed are determined, project impacts to these special-status plants and plant communities are potentially significant and unavoidable.

Although no special-status wildlife species have been found at the site, potentially occurring special-status wildlife includes:

- Coastal California gnatcatcher
- Coastal whiptail
- Southern California legless lizard
- Western pond turtle
- Bats
- Other migratory birds

Habitat loss from the development of the proposed project is not anticipated to significantly impact special-status wildlife species due to the relatively low acreage, proximity to existing development, and the amount of remaining suitable habitat in the surrounding area. Potential impacts to special-status wildlife, including migratory birds, could occur during construction activities. With the implementation of *Mitigation Measure 5-2, preconstruction surveys for special-status wildlife that potentially occur within construction areas*, the impact would be less than significant.

#### 5.4.1.3 Pipelines

The botanical surveys performed in spring and summer 2022 evaluated the potential occurrence of special-status plant species and mapped vegetation communities. Lyon's pentachaeta, Catalina mariposa lily, and slender mariposa lily are known to occur along the pipeline corridor within Triunfo Creek Park and may be affected by pipeline construction. Similarly, Agoura Hills dudleya and Southern California black walnut occur along the Conejo Canyon Open Space Trail. In this area, special-status plants and plant communities may be affected by project construction, but all disturbance associated with pipeline installation is expected to stay within the trail footprint.

Overall, pipeline installation may result in the loss of special-status species plant species and natural communities and would remove an unknown number of individuals. The Pure Water Project will implement *Mitigation Measure 5-1, prepare and implement a mitigation plan for special-status plants and plant communities*. However, until the number and species of the special-status plants and plant communities to be removed are determined, project impacts would be potentially significant and unavoidable.

Although no special-status wildlife species have been found in the pipeline areas, potentially occurring special-status wildlife includes:

- Least Bell's vireo
- Coastal California gnatcatcher
- Coastal whiptail
- Southern California legless lizard
- Arroyo chub
- Western pond turtle
- Bats
- Other migratory birds

Habitat loss from pipeline construction is not anticipated to significantly impact special-status wildlife species due to the relatively low acreage, proximity to existing development, and the amount of remaining suitable habitat in the surrounding area. Potential impacts to special-status wildlife, including migratory birds, could occur during construction activities. With the implementation of *Mitigation Measure 5-2, preconstruction surveys for special-status wildlife that potentially occur within construction areas*, the impact would be less than significant.

#### 5.4.1.4 Malibu Creek

No project-related construction would occur in Malibu Creek. Project effects would be limited to changes in Malibu Creek streamflows associated with elimination of Tapia WRF discharges, except under an operational emergency or qualifying storm event. No significant changes to flows in Malibu Creek downstream of the Tapia WRF are anticipated from April 15 to November 15 because discharges are currently prohibited during this time period under the existing NPDES permit.

With implementation of the project, discharges from Tapia WRF would change from November 15 to April 15, and there would be a reduction in the occasional peak flows that occur during this time period (Figure 11-5 in Chapter 11, Hydrology and Water Quality). However, these reductions would not substantially affect the magnitude or timing of flows that facilitate adult steelhead immigration, spawning, incubation, and juvenile outmigration in Malibu Creek.

In addition, the JPA is currently building a summer flow augmentation project, consisting of a new pipeline to convey water into Malibu Creek from a nearby Metropolitan potable water pipeline after additional treatment at the existing Tapia WRF overflow structure (JPA 2019). This new pipeline would help maintain minimum instream flows in Malibu Creek during the summer and would support maintaining the instream flow requirements once the Pure Water Project is in operation.

Aquatic habitat conditions, including the proportion of riffles, glides, and pool habitats, would continue to vary annually and with flows, but would remain within the range experienced prior to project implementation. Bank stability and vegetative cover in the various reaches of Malibu Creek are not anticipated to change relative to existing conditions. Because the changes in hydrology would not substantially affect peak flows and sediment transport, substrate size classes in the reaches would continue to vary as sediments move through the system and downstream to the lagoon, but are anticipated to remain within the range experienced prior to project implementation. The existing suboptimal physical habitat conditions are expected to continue in Malibu Creek. Therefore, the project would have less than significant impacts on Southern California steelhead and its critical habitat.

Similarly, the changes in hydrology would not affect sediment transport or flows entering Malibu Lagoon. As noted in the sediment transport analysis for the Malibu Creek Ecosystem Restoration Study (USACE and CDPR 2017), little sediment transport would occur for flows less than 200 cfs. Flows greater 200 cfs, when sediment transport would occur, are not common in Malibu Creek, occurring on average a few times a year (Figure 11-5 in Chapter 11, Hydrology and Water Quality).

With implementation of the project, discharges from Tapia WRF would be eliminated, except under an operational emergency or qualifying storm event, resulting in fewer days when sediment transport would occur in the reaches of Malibu Creek upstream of Rindge Dam. Currently, most silt and clay carried along Malibu Creek pass over the top of Rindge Dam, while the decrease in slope caused by the dam allows some sand and larger sizes to deposit (USACE and CDPR 2017). Rindge Dam serves as a sediment sink, collecting sediments transported from upstream during peak flow events and moderating sediment inputs and transport into the downstream reaches and Malibu Lagoon. Therefore, the project would have a less than significant impact on conditions in the lagoon for tidewater goby and its critical habitat.

### **5.4.2 Impact 5-2: Riparian Habitat**

No riparian habitat is expected to be affected by construction of either of the AWPf alternative sites or for any of the pipeline sections. Riparian habitat does not exist within the pipeline sections in the Las Virgenes Reservoir and Triunfo Creek Park area or along the Conejo Canyon Open Space Trail. The Arroyo Conejo crossing would occur within the new bridge structure, which is expected to be completed prior to pipeline construction. Other pipeline crossings are in box culverts without riparian habitat present. Therefore, impacts would be less than significant.

No project-related construction would occur in Malibu Creek. Project effects would be limited to changes in streamflows in Malibu Creek associated with the elimination of Tapia WRF discharges, except under an operational emergency or qualified storm event. Because discharges are currently prohibited by the existing NPDES permit from April 15 to November 15, Malibu Creek streamflows downstream of the Tapia WRF would remain similar to existing conditions (that is, near the 2.5-cfs minimum flow for steelhead) during this time period.

With implementation of the project, discharges from Tapia WRF would be eliminated from November 15 to April 15, and there would be a reduction in the occasional peak flows that occur during this time period. However, these reductions would not substantially affect the quantity or composition of riparian vegetation along Malibu Creek. Therefore, the project would have less than significant impacts on riparian vegetation adjacent to Malibu Creek.



### 5.4.3 Impact 5-3: Wetlands

This section describes potential impacts to wetlands that may occur at the Alternative 1 Agoura Road AWPf site or the Alternative 2 Reservoir AWPf site, and along the pipeline corridors. Based on recent surveys, four wetland features are known to occur within the development footprint of Pure Water Project facilities, as follows:

- 1) A 0.177-acre wetland at the Alternative 1 Agoura Road AWPf site, located along the southern side of Agoura Road and within the AWPf construction footprint
  - This wetland area also contains 0.04 acres of mulefat thicket, a sensitive natural community
- 2) Along the margins of Las Virgenes Reservoir, where the purified water pipeline enters the reservoir at an area containing California bullrush marsh
- 3) Seasonally flooded aquatic resource complexes at the Alternative 2 Reservoir AWPf site
- 4) A 140-foot linear wetland along the edge of the Conejo Canyon Open Space Trail on the concentrate pipeline alignment

In addition to these wetland areas, Other waters of the United States were identified in several areas, including on the Alternative 1 Agoura Road AWPf site, along the access road to the Alternative 2 Reservoir AWPf site, and along the Westlake Vista Trail pipeline corridor. These features are likely to be considered jurisdictional features subject to regulatory review if they cannot be avoided by project construction.

Overall, Pure Water Project feature impacts to these wetlands and Other waters of the United States areas are potentially significant. The impact would be reduced to a less than significant level with the implementation of *Mitigation Measure 5-3, avoid and minimize impacts to jurisdictional waters, including wetlands*.

### 5.4.4 Impact 5-4: Wildlife Corridors

Wildlife movement corridors maintain habitat connectivity across natural community boundaries. Corridors may support daily movement:

- From one foraging habitat to another
- To watering holes
- To denning or roosting sites
- Seasonal movements, including large-scale migrations

Wildlife corridors may be represented by linear habitats, such as:

- Aquatic streams or rivers
- Riparian woodlands along stream courses
- Continuous or interconnected patches of natural habitat surrounded by other types of habitat, such as woodland habitat on hillsides surrounded by lowland grasslands
- Natural habitat surrounded by developed land, such as chaparral surrounded by urban or agricultural land

Movement corridors may also be represented by ridgelines, valleys, or other less-tangible features where wildlife congregate during daily or seasonal movements.

The South Coast Wildlands Missing Linkage Project defined the Santa Monica - Sierra Madre Connection, a north-south linkage from Santa Monica Mountains along the coast to the Santa Susana Mountains and the Sierra Madre Ranges of Los Padres National Forest (South Coast Wildlands 2008). It is one of the few coastal to inland connections remaining in the South Coast Ecoregion. The border of this linkage is north, west, and east of the project area and is an important connection for the Santa Monica

Mountains Significant Ecological Area (SEA), as designated through the Los Angeles County Department of Regional Planning (LACDRP) website (LACDRP 2022). U.S. 101 is the most substantial impediment to movement in the project area.

Animals are able to move through the Santa Monica Mountains SEA in many areas, although wildlife movement is obstructed by development. Due to the size and topographic complexity of the Santa Monica Mountains, many linkages are likely to occur within the SEA at various bottlenecks. These linkages allow movement between large open space areas within the SEA as well as between areas outside the SEA, such as the Simi Hills and the western extent of the Santa Monica Mountains in Ventura County. The genetic flow through these areas is crucial in maintaining the diversity and viability of certain species within the Santa Monica Mountains. Due to the lack of alternative routes and encroachment of development, open space linkages between Kanan Road and Calabasas Parkway along U.S. 101, east of the project area, are of particular importance for continued wildlife movement (LACDRP 2022).

The Wallis Annenberg Wildlife Crossing is under construction approximately 1 mile southeast of the project area, near Liberty Canyon Road in Agoura Hills. The vegetated overcrossing is scheduled to be completed in October 2023 and will be the largest of its kind in the world (Anaya-Morga 2021). The purpose of this crossing is to provide a safe and sustainable passage for wildlife across U.S. 101, which reduces wildlife death and allows for the movement of animals and the exchange of genetic material.

The existing Liberty Canyon Road bridge is regularly used by deer, coyotes (*Canis latrans*), and raccoons, but also provides connectivity for species such as mountain lion (*Felis concolor californicus*) and badger (*Taxidea taxus neglecta*) (South Coast Wildlands 2008). Although movement through the project area could contribute or be a part of this corridor, it is unlikely the Pure Water Project would have an effect, given the existing barriers and proximity to existing development. In addition, the project would not produce new bottlenecks to wildlife movement in the area, with linear features only having short-term effects during construction. Therefore, the impact would be less than significant.

### **5.4.5 Impact 5-5: Oak Trees**

This section describes potential impacts to oak trees that may occur at the Alternative 1 Agoura Road AWPf site or the Alternative 2 Reservoir AWPf site, and along the pipeline corridors. In addition to oak trees themselves, this section also addresses the potential loss of the valley oak – coast live oak woodland natural community. With mitigations, Impact 5-5 would be less than significant.

#### **5.4.5.1 Alternative 1 Agoura Road Advanced Water Purification Facility**

The Alternative 1 Agoura Road AWPf would have oak tree impacts within the site development footprint. Although the AWPf has been sited to fit within a mostly open area, the required AWPf area would affect oak trees and oak tree natural communities both on the building footprint and along the margins of the building pad, including areas of required grading. In total, approximately 36 oak trees are expected to be removed, consisting mostly of valley oaks. Trees to be removed are mostly smaller to mid-sized trees, but six trees (including one large, multi-trunked tree) over 24 inches in diameter would be removed.

The removal of oak trees or substantial encroachments within or near the driplines is a potentially significant impact. Mitigation *Measure 5-4, Prepare and implement a mitigation plan for oak trees and oak tree natural communities* requires the preparation of oak tree mitigation plans, which would reduce impacts to a less than significant level by avoiding trees where feasible and replacing those that are removed.

#### **5.4.5.2 Alternative 2 Reservoir Advanced Water Purification Facility**

There are no oak trees within the footprint and grading area for the Reservoir AWPf itself. There are an undetermined number of oak trees and oak tree natural community areas along the access road that would need to be removed during grading and road construction. Removal of these trees and natural community areas may occur as part of preconstruction site preparation or during construction, which

would be a potentially significant impact. *Mitigation Measure 5-4, prepare and implement a mitigation plan for oak trees and oak tree natural communities* requires the preparation of oak tree mitigation plans, which would reduce impacts to a less than significant level by avoiding trees where feasible and replacing those that are removed.

### 5.4.5.3 Pipelines

Oak trees and oak tree natural communities are known to occur along Pure Water Project pipeline alignments, as follows:

- Along the purified water pipeline to Las Virgenes Reservoir, mostly near the Pentachaeta Trail trailhead in Triunfo Creek Park
- Within Los Robles Greens golf course along the proposed alignment of the source water augmentation pipeline

Oak tree impacts are expected to occur because of pipeline construction. Within Triunfo Creek Park, sufficient space appears to be available to construct the purified water pipeline without removing any trees. However, some construction activity encroachment within or near the driplines of approximately eight oak trees is likely to occur. Within Los Robles Greens golf course, source water augmentation pipeline construction may require the removal of 3 oak trees, with encroachment of construction activity within or near the driplines of 16 additional oak trees (City of Thousand Oaks 2021b).

For these pipeline projects, the removal of oak trees or substantial encroachments within or near the driplines is a potentially significant impact. *Mitigation Measure 5-4, prepare and implement a mitigation plan for oak trees and oak tree natural communities* requires the preparation of oak tree mitigation plans, which would reduce impacts to a less than significant level by avoiding trees where feasible and replacing those that are removed.

## 5.5 Mitigation Measures

Based on the analysis, mitigation is required for:

- Special-status plants
- Special-status wildlife
- Wetlands
- Sensitive natural communities
- Oak trees

The Pure Water Project will implement the following mitigation measures for biological resources.

### **Mitigation Measure 5-1: Prepare and implement a mitigation plan for special-status plants and plant communities**

Special-status plants are likely to be encountered during construction in most natural areas, based on surveys conducted in 2022. Given the Pure Water Project construction timeline and potential for changed conditions, disturbance areas (depending on the selected alternative) should continue to be monitored for special-status plant subpopulations and sensitive natural communities. Prior to initiation of any construction activities that would affect special-status plants, a program will be developed that describes:

- Appropriate avoidance and minimization measures
- Plant salvage and seed collection procedures
- Offsite propagation
- Identification of mitigation areas
- Site preparation and planting of mitigation areas
- Success criteria
- Monitoring and reporting processes



The program will be developed and implemented in coordination with relevant state and federal agencies with responsibilities for special-status plant species protection. Specifically, the program will include the following:

- Preconstruction surveys of the disturbance areas will be performed by a qualified botanist during the appropriate season for detection. Surveys will follow standard survey protocols for rare plants, primarily the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000) and *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).
  - If suitable relocation areas occur on or near the affected sites, surveys will also include these potential relocation areas to provide background data for determining transplant success.
- The project will avoid impacts on rare, endangered, and threatened plants to the maximum extent possible. For impacts on CESA-listed or ESA-listed species, the JPA will consult with CDFW or the USFWS to obtain appropriate take authorization prior to any ground-disturbing activities and vegetation removal.
- Special-status plants and plant communities that can be avoided will include protection measures to minimize the potential for accidental disturbance. Temporary construction fencing will be installed around protected zones adjacent to the disturbance areas. Fencing will be maintained during construction, and construction crews will be informed about the need to avoid these areas.
- An avoidance and relocation plan will be developed and implemented to address special-status plants that cannot be avoided. The plan will be submitted to CDFW for review, and the JPA will resolve CDFW concerns and comments. No ground-disturbing activities or vegetation removal will occur until the plan is implemented. The plan will address and describe methods for:
  - Topsoil salvage to preserve the seed bank
  - Seed collection, storage, nursery propagation, and planting
  - Salvage and planting of other plant propagules
  - Location of relocation areas on- and offsite
  - A land protection plan for relocation areas
  - Methods for monitoring and reporting, including success criteria and adaptive management measures and contingency plans for achieving success; monitoring will occur for a minimum of 5 years
- For impacts on special-status species, the JPA will provide compensatory mitigation at an appropriate ratio to be determined based on site conditions and in consultation with CDFW and, if necessary, USFWS. Compensatory mitigation will be provided for the total number of plants and total acreage of habitat supporting those plants impacted.
- For impacts on natural community alliances or associations, the JPA will provide compensatory mitigation at an appropriate ratio to be determined based on site conditions and in consultation with CDFW. Mitigation will replace the natural community alliance or association that was affected. Areas that may be affected by permanent fuel modification will be included as part of the total acreage requiring compensation.
- If relocation is not possible or if there is a lack of success during the monitoring period, then purchase of mitigation credits or suitable offsite properties (including conservation easements) may be used to fulfill these obligations. The JPA will purchase credits prior to any ground-disturbing activities or vegetation removal.

### **Mitigation Measure 5-2: Perform preconstruction surveys and construction monitoring for special-status wildlife species**

~~Prior to the start of construction activities within potentially suitable habitat, perform the following surveys for special-status wildlife species:~~

The JPA will retain qualified biologists with appropriate handling permits or will obtain appropriate handling permits to the start of capture, temporarily possess, and relocate special-status wildlife to avoid harm or mortality in connection with project construction and activities.

A qualified biologist will prepare a Worker Environmental Awareness Training. The biologist will communicate to workers that, upon encounter with a special-status species, work must stop, the biologist must be notified, and work may only resume once a qualified biologist has determined it is safe to do so.

A qualified biologist will prepare a Wildlife Relocation and Avoidance Plan. The plan will describe the special-status species that could occur within the project site and proper avoidance, handling, and relocation protocols. The plan will include species-specific avoidance buffers and suitable relocation areas at least 200 feet outside of the project site. The biologist will submit a copy of the Wildlife Relocation and Avoidance Plan to CDFW for approval prior to any clearing, grading, or excavation work on the project site.

To avoid direct injury and mortality of special-status wildlife, a qualified biologist will be onsite to move out of harm's way wildlife of low mobility that would be injured or killed. Wildlife will be protected, allowed to move away on its own (non-invasive, passive relocation), or relocated to suitable habitat adjacent to the project site. In areas where a special-status species is found, work may only occur in these areas after a qualified biologist has determined it is safe to do so. Even so, a qualified biologist will advise workers to proceed with caution. A qualified biologist will be onsite daily during initial ground and habitat-disturbing activities as well as vegetation removal. Then, the biologist will be onsite weekly or every other week for the remainder of the activity until the cessation of all ground- and habitat-disturbing activities, as well as vegetation removal, so that no wildlife is harmed.

If any special-status wildlife is harmed during relocation or a dead or injured animal is found, work in the immediate vicinity will stop immediately, the qualified biologist notified, and the dead or injured animal documented immediately. A formal report will be sent to the appropriate agency within 3 days of the incident or finding. The report will include the date, time of the finding or incident (if known), location of the carcass or injured animal, and circumstances of its death or injury (if known). Work in the immediate vicinity may only resume once the proper notifications have been made and additional mitigation measures have been identified to prevent additional injury or death.

A qualified biologist will conduct species-specific and season-appropriate surveys for the following species where suitable habitat occurs in the project site. Positive detections of special-status species and suitable habitat at the detection location will be mapped. If species are detected, the biologist will use visible flagging to mark the detection location.

- Least Bell's Vireo: Perform protocol surveys within the Conejo Canyons Open Space and where there is habitat for least Bell's vireo in the project area. Surveys will adhere to the USFWS *Least Bell's Vireo Survey Guidelines* (USFWS 2001). A final survey report (including negative findings) will be provided to USFWS and CDFW within 45 days following completion of the survey effort. A final survey report will be submitted to USFWS and CDFW prior to any project-related ground-disturbing activities and vegetation removal.

If least Bell's vireo is present in the project area, the JPA will fully avoid impacts. A final Least Bell's Vireo Avoidance Plan will be developed prior to implementing project-related ground-disturbing activities and vegetation removal.

To fully avoid impacts to least Bell's vireo, no ground-disturbing activities, including staging, or disturbances to native and non-native vegetation, will occur during the least Bell's vireo breeding season from March 15 through September 15 to avoid take of least Bell's vireo birds, nestlings, or eggs. If construction activities occur within this time, nesting bird surveys will be conducted. Active least Bell's vireo nests will be avoided with a 500-foot buffer delineated by high-visibility flagging. Construction activities will not continue within the buffer until the young have fledged or the nest is no longer active.

If impacts to least Bell's vireo cannot be avoided, the JPA will consult with the USFWS and CDFW to obtain take authorization. Appropriate take authorization will be obtained prior to any ground-disturbing activities and vegetation removal.

- Coastal California Gnatcatcher: Protocol presence or absence surveys for coastal California gnatcatcher will be performed by a qualified biologist with a USFWS Section 10(a)(1)(A) permit. If coastal California gnatcatcher are present, the Pure Water Project and its contractors will avoid impacting occupied habitat by maintaining a 500-foot buffer. In addition, no construction activities will occur within 500 feet of an active nest. Buffers will be maintained until young have fledged (left the nest on their own), as determined by the biologist, or the nest is no longer active. Buffers will be delineated by high-visibility fencing. If these avoidance techniques are not feasible, USFWS and CDFW will be contacted regarding alternative avoidance measures for the species.

If coastal California gnatcatcher is present, the JPA will consult with the USFWS to determine whether the project would result in take. Consultation with the USFWS to comply with the ESA is advised well in advance of any ground-disturbing activities or vegetation removal that may impact the gnatcatcher. If a take permit from the USFWS is needed, the JPA will comply with the mitigation measures detailed in the permit.

If the project would result in permanent loss of gnatcatcher habitat, the JPA will provide replacement habitat at no less than 2:1 for the total acreage of affected habitat. Assurances for long-term protection of replacement habitat will be provided by the JPA prior to any ground-disturbing activities or vegetation removal that may impact gnatcatcher.

- ~~Special-status Reptiles: A preconstruction clearance survey will be performed by a qualified biologist 24 hours prior to the start of construction activities. If a western pond turtle, Southern California legless lizard, or coastal whiptail is observed in or near an active work area, project activities within 50 feet will be stopped immediately, and a qualified biologist will be consulted to evaluate the situation. The biologist may reduce the avoidance buffer at their discretion if avoidance of the reptile is possible. Work will not start again until the animal leaves the site on its own or a biologist is able to move the animal out of the area with CDFW approval.~~
- California Legless Lizard and Coastal Whiptail: Surveys will be scheduled during the summer months (June and July) when these animals are most likely to be encountered. Surveys will be conducted with parallel transects at approximately 20 feet apart and walked onsite in appropriate habitat for each species. Suitable habitat consists of areas of sandy, loose, and moist soils, typically under sparse vegetation of scrub, chaparral, and within the duff of oak woodlands.
- Western Pond Turtle: Surveys will be conducted during the time of greatest pond turtle activity, typically during the breeding season (May through July) and when pond turtles have not left the water to aestivate or overwinter in the uplands. Surveys and potential habitats will follow the USGS Western Pond Turtle (*Emys marmorata*) Visual Survey Protocol for the Southcoast Ecoregion (USGS 2006).
- Nesting Birds: Preconstruction nesting bird surveys will be performed by a qualified biologist within 500 feet of the construction area no more than 147 days prior to construction when work activities in that area begin (or resume after 2 or more weeks of inactivity) between February 1 and August 31. If the construction area and within 500 feet of the construction area has nesting habitat for raptors, surveys for nesting raptors will begin January 1 to avoid take of birds, raptors, or their eggs.

~~Should an active nest be observed, a qualified biologist will determine proper buffers for construction as needed~~implement a minimum buffer of 300 feet around the migratory bird species nests and 500 feet around active raptor nests. The qualified biologist will notify CDFW of buffers established around any active nests of protected species. Buffers will be maintained until young have fledged (left the nest on their own), as determined by a qualified biologist, or the nest is no longer active.

The biologist will monitor active nests daily when construction is occurring and assess the effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist ~~may~~will increase the minimum buffer and recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by a monitor, work ~~may~~will be stopped or

redirected to other areas until the nesting and fledging is completed or the nest has otherwise become inactive.

- Bats: Prior to construction, a qualified biologist will complete a habitat assessment for special-status bats to identify potential maternity roost sites or substantial day roost sites. If special-status bat roost sites are identified, then a qualified biologist will complete acoustical monitoring surveys and visual surveys at dusk to identify roost locations and types, the species composition, and number of occupants.

If a maternity roost is present, the biologist will determine the extent of the construction buffer around the active roost. The buffer will be maintained from April 1 until the young are flying, typically after August 31. If a roost is present in a bridge or tree in or adjacent to the construction area, the biologist will determine the likelihood of disturbance. The impact of roost eviction rather than roost protection will be evaluated, and roost eviction will occur only when necessary. Any necessary roost eviction will occur at night, between September 1 and March 31 outside the maternity season unless the roost is determined to be a non-maternity roost occupied only by males.

- Arroyo Chub and Western Pond Turtle: The JPA will fully avoid all impacts to arroyo chub and western pond turtle along Arroyo Conejo. No work will occur on the stream banks adjacent to Arroyo Conejo during the winter rainy season, typically between December 1 and March 31. Additionally, no work will occur during the combined rainy season and breeding season for arroyo chub (February 1 through August 31) and western pond turtle (March 1 through July 15).

For work occurring near Arroyo Conejo, the JPA will monitor construction noise to confirm noise does not affect wildlife in the adjacent river habitat. Construction equipment will use noise-reduction features (such as mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. Stationary noise sources, such as generators and pumps, at staging areas within 1,400 feet of sensitive receptors should be shielded at the source by an enclosure, temporary sound walls, or acoustic blankets. Where feasible, sound walls or acoustic blankets should have a height of no less than 8 feet, a Sound Transmission Class of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts. Unnecessary construction vehicle use and idling time should be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, the engine should be shut off.

### **Mitigation Measure 5-3: Avoid and minimize impacts to jurisdictional waters, including wetlands**

The Pure Water Project may affect some watercourses identified in undeveloped areas, with an unavoidable wetland impact along Agoura Road (Alternative 1 Agoura Road AWPf only) and at the Las Virgenes Reservoir site (Alternative 2 Reservoir AWPf only). For all impacts to jurisdictional waters, including wetlands, that cannot be avoided, permits must be obtained from the appropriate state and federal agencies. The JPA will notify the appropriate agencies – expected to be the USACE, Regional Board, and CDFW – prior to any ground-disturbing activities and vegetation removal, including staging, near streams. Notifications will be consistent with the permit application submittal requirements in effect at the time of submittal. For these impacts, the Pure Water Project will evaluate all construction footprints in undeveloped areas to avoid and minimize impacts to jurisdictional waters. Avoidance and minimization measures may include:

- Maintain a construction buffer from the jurisdictional limits by installing construction fencing to prevent encroachment. If possible, the fencing will be installed at least 10 feet from the jurisdictional limits.
- Locate construction staging, including equipment and materials storage, away from the jurisdictional limits, preferably at least 50 feet away.
- Implement erosion control measures as prescribed by a Stormwater Pollution Prevention Plan (SWPPP) or Erosion Control Plan. Chapter 8, Geology and Soils (including Mitigation Measure 8-2) and Chapter 11, Hydrology and Water Quality, provide further discussion.

For impacts to wetlands that cannot be avoided, compensatory mitigation will be provided. The JPA will provide compensatory mitigation by purchasing credits at an approved mitigation bank within the region



or by paying in-lieu fees. Credits or in-lieu fees will be provided at a ~~1 to 1~~ appropriate ratio subject to the specific requirements of each agency at no less than 1:1.

### **Mitigation Measure 5-4: Prepare and implement a mitigation plan for oak trees and oak tree natural communities.**

The Pure Water Project is expected to result in impacts to oak trees and oak tree natural communities, including potential tree removal, in several areas based on a tree survey conducted in 2022. In preparation for construction, a program will be developed that describes:

- Appropriate avoidance and minimization measures
- Identification of oak tree mitigation areas
- Success criteria
- Monitoring and reporting processes

The program will be developed and implemented in coordination with CDFW and affected local agencies with responsibility for oak tree protection. Specifically, the program will include the following:

- Additional surveys by a qualified arborist of all oak trees and oak tree communities to be affected by construction-related disturbance, including both tree removal and encroachment within 5 feet of the driplines of oak trees that will be preserved. In addition to the physical characteristics already recorded, the surveys will include a horticultural evaluation, including physical evidence of disease, identification of pests, and an evaluation of the trees' vigor.
- Oak trees that can be avoided will include protection measures to minimize the potential for accidental disturbance. Temporary construction fencing will be installed around the protected zones of all oak trees to be preserved adjacent to the disturbance areas. Fencing will be maintained during construction, and construction crews informed about the need to avoid these areas.
- All trees identified for removal will be inspected for contagious tree diseases, such as thousand canker fungus (*Geosmithia morbida*), polyphagous shot-hole borer (*Euwallacea* spp.), and goldspotted oak borer (*Agrilus auroguttatus*). To avoid the spread of infectious tree diseases, diseased trees will not be transported from the site without first being treated using best available management practices relevant to each tree disease observed.
- The project will include an oak tree planting plan that includes information on the location of mitigation plantings. Preference is for onsite mitigation within or adjacent to the disturbed areas and areas subject to permanent fuel modification, including as part of site landscaping plans. In addition to oak tree planting, the planting plan will include provisions to maintain the restoration areas in a manner suitable as a natural community. The planting plan will include:
  - Restoration of functioning and self-sustaining woodlands of similar composition, structure, and function as the affected woodlands.
  - Restoration of structurally diverse understory vegetation species (grasses, forbs, shrub, subshrub, and vine) occurring in the affected woodlands; acorns and seedlings will originate from plants and trees of the same species as the affected species
  - Standards for new plantings, such as hole size and depth, soil amendments, irrigation, and protection (for example, tree fences or cages)
  - Planting schedule
  - Measures to control exotic vegetation and protection from herbivory
  - A requirement that four trees will be planted for every oak tree removed that is wider than 4 inches in diameter
  - Methods for monitoring Measurable goals and reporting, including success criteria for establishment of self-sustaining populations based on site and habitat conditions prior to impact and using functional local native oak shrublands and woodlands as reference sites, adaptive

management ~~measures~~techniques, and contingency ~~plans for achieving~~measures if success criteria are not met

- Annual monitoring will ~~occur~~criteria and requirements for a minimum of 5 years
- If mitigation cannot be achieved through oak tree planting or if there is a lack of success during the monitoring period, then payment of in lieu fees to a local agency or conservation organization or purchase of suitable offsite properties (including conservation easements) may be used to fulfill these obligations.

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## 6. Cultural and Paleontological Resources

This chapter assesses potential effects on cultural and paleontological resources. Cultural resources are defined as prehistoric and historic-era buildings, sites, districts, structures, or objects, typically 45 years or older. Paleontological resources are defined as fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. Paleontological resources are older than recorded human history or older than middle Holocene epoch (that is, older than about 5,000 radiocarbon years) (SVP 2010).

This chapter describes the prehistoric and historic setting of the project area, and discusses known cultural and paleontological resources, as well as the cultural and paleontological sensitivity.

In addition, this chapter also identifies applicable state and local regulations; identifies potential impacts from of the Pure Water Project; and proposes mitigation measures, where available, to reduce potentially significant impacts on cultural and paleontological resources.

### 6.1 Existing Setting

Unless otherwise noted, the existing setting description in this section is primarily adapted from the *Calleguas Municipal Water District Las Virgenes Municipal Water District Interconnection Project Final Environmental Impact Report* (Padre Associates, Inc. 2019), which evaluated new water facilities to interconnect the Las Virgenes MWD and Calleguas MWD water systems.

#### 6.1.1 Physiography

The project area lies within the southernmost part of the west-central portion of the Transverse Ranges geologic province of Southern California within the cities of Thousand Oaks, Agoura Hills, and Westlake Village in both Ventura and Los Angeles counties. This province is characterized by east–west trending folds, faults, and mountain ranges.

Project features are situated in an area of distinctive geomorphic features comprising mountains, artificial lakes, and rolling hills. Within the project area is the Conejo Valley, which is approximately 9 miles long and 7 miles wide and situated at an elevation of 800 to 900 feet above sea level.

Geologic conditions within the project area consist of a thin sedimentary soil cover over bedrock. Miocene age Conejo Volcanic rocks are found throughout the project area. These rocks are hard and generally stable. Softer marine sediments of the Topanga, Modelo, and Monterey formations (also of the Miocene age) are found within the eastern and southern parts of the project area; and the Sespe, Llajas, Santa Susana, and Chatsworth formations, which are of Oligocene to Cretaceous age, are found to the north and northeast of the project area. The Pleistocene Saugus Formation is found within the northern project area. Alluvial sediments, Holocene to Pleistocene in age, are found within canyons and the Conejo Valley bottom.

#### 6.1.2 Prehistory

This section describes the prehistory of the project area.

##### 6.1.2.1 Early Period (c. 8000–3350 BP)

Reliable evidence of Holocene (more than 10,000 years ago) settlement in the region begins circa (c.) 8,000 Before Present (BP). The earliest sites were located on terraces and mesas; however, settlement gradually shifted to the coast (Wlodarski 1988). Site assemblages dating to this period often contained substantial amounts of milling stones and manos, crude choppers, and core tools (W&S 1997). Prehistoric peoples used these tools to harvest terrestrial and sea mammals, shellfish, and fish. Mortars



and pestles appear toward the end of the period, suggesting a shift to a greater reliance on acorns (Ventura County 2019).

### 6.1.2.2 Middle Period (c. 3350–800 BP)

Archaeological material dating to the Middle Period represents a significant evolution in hunter-gatherer technology. The presence of chipped stone tools increases and diversifies, projectile points became more common, and fishhooks and plank canoes (*tomol*) appear (Wlodarski 1988; W&S 1997). Burials dating to this period provide evidence of wealth and social stratification, indicating a transition to ranked society (Ventura County 2019). Excavation data from the Santa Monica Mountains demonstrate expansion to the inland region, allowing trade and ceremonial exchange patterns to develop (Ventura County 2005, 2019).

### 6.1.2.3 Late Period (c. 800–150 BP)

The cultural complexity initiated during the Middle Period intensified in the Late Period. Regionally, this period is also referred to as the Chumash Era, as Chumash social and religious development peaked during this time. Villages became the main population centers, with satellite camps established for the seasonal harvest of plants, seeds, game, and material resources (Wlodarski 1988). The Chumash became expert craftspeople of baskets, stone vessels, shell beads, *tomol*, and fishing technology (Ventura County 2005). It is also likely that communication and trade with non-Chumash tribes and villages accelerated during this period (Ventura County 2019).

### 6.1.3 Ethnohistoric Setting

The project area is located primarily within the ethnohistoric territory of the Chumash and the Gabrieliño.

The Chumash largely inhabited the Coast Ranges between San Simeon and Malibu (Kroeber 1925). The Chumash have been divided into several geographic groups, each associated with a distinct language dialect (Hoover 1986). The Chumash living in Ventura County formed the *Ventureño* dialect group of the Chumash language family (Golla 2007). This group was named for their association with the Spanish Mission San Buenaventura, founded in 1782. The Chumash political organization comprised a named village and the surrounding resource areas governed by a chief, known as the *Wot* (Sampson 2022). Some higher status chiefs controlled large chiefdoms containing several villages.

It is likely the project area was included in the chiefdom *Lulapin*, whose limits extended from Malibu to just beyond modern Santa Barbara. The village *Muwu*, at modern Point Mugu, was the main headquarters for this chiefdom (Whitley and Clewlow 1979; Whitley and Beaudry 1991). Other villages included *Shimiyi* (the name Simi is derived from), *Hu'wam* located at the base of Escorpión Peak, and *Ta'apu* located in the Simi valley (Whitley and Clewlow 1979).

According to ethnohistoric studies, inhabitants from different villages bonded through trade, joint ceremonies, and intermarriage (Sampson 2022). The chiefly offices were normally inherited through the male line with a primogeniture rule (that is, the custom of the firstborn inheriting the office) (Hoover 1986). Chiefs had several bureaucratic assistants to help in political affairs and serve as messengers, orators, and ceremonial assistants. Several status positions were associated with specialized knowledge and rituals, such as weather prophet, ritual poisoner, and herbalist (Bean 1974).

The Chumash were a non-agrarian culture and relied on hunting and gathering for their sustenance. Archaeological evidence indicates that the Chumash exploited marine food resources from the earliest occupation of the coast at least 9,000 years ago (Greenwood 1978). Much of their subsistence was derived from pelagic fish, particularly during the late summer and early fall (Hoover 1986). Shellfish were also exploited, including mussel and abalone from rocky shores and cockle and clams from sandy beaches. Acorns were a food staple; they were ground into flour using stone mortars and pestles and then leached to remove tannic acid. In addition, a wide variety of seeds was used, including *chia* from various species of sage.

The Chumash harvested several plants for their roots, tubers, or greens (Hoover 1986). In this area, as elsewhere in California, basketry served many of the functions that pottery did in other places. The Chumash used baskets for cooking, serving, storage, and transporting burdens. Some basket makers wove baskets so tightly that they could hold water, while others waterproofed their baskets by lining them with pitch or asphaltum (Chartkoff and Chartkoff 1984).

The coastal Chumash practiced a regular seasonal round of population dispersal and aggregation in response to the location and seasonal availability of different food resources. In this way, large coastal villages would have been fully populated only in the late summer when pelagic fishing was at its peak. Through winter, the Chumash depended largely on stored food resources. During the spring and summer, the population dispersed through inland valleys to harvest wild plant resources (Landberg 1965).

The Chumash lived in large, hemispherical houses constructed by planting willows or other poles in a circle and bending and tying them together at the top. These structures were then covered with tule mats or thatch. These structures housed 40 to 50 individuals, or 3- to 4-member family groups. Dance houses and sweathouses are also reported for the Chumash (Kroeber 1925).

Archaeological evidence supports observations that twin or split villages existed on opposite sides of streams or other natural features, possibly reflecting the moiety system of native California (Greenwood 1978). Spanish colonization and the establishment of Mission San Buenaventura ended Chumash culture in Ventura County. Chartkoff and Chartkoff (1984) note that Spanish settlement barred many Native Americans from traditionally important resources, including clamshell beads, abalone shells, Catalina steatite, shellfish, and asphaltum. The introduction of European customs and diseases transformed the hunter-gatherers into agricultural laborers and decimated the native population.

According to Sapphos Environmental (2014), at the time of European contact, the Native American group occupying most of Los Angeles and Orange counties was known as the Gabrieliño. Ancestors of the Gabrieliño arrived in the Los Angeles basin in approximately 2500 BP, eventually settling in the area between Topanga Canyon and Aliso Creek, including the watersheds of the Los Angeles, San Gabriel, and Satna Ana rivers, as well as nearby islands. More study is needed about the Gabrieliño political and social organization; but Gabrieliño communities appear to have been self-contained, made up of related family units, and led by a hereditary chiefdom. Evidence suggests the existence of, at minimum, three hierarchically distinct social classes within the Gabrieliño community, comprising an elite class of chiefs and their families, a hereditary middle class based on economic status, and a lower class of less economically established families.

The Gabrieliño used a hunter-gatherer strategy built around larger, primary settlements and smaller, seasonal resource procurement camps. Game species for the Gabrieliño included rabbit, squirrel, deer, snake, rat, and insects. Their hunting technology included the bow and arrow, snares, and traps.

Coastal and aquatic resources were also an important part of the Gabrieliño diet. Shell-gathering camps were established; and aquatic resources included whales, fish, seals, and sea otters. Most fishing took place from the shore, but there was some deep-water fishing using boats.

A wide variety of plant resources were included in the Gabrieliño diet, including:

- Seeds of the Islay plant
- Seeds and shoots of the chia plant
- Roots, bulbs, and sunflower seeds
- Acorns, most importantly

Trade existed between groups of Gabrieliño communities and with outside groups. On Santa Catalina Island, the Gabrieliño inhabitants established a trade industry involving soapstone. The material was exchanged with inland groups, such as the Serrano, for food and luxury resources.

#### **6.1.4 Historic Context**

This section describes the project's historic context.

##### **6.1.4.1 European Exploration (1542–1769)**

Juan Cabrillo, while exploring the California coast, became the first European to travel through the region when he anchored near Point Mugu in October 1542. Over 200 years later, Gaspar de Portolá led the first Spanish land expedition in January 1770, traveling through what is now the Conejo Valley and camping near a Chumash village near present-day Westlake Village (probably *Hipuc*). Juan Crespi, a priest accompanying the expedition, named the campsite El Triunfo del Dulcísimo Nombre de Jesús, the English translation of which is: “The Triumph of the Sweetest Name of Jesus” (Bolton 1926; Browning 1992; Priestley 1937).

Several accounts of this expedition exist, including those of Juan Crespi (Bolton 1926), Miguel Costansó (Browning 1992), and Pedro Fages (Priestley 1937). Costansó's diary contains observations regarding the native inhabitants' houses, settlement patterns, dress, and customs, as well as their attitudes toward the expedition (Browning 1992). Fages noted the general Chumash population was distributed in small, numerous villages (Priestley 1937).

##### **6.1.4.2 Spanish Period (1769–1821)**

In 1776, Juan Bautista de Anza traveled through Ventura County as leader of the San Francisco colonists, stopping near the outlet of the Santa Clara River. This route, known today as the Juan Bautista De Anza National Historic Trail, runs from near Nogales, Arizona to San Francisco, California, and crosses through Ventura County (CATE 2022). Junípero Serra founded Mission San Buenaventura in 1782. Newly baptized Chumash provided almost all the labor to construct and maintain the mission, which included the 7-mile-long aqueduct system that carried water from the Ventura River (Triem 1985).

##### **6.1.4.3 Mexican Period (1821–1850)**

In 1821, Mexico declared independence from Spain; a year later, California became a Mexican Territory. After the secularization of the missions in 1834, former Spanish land grants were gradually transferred to private ownership. Within the project area, the alignment of present-day Lindero Canyon Road formed the approximate boundary between two adjacent land grants: Rancho El Conejo to the west and Rancho Simi to the east. Rancho El Conejo spanned 48,572 acres, and Rancho Simi included 113,009 acres (State Lands Commission n.d.).

##### **6.1.4.4 United States Period (1850–Present)**

The Treaty of Hidalgo formally transferred California to the United States (U.S.) in 1848, and statehood was achieved in 1850. At the time, the area that would become Ventura County was originally the southern portion of Santa Barbara County (Murphy 1979). Within the project area, the Philadelphia and California Petroleum Company purchased most of Rancho Simi in 1858. During the 1860s, Americans settled in the area and raised livestock and crops (State Lands Commission n.d.).

Portions of Rancho El Conejo were purchased by Howard Mills from Minnesota, renaming it Triunfo Ranch. Mills, who owned most of present-day Westlake Village and Hidden Valley, went bankrupt in 1891 and sold Triunfo Ranch to Andrew D. Russell. In 1874, approximately 2,259 acres of what would later be called the Newbury Tract was purchased by Egbert Starr Newbury, a Michigan native (Bidwell 1989). Newbury later gained prominence as Conejo Valley's first postmaster and newspaper reporter. When the Conejo Valley School District was established in March 1877, there were 126 residents living in Conejo Valley (Begun 2006).

## Thousand Oaks

The Janss family acquired 10,000 acres of farmland in the area in the early 20<sup>th</sup> century, with the goal of creating a new community. By 1927, Louis Goebel established the “Lion farm” with exotic animals that later became known as Jungleland. During the 20<sup>th</sup> century, chicken farms, orchards, and dairy farms were located throughout the valley (City of Thousand Oaks 2022a).

On September 29, 1964, the community incorporated and chose the name City of Thousand Oaks. As the area added suburban tracts, approximately 20,000 people lived in the area by the 1980s (City of Thousand Oaks 2022a).

## Agoura Hills

By 1906, Pierra Agoure had acquired almost 17,000 acres of land in present-day Agoura Hills. As agricultural viability improved with increased water pumping technology, orchards and farms were established. In the 1920s, land near Agoura Hills was subdivided and sold to individuals, ostensibly to be used as poultry farms; however, many of these farms proved to be unsustainable. Paramount Studios purchased a ranch in the area for filming, naming the area Picture City. In 1963, the community secured reliable water sources by importing water from the Colorado River. Through the 1960s and 1970s, the community continued to expand; and the number of local businesses, schools, and housing increased (City of Agoura Hills 2010b).

## Westlake Village

A large section of land was purchased for a cattle ranch by the Russell brothers in 1881. In 1925, it was sold to William Randolph Hearst; and in 1943, to Fred Albertson, who used part of the land for filming motion pictures and television shows. In 1963, the ranch was purchased by the American-Hawaiian Steamship Company, and a master plan for a new city was commissioned. Westlake Village was then developed as a planned community. The city bisected the Los Angeles and Ventura county lines. The Los Angeles County section was incorporated into Westlake Village in 1981, while the Ventura County section became part of Thousand Oaks partially in 1968 and the remaining portion in 1972 (City of Westlake Village 2022).

### 6.1.5 Paleontological Setting

The local geology of a project area determines its paleontological potential. The paleontological potential of a geologic unit is inferred from the abundance of fossil specimens or previously recorded fossil sites in exposures of that unit, or of similar units in similar geological settings. The underlying assumption of this assessment method is that a geologic unit is mostly likely to yield fossil remains in a quantity and of a quality similar to those previously recorded from the unit elsewhere in the region (SVP 2010). Figure 6-1 shows the project’s geologic units.

The paleontological potential of a geologic unit reflects (1) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant vertebrate, invertebrate, plant, or trace fossils; and (2) the importance of recovered evidence for proper stratigraphic interpretation, age determination of a geologic unit, paleoenvironmental and paleoclimatic reconstructions, or to understanding evolutionary processes. An individual fossil specimen is considered scientifically important if it is (SVP 2010):

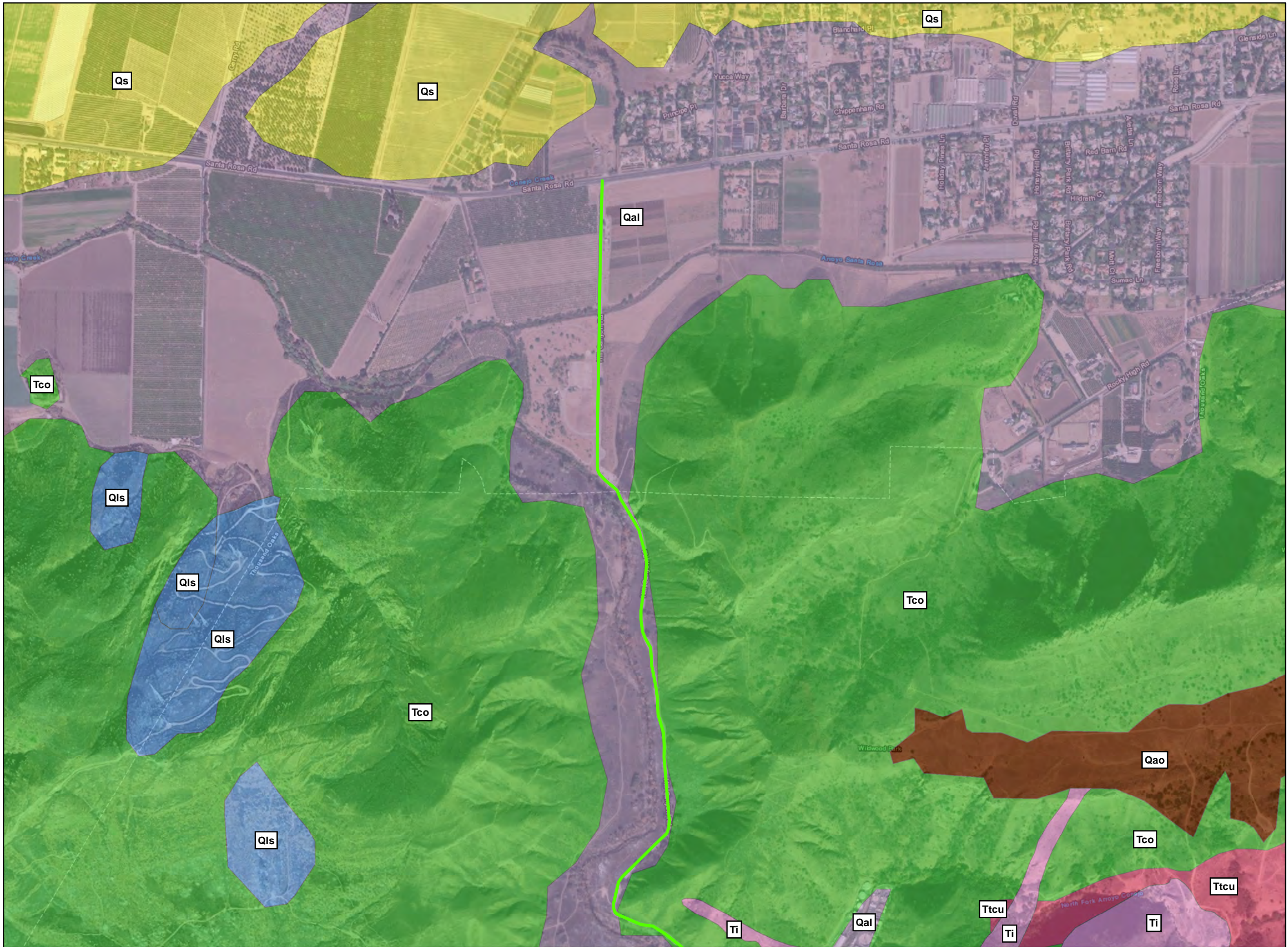
- *Identifiable*
- *Complete*
- *Well preserved*
- *Age diagnostic*
- *Useful in paleoenvironmental reconstruction*
- *A member of a rare species*
- *Askeletal element different from, or a specimen more complete than, those now available for the species*



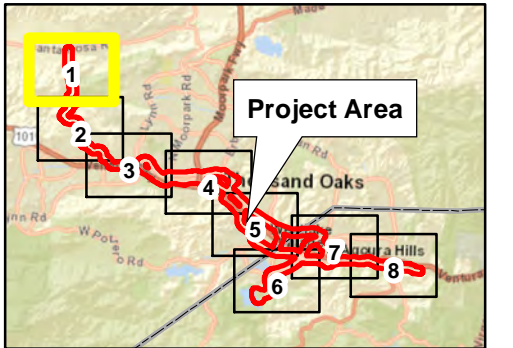
Determining the paleontological potential of a geologic unit helps to determine which units may require mitigation to reduce potential impacts to paleontological resources during project development. In the *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, the Society of Vertebrate Paleontology (SVP) (2010) established the following four categories of paleontological potential of geologic units:

- 1) **High Potential** - *Geologic units from which vertebrate or scientifically important invertebrate, plant, or trace fossils have been recovered are considered to have a High Potential for containing additional scientifically important paleontological resources. Geologic units that contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and geologic units which may contain new vertebrate deposits, traces, or trackways, are also classified as having High Potential.*
- 2) **Low Potential** - *Geologic units with Low Potential are known to produce significant fossils only on rare occasions, and/or only preserve fossils in rare circumstances such that the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium.*
- 3) **No Potential** - *Geologic units with No Potential are those that formed at high temperatures and/or pressures, deep within the earth, such as plutonic igneous rocks, and high-grade metamorphic rocks. Since the environment in which these rocks are formed is not conducive to the preservation of biological remains, they do not contain fossils.*
- 4) **Undetermined Potential** - *Geologic units for which little information is available concerning their geologic context (e.g., depositional environment, age) and/or contained paleontological resources are considered to have undetermined potential. The paucity of data is usually due to a lack of study in that unit or because of high variability in the unit's lithology. Typically, further study is necessary to determine whether these units have High, Low, or No Potential to contain scientifically significant paleontological resources. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.*





- Legend**
- Concentrate Alignment Options
  - Newbury Park 7.5' quadrangle**
  - Qal: Alluvium (Holocene)
  - Qls: Landslide deposits (Holocene and Pleistocene)
  - Qao: Older alluvium (Holocene and Pleistocene)
  - Qs: Saugus Formation (Pleistocene)
  - Ti: Intrusive Rocks (middle and upper Miocene)
  - Tco: Conejo Volcanics (of Topanga Group) (middle Miocene)
  - Ttcu: Topanga Canyon Formation (of Topanga Group) (middle Miocene)



Sources:

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 97-428.

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 97-459.

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

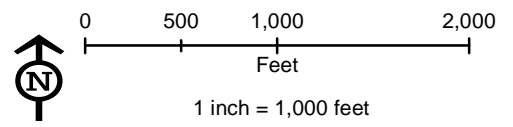
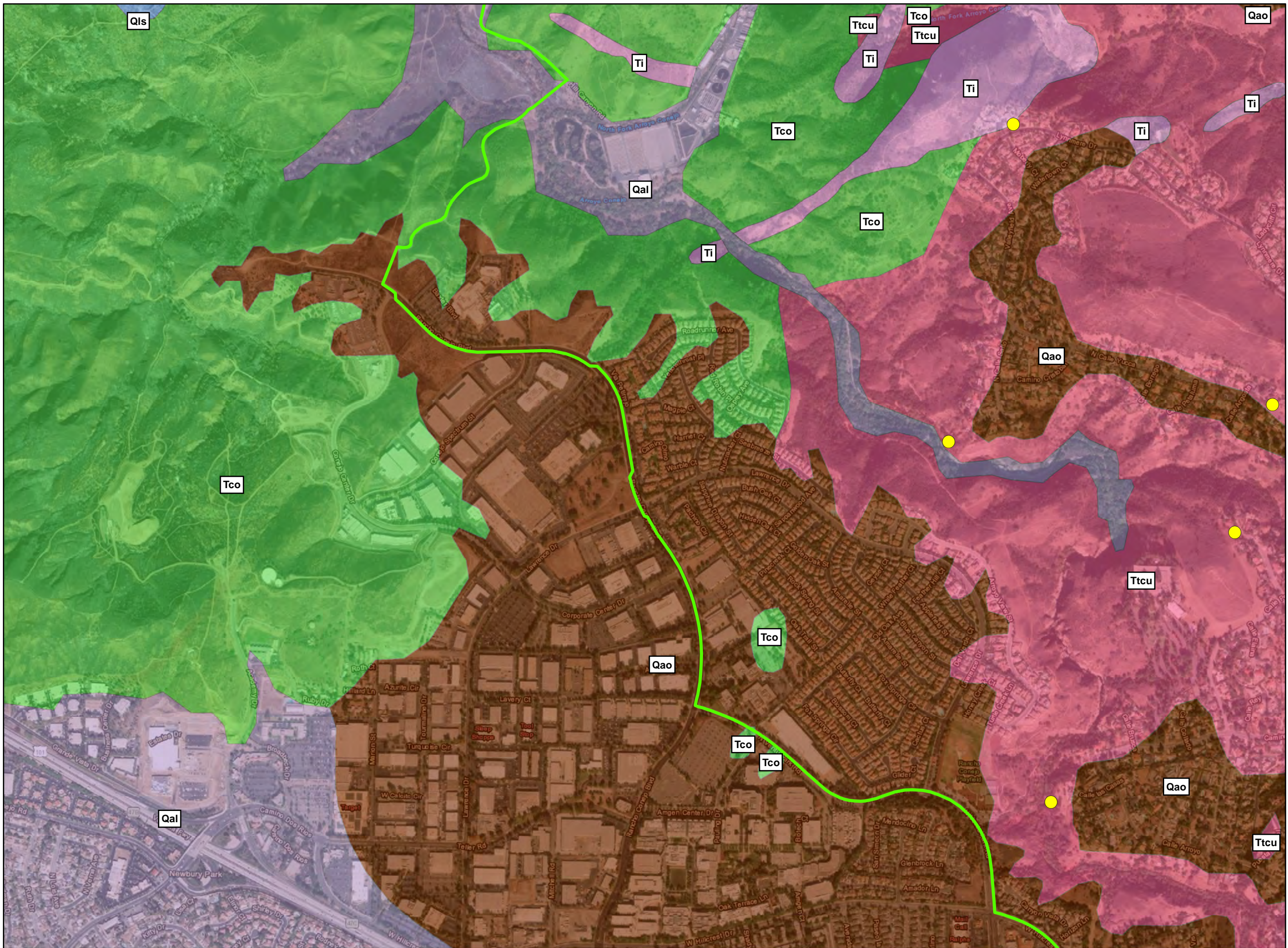


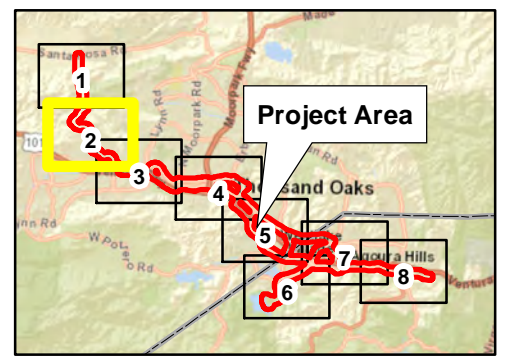
FIGURE 6-1  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo





**Legend**

- Concentrate Alignment Options
- Newbury Park 7.5' quadrangle**
  - Qal: Alluvium (Holocene)
  - Qls: Landslide deposits (Holocene and Pleistocene)
  - Qao: Older alluvium (Holocene and Pleistocene)
  - Ti: Intrusive Rocks (middle and upper Miocene)
  - Tco: Conejo Volcanics (of Topanga Group) (middle Miocene)
  - Ttcu: Topanga Canyon Formation (of Topanga Group) (middle Miocene)
- Fossil Locality



Sources:

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 97-428.

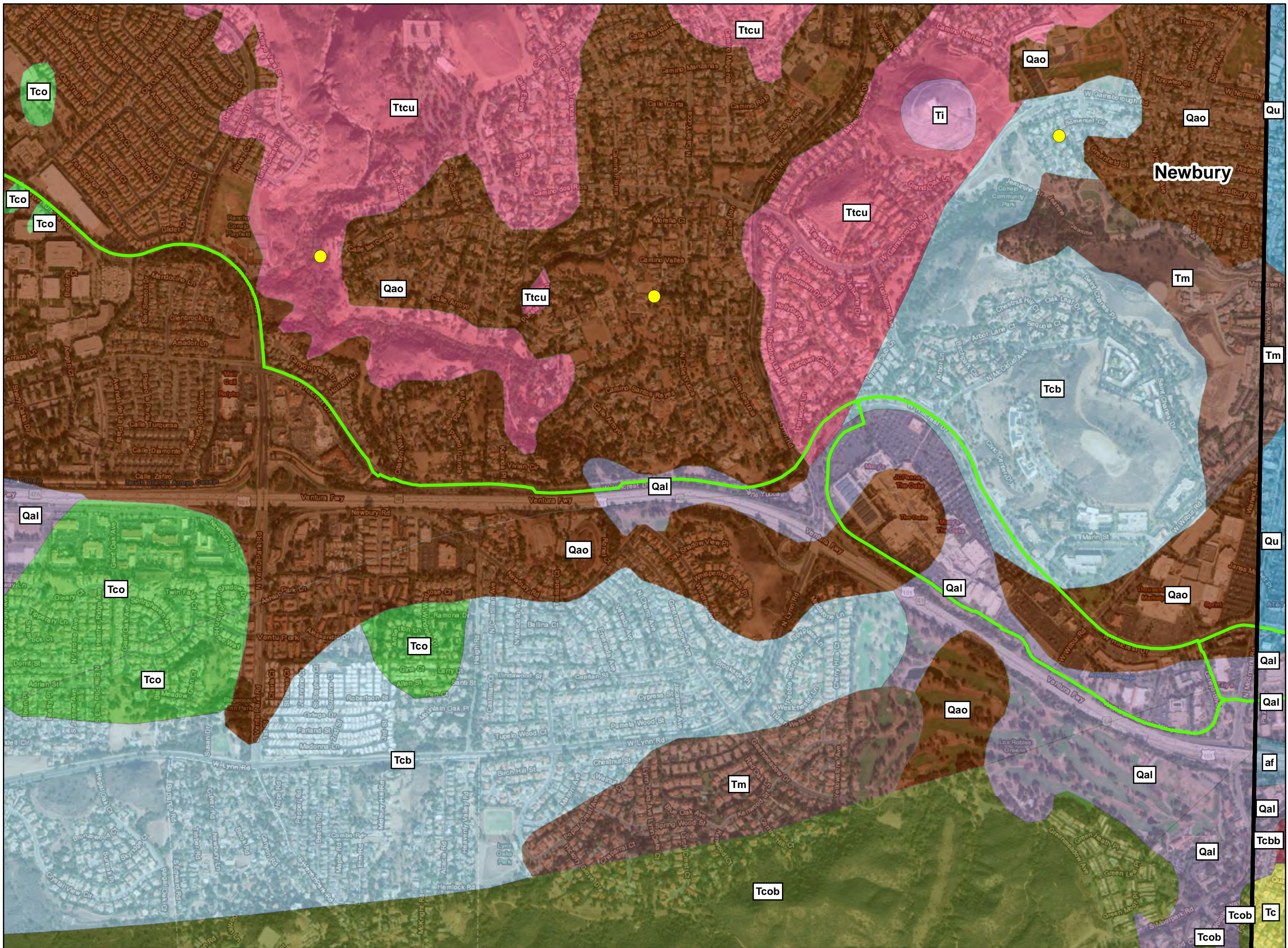
R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 97-459.

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

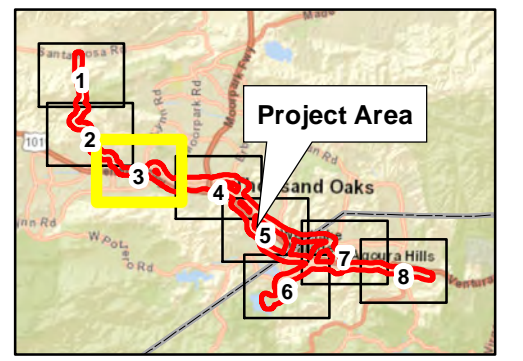
0 500 1,000 2,000  
Feet  
1 inch = 1,000 feet

FIGURE 6-1  
**Geology**  
Pure Water Project Las Virgenes – Triunfo





- Legend**
- Concentrate Alignment Options
  - Newbury Park 7.5' quadrangle**
    - Qal: Alluvium (Holocene)
    - Qao: Older alluvium (Holocene and Pleistocene)
    - Tm: Modelo Formation (middle and upper Miocene)
    - Tcb: Calabasas Formation (of Topanga Group) (middle Miocene)
    - Ti: Intrusive Rocks (middle and upper Miocene)
    - Tco: Conejo Volcanics (of Topanga Group) (middle Miocene)
    - Tcob: Conejo Volcanics (chiefly basaltic) (of Topanga Group) (middle Miocene)
    - Ttcu: Topanga Canyon Formation (of Topanga Group) (middle Miocene)
  - Thousand Oaks 7.5' quadrangle**
    - af: artificial fill (Holocene)
    - Qal: Alluvium (Holocene and late Pleistocene)
    - Qu: Alluvium, undivided (Pleistocene)
    - Tm: Monterey Formation (upper Miocene)
    - Tc: Conejo Volcanics (middle Miocene)
    - Tcbb: Conejo Volcanics (chiefly basaltic) (middle Miocene)
  - Fossil Locality



Sources:

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 97-428.

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 97-459.

R. F. Yerkes and P.K. Showalter. 1991. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 91-2188.

T.W. Dibblee Jr. and H.E. Ehrenspeck. 1993. Geologic Map of the Thousand Oaks Quadrangle, Ventura and Los Angeles Counties, California. 1:24,000 Dibblee Geological Foundation Map DF-49.

R. F. Yerkes and R. H. Campbell. 1995. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 95-88.

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

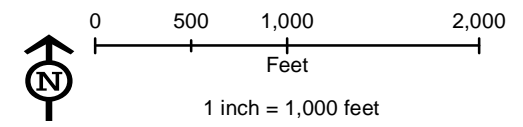
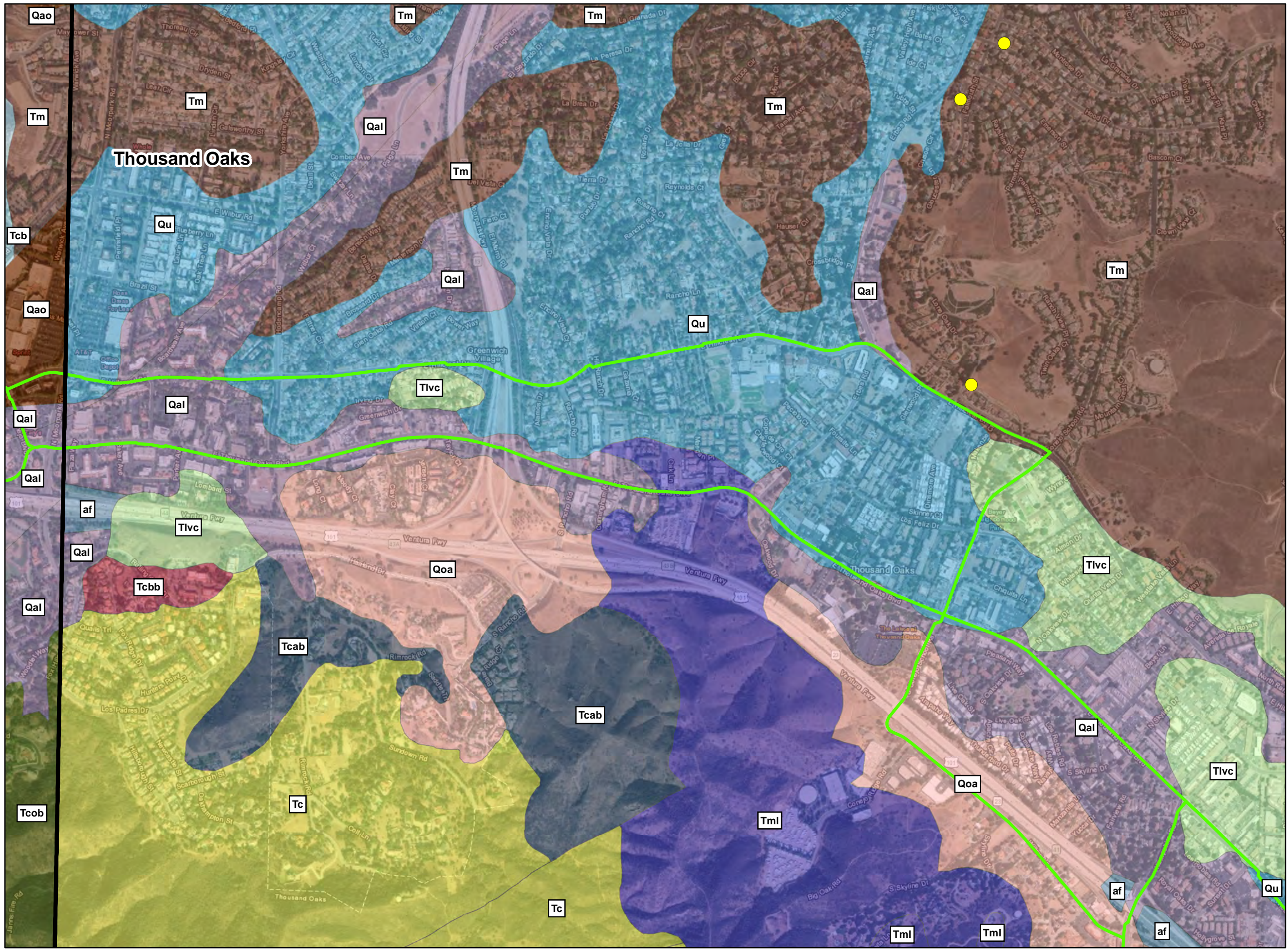
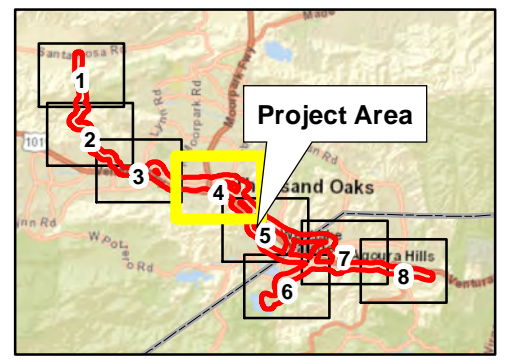


FIGURE 6-1  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo





- Legend**
- Concentrate Alignment Options
  - Newbury Park 7.5' quadrangle**
    - Qal: Alluvium (Holocene)
    - Qao: Older alluvium (Holocene and Pleistocene)
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    - Tcob: Conejo Volcanics (chiefly basaltic) (of Topanga Group) (middle Miocene)
  - Thousand Oaks 7.5' quadrangle**
    - af: artificial fill (Holocene)
    - Qal: Alluvium (Holocene and late Pleistocene)
    - Qu: Alluvium, undivided (Pleistocene)
    - Qoa: Older alluvium (Pleistocene)
    - Tm: Monterey Formation (upper Miocene)
    - Tml: Monterey Formation (lower) (middle Miocene)
    - Tlvc: Detritus derived from Conejo Volcanics (middle Miocene)
    - Tc: Conejo Volcanics (middle Miocene)
    - Tcab: Conejo Volcanics (andesitic to dacitic) (middle Miocene)
    - Tcbb: Conejo Volcanics (chiefly basaltic) (middle Miocene)
  - Fossil Locality



Sources:

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 97-428.

R. F. Yerkes and R. H. Campbell. 1997. Preliminary Geologic Map of the Newbury Park 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 97-459.

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R. F. Yerkes and R. H. Campbell. 1995. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 95-88.

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

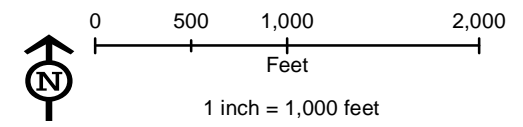
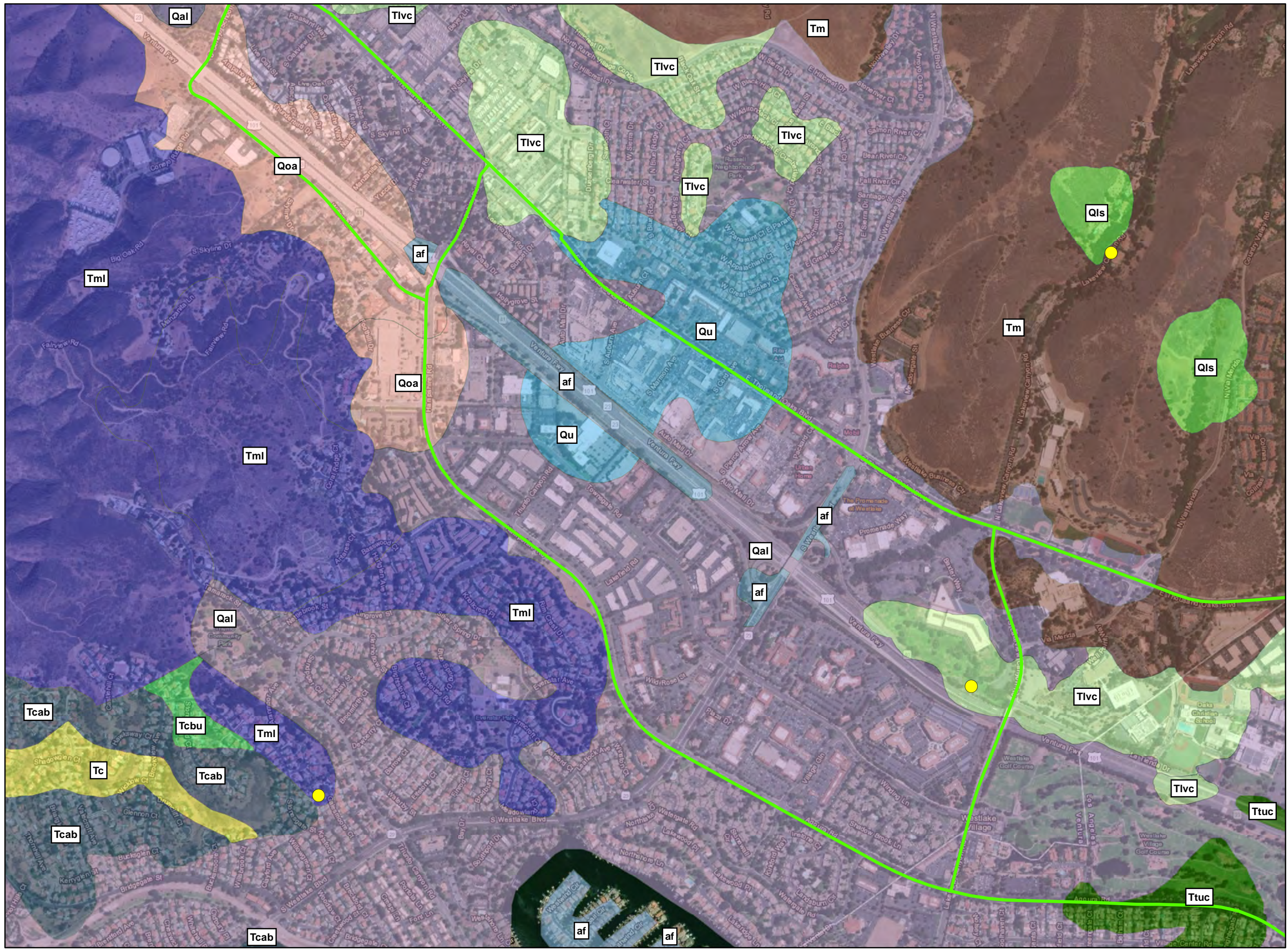


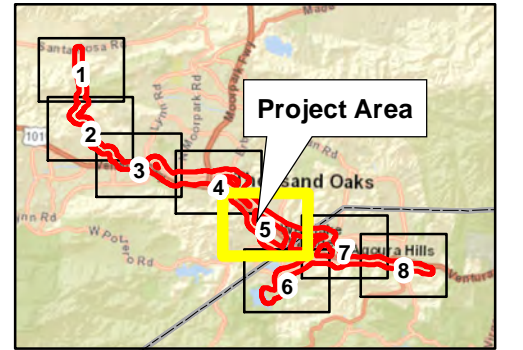
FIGURE 6-1  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo





**Legend**

- Concentrate Alignment Options
- Thousand Oaks 7.5' quadrangle**
- af: artificial fill (Holocene)
- Qal: Alluvium (Holocene and late Pleistocene)
- Qls: Landslide deposits (Holocene and Pleistocene)
- Qu: Alluvium, undivided (Pleistocene)
- Qoa: Older alluvium (Pleistocene)
- Tm: Monterey Formation (upper Miocene)
- Tml: Monterey Formation (lower) (middle Miocene)
- Tlvc: Detritus derived from Conejo Volcanics (middle Miocene)
- Ttuc: Upper Topanga Formation (middle Miocene)
- Tc: Conejo Volcanics (middle Miocene)
- Tcab: Conejo Volcanics (andesitic to dacitic) (middle Miocene)
- Tcbu
- Fossil Locality



Sources:

R. F. Yerkes and P.K. Showalter. 1991. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 91-2188.

T.W. Dibblee Jr. and H.E. Ehrenspeck. 1993. Geologic Map of the Thousand Oaks Quadrangle, Ventura and Los Angeles Counties, California. 1:24,000 Dibblee Geological Foundation Map DF-49.

R. F. Yerkes and R. H. Campbell. 1995. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 95-88

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

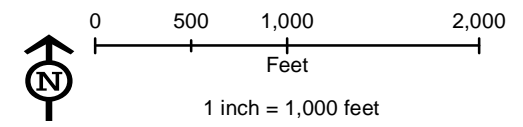
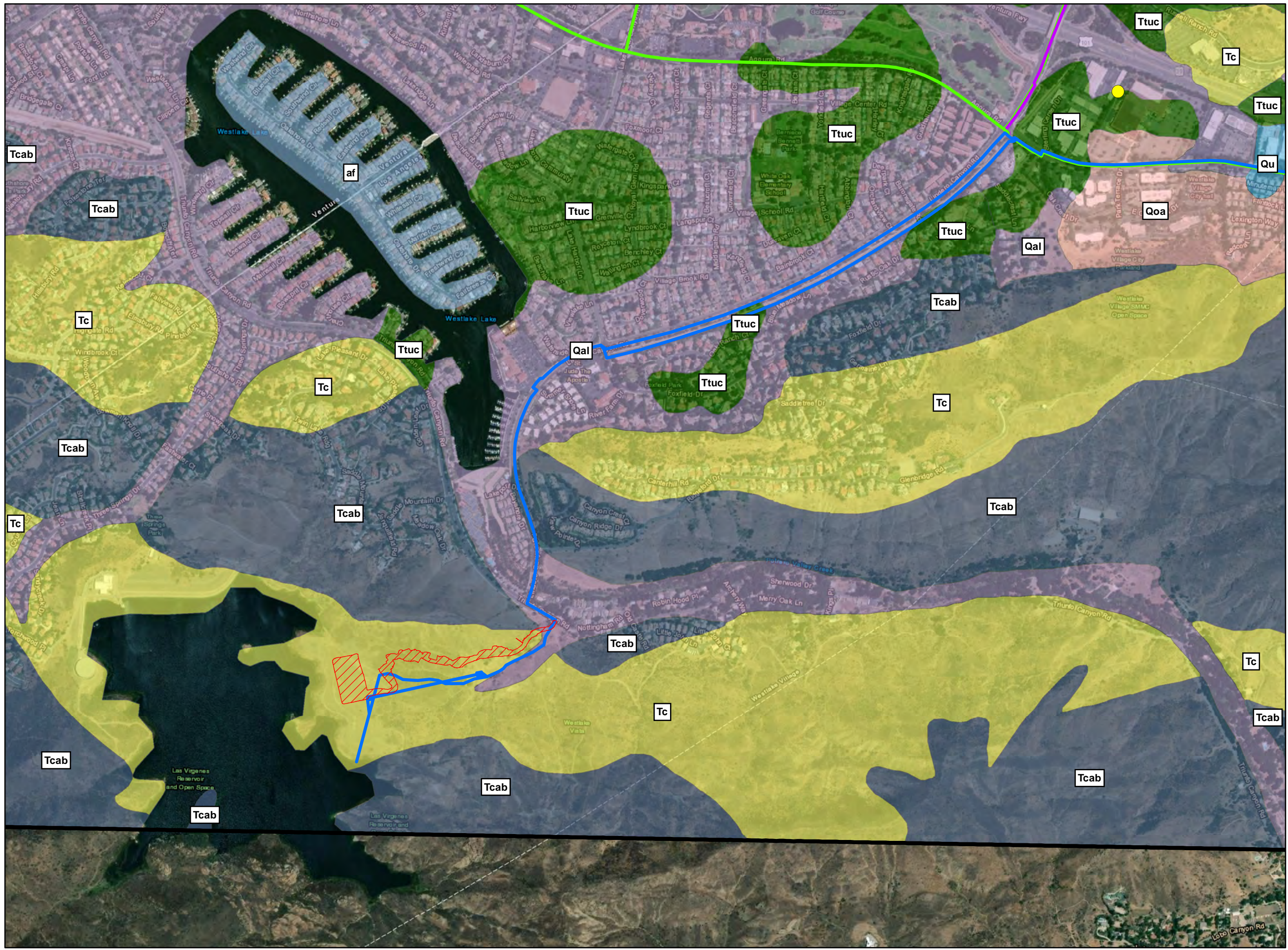


FIGURE 6-1  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo



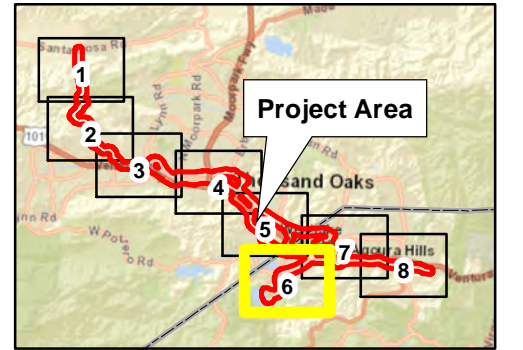


**Legend**

- Alternative 2 Reservoir AWP
- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options

**Thousand Oaks 7.5' quadrangle**

- af: artificial fill (Holocene)
- Qal: Alluvium (Holocene and late Pleistocene)
- Qu: Alluvium, undivided (Pleistocene)
- Qoa: Older alluvium (Pleistocene)
- Ttuc: Upper Topanga Formation (middle Miocene)
- Tc: Coniejo Volcanics (middle Miocene)
- Tcab: Coniejo Volcanics (andesitic to dacitic) (middle Miocene)
- Fossil Locality



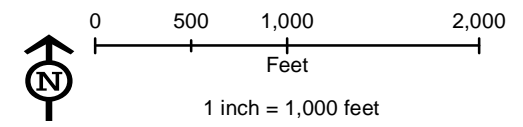
Sources:

R. F. Yerkes and P.K. Showalter. 1991. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 91-2188.

T.W. Dibblee Jr. and H.E. Ehrenspeck. 1993. Geologic Map of the Thousand Oaks Quadrangle, Ventura and Los Angeles Counties, California. 1:24,000 Dibblee Geological Foundation Map DF-49.

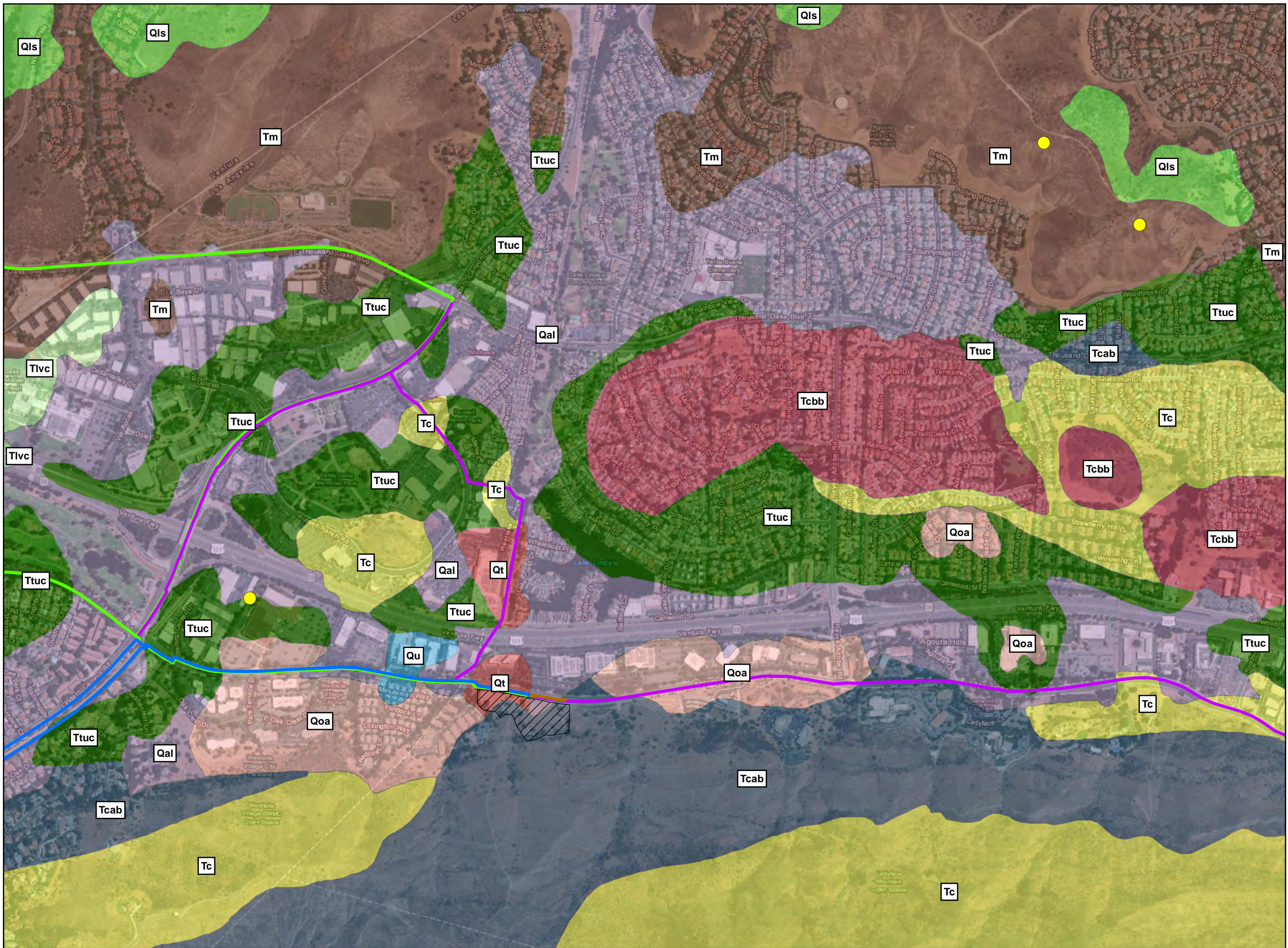
R. F. Yerkes and R. H. Campbell. 1995. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 95-88

ESRI World Topo Map; ESRI World Street Map; USGS, 1997



**FIGURE 6-1**  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo



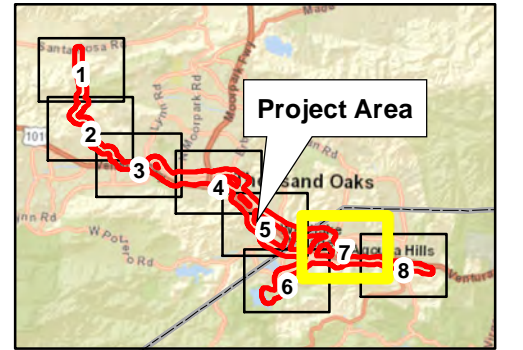


**Legend**

- Alternative 1 Agoura Road
- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Waste Line Alignment

**Thousand Oaks 7.5' quadrangle**

- Qal: Alluvium (Holocene and late Pleistocene)
- Qls: Landslide deposits (Holocene and Pleistocene)
- Qu: Alluvium, undivided (Pleistocene)
- Qt: Terrace deposits (Pleistocene)
- Qoa: Older alluvium (Pleistocene)
- Tm: Monterey Formation (upper Miocene)
- Tlvc: Detritus derived from Conejo Volcanics (middle Miocene)
- Ttuc: Upper Topanga Formation (middle Miocene)
- Tc: Conejo Volcanics (middle Miocene)
- Tcab: Conejo Volcanics (andesitic to dacitic) (middle Miocene)
- Tcbb: Conejo Volcanics (chiefly basaltic) (middle Miocene)
- Fossil Locality



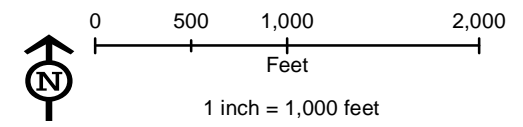
Sources:

R. F. Yerkes and P.K. Showalter. 1991. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 91-2188.

T.W. Dibblee Jr. and H.E. Ehrenspeck. 1993. Geologic Map of the Thousand Oaks Quadrangle, Ventura and Los Angeles Counties, California. 1:24,000 Dibblee Geological Foundation Map DF-49.

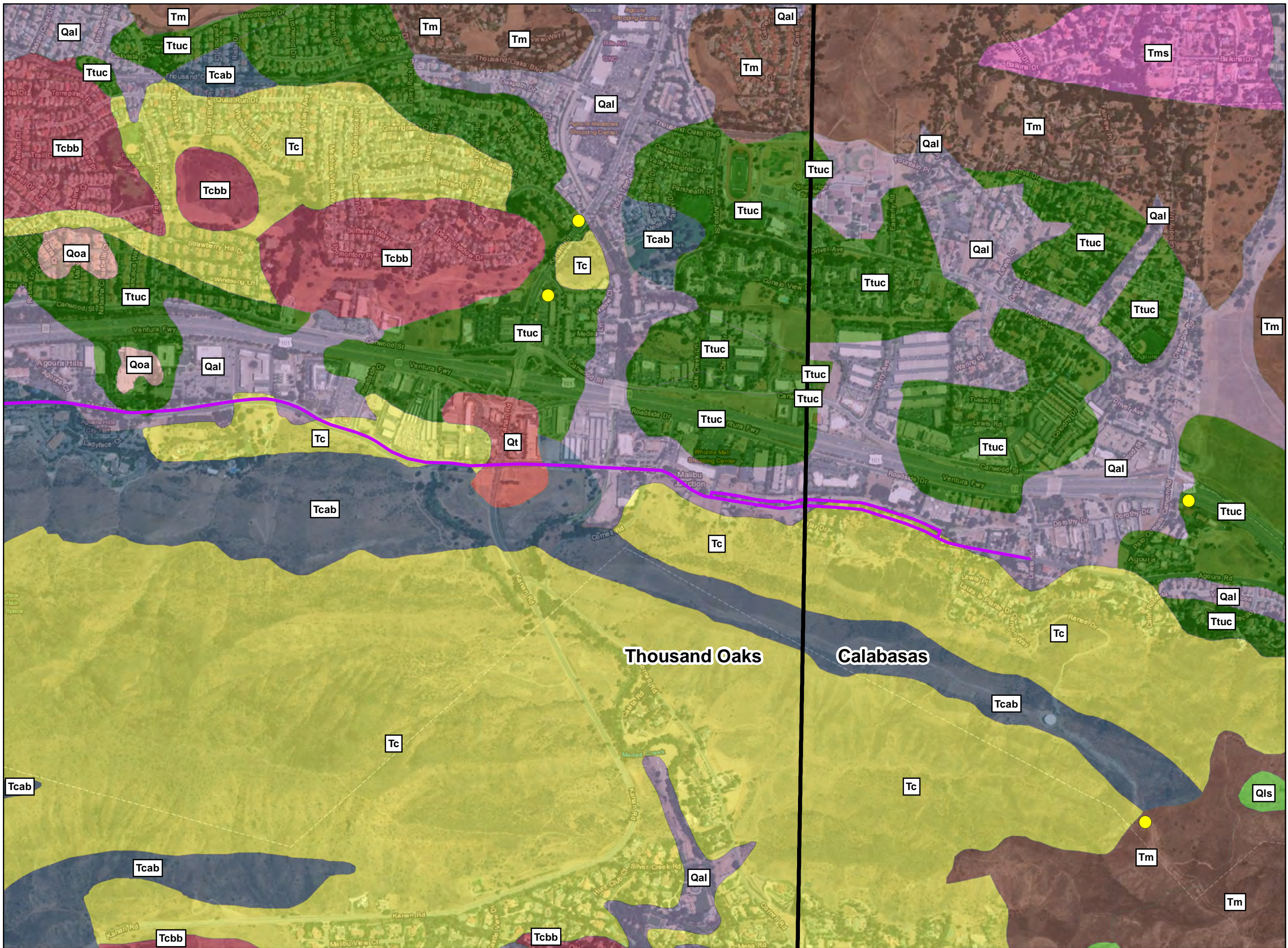
R. F. Yerkes and R. H. Campbell. 1995. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 95-88

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

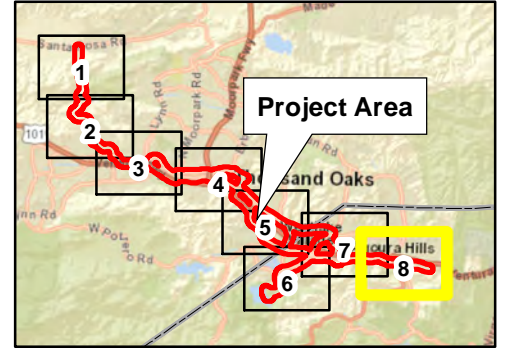


**FIGURE 6-1**  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo





- Legend**
- Source Water Alignment Options
  - Thousand Oaks 7.5' quadrangle**
    - Qal: Alluvium (Holocene and late Pleistocene)
    - Qt: Terrace deposits (Pleistocene)
    - Qoa: Older alluvium (Pleistocene)
    - Tm: Monterey Formation (upper Miocene)
    - Ttuc: Upper Topanga Formation (middle Miocene)
    - Tc: Conejo Volcanics (middle Miocene)
    - Tcab: Conejo Volcanics (andesitic to dacitic) (middle Miocene)
    - Tcbb: Conejo Volcanics (chiefly basaltic) (middle Miocene)
  - Fossil Locality
  - Calabasas 7.5' quadrangle**
    - Qal: Alluvium (Holocene and late Pleistocene)
    - Qls: Landslide deposits (Holocene and Pleistocene)
    - Tm: Modelo Formation (upper Miocene)
    - Tms: Modelo Formation (sandstone unit) (upper Miocene)
    - Ttuc: Upper Topanga Formation (middle Miocene)
    - Tc: Conejo Volcanics (middle Miocene)
    - Tcab: Conejo Volcanics (andesitic to dacitic) (middle Miocene)
  - Fossil Locality



Sources:

R. F. Yerkes and P.K. Showalter. 1991. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California. US Geological Survey Open File Report 91-2188.

T.W. Dibblee Jr. and H.E. Ehrenspeck. 1993. Geologic Map of the Thousand Oaks Quadrangle, Ventura and Los Angeles Counties, California. 1:24,000 Dibblee Geological Foundation Map DF-49.

R. F. Yerkes and R. H. Campbell. 1995. Preliminary Geologic Map of the Thousand Oaks 7.5-minute Quadrangle, Southern California: A Digital Database US Geological Survey Open File Report 95-88.

T.W. Dibblee Jr. 1992. Geologic Map of the Calabasas Quadrangle, 1:24,000 Dibblee Geological Foundation Map DF-37.

R. F. Yerkes and R.H. Campbell. 1995. Preliminary Geologic Map of the Calabasas 7.5' Quadrangle, Southern California: A Digital Database. US Geological Survey Digital Database Open File-Report 95-51.

R. F. Yerkes and P.K. Showalter. 1993. Preliminary Geologic Map of the Calabasas 7.5' Quadrangle, Southern California. US Geological Survey Open-File Report 93-205.

ESRI World Topo Map; ESRI World Street Map; USGS, 1997

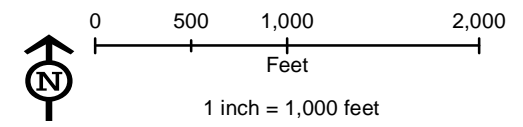


FIGURE 6-1  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo



The geologic units within the project area have been mapped at a scale of 1:24,000 (Yerkes and Showalter 1991, 1993; Dibblee 1992; Dibblee and Ehrenspeck 1993; Yerkes and Campbell 1995a, 1995b, 1997a, 1997b). According to these published maps, these geologic units range from middle Miocene to Holocene in age and are volcanic, marine, and nonmarine in origin. Table 6-1 lists these units from youngest to oldest, and Figure 6-1 shows the units.

**Table 6-1. Geologic Units**

Geologic Unit	Geologic Map	Map Symbol	Age	Description
<b>General Study Area</b>				
Artificial Fill	Thousand Oaks	af	Holocene (Recent)	<i>Cut and fill areas with sediments and/or debris that have been removed from one location and transported to another location by human activity rather than by natural means. Typically found along existing railroad tracks, highways, streets, and bridges where it is used to provide suitable foundation or drainage, or to adjust for changes in topography</i>
Alluvium	Newbury Park	Qal	Holocene	<i>Unconsolidated clay, sand, and gravel in stream beds and valley fill; locally includes colluvium, slopewash, and talus</i>
	Thousand Oaks and Calabasas	Qal	Holocene and Late Pleistocene	<i>Gravel, sand, silt, and clay in stream beds and valley fill; unconsolidated in Thousand Oaks quadrangle; slightly to well consolidated and/or cemented in Calabasas quadrangle</i>
Alluvium - Undivided	Thousand Oaks	Qu	Pleistocene	<i>Slightly to well consolidated gravel, sand, silt, and clay; chiefly floodplain deposits</i>
Landslide Deposits	Newbury Park, Thousand Oaks, and Calabasas	Qls	Holocene and Pleistocene	<i>Deposits resulting from ground movements, such as rock falls, slope failures, etc.; parent materials include both surficial deposits and bedrock</i>
Terrace Deposits	Thousand Oaks	Qt	Pleistocene	<i>Gravel, sand, silt, and clay, slightly to well consolidated, chiefly on flanks of valleys or streams</i>
Older Alluvium	Newbury Park	Qao	Holocene and Pleistocene	<i>Poorly consolidated sand and gravel; dissected; includes floodplain deposits</i>
	Thousand Oaks	Qoa	Pleistocene	<i>Partially cemented and dissected gravel, sand, silt, and clay</i>
Saugus Formation	Newbury Park	Qs	Pleistocene	<i>Interfingering shallow marine, brackish water, and nonmarine deposits that grade upward into exclusively nonmarine sandstone and conglomerate</i>
Modelo Formation	Newbury Park and Calabasas	Tm	Middle and Upper Miocene	<i>Dominantly silty shale or soft earthy siltstone, locally siliceous or diatomaceous shale or siltstone, interbedded coarse- to fine-grained arkosic sandstone</i>
Modelo Formation (sandstone unit)	Calabasas	Tms	Upper Miocene	<i>Sandstone, massive, fine- to medium-grained, thick sequences in both lower and upper parts of formation</i>
Monterey Formation	Thousand Oaks	Tm	Upper Miocene	<i>White weathering, thin bedded, platy, locally brittle siliceous shale to soft, punky shale; devoid of sandstone</i>



**Table 6-1. Geologic Units**

Geologic Unit	Geologic Map	Map Symbol	Age	Description
Monterey Formation (lower)	Thousand Oaks	Tml	Middle Miocene	<i>Lower part, similar to Tm, but soft, fissile to punky, includes scattered thin hard calcareous layers and concretions</i>
Intrusive Rocks	Newbury Park	Ti	Middle and Upper Miocene	<i>Chiefly basalt or diabase; some dacite plugs</i>
Calabasas Formation	Newbury Park	Tcb	Middle Miocene	<i>Sandstone and siltstone, massive to poorly bedded, scattered calcareous concretions; local pebble conglomerates contain quartzites and clasts derived from underlying volcanic rocks</i>
Detritus Derived from Conejo Volcanics	Thousand Oaks	Tlvc	Middle Miocene	<i>Basal epiclastic (reworked) conglomerate and detritus derived from Conejo Volcanics; gray to rusty brown, massive to crudely bedded, contains poorly sorted, subrounded clasts as large as small boulders of mostly andesitic rocks in incoherent detrital matrix, partly intertongued with shale of Tml</i>
Upper Topanga Formation	Thousand Oaks and Calabasas	Ttuc	Middle Miocene	<i>Clay shale and siltstone, gray, thin-bedded, soft, crumbly, weakly resistant to erosion; locally contains calcareous concretions or lenses, includes few thin sandstone strata</i>
Conejo Volcanics (of Topanga Group) (also referred to as the Middle Topanga Formation or Topanga Volcanics)	Newbury Park	Tco	Middle Miocene	<i>Andesitic to basaltic flows, volcanic breccia and agglomerate</i>
	Thousand Oaks and Calabasas	Tc	Middle Miocene	<i>Submarine and subaerial volcanic extrusive rocks; extensive volcanic flows and volcanoclastic rocks; chiefly basaltic flows, volcanic breccia and agglomerate, minor andesitic and dacitic units. Limestone occurs as lenticular deposits on the surface of composite flow units, as matrix within breccia of pebble- to cobble-size volcanic clasts, within primary voids extending down from flow surfaces, as lenses between flows within composite flow units, and as neptunian dikes</i>
Conejo Volcanics (andesitic to dacitic) (of Topanga Group)	Thousand Oaks and Calabasas	Tcab	Middle Miocene	<i>Andesitic to dacitic flow breccia and agglomerate.</i>
Conejo Volcanics (chiefly basaltic) (of Topanga Group)	Newbury Park	Tcob	Middle Miocene	<i>Basaltic flows</i>
	Thousand Oaks	Tcbb	Middle Miocene	<i>Basaltic breccia, pillow breccia, aquagene tuff</i>
Topanga Canyon Formation (of Topanga Group)	Newbury Park	Ttcu	Middle Miocene	<i>Fine- to medium-grained sandstone, minor interbedded siltstone and shale</i>

Source: Yerkes and Showalter 1991, 1993; Dibblee 1992; Dibblee and Ehrenspeck 1993; Yerkes and Campbell 1995a, 1995b, 1997a, 1997b

**6.1.6 Literature Review for Cultural Resources**

A records search was received from the California Historical Resources Information System (CHRIS) (State of California 2022b) South Central Coastal Information Center (SCCIC) at California State University, Fullerton on February 18, 2022 (Record Search File 23394.9454). The records search included a review of previously recorded cultural resources, as well as previously conducted cultural resources investigations within the project area. The record search included an area extending up to approximately 3,500 feet from the project elements. This section summarizes findings from the record search.

**6.1.6.1 Previously Conducted Investigations for Cultural Resources**

Within the project area, 173 previously conducted cultural resources investigations have been conducted; of those, 77 investigations intersect the pipeline alignment options, 5 intersect the Alternative 1 Agoura Road AWPf site, and 4 intersect the Alternative 2 Reservoir AWPf site. The following approximate percentages of the project areas have been subject to relevant cultural resources studies:

- 70% of the pipeline alignment in studies completed between 1975 and 2016
- 80% of the Alternative 1 Agoura Road AWPf site in studies completed between 1966 and 2001
- 95% of the Alternative 2 Reservoir AWPf site in studies completed between 1982 to 1990

**6.1.6.2 Previously Recorded Cultural Resources**

Within the project area, 38 previously recorded cultural resources were identified; of these, 10 previously recorded cultural resources overlap with the pipeline alignment options, including 8 prehistoric resources, 1 historic-era resource, and 1 multicomponent resource (consisting of prehistoric and historic-era resources). One prehistoric resource (P-19-000042, a lithic scatter) was recorded within the Alternative 1 Agoura Road AWPf site, and one prehistoric resource (P-19-001791, a lithic scatter) was recorded within the Alternative 2 Reservoir AWPf site. The P-19-001791 resource also overlapped with the pipeline options. Of these resources, eight resources have not been evaluated for significance, two resources have been evaluated eligible for the California Register of Historical Resources (CRHR), and one resource was evaluated not eligible for the National Register of Historic Places (NRHP) and the CRHR.

An additional 27 resources were located within the project area (however, they do not intersect with any project elements), including 22 prehistoric resources, 4 historic-era resources, and 1 multicomponent site. Table 6-2 summarizes information about the resources within the pipeline options, and Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf footprints.

**Table 6-2. Previously Recorded Cultural Resources**

Resource Identified	Resource Type	Description	Evaluation
<b>Pipeline Options</b>			
P-19-000186	Prehistoric	Burials and habitation debris	Not evaluated
P-19-000462	Prehistoric	Lithic scatter and habitation debris	Not evaluated
P-19-000463	Prehistoric	Lithic scatter	Not evaluated
P-19-000467	Prehistoric	Lithic scatter and habitation debris	Not evaluated
P-19-001069	Prehistoric	Lithic scatter	Recommended eligible for CRHR
P-19-001352	Prehistoric	Habitation debris	Recommended eligible for CRHR
P-19-001791	Prehistoric	Lithic scatter	Not evaluated
P-56-000261	Prehistoric	Lithic scatter, burials, and habitation debris	Not evaluated
P-56-000654/H	Prehistoric and Historic	Foundation, well and cisterns, walls and fences, lithic scatter, habitation debris, and amusement park remains (Jungle Land)	Not evaluated

**Table 6-2. Previously Recorded Cultural Resources**

Resource Identified	Resource Type	Description	Evaluation
P-56-153139	Historic	Single-family property and ancillary building	Not eligible for NRHP or CRHR
<b>Alternative 1 Agoura Road AWPf Site</b>			
P-19-000042	Prehistoric	Lithic scatter, quarry, and habitation debris	Not evaluated
<b>Alternative 2 Reservoir AWPf Site</b>			
P-19-001791	Prehistoric	Lithic scatter	Not evaluated

Source: CHRIS Record Search File 23394.9454, 2022

Sites P19-001069 and P-19-001352 were previously recommended for the CRHR when previously recorded on site forms in 2012 by Linda Akyuz. Site P-19-001069 was first recorded in 1980 by J. Brock as a lithic scatter (possible quarry). The site consisted of 20 flakes of materials, such as andesite, basalt, rhyolite, and quartzite. The site was revisited in 2012 by Linda Akyuz for the *Addendum to Cultural Resources and Paleontological Resources Assessment for the Agoura Road Widening Project (2011)*, and no evidence of the resource was observed during an intensive pedestrian survey. Although no surface evidence of the site was recorded, there is still the possibility of encountering resources subsurface, and it was recommended eligible for listing in the CRHR.

Site P-19-001352 was first recorded on site forms in 1987 by Richard L. Wessel for the City of Agoura Hills. The site was recorded as a midden deposit containing:

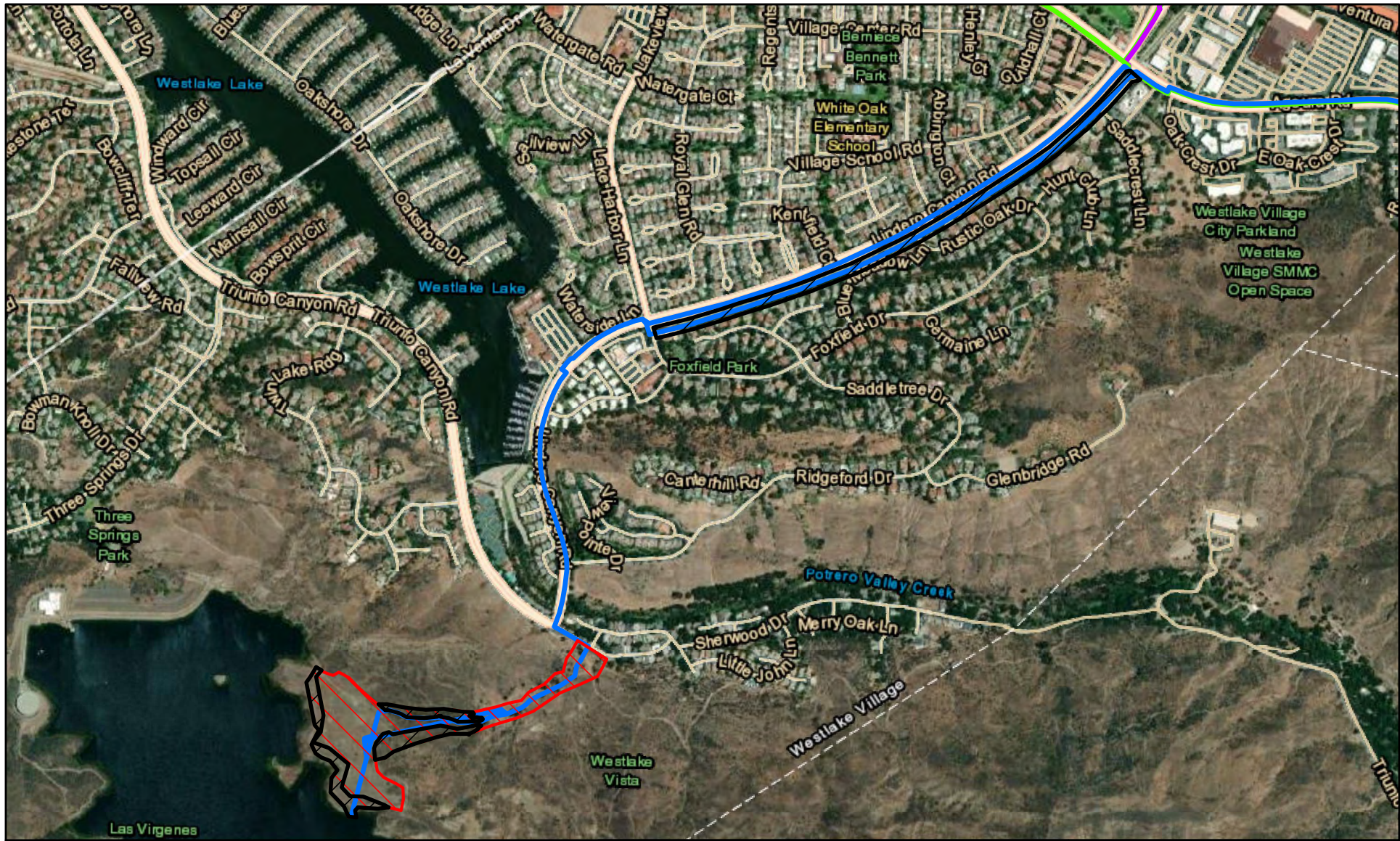
- Two milling slabs
- Numerous angular hammers, core tools, and large andesite flake tools
- Two manos
- Flakes and cores from a variety of materials (local andesite, chalcedony chert, quartzite, fused shale, and banded chert)

The site was revisited in 2011 by Robin Turner during the *Cultural Resources and Paleontological Resources Assessment for the Agoura Road Widening Project (2011)*, and in 2012 by Linda Akyuz for the *Addendum to Cultural Resources and Paleontological Resources Assessment for the Agoura Road Widening Project (2011)*. No evidence of the resource was observed during intensive pedestrian surveys conducted. Although no surface evidence of the site was recorded, there is still the possibility of encountering resources in the subsurface, and it was recommended eligible for listing in the CRHR.

### 6.1.7 Archaeological Survey

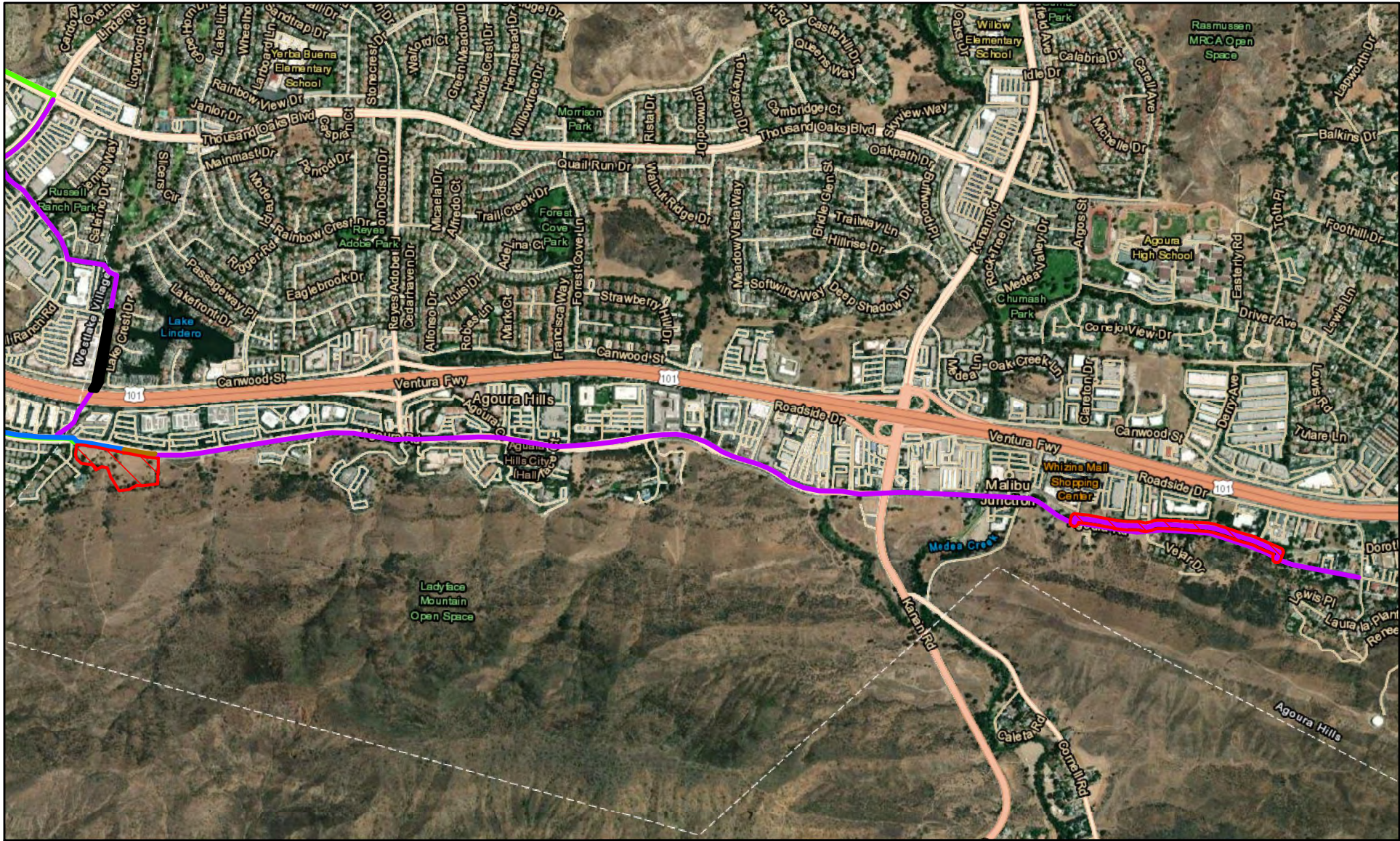
In February 2022, an archaeological survey of the Alternative 1 Agoura Road AWPf site, Alternative 2 Reservoir AWPf site, and pipeline option locations was completed. Archaeologists surveyed for cultural resources by visually inspecting the ground surface and subsurface exposures, including rodent burrows; road disturbances; and exposed cut banks, rills, gullies, and washes. In areas along the pipeline options that were paved or heavily disturbed, archaeologists completed a reconnaissance or windshield survey, where accessible. Figures 6-2 and 6-3 show the portions of the survey area where intensive surveys occurred.





<p><b>Type</b></p> <ul style="list-style-type: none"> <li><span style="color: green;">—</span> Concentrate Alignment Options</li> <li><span style="color: blue;">—</span> Purified Water Alignment Options</li> <li><span style="color: purple;">—</span> Source Water Alignment Options</li> <li><span style="border: 1px dashed red; display: inline-block; width: 15px; height: 10px;"></span> Survey Boundaries 2022</li> <li><span style="border: 1px dashed black; display: inline-block; width: 15px; height: 10px;"></span> Inaccessible Survey Area</li> </ul>	<p>Sources: ESRI World Topo Map ESRI World Street Map</p>		<p align="center"><b>Figure 6-2</b> <b>Cultural Survey Results</b></p>
<p align="center"><b>Jacobs</b></p>	<p align="center">   </p>	<p align="center">Pure Water Project Las Virgenes – Triunfo</p>	
<p align="center">July 19, 2022</p>			





<b>Type</b>
Concentrate Alignment Options
Purified Water Alignment Options
Source Water Alignment Options
Waste Line Alignment
Survey Boundaries 2022
Inaccessible Survey Area

Sources:  
ESRI World Topo Map  
ESRI World Street Map

**Jacobs**

July 19, 2022



**Figure 6-3**  
**Cultural Survey Results**

Las Virgenes-Triumfo  
Pure Water Project

0 500 1,000 1,500 2,000  
Feet



Archaeologists completed an intensive pedestrian survey employing transects spaced no more than 26 feet apart. Archaeologists surveyed for cultural resources by visually inspecting the ground surface and subsurface exposures, including rodent burrows; road disturbances; and exposed cut banks, rills, gullies, and washes. In areas along the pipeline alignment options that were paved or heavily disturbed, archaeologists completed a reconnaissance or windshield survey, where accessible. The survey was conducted using a global positioning system (GPS) Collector tablet, which contained shapefiles showing the project features. In addition, a Trimble R1 unit was used for submeter accuracy. Field notes and photographs documenting current conditions were taken during the survey. Photos 6-1 through 6-3 show representative photographs from the archaeological survey.



**Photo 6-1. Alternative 1 Agoura Road Advanced Water Purification Facility Overview from Western End, View East**





**Photo 6-2. Westlake Vista Trail within Triunfo Canyon Park Overview from Northern Area, View South**



**Photo 6-3. Concentrate Pipeline Alignment Overview West of the Hill Canyon Water Treatment Plant, View North**

Visibility within the general survey areas ranged from 10 to 100%. The Alternative 1 Agoura Road AWPf site had ground visibility between 10 to 60%. Lower visibility in certain areas was due to brush and seasonal grasses dominating the landscape. The 60% visibility area was limited to the graded landform located along the western margin of the survey area, which was also partially covered in seasonal grasses.

The Alternative 2 Reservoir AWPf site, including the pipeline alignment along Westlake Vista Trail, had ground visibility between 10 to 50%, with the best visibility in the flats directly east of the reservoir. This area was partially covered with seasonal grasses and brush, limiting visibility. Other portions of the site with the least visibility had heavy vegetation that consisted of seasonal grasses and brush.

One intensively surveyed section of the pipeline alignment options was located west of the Hill Canyon Water Treatment Plant, and consisted of an unpaved, graded, and maintained unnamed fire access road. This portion of the survey had 100% ground visibility.

None of the previously recorded cultural resources within the alternative AWPf sites and pipeline option locations were reidentified during the survey:

- Site P-19-000042, previously recorded within the Alternative 1 Agoura Road AWPf site, was not located during the survey. An apartment complex was constructed approximately 200 feet west of where the site was previously identified, and a dirt road was seen parallel to the western border of the site boundary, making it likely the site has been heavily disturbed since it was last recorded.
- Site P19-01791, located within the Alternative 2 Reservoir AWPf site and overlapping the pipeline alignment, was also not located. The site boundary overlaps the Westlake Vista Trail in Triunfo Canyon Park that is open for public use, making it likely the site has been heavily disturbed due to high usage of the trail.
- The remaining sites within the pipeline alignment options footprint were not relocated during the survey effort due to the previously recorded site locations being paved.

One newly discovered cultural resource was identified during the survey of the Alternative 1 Agoura Road AWPf site consisting of:

- A ceramic insulator
- Two crossbars
- Cement fragments
- Undiagnostic glass fragments located on a circular, flat-graded area approximately 130 feet in diameter

A U.S. Geological Survey (USGS) topographic map from 1903 shows a structure at this approximate location. No other cultural resources were identified during the survey.

### **6.1.8 Literature and Fossil Locality Review for Paleontological Resources**

A paleontological resource assessment was conducted to assess the potential for paleontological resources to be uncovered during ground-disturbing activities. This assessment was prepared in accordance with SVP's established standard procedures (SVP 2010) and included an examination of the following sources:

- Published geological maps of the project area
- Paleontological locality search using the University of California Museum of Paleontology (UCMP) online database (Berkeley 2022) and Natural History Museum of Los Angeles County (LACM)
- Published paleontological reports to determine whether the geologic units present typically yield paleontological resources

Pure Water Project features are not present in all of the geologic units described in this chapter; therefore, not all of these geologic units are included in the assessment. As geologic formations and units

can be exposed over large geographic areas but contain similar lithologies and fossils, the UCMF online database literature review and fossil locality search included localities outside the immediate facility footprints.

Appendix C provides the fossil records from the UCMF database. Appendix D provides the paleontological locality report from LACM. Based on the information from the literature review and fossil locality search, the paleontological potential of each geologic unit within the project area was determined following SVP standard procedures (2010). Table 6-3 summarizes the paleontological potential of each unit.

**Table 6-3. Paleontological Potential**

Geologic Unit	Geologic Map	Map Symbol	Age	Paleontological Potential	Project Feature
Artificial Fill	Thousand Oaks	af	Holocene (Recent)	None	<ul style="list-style-type: none"> <li>Concentrate pipeline</li> </ul>
Alluvium	Newbury Park	Qal	Holocene	Low to High (increases with depth)	<ul style="list-style-type: none"> <li>Concentrate pipeline</li> </ul>
	Thousand Oaks and Calabasas	Qal	Holocene and Late Pleistocene	High	<ul style="list-style-type: none"> <li>Concentrate pipeline</li> <li>Source water pipeline</li> <li>Purified water pipeline</li> <li>Alternative 2 Reservoir AWPf</li> <li>Alternative 1 Agoura Road AWPf</li> </ul>
Alluvium - Undivided	Thousand Oaks	Qu	Pleistocene	High	<ul style="list-style-type: none"> <li>Concentrate pipeline</li> <li>Purified water pipeline</li> </ul>
Terrace Deposits	Thousand Oaks	Qt	Pleistocene	High	<ul style="list-style-type: none"> <li>Concentrate pipeline</li> <li>Source water pipeline</li> <li>Purified water pipeline</li> <li>Alternative 1 Agoura Road AWPf</li> </ul>
Older Alluvium	Newbury Park	Qao	Holocene and Pleistocene	High	<ul style="list-style-type: none"> <li>Concentrate pipeline</li> </ul>
	Thousand Oaks	Qoa	Pleistocene		<ul style="list-style-type: none"> <li>Concentrate pipeline</li> <li>Purified water pipeline</li> <li>Source water pipeline</li> </ul>
Saugus Formation	Newbury Park	Qs	Pleistocene	High	<ul style="list-style-type: none"> <li>Potentially underlying Alluvium (Qal) throughout the project area</li> <li>Concentrate pipeline in the northern project area</li> </ul>
Modelo Formation	Newbury Park and Calabasas	Tm	Middle and Upper Miocene	High	<ul style="list-style-type: none"> <li>Potentially underlying Alluvium (Qal) and Older Alluvium (Qoa) that underlie the concentrate</li> </ul>



**Table 6-3. Paleontological Potential**

Geologic Unit	Geologic Map	Map Symbol	Age	Paleontological Potential	Project Feature
Modelo Formation (sandstone unit)	Calabasas	Tms	Upper Miocene	High	pipeline along the Ventura Freeway between North Lynn Road and North Moorpark Road in the Newbury Park quadrangle <ul style="list-style-type: none"> <li>▪ Potentially underlying deposits mapped as Alluvium (Qal) that underly the source water pipeline in the vicinity of the Ventura Freeway at the eastern terminus of the project area in the Calabasas quadrangle</li> </ul>
Monterey Formation	Thousand Oaks	Tm	Upper Miocene	High	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> </ul>
Monterey Formation (lower)	Thousand Oaks	Tml	Middle Miocene	High	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> </ul>
Intrusive Rocks	Newbury Park	Ti	Middle and Upper Miocene	None	<ul style="list-style-type: none"> <li>▪ Throughout the project area in the Newbury Park quadrangle</li> </ul>
Calabasas Formation	Newbury Park	Tcb	Middle Miocene	Low	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> </ul>
Detritus Derived from Conejo Volcanics	Thousand Oaks	Tlvc	Middle Miocene	Low	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> </ul>
Upper Topanga Formation	Thousand Oaks and Calabasas	Ttuc	Middle Miocene	High	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> <li>▪ Purified water pipeline</li> <li>▪ Source water pipeline</li> </ul>
Conejo Volcanics (of Topanga Group)	Newbury Park	Tco	Middle Miocene	High	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> </ul>
	Thousand Oaks and Calabasas	Tc	Middle Miocene		<ul style="list-style-type: none"> <li>▪ Purified water pipeline</li> <li>▪ Source water pipeline</li> <li>▪ Alternative 2 Reservoir AWPf</li> </ul>
Conejo Volcanics (andesitic to dacitic) (of Topanga Group)	Thousand Oaks and Calabasas	Tcab	Middle Miocene	None	<ul style="list-style-type: none"> <li>▪ Purified water pipeline</li> <li>▪ Source water pipeline</li> <li>▪ Alternative 2 Reservoir AWPf</li> <li>▪ Alternative 1 Agoura Road AWPf</li> </ul>
Topanga Canyon Formation (of Topanga Group)	Newbury Park	Ttcu	Middle Miocene	High	<ul style="list-style-type: none"> <li>▪ Concentrate pipeline</li> </ul>

Source: Yerkes and Showalter 1991, 1993; Dibblee 1992; Dibblee and Ehrenspeck 1993; Yerkes and Campbell 1995a, 1995b, 1997a, 1997b

### 6.1.8.1 Paleontological Resources and Paleontological Potential

This section summarizes the paleontological resources in order of age, youngest to oldest, and paleontological potential in the project area.

**Artificial fill (af – Holocene):** The depth of these sediments within the project area is unknown. However, by their very nature, fossils found in artificial fill have lost their native provenance; therefore, they have marginal scientific value. Artificial fill is generally considered to have no potential to produce significant paleontological resources based on SVP's standard procedures (2010).

**Alluvium (Qal – Holocene to late Pleistocene); Alluvium Undivided (Qu – Pleistocene), Terrace Deposits (Qt – Pleistocene); Older Alluvium (Qao – Holocene to Pleistocene and Qoa – Pleistocene):** Although Holocene (less than 11,700 years ago) deposits can contain remains of plants and animals, only those from the middle to early Holocene (4,200 to 11,700 years ago) are considered scientifically important (SVP 2010). Scientifically important fossils from middle to early Holocene deposits are not very common.

The UCMP has 10 records of invertebrate fossil localities from Holocene deposits in Ventura County and 43 records of fossil localities from Holocene deposits within Los Angeles County (10 microfossils, 4 invertebrates, 2 plants, and 27 microfossils or plants) (Appendix A). However, the UCMP database lists all of these as simply Holocene in age and does not differentiate between early, middle, or late; so it is impossible to distinguish which of these are scientifically important.

The LACM does not report any fossil localities from Holocene sediments. Holocene sediments often form a thin veneer over the top of older (for example, Pleistocene age) deposits at variable depth. These older deposits are known to produce scientifically important fossils from within Ventura and Los Angeles counties (Jefferson 1991a, 1991b; Miller 1971; Reynolds and Reynolds 1991).

The UCMP reports 69 invertebrate and 6 vertebrate fossil localities from Pleistocene deposits in Ventura County. In Los Angeles County, the UCMP reports the following fossil localities from Pleistocene deposits:

- 9 plant
- 1 invertebrate and microfossil
- 241 invertebrate
- 5 microfossil
- 5 invertebrate and vertebrate
- 15 vertebrate fossil localities

While the LACM reported no paleontological localities from within the project area, there were four vertebrate fossil localities within the area from the same or similar Pleistocene deposits within 3 miles or less of the project area:

- LACM VP 1680 produced mammoth and horse remains approximately 1 mile northwest of Newbury Park in the Conejo Valley.
- LACM VP 7660 produced mastodon remains from the Lakes at Thousand Oaks near the corner of East Thousand Oaks Boulevard and South Conejo School Road.
- LACM VP 3213 produced ground sloth and other vertebrate remains (not further specified) along South Westlake Boulevard south of the Ventura Freeway.
- LACM VP 1142 produced vertebrate remains (unspecified) south of Sherwood Lake.

Holocene Alluvium (Qal) has low paleontological potential from the surface to 5 feet below ground surface (bgs) and high paleontological potential at depths greater than 5 feet bgs. Pleistocene deposits are known to produce significant fossil vertebrates in Ventura and Los Angeles counties. For this reason, Pleistocene Alluvium (undivided) (Qu), Pleistocene Terrace deposits (Qt), and Pleistocene Older Alluvium (Qao/Qoa) have high paleontological potential. Similarly, because the precise contact between Holocene and Pleistocene deposits is unknown, deposits mapped as Holocene to late Pleistocene Alluvium (Qal) also have high paleontological potential.

**Landslide Deposits (Qls – Holocene and Pleistocene):** No landslide deposits are mapped within the project area.

**Saugus Formation (Qs – Pleistocene):** Although the Saugus Formation is not mapped as underlying the concentrate alignment option at the northern terminus of the project area, the Saugus Formation does underlie deposits mapped as Alluvium (Qal) that do underlie the concentrate alignment. Because Alluvium can form a thin veneer over the top of older deposits (such as the Saugus Formation), and the depth to the Saugus Formation beneath the Alluvium is unknown, the Saugus Formation is included in this assessment.

The lower marine sandstone beds of the Saugus Formation are known to have produced fossils of (Squires 1997; Hazzard 1940):

- *Aves* (birds)
- *Chondrichthyans* (cartilaginous fish, such as sharks and rays)
- *Echinoderms* (starfish, sand dollars)
- Marine *mollusks* (snails, squid, and octopus)
- *Mysticetes* (baleen-bearing whales)
- *Odontocetes* (toothed-whales)

The upper, terrestrial sandstone, and conglomerate beds have yielded the fossilized remains of Pleistocene megafauna, including tapir, horse, deer, and mastodon (Squires 1997; Hazzard 1940). The UCMP database reports 19 invertebrate and 1 microfossil locality from Ventura County. Six invertebrate localities are within 20 miles or less of the project area.

LACM reports two vertebrate fossil localities from the Saugus Formation. Locality LACM IP 16927, which is approximately 8 miles northwest of the northern terminus of the project area, produced perissodactyla remains and bivalves. LACM locality VP6236-6240, which is located approximately 15 miles northeast of the northern terminus of the project area, produced a diverse fossil assemblage, including:

- Albatross (*Diomedea*)
- Auk (*Mancalla*)
- Baleen whale (*Balaenidae*)
- Cormorant (*Phalacrocorax*)
- Eared seal (*Otariidae*)
- Rock bass (*Paralabax*)
- Rorquals (*Balaenopteridae*)
- Scoter (*Melanitta*)
- Sea snake (*Hydrophiidae*)
- Shearwater (*Puffinus*)
- Sturgeon (*Acipenser*)

The Saugus Formation has high paleontological potential.

**Modelo Formation (Tm – middle and upper Miocene); Modelo Formation (sandstone unit) (Tms – upper Miocene):** The Modelo Formation is not present within the project area; however, the Modelo Formation likely underlies deposits mapped as Alluvium (Qal) and Older Alluvium (Qao) within the project area along the Ventura Freeway between North Lynn Road and North Moorpark Road in the Newbury Park quadrangle, and underlying deposits mapped as Alluvium (Qal) in the vicinity of the Ventura Freeway at the eastern terminus of the project area in the Calabasas quadrangle. Because Alluvium and Older Alluvium can form a thin veneer over the top of older deposits (such as the Modelo Formation), and the depth to the Modelo Formation beneath the Alluvium and Older Alluvium is unknown, the Modelo Formation is included in this assessment.

The Modelo Formation is one of the most outstanding fossiliferous formations in the project area. It is best known for its fish fauna, which are remarkably preserved (David 1943; Squires 1997). The UCMP database reports 5 invertebrate and 1 microfossil locality from the Modelo Formation in Ventura County;



and 27 invertebrate, 11 vertebrate, 6 plant, and 46 microfossil localities from Los Angeles County, including:

- UCMP locality V3430 produced bird and bony fish remains approximately 4 miles east of the eastern terminus of the project area in the Calabasas quadrangle.
- UCMP locality V82048 produced bony fish remains approximately 10 miles east-northeast of the eastern terminus of the project area along Del Moreno Drive.

LACM reports three vertebrate fossil localities within 2 miles or less of the project area in Thousand Oaks, including:

- Locality LACM VP 7987 produced remains of shark (*Isurus*, *Carcharhinus*), ray-finned fish (*Clupeidae*), porgies (*Plectrutes*), herring (*Xyne*), and bony fish (*Eclipes*, *Ganolytes*).
- Locality LACM VP 6034 produced mackerel and tuna family remains (*Scombridae*).
- Locality LACM VP 4965-4966 produced the remains of primitive baleen whales (*Cetotheriidae*).

Therefore, these sediments have the potential to contain in situ fossils and have a high paleontological potential.

### **Monterey Formation (Tm – upper Miocene); Monterey Formation (lower) (Tml – middle Miocene):**

The Monterey Formation has produced a wide variety of exquisitely preserved fossils of plants, invertebrates, and vertebrates, most which are of marine origin (Cooper and Eisentraut 2002):

- Bony fish
- Desmostylians
- Diverse assemblages of marine invertebrates
- Dolphins
- Marine and terrestrial plants
- Sea cows
- Sharks
- Whales

The UCMP database reports 49 microfossil, 4 invertebrate, and 2 vertebrate fossil localities from Ventura County; and 34 microfossil, 10 plant, and 5 vertebrate localities from Los Angeles County. LACM reports one vertebrate fossil locality from the Monterey Formation within 2.5 miles of the project area near Oak Park and Lindero Canyon that produced fish (*Eclipes*, *Clupeidae*) and plants (unspecified). Therefore, these sediments have the potential to contain in situ fossils and have a high paleontological potential.

**Intrusive Rocks (Ti – middle and upper Miocene):** Intrusive igneous rocks like these form under intense temperature and pressure and are not conducive to the preservation of fossils. Therefore, this unit has no paleontological potential.

**Calabasas Formation (Tcb – middle Miocene):** No fossil localities were reported from the UCMP or LACM databases. However, foraminifera, molluscan fauna, and fish scales have been reported from the Calabasas Formation in the vicinity of the central Santa Monica Mountains in Ventura County (Yerkes and Campbell 1979). The Calabasas Formation has low paleontological potential.

**Detritus Derived from Conejo Volcanics (Tlvc – middle Miocene):** No fossil localities were reported from the UCMP or LACM databases. There are few documented fossils from these deposits in the literature, but they are limited to common species of shallow marine mollusks (Dibblee and Ehrenspeck 1993). Detritus derived from Conejo volcanics has low paleontological potential.

**Upper Topanga Formation (Ttuc – middle Miocene) and Topanga Canyon Formation (undivided) (of Topanga Group) (Ttcu – middle Miocene):** Deposits from the Upper Topanga Formation in the

Calabasas area have yielded significant fossil remains, including (Christopher A. Joseph & Associates 2009; Campbell and Yerkes 1980):

- A primitive baleen whale (*Nannocetus*)
- Basking shark (*Cetorhinus*)
- Bonito shark (*Isurus*)
- Eagle ray (*Myliobatis*)
- Giant sea bass (*Stereolepis*)
- Grouper (*Lompoquia*)
- Herring (*Ganolytes cameo*)
- Sea cows (*Dugongidae*)
- Snaggletooth shark (*Hemipristis*)

The Topanga Canyon Formation (undivided) has produced numerous significant fossil remains, including diverse assemblages of (Lander 2011):

- Barnacles
- Bivalves
- Crabs
- Echinoids
- Gastropods
- Land plants
- Ray-finned fish
- Sea lions, and whales
- Sharks and rays
- Small reptiles
- Terrestrial mammals

The UCMP database reports 10 invertebrate and 1 microfossil locality from Ventura County; and 95 invertebrate, 1 plant, and 1 vertebrate fossil locality from Los Angeles County. LACM reports two fossil localities from the Topanga Formation that are 6 miles or less from the northern terminus of the project area, including:

- Locality LACM VP 6949 produced a diverse assemblage of invertebrates (bivalves, echinoids, bryozoans, and barnacles) and shark (*Isurus planus*) remains.
- Locality LACM VP 7265 produced toothed whale (*Odontoceti*), requiem shark (*Carcharhinus*, *Galeocerdo*), weasel shark (*Hemipristis*), eagle ray (*Myliobatidae*), and barracuda (*Sphyraenidae*) remains.

The Upper Topanga Formation and Topanga Canyon Formation have high paleontological potential.

**Conejo Volcanics (of Topanga Group) (Tco/Tc – middle Miocene):** Most volcanic rocks do not contain fossils; however, the Conejo volcanics are unique because they contain interbeds of sandstone, siltstone, and limestone. Within a small area of Malibu Canyon in the Santa Monica Mountains, more than 200 fossil localities occur in the Conejo volcanics (KellerLynn 2008). Fossils in the Conejo volcanics include (Stanton and Alderson 2013; Stadum and Weigand 1998):

- Barnacles
- Bivalves
- Brachiopods
- Echinoids
- Fish scales
- Foraminifera
- Gastropods
- Wood
- Worm tubes

These fossils are noteworthy because of the rarity of carbonate rocks in association with submarine volcanism, as well as the rarity of limestone in the Cenozoic record of the Pacific Coast (Tweet et al. 2012). The UCMP database reports one invertebrate fossil locality from the Conejo volcanics in Los Angeles County; none are reported from Ventura County. LACM reports invertebrate fossil remains (unspecified) from locality LACM IP 16927, which is located less than 0.5 mile from the project area on Renee Drive north of the water tank in Agoura Hills. Because of the scientific significance of the fossil specimens recovered from the Conejo volcanics, this unit is assigned a high paleontological potential.

**Conejo Volcanics (andesitic to dacitic) (of Topanga Group) (Tcab – middle Miocene):** Andesite and dacite are extrusive volcanic rocks that are not conducive to the preservation of fossils. Therefore, the andesitic to dacitic unit of the Conejo volcanics has no paleontological potential.

**Conejo Volcanics (chiefly basaltic) (of Topanga Group) (Tcob and Tcbb – middle Miocene):** This unit is not mapped within the project area.

## 6.2 Regulatory Framework

Cultural and paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under federal and state laws and regulations. Because federal lands and agencies are not involved in this project, federal regulations are not included in this section. This study satisfies project requirements in accordance with state and local regulations. This analysis also complies with professional guidelines and significance criteria for paleontological resources as specified by the SVP (1995, 2010).

### 6.2.1 State Regulations

This section describes state regulations related to cultural and paleontological resources relevant to the Pure Water Project.

#### 6.2.1.1 California Register of Historical Resources

The CRHR is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. CRHR helps government agencies identify and evaluate California's historic resources and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (Public Resources Code [PRC] Section 5024.1(a)). Resources listed in or eligible for listing in CRHR are to be considered during the CEQA process.

A cultural resource is evaluated under four CRHR criteria to determine its historic significance. For a resource to have historic significance, it must be in accordance with the one or more of the following criteria (as defined in PRC Section 15064.5(a)(3)):

- 1) *Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage*
- 2) *Is associated with the lives of persons important in our past*
- 3) *Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values*
- 4) *Has yielded, or may be likely to yield, information important in prehistory or history*

Any resource that meets these criteria and retains sufficient historic integrity is considered a historical resource under CEQA.

In addition to meeting one or more of these criteria, CRHR requires that sufficient time must have passed to allow a "...scholarly perspective on the events or individuals associated with the resource"; 50 years is used as a general estimate of the time needed to understand the historic importance of a resource



(14(11.5) CCR 4852(d)(2)). The Office of Historic Preservation recommends documenting, and considering during the planning process, any cultural resource that is 45 years or older.

CRHR also requires a resource to possess integrity, which is defined as "...the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance." Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. Resources that are significant, meet the age guidelines, and possess integrity would generally be considered eligible for listing in the CRHR.

#### **6.2.1.2 California Public Resources Code Section 21083.2**

PRC Section 21083.2 describes the CEQA requirements for evaluating whether a project may have a significant effect on archaeological or paleontological resources. CEQA defines a "unique archaeological resource" as an archaeological artifact, object, or site that clearly demonstrates that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person

CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- Is listed in, or determined to be eligible for listing in, the CRHR
- Is listed in a local register of historical resources, as defined in PRC Section 5020.1(k)
- Is identified as significant (for example, rated 1 through 5) in a historical resource survey that meets the requirements of PRC Section 5024.1(g)
- Is determined to be a historical resource by a project's lead agency

Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource.

If the cultural resource in question is an archaeological site, CEQA requires that the lead agency first determine whether the site is a historical resource, as defined in 14(3) CCR 15064.5(a). If the archaeological site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as for a documented historical resource. If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with PRC Section 21083.2.

According to PRC Section 21083.2, if an impact on a historic or unique archaeological resource is significant, CEQA requires feasible measures to minimize the impact. Mitigation of significant impacts must lessen or eliminate the physical impact that a project would have on the resource. Generally, the use of drawings, photographs, or displays does not mitigate the physical impact on the environment caused by demolition or destruction of a historic resource. However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to less than significant.

CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped when human remains are uncovered and that the county coroner assess the remains. If the coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. The lead agency must consult with the appropriate Native Americans, if any, identified by the Native American Heritage Commission in a timely manner.

For paleontological resources, Appendix G, Section VII(f) of the CEQA Guidelines, states that lead agencies are directed to consider whether the project would "...directly or indirectly destroy a unique paleontological resource, or site, or unique geological feature..." when assessing the potential environmental impacts of a project. An impact to paleontological resources would be considered significant if a project could result in the direct or indirect destruction of a unique paleontological resource or site. A paleontological resource or site is deemed unique if it contains (SVP 2010):

- Identifiable vertebrate fossils, large or small
- Uncommon invertebrate, plant, or trace fossils
- Other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, or biochronologic information

### **6.2.1.3 California Public Resources Code Section 5097.5**

Requirements for paleontological resource management are included in PRC Section 5097.5, which states the following:

*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.*

These statutes prohibit the removal, without permission, of any paleontological site or feature from lands under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. As a result, local agencies are required to comply with PRC Section 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (for example, encroachment permits) undertaken by others. PRC Section 5097.5 also establishes the removal of paleontological resources as a misdemeanor and requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

### **6.2.1.4 California Health and Safety Code**

Section 7050.5(b) of the California Health and Safety Code specifies the protocol when human remains are discovered:

*In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.*

## **6.2.2 General Plans – Policies and Guidance**

Policies and guidance related to cultural and paleontological resources found in sections of each general plan are discussed in this section.

**6.2.2.1 City of Agoura Hills**

Table 6-4 provides the cultural and paleontological goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) and the Agoura Hills Code of Ordinances that are applicable to the project.

**Table 6-4. City of Agoura Hills Cultural Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>General Plan</b>	
Policy HR-1	Requires the maintenance and protection of significant historic and prehistoric resources.
Policy HR-3	Requires that significant archaeological or paleontological resources be preserved in situ when feasible. Mitigation is required in all other instances, including coordination of recognized Chumash representatives.
<b>Agoura Hills Code of Ordinances</b>	
Article IX, Chapter 4, Parts 8 and 9	Requires proposed projects be compatible with the natural and cultural resources of the area.
Article IX, Chapter 6	Applicant for a conditional use permit has the burden of proof for such compatibility. Paleontological resources are considered a natural resource.

Source: City of Agoura Hills 2010b, 2021

**6.2.2.2 City of Westlake Village**

Table 6-5 provides the cultural and paleontological goals and policies established by the *City of Westlake Village General Plan* (City of Westlake Village 2019a) that are applicable to the project.

**Table 6-5. City of Westlake Village Cultural Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Goal 12	Identifies a Cultural Reconnaissance Area Overlay as a Special Natural or Cultural area. The area is intended to preserve, where feasible, sites of archaeological and historic significance or the information they contain where site preservation is not possible. As part of any development proposal for property located within or adjacent to a designated Cultural Reconnaissance Area, an intensive, systematic surface reconnaissance program conducted by a qualified archaeologist is required to identify and evaluate the impact of the proposed development and to recommend measures to mitigate such impacts.

Source: City of Westlake Village 2019a

**6.2.2.3 City of Thousand Oaks**

Table 6-6 provides the cultural and paleontological goals and policies established by the City of Thousand Oaks Municipal Code that are applicable to the project.



**Table 6-6. City of Thousand Oaks Cultural Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Chapter 3, Section 7-3.09	Establishes permit limitations and conditions relating to archaeological, paleontological, and historic sites during ground-disturbing activities.
Chapter 9	Establishes the Thousand Oaks Cultural Heritage Board; defines landmarks and points of historic interest; and requires that any property owner intending to demolish, relocate, remove, or alter a landmark or point of historic interest obtain a Certificate of Appropriateness.
Chapter 14	Outlines steps required by developers to contact the City if archaeological resources are identified on a project during excavation.

**6.2.2.4 Ventura County**

Table 6-7 provides the cultural and paleontological goals and policies established by the *Ventura County 2040 General Plan* (Ventura County 2020) that are applicable to the project.

**Table 6-7. Ventura County Cultural Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Section 6.4	
COS-4.1	<i>The County shall maintain an inventory of tribal, cultural, historical, paleontological, and archaeological resources in Ventura County based on project studies and secondary resources,</i>
COS-4.2	<i>Enhance cooperation with cities, special districts, other appropriate organizations, and private landowners in acknowledging and preserving the County's paleontological and cultural resources. Engage in consultation with Native American tribes on discretionary projects.</i>
COS-4.3	<i>All structures and sites that are designated, or eligible for designation, as County Historical Landmarks to be preserved as a condition of discretionary development, in accordance with the Secretary of the Interior Standards, unless a structure is unsafe or deteriorated beyond repair.</i>
COS-4.4	<i>Discretionary development projects shall be assessed for potential tribal, cultural, historical, paleontological, and archaeological resources by a qualified professional and shall be designed to protect existing resources. Whenever possible, significant impacts shall be reduced to a less-than-significant level through the application of mitigation and/or extraction of maximum recoverable data. Priority shall be given to measures that avoid resources. Discretionary development will be designed or redesigned to avoid potential impacts to significant paleontological or cultural resources whenever possible. Unavoidable impacts, whenever possible, will be reduced to a less than significant level or will be mitigated by extracting as much recoverable data as possible. Determinations of impacts, significance, and mitigation will be made by qualified archaeological (in consultation with recognized local Native American groups), and historical or paleontological consultants, depending on the type of resource in question.</i>
COS-4.5 and COS-4.6	<i>In all feasible circumstances, discretionary development to adaptively reuse architecturally or historically significant buildings if the original use of the structure is no longer feasible and the new use is allowed by the underlying land use designation and zoning district shall be completed. Discretionary development shall also incorporate architectural designs and features that reflect the historical and cultural traditions characteristic to the area or community.</i>

Source: Ventura County 2020

### 6.3 Assessment Methods and Thresholds of Significance

Most of the project would be constructed in already disturbed areas. Therefore, data gathering was focused on (1) less-disturbed parcels where project features may be located and (2) areas with previously identified cultural resources. Per the CEQA Guidelines, impacts on cultural or paleontological resources may occur if the project would result in the following:

- *A substantial adverse change in the significance of an archaeological resource, as defined in Section 15064.5 of the CEQA Guidelines, or disturbance of any human remains, including those interred outside of formal cemeteries*
- *A substantial adverse change in the significance of a historical resource, as defined in Section 15064.5 of the CEQA Guidelines*
- *Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature*

### 6.4 Environmental Impacts

This section describes potential environmental impacts from the Pure Water Project related to cultural and paleontological resources.

#### 6.4.1 Overview

Table 6-8 summarizes the potential impacts of the project on cultural and paleontological resources.

**Table 6-8. Summary of Cultural and Paleontological Resources Impacts**

Impact	Alternative 1 Agoura Road AWWP	Alternative 2 Reservoir AWWP	Pipelines
Impact 6-1: Archaeological Resources	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
Impact 6.2: Historic Structures or Buildings	No impact	No impact	No impact
Impact 6.3: Paleontological Resources	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation

#### 6.4.2 Impact 6-1: Archaeological Resources

With mitigation, Impact 6-1 would result in less than significant impacts.

##### 6.4.2.1 Alternative 1 Agoura Road Advanced Water Purification Facility

Background research through the CHRIS identified one cultural resource within the Alternative 1 Agoura Road AWWP site. P-19-000042, a lithic scatter, intersects the southern portion of the site. This resource was not relocated during the field survey. The survey did identify one cultural resource in the western portion of the site, consisting of power-transmission-related debris. The resource is not eligible for listing in the CRHR or considered a historical resource for CEQA because it lacks historic integrity to reflect a significant event, person, or distinctive engineering achievements; and there are no adequate data about the resource.

Therefore, no impacts to historic-era or prehistoric archaeological resources are expected to occur within for Alternative 1 Agoura Road AWWP. However, prehistoric archaeological resources are known to occur in the project area, as the records search demonstrated. Undisturbed subsurface archaeological deposits may be present in the area in general, particularly in areas of high and medium archaeological sensitivity zones, in locations where cultural resources have been previously identified, and where construction may

occur in previously undisturbed soils or outside of existing ground disturbance. Therefore, there is the potential that archaeological resources could be found in undisturbed soils during construction activities, such as grading and excavation.

As a result, the following mitigation measure is recommended to address the potential for discovery of cultural resources. Implementation of *Mitigation Measure 6-1a, perform archaeological surveys prior to construction in high and medium archaeological sensitivity zones*, would support identification, avoidance, and mitigation of cultural resources for projects in zones of greater archaeological sensitivity. In addition, *Mitigation Measure 6-1b, halt construction if archaeological resources are discovered* would provide for avoidance, recovery, or other mitigation of unknown subsurface cultural resources encountered during project construction activities .

In addition, the construction contractor is required to follow California Health and Safety Code Section 7050.5(b), which specifies protocols if human remains are discovered.

With implementation of Mitigation Measure 6-1a and Mitigation Measure 6-1b, impacts of Alternative 1 Agoura Road AWPf on archaeological resources would be less than significant.

### **6.4.2.2 Alternative 2 Reservoir Advanced Water Purification Facility**

Background research through the CHRIS identified one cultural resource within the Alternative 2 Reservoir AWPf site. P-19-001791, a lithic scatter, intersects the central northern edge of the site. The resource was not relocated during the field survey. The survey did not identify newly discovered cultural resources at the site.

Therefore, no impacts to historic-era or prehistoric archaeological resources are expected to occur for Alternative 2 Reservoir AWPf. However, prehistoric archaeological resources are known to occur in the general vicinity of the site, as the records search demonstrated; and undisturbed subsurface archaeological deposits may be present in the area in general, particularly in areas of high and medium archaeological sensitivity zones. Therefore, there is the potential that archaeological resources could be found in undisturbed soils during construction activities, such as grading and excavation.

As a result, the following mitigation measure is recommended to address the potential for discovery of cultural resources. Implementation of *Mitigation Measure 6-1a, perform archaeological surveys prior to construction in high and medium archaeological sensitivity zones* would support identification, avoidance, and mitigation of cultural resources for projects in zones of greater archaeological sensitivity. In addition, *Mitigation Measure 6-1b, halt construction if archaeological resources are discovered* would provide for avoidance, recovery, or other mitigation of unknown subsurface cultural resources encountered during project construction activities.

In addition, the construction contractor is required to follow California Health and Safety Code Section 7050.5(b), which specifies protocols if human remains are discovered.

With implementation of Mitigation Measure 6-1a and Mitigation Measure 6-1b, impacts of Alternative 2 Reservoir AWPf on archaeological resources would be less than significant.

### **6.4.2.3 Pipelines**

Background research through the CHRIS identified 10 cultural resources within the pipeline alignment options footprint, consisting of 8 prehistoric resources, 1 historic-era resource, and 1 multicomponent resource (consisting of prehistoric and historic-era resources). Two of these resources overlap with unpaved portions of the pipeline alignments that were intensively surveyed; however, none of the resources were reidentified during the survey. No surface evidence was found of sites P-19-001352 and P-19-001069 that had previously been recommended for CRHR eligibility. Sites P-19-000186 and P-56-000261 previously recorded as possibly having human remains were not relocated during the survey effort either due to the previously recorded site locations being paved and developed.



While no resources were identified, prehistoric archaeological resources are known to occur in the general vicinity of the pipeline options, as the records search demonstrated; and undisturbed subsurface archaeological deposits may be present in the area in general, particularly in areas of high and medium archaeological sensitivity zones. Therefore, there is the potential that archaeological resources could be found in undisturbed soils during construction activities, such as grading and excavation.

As a result, the following mitigation measure is recommended to address the potential for discovery of cultural resources. Implementation of *Mitigation Measure 6-1a, perform archaeological surveys prior to construction in high and medium archaeological sensitivity zones* would support identification, avoidance, and mitigation of cultural resources for projects in zones of greater archaeological sensitivity. In addition, *Mitigation Measure 6-1b, halt construction if archaeological resources are discovered* would provide for avoidance, recovery, or other mitigation of unknown subsurface cultural resources encountered during project construction activities.

In addition, the construction contractor is required to follow California Health and Safety Code Section 7050.5(b), which specifies protocols if human remains are discovered.

With implementation of Mitigation Measure 6-1a and Mitigation Measure 6-1b, impacts of the pipelines on archaeological resources would be less than significant.

#### **6.4.3 Impact 6-2: Historic Structures or Buildings**

The construction of Alternative 1 Agoura Road AWPf, Alternative 2 Reservoir AWPf, and the pipeline options would not require the removal, alternation, or relocation of any standing structures more than 45 years old that may be considered historical resources. Therefore, there would be no impact .

#### **6.4.4 Impact 6-3: Paleontological Resources**

With mitigation, Impact 6-3 would result in less than significant impacts.

##### **6.4.4.1 Alternative 1 Agoura Road Advanced Water Purification Facility**

Scientifically important fossil remains have been recovered from geologic units mapped as Alluvium (Qal) and Terrace deposits (Qt) that underlie the Alternative 1 Agoura Road AWPf site. Consequently, these units have high paleontological potential. Ground-disturbing activities in these units have the potential to encounter scientifically important paleontological resources. For project areas underlain by geologic units with high potential for producing scientifically important paleontological resources, mitigation of potential adverse impacts resulting from construction-related ground disturbance is recommended.

The following mitigations are recommended:

- *Mitigation Measure 6-3a, prepare a Paleontological Resources Monitoring and Mitigation Plan (PRMMP)* would include site-specific impact mitigation recommendations, and specific procedures to follow for construction monitoring and fossil discovery in areas underlain by geologic units with high paleontological potential.
- *Mitigation Measure 6-3b, halt construction if paleontological resources are discovered* would provide for avoidance, recovery, or other mitigation of paleontological resources encountered during project construction activities where a paleontological monitor is not present.
- *Mitigation Measure 6-3c, prepare a Paleontological Resources Worker Environmental Awareness Training (WEAT) Program* would train construction personnel regarding the recognition of possible buried paleontological resources, protection of paleontological resources during construction, and the procedures to be followed if paleontological resources are encountered. Personnel will be instructed that unauthorized collection or disturbance of fossils is unlawful.

With implementation of Mitigation Measure 6-3a, Mitigation Measure 6-3b, and Mitigation Measure 6-3c, impacts from Alternative 1 Agoura Road AWPf on paleontological resources would be less than significant.

### 6.4.4.2 Alternative 2 Reservoir Advanced Water Purification Facility

Scientifically important fossil remains have been recovered from geologic units mapped as Alluvium (Qal) and Conejo volcanics (Tc) that underlie the Alternative 2 Reservoir AWPf site. Consequently, these units have high paleontological potential. Ground-disturbing activities in these units have the potential to encounter scientifically important paleontological resources. For project areas underlain by geologic units with high potential for producing scientifically important paleontological resources, mitigation of potential adverse impacts resulting from construction-related ground disturbance is recommended.

The following mitigations are recommended:

- *Mitigation Measure 6-3a, Prepare a PRMMP* would include site-specific impact mitigation recommendations, and specific procedures to follow for construction monitoring and fossil discovery in areas underlain by geologic units with high paleontological potential.
- *Mitigation Measure 6-3b, Halt construction if paleontological resources are discovered* would provide for avoidance, recovery, or other mitigation of paleontological resources encountered during project construction activities where a paleontological monitor is not present.
- *Mitigation Measure 6-3c, Prepare a Paleontological Resources WEAT Program* would train construction personnel regarding the recognition of possible buried paleontological resources, protection of paleontological resources during construction, and the procedures to be followed if paleontological resources are encountered. Personnel will be instructed that unauthorized collection or disturbance of fossils is unlawful.

With implementation of Mitigation Measure 6-3a, Mitigation Measure 6-3b, and Mitigation Measure 6-3c, impacts from Alternative 2 Reservoir AWPf on paleontological resources would be less than significant.

### 6.4.4.3 Pipelines

Scientifically important fossil remains have been recovered from the following mapped geologic units that underlie all pipelines:

- Alluvium (Qal and Qu)
- Terrace deposits (Qt)
- Older Alluvium (Qoa and Qao)
- Monterey Formation (lower) (Tml)
- Monterey Formation (Tm)
- Conejo volcanics (Tco and Tc)
- Topanga Canyon Formation (Ttcu)
- Upper Topanga Formation (Ttuc)

Consequently, these units have high paleontological potential. Ground-disturbing activities in these units have the potential to encounter scientifically important paleontological resources. For project areas underlain by geologic units with high potential for producing scientifically important paleontological resources, mitigation of potential adverse impacts resulting from construction-related ground disturbance is recommended.

The following mitigations are recommended:

- *Mitigation Measure 6-3a, Prepare a PRMMP* would include site-specific impact mitigation recommendations, and specific procedures to follow for construction monitoring and fossil discovery in areas underlain by geologic units with high paleontological potential.

- *Mitigation Measure 6-3b, Halt construction if paleontological resources are discovered* would provide for avoidance, recovery, or other mitigation of paleontological resources encountered during project construction activities where a paleontological monitor is not present.
- *Mitigation Measure 6-3c, Prepare a Paleontological Resources WEAT Program* would train construction personnel regarding the recognition of possible buried paleontological resources, protection of paleontological resources during construction, and the procedures to be followed if paleontological resources are encountered. Personnel will be instructed that unauthorized collection or disturbance of fossils is unlawful.

With implementation of Mitigation Measure 6-3a, Mitigation Measure 6-3b, and Mitigation Measure 6-3c, impacts of the pipelines on paleontological resources would be less than significant.

## 6.5 Mitigation Measures

The Pure Water Project would have potentially significant impacts to archaeological and paleontological resources. Implementation of Mitigation Measures 6-1 through 6-3 would reduce these impacts to less than significant.

**Mitigation Measure 6-1a, Perform archaeological survey prior to construction in high and medium archaeological sensitivity zones.** Prior to construction, the JPA will determine whether the project is located within a high or medium archaeological sensitivity zone. If the project site is determined to be in a high or medium archaeological sensitivity zone, a qualified archaeologist will perform an archaeological investigation at the site if it has not been surveyed. Subsurface testing, including hand-augured borings and excavated test pits, may be recommended by the archaeologist. The archaeologist will analyze gathered data in relation to the detailed project construction plans. The findings of the investigation will be submitted for JPA review and approval. This report will include an evaluation of the “uniqueness” of all finds, anticipated project-related impacts, and recommendations for mitigating impacts.

**Mitigation Measure 6-1b, Halt construction if archaeological resources are discovered.** In the event archaeological resources are discovered, the construction contractor will be responsible for halting construction activities, notifying the JPA, and retaining a qualified archaeologist. The archaeologist will evaluate the uniqueness of the find, contact local Native American and historical organizations, and recommend a course of action. The construction contractor will receive training regarding the identification of cultural resources by a qualified archaeologist prior to the start of construction activities.

**Mitigation Measure 6-3a, Prepare a PRMMP.** Prior to construction, a PRMMP will be developed to reduce potential impacts to paleontological resources. The PRMMP will be prepared by a professional paleontologist and will meet SVP criteria (2010). The PRMMP will:

- Identify construction impact areas where significant paleontological resources may be encountered and the depths at which those resources are likely to be discovered
- Stipulate the location and frequency of monitoring and other appropriate procedures
- Describe the significance criteria to be used to determine which resources will be recovered for their data potential, as well as the coordination strategy to conduct adequate monitoring
- Describe methods of recovery
- Provide procedures for postexcavation preparation and analysis of specimens
- Document the final curation of specimens at an accredited facility
- Describe data analysis methods
- Describe reporting requirements

The PRMMP will specify that all paleontological work will be conducted by qualified professionals meeting the SVP criteria (2010) so that encountered resources will be quickly and professionally recovered while



not impeding project construction. At the end of the monitoring effort, a Paleontological Monitoring Report will be prepared by the professional paleontologist to document the results of monitoring.

**Mitigation Measure 6-3b, Halt construction if paleontological resources are discovered.** Should any paleontological resources (for example, fossils) be encountered during construction activities when a paleontological monitor is not present, work will be halted immediately within 50 feet of the discovery. The project paleontologist will determine the significance of the discovery, evaluate the uniqueness of the find, and prepare a written report documenting the find and recommending further courses of action. Depending on the significance of the discovery, the actions may include avoidance, excavation, documentation, recovery, or other measures determined by the paleontologist. Because proper excavation and removal of paleontological resources do not lessen the scientific value of the resources, recovery is the recommended method of reducing impacts to scientifically important paleontological resources resulting from project-related excavations and would reduce impacts to less than significant.

**Mitigation Measure 6-3c, Prepare a Paleontological Resources WEAT Program.** Because ground disturbance is associated with some risk of encountering previously undiscovered paleontological resources, prior to the initiation of construction or ground-disturbing activities, a WEAT module for paleontological resources will be prepared by a qualified professional paleontologist, as defined by the SVP (2010). Construction personnel will be trained via the WEAT module regarding the following activities:

- Recognition of possible buried paleontological resources
- Protection of paleontological resources during construction
- Coordination between construction staff and paleontological staff
- Construction and paleontological staff roles and responsibilities in implementing the PRMMP
- Procedures to be followed if paleontological resources are encountered

Personnel will be instructed that unauthorized collection or disturbance of fossils is unlawful. Training materials and formats may include in-person training, prerecorded videos, posters, and informational brochures. Upon completion of WEAT training, the contractor would require workers to sign a form stating that they attended the training and understand and will comply with the information presented.

## 7. Energy

This chapter evaluates the potential for the Pure Water Project to efficiently use energy resources and comply with plans for energy efficiency and energy conservation.

### 7.1 Existing Setting

The Las Virgenes MWD and Triunfo WSD operate energy-intensive facilities to move and treat drinking water, recycled water, and wastewater throughout their service areas. The highest energy-using drinking water facilities reported by the Las Virgenes MWD are as follows (Las Virgenes MWD 2021):

- Seminole Pump Station – 690,814 kilowatt-hours (kWh)
- Warner Pump Station – 551,764 kWh
- Cornell Pump Station – 537,992 kWh
- Westlake Pump Station – 472,213 kWh
- Jed Smith Pump Station – 428,618 kWh
- Westlake Filtration Plant – 404,256 kWh

Total energy use by Las Virgenes MWD drinking water facilities in 2018 was 3,972,817 kWh (Las Virgenes MWD 2021). Based on total water deliveries in 2018 of 20,506 AF, the estimated energy intensity of the local delivery system is 194 kilowatt-hours per acre-foot (kWh/AF). Energy use by the recycled water system and by Triunfo WSD facilities, including the Tapia WRF, is not available.

At this time, all power required to operate Las Virgenes MWD and Triunfo WSD facilities is provided by the regional power agency Southern California Edison (SoCal Edison). A portion of these demands is offset by a solar power generating facility located at the Las Virgenes MWD headquarters, which is designed to generate peak power of approximately 5 megawatts (MW). The solar generating facility helps offset power use by the recycled water pump station located at the headquarters site.

### 7.2 Regulatory Framework

This section describes the laws and regulations affecting energy use, focusing on California requirements and local agency goals and policies. There are no federal regulations for energy use that are directly applicable to the Pure Water Project.

#### 7.2.1 State Regulations

This section discusses state regulations directly applicable to energy use and efficiency. State regulations addressing climate change also include energy efficiency goals so are applicable as well. Climate change regulations are discussed in Chapter 9, Greenhouse Gas Emissions.

##### 7.2.1.1 Building Energy Efficiency Standards

State of California standards for building energy efficiency are primarily in 24 CCR 6, commonly known as the Title 24 standards. The California Energy Commission updates these standards every 3 years – the current version is the *2022 Building Energy Efficiency Standards* (California Energy Commission 2022a). The Title 24 standards require an energy budget in terms of energy consumption per square foot of floor space, to be determined either by a prescriptive method of following known best practices or a performance method allowing for innovation in design as long as energy use is as efficient as the prescriptive method.

Title 24 standards are adaptable based on climate zone and building type:

- All Pure Water Project facilities would be in Climate Zone 9 (California Energy Commission 2022b).
- Preliminary design work by the JPA has determined that the AWPf and pump station facilities would be nonresidential buildings of the following occupancy types:
  - Industrial/Manufacturing Facility Building: Most AWPf and pump station building areas
  - Office Building: Office space areas for the plant operators

### 7.2.1.2 Green Building Standards

In addition to the 24 CCR 6 standards for building energy efficiency, the State of California also has established Green Building Standards pursuant to Title 24 CCR Part 11. The California Building Standards Commission updates these standards every 3 years – the current version is the *2022 California Green Building Standards* (California Building Standards Commission 2022). The Green Building Standards include mandatory and voluntary standards for:

- Energy efficiency
- Water efficiency and conservation
- Material conservation and resource recovery
- Environmental quality

For nonresidential development such as the Pure Water Project facilities, Green Building Standards mandatory measures include:

- Site design for stormwater pollution prevention (Chapter 11, Hydrology and Water Quality provides additional discussion)
- Provision for bicycle parking, preferred clean air vehicle and high-occupancy vehicle parking, and electric vehicle charging stations
- Light pollution reduction (Chapter 3, Aesthetics provides additional discussion)
- Use of shade trees in site landscaping
- Weather protection and moisture control
- Pollutant control in finish materials, such as adhesives, seals, and caulks; painting and coatings; and carpet systems
- Acoustical control in walls, ceilings, and windows

The Green Building Standards include many options for additional voluntary measures. Voluntary standards applicable to Pure Water Project facilities include:

- Site preservation to reduce the development footprint and optimize open space
- Low-impact development standards to control stormwater runoff (Chapter 11, Hydrology and Water Quality provides additional discussion)
- Exterior wall shading, including vegetative shade
- Light-colored hardscape features and cool roofs
- Onsite renewable energy generation, such as solar panels
- Use of locally or regionally sourced and bio-based building materials, reused materials, materials with a high recycled content, and materials with good longevity and recyclability

The Green Building Standards include voluntary tiers to further encourage building practices that improve public health, safety, and the general welfare by promoting the use of building concepts that minimize the



building’s impact on the environment and promote a more sustainable design (California Building Standards Commission 2019). The two voluntary tiers are:

- Tier 1: Comply with Savings by Design modeling procedures, specifically the *Savings By Design Healthcare Modeling Procedures* (EnergySoft 2009).
- Tier 2. Exceed the Savings by Design modeling procedures by a minimum of 15%.

**7.2.2 Local Regulations**

Pure Water Project operational facilities would be located within Agoura Hills and Westlake Village. Policies and guidance related to energy found in sections of each general plan are discussed in this section. Because no operational facilities (only pipelines) would be located within Thousand Oaks or in unincorporated Ventura County, no local regulations for energy use apply.

**7.2.2.1 City of Agoura Hills**

This section describes City of Agoura Hills regulations relevant to the project.

**General Plan**

Table 7-1 provides the energy goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to the project.

**Table 7-1. City of Agoura Hills Energy Goals and Policies**

Goal or Policy Name	Goal or Policy Language
Goal U-5: Energy Provision and Conservation	<i>This goal is intended to ensure adequate, efficient, and environmentally sensitive energy service for all residents and businesses.</i>
Policy U-5.1: New Development Requirements	<i>New Development Requirements. Require that new development be approved contingent upon its ability to be served by adequate natural gas and electrical facilities and infrastructure.</i>
Policy U-5.3: Solar Access	<i>Ensure that sites, landscaping, and buildings are configured and designed to maximize and protect solar access.</i>
<i>Policy U-5.7: Solar Panels in Projects</i>	<i>Provide incentives for use of solar energy in new development.</i>
Goal NR-9: Energy Conservation	<i>This goal is intended to ensure affordable, reliable, and sustainable energy resources residents and businesses.</i>
Policy NR-9.1: Public Outreach	<i>Promote energy conservation measures and options to all residences, businesses, contractors, and consultants.</i>

Source: City of Agoura Hills 2010b

**Climate Action and Adaptation Plan**

Table 7-2 provides the energy goals and policies established by the *Climate Action and Adaptation Plan* (City of Agoura Hills 2022a) that are applicable to the project.

**Table 7-2. City of Agoura Hills Additional Energy Goals**

Goal Name	Goal Language
Climate Action and Adaptation Plan Goal 4: Increase Energy Efficiency in New Commercial Units	<p><i>Educate city staff and developers on future Title 24 updates and additional energy efficiency opportunities for new, nonresidential development</i></p> <p><i>Promote Tier 1 and Tier 2 Green Building ratings, such as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) (2022) or Build it Green certification (builditgreen.org 2022)</i></p> <p><i>Develop City of Agoura Hills staff to be resources in implementing energy efficiency to exceed current 24 CCR 6 standards and to ensure that staff can implement Title 24 updates quickly and effectively</i></p>

Source: City of Agoura Hills 2022a

### 7.2.2.2 City of Westlake Village

Table 7-3 provides the energy goals and policies established by the *City of Westlake Village General Plan* (City of Westlake Village 2019a) that are applicable to the project.

**Table 7-3. City of Westlake Village Energy Goals and Policies**

Goal or Policy Name	Goal or Policy Language
Scare Resources Goal	<i>It shall be the goal of the City of Westlake Village to work to protect the limited number of resources available to the City of Westlake Village.</i>
Objective 1	<i>Protect the limited resources available to the city while promoting conservation and innovative planning.</i>

Source: City of Westlake Village 2019a

## 7.3 Assessment Methods and Thresholds of Significance

Potential energy impacts were evaluated according to the CEQA Guidelines (CCR, Section 15000, et seq.). Energy impacts may occur if the Pure Water Project would result in the following:

- A potentially significant environmental impact due to wasteful inefficient or unnecessary consumption of energy resources during project construction or operation
- A conflict with or obstruction of a state or local plan for renewable energy or energy efficiency

## 7.4 Environmental Impacts

Table 7-4 summarizes potential energy impacts.

**Table 7-4. Summary of Energy Impacts**

Impact	Alternative 1 Agoura Road AWPF	Alternative 1 Reservoir AWPF	Pipelines
Impact 7-1: Wasteful, inefficient, or unnecessary energy consumption	Less than significant	Less than significant	Less than significant
Impact 7-2: Policy consistency (renewable energy or energy efficiency)	Less than significant	Less than significant	Less than significant

#### **7.4.1 Impact 7-1: Wasteful, Inefficient, or Unnecessary Energy Consumption**

Pure Water Project construction work requires the consumption of energy resources, including fossil fuels. This consumption of energy is necessary to construct the project features, including the AWPf, pipelines, and related facilities. Although construction activities would consume energy, the construction contractors would manage fuel costs; therefore, fuel consumption would not be wasteful or inefficient.

Project operation would result in the consumption of energy resources, including the use of fossil fuels, for activities such as water purification and pumping. These operational activities are similar in nature to current operations; however, overall power use would increase. Primarily, the membrane filtration and RO units are expected to require an annual energy use of approximately 6–7 million kWh when the AWPf is operational. This energy use is necessary to operate the water purification process, and the JPA would manage energy costs; therefore, energy consumption would not be wasteful or inefficient.

The AWPf is being designed to be solar-ready, consistent with Green Building Standards. In addition, local water purification would offset the energy use needed for the California Department of Water Resources to export Northern California water and for Metropolitan to deliver drinking water to Las Virgenes Reservoir.

For these reasons, the impact would be less than significant.

#### **7.4.2 Impact 7-2: Policy Consistency (Renewable Energy or Energy Efficiency)**

Policies applicable to Pure Water Project energy use are the 24 CCR 6 Building Energy Efficiency Standards and the 24 CCR 11 Green Building Standards. In addition, compliance with these standards is locally encouraged by the *City of Agoura Hills General Plan* and *Climate Action and Adaptation Plan* and the *City of Westlake Village General Plan*. Pure Water Project facilities must be designed to meet the Building Energy Efficiency Standards; therefore, a Title 24-compliant energy budget would be prepared during final design.

Based on site development and architectural design to date, several of the Green Building Standards' mandatory measures are included, including stormwater pollution prevention and shade trees. Additional mandatory measures would be added during final design. In addition, the site plan has been developed to reduce the development footprint and optimize open space, which are both voluntary Green Building Standard measures. Additional voluntary measures may be added during final design.

For these reasons, the Pure Water Project would be consistent with state and local plans for renewable energy and energy efficiency, and the impact would be less than significant.

### **7.5 Mitigation Measures**

Impacts 7-1 and 7-2 would be less than significant; therefore, no mitigation is needed.



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## 8. Geology and Soils

This chapter identifies and evaluates the potential impacts of the project on geology, seismicity, and soil resources and includes the following information:

- Local topography, geology, seismicity, and soil resources
- Applicable state, local, and regional plans and programs, objectives, and policies
- Potential impacts related to geology and soils
- Proposed mitigation measures to reduce potentially significant impacts

### 8.1 Existing Setting

This section describes the geology and topography, earthquake fault-ruptures and seismic hazards, and soils within areas that would potentially be affected by proposed alternatives considered for the Pure Water Project.

#### 8.1.1 Geology and Topography

The project is located within the cities of Agoura Hills, Westlake Village, and Thousand Oaks, and in unincorporated Ventura County, California. Regionally, the Pure Water Project is located north of the Santa Monica Mountains. The project area is within the Southern California Transverse Ranges geomorphic province and is characterized by a system of east–west trending valleys, folds, faults, and mountain ranges. Elevations within the project area range between approximately 220 and 1,070 feet above mean sea level (Esri 2021).

The project area is generally underlain by rocks of the Cenozoic geologic era. Figure 8-1 shows the geologic units found along the proposed pipeline alignments and AWPf alternatives. Quaternary age surficial sediments primarily consist of alluvium (unconsolidated to weakly consolidated sand, clay, and gravel) and are found within valleys and low-lying areas. Sedimentary rocks of the Miocene-aged Modelo and Monterey Formations are present in the project area and generally consist of shale and siltstone.

Sedimentary and igneous rocks of the Topanga Formation are also present in the project area and include primarily clay shale and siltstone, and Conejo Volcanics (volcanic rocks) of the Topanga Group (Dibblee and Ehrenspeck 1990, 1992, 1993; Yerkes and Showalter 1991, 1993; Yerkes and Campbell 1995a, 1995b, 1997a, 1997b). Table 6-1 provides additional descriptions of geologic units found within the project area.

The Alternative 1 Agoura Road AWPf site terrain consists of gentle hills and gullies (generally inclined at 3H:1V to 5H:1V [where H:V is horizontal to vertical]), with elevations that range from approximately 955 feet above sea level at the northern portion of the site to 1,030 feet above sea level at the southern portion of the site. The hillside steepens significantly to the south, where slopes steeper than 2H:1V are present. The Agoura Road embankment fill slope descends to the northern end of the site. The fill slope appears to be inclined at 2H:1V and on the order of 5 to 15 feet tall.

The Alternative 2 Reservoir AWPf site area was formerly mountainous ridgetop and saddle-type terrain. However, the site area is currently relatively flat at an elevation of roughly 1,065 feet. The site is the former Borrow Area No. 3 of the Las Virgenes Reservoir project (Wahler 1969, 1970). Based on the elevation of 1,065 feet and original topography from the reservoir site investigation (Wahler 1970), the borrow activities resulted in cuts on the order of 75 to 95 feet deep at the site.

With the exception of the concentrate pipeline alignment's open space hillside areas in the northwestern project area, and east of Las Virgenes Reservoir, the pipelines are primarily planned beneath existing streets with variable grades. Outside of city streets, pipelines are generally planned beneath existing (dirt) fire roads and trails with variable grades.

### 8.1.2 Earthquake Faults

Southern California is in a seismically active region, and areas underlain by active faults are at risk of ground rupture from movement of the earth's crust along the fault (USGS 2020). Faults designated as active faults under the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) have a higher potential for ground surface rupture during an earthquake event. This designation indicates the faulting has resulted in surface offsets in Holocene time (approximately within the last 12,000 years), and the fault's location is well defined (California Department of Conservation 2018).

Although the State of California has not prepared an official Alquist-Priolo Earthquake Fault Zone Map for the Thousand Oaks quadrangle (California Department of Conservation 2018), no known Holocene or Quaternary-aged faults are mapped adjacent to or crossing either the Alternative 1 Agoura Road or Alternative 2 Reservoir AWP sites (USGS 2020; Campbell et al. 2014).

As shown on Figure 8-2, an undifferentiated Quaternary-aged fault crosses the concentrate pipeline options, mapped as two splays of the Sycamore Canyon fault (USGS 2020). These fault splays are mapped as being concealed by late to middle Pleistocene aged (between 12,000 and 2 million years old) Old Alluvium in the 2014 geologic map prepared for the area (Campbell et al. 2014). Because these splays are concealed by pre-Holocene aged soil, they would not be considered "active" per the Alquist-Priolo Act.

The closest mapped active fault to the project area is the Simi-Santa Rosa fault zone, mapped north of the northern end of the concentrate conveyance near Santa Rosa Road (USGS 2020). The concentrate alignment terminus is planned just south of the southern limit of the Alquist-Priolo Earthquake Fault Zone for the Simi-Santa Rosa Fault (California Department of Conservation 1999).

Geologic hazards that could potentially affect the project are described in the following sections. Figure 8-2 shows the locations of the mapped faults.

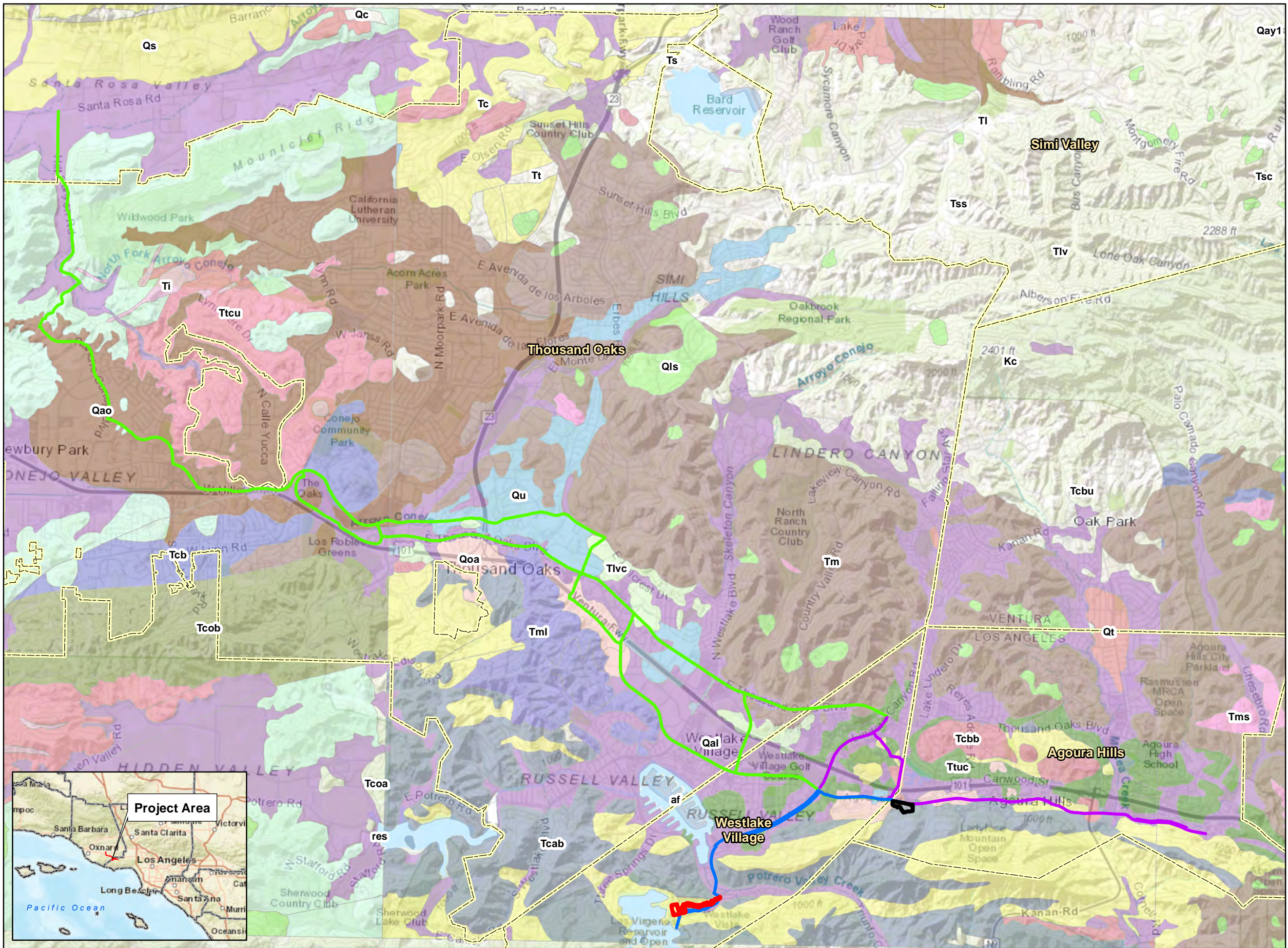
#### 8.1.2.1 Ground Shaking

Ground shaking from earthquakes can cause extensive damage to property and people. Factors that determine the amount of damage caused from ground shaking are interrelated and include the following factors, among others:

- Magnitude and depth of the earthquake
- Distance from the fault
- Duration of shaking
- Type of bedrock and soils
- Topography

Southern California is subject to strong ground shaking during earthquakes (Figure 8-2). Over the last 100 years, 182 earthquakes (all with a magnitude less than 3.7) have been recorded within approximately 7 miles of the project (USGS 2022). There are no mapped active or potentially active faults underlying the project; however, because of its proximity to regional faults, the area could experience very strong intensity ground shaking during a large earthquake. As shown on Figure 8-2, the project area, where underlain by alluvial sediments, is at risk of higher potential shaking intensity versus those portions of the project area underlain by bedrock.





- ### Legend
- Alternative 1 Agoura Road
  - Alternative 2 Reservoir AWWP
  - Concentrate Alignment Options
  - Purified Water Alignment Options
  - Source Water Alignment Options
- ### USDA Soil Types
- af: artificial fill (Holocene)
  - Tc: Conejo Volcanics (middle Miocene)
  - Tcab: Conejo Volcanics (andesitic to dacitic) (middle Miocene)
  - Tcb: Calabasas Formation (of Topanga Group) (middle Miocene)
  - Tcbb: Conejo Volcanics (chiefly basaltic) (middle Miocene)
  - Tco: Conejo Volcanics (of Topanga Group) (middle Miocene)
  - Tcob: Conejo Volcanics (chiefly basaltic) (of Topanga Group) (middle Miocene)
  - Ti: Intrusive Rocks (middle and upper Miocene)
  - Tm: Modelo Formation (upper Miocene)
  - Tml: Monterey Formation (lower) (middle Miocene)
  - Tms: Modelo Formation (sandstone unit) (upper Miocene)
  - Tlvc: Detritus derived from Conejo Volcanics (middle Miocene)
  - Ttcu: Topanga Canyon Formation (of Topanga Group) (middle Miocene)
  - Ttuc: Upper Topanga Formation (middle Miocene)
  - Qal: Alluvium (Holocene and late Pleistocene)
  - Qao: Older alluvium (Holocene and Pleistocene)
  - Qoa: Older alluvium (Pleistocene)
  - Qs: Saugus Formation (Pleistocene)
  - Qt: Terrace deposits (Pleistocene)
  - Qu: Alluvium, undivided (Pleistocene)
  - Qls: Landslide deposits (Holocene and Pleistocene)

Sources:  
 USGS, 1991-1995; ESRI World Topo Map;  
 ESRI World Street Map;

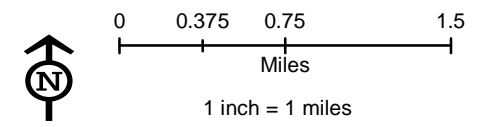
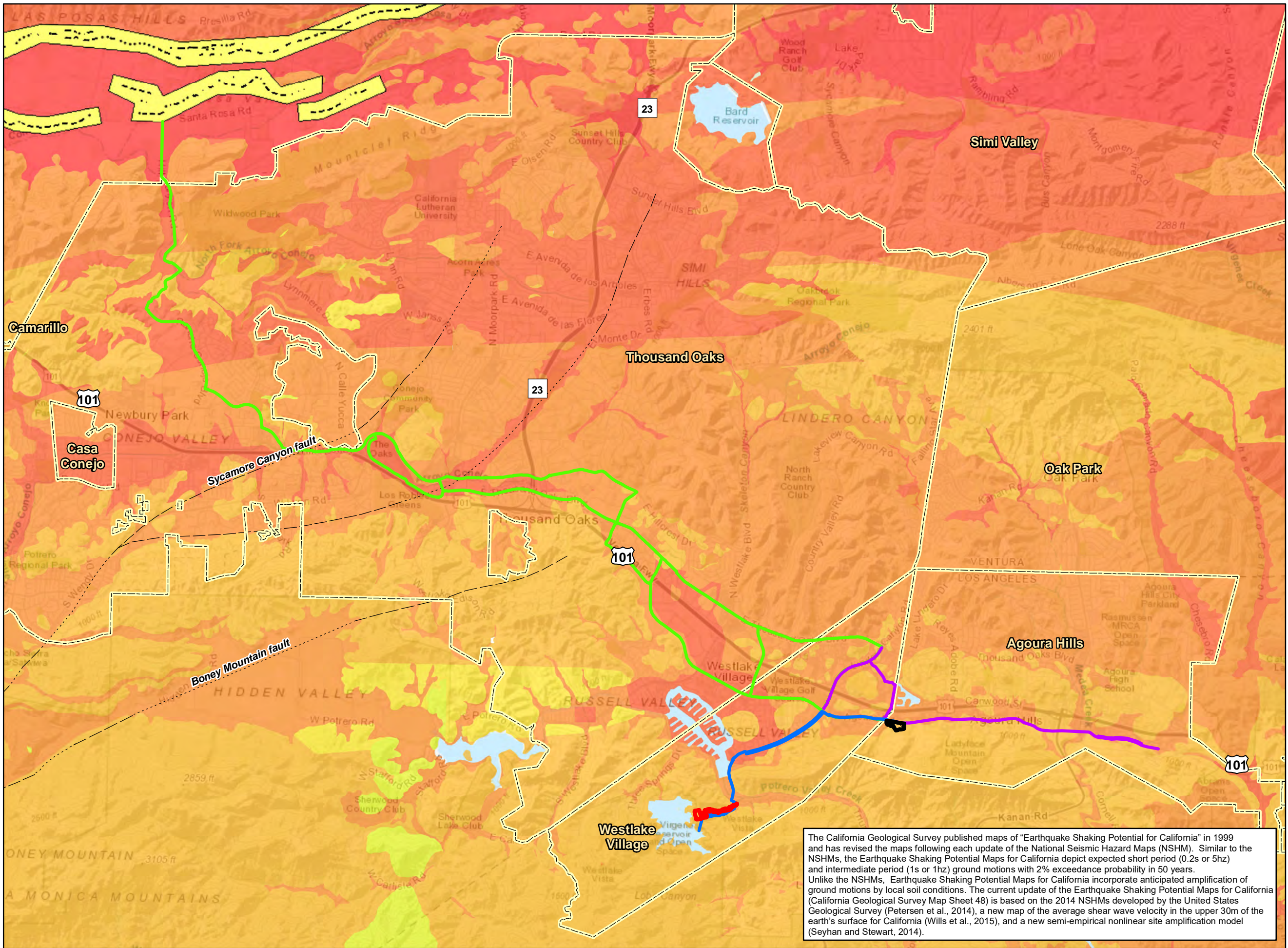


FIGURE 8-1  
**Geology**  
 Pure Water Project Las Virgenes – Triunfo





### Legend

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road
- Alternative 2 Reservoir AWP

### Fault Traces

- Accurately Located
- Approximately Located
- Approximately Located, Queried
- Inferred
- Inferred, Queried
- Concealed
- Concealed, Queried
- Aerial Photo Lineament
- Alquist-Priolo Earthquake Fault Zone

### Percent Shaking Relative to Gravity

- 100 - 110%
- 90 - 100%
- 80 - 90%
- 70 - 50%
- 60 - 70%
- 50 - 60%
- 40 - 50%
- City Boundary

**Project Area**

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 California Department of Conservation,  
 Downloaded March 2022;  
 Seismic Hazards Program, California Geological Survey,  
 California Department of Conservation, Seismic Hazard  
 Zones: Alquist-Priolo Fault Traces, 2021; D. Branum,  
 R. Chen, C. Wills (California Geological Survey);  
 M. Petersen (United States Geological Survey);  
 MS: Earthquake Shaking Potential for California, 2016

The California Geological Survey published maps of "Earthquake Shaking Potential for California" in 1999 and has revised the maps following each update of the National Seismic Hazard Maps (NSHM). Similar to the NSHMs, the Earthquake Shaking Potential Maps for California depict expected short period (0.2s or 5hz) and intermediate period (1s or 1hz) ground motions with 2% exceedance probability in 50 years. Unlike the NSHMs, Earthquake Shaking Potential Maps for California incorporate anticipated amplification of ground motions by local soil conditions. The current update of the Earthquake Shaking Potential Maps for California (California Geological Survey Map Sheet 48) is based on the 2014 NSHMs developed by the United States Geological Survey (Petersen et al., 2014), a new map of the average shear wave velocity in the upper 30m of the earth's surface for California (Wills et al., 2015), and a new semi-empirical nonlinear site amplification model (Seyhan and Stewart, 2014).

**Figure 8-2**  
**Shaking Intensity**  
 Pure Water Project Las Virgenes-Triunfo



### 8.1.2.2 Landslides

Weak rocks and steep slopes are basic geologic characteristics that contribute to slope instability, including landslides. In susceptible areas, landslides can be triggered by earthquakes, high rainfall, weathering, or by human activities. Based on properties of geologic and soil units mapped within the project area (Table 6-1 and Figure 8-1), the two AWPf sites or conveyance pipelines, are not located in landslide hazard zones of required investigation (CGS 2000b, 2002b), as shown on Figure 8-3.

### 8.1.2.3 Liquefaction

Liquefaction is the transformation of saturated, unconsolidated material from a solid state to a liquid state because of increased pore pressure that reduces the material's strength. During liquefaction, soil becomes fluid-like and mobile, and permanent displacement of the ground can occur, resulting in damage to utilities and structures. Increased pore pressure in unconsolidated materials is caused by ground shaking during large earthquakes. Liquefaction can cause foundation failures in buildings and other facilities because of the reduction of foundation-bearing strength. The potential for liquefaction depends on the duration and intensity of earthquake shaking, particle size distribution of the soil, density of the soil, and groundwater elevation. Areas at risk of liquefaction typically have a high groundwater table with low- to medium-density sediments, particularly younger alluvium (CGS 2000a, 2002a).

Within the project area, the potential for liquefaction exists in local areas underlain by younger alluvium and historically shallow groundwater. Figure 8-3 shows the project areas with potential for liquefaction. Footprints of both Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf are not located within mapped zones of required investigation for liquefaction. However, some sections of the pipelines are located within mapped zones of required investigation for liquefaction (CGS 2000b, 2002b).

### 8.1.2.4 Lateral Spreading

Lateral spreading is a ground failure that involves displacement of large blocks of ground moving down a gentle grade, typically toward a river or stream channel. The potential for lateral spreading is highest in areas underlain by soft, saturated, liquefiable materials, especially where bordered by a river or stream bank. There are sections of the pipeline located within mapped zones of required investigation for liquefaction potential, as shown on Figure 8-3. Those sections near a river or stream channel could be susceptible to lateral spreading.

### 8.1.3 Soils

The project area contains soil types that vary with landscape position (Figure 8-4). Soil types in the project area have physical properties that could impact design and construction. For Pure Water Project features, such limitations could include:

- Corrosive soils
- Erosion-prone soils
- Soils susceptible to shrink-swell behavior, collapse, or settlement under external loads

Settlement is typically a gradual drop in elevation of a ground surface caused by soils settling or compacting under the weight of fill material or building loads. Settlement may continue over a long period. The degree of settlement is primarily influenced by the following factors:

- Thickness of the settlement-prone soils
- Site history
- Characteristics of fill material
- Characteristics of building loads

Settlement is not always uniform; differential settlement is uneven, causing different parts of a structure to settle at different rates. Differential settlement could potentially occur in areas with nonuniform fill material and thickness due to nonuniform subgrade materials or uneven loading.



Erosion is the process whereby soil particles become detached and are transported by wind or water. Rates of erosion can vary, depending on several factors, including:

- Soil texture
- Structure
- Amount of soil cover
- Geometry of the slope

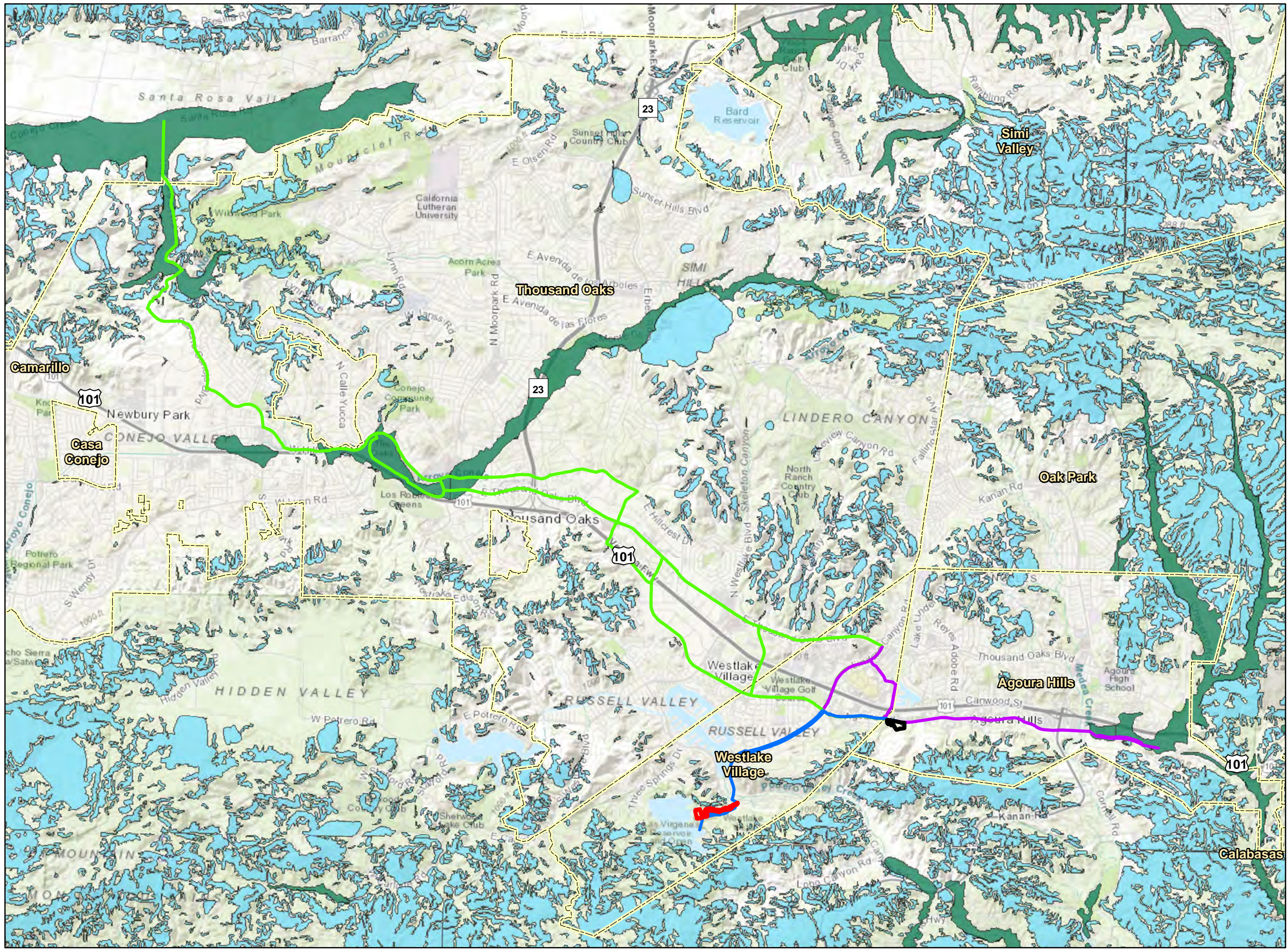
Hillside areas of the concentrate pipeline alignment in the northwestern project area and the hillside area east of Las Virgenes Reservoir have a higher risk of erosion. However, most of the proposed construction occurs in more urbanized, relatively flat areas with a low erosion hazard.

Expansive soils exhibit a cycle of shrinking and swelling (contraction and expansion) with drying and wetting. This occurs in fine-textured soils containing expansive clay minerals. Structures built on expansive soils can be damaged over time, and foundations can crack or shift. Soils and soft bedrock with high expansive properties likely underlie portions of the project area. Generally, proper engineering design can mitigate expansive soils problems and their impacts on facilities and structures.

The chemical properties of a soil or bedrock unit can sometimes be detrimental to below-grade structures or improvements. Soil corrosion can significantly impact typical construction materials, such as metals and concrete. Corrosive soils are likely present at least locally in the project area. Similarly, the shrink-swell and collapse potential of the subsurface materials in the project area are likely at least locally prone to these hazards.

Because most of the pipeline alignment alternatives are located within urban lands (existing roads, trails, and easements), surficial soil units have been cut and filled for development, such as construction of roads and buildings. Urban lands are covered by asphalt, concrete, buildings, and other structures; and urban soils mostly contain fill material. These soils are largely engineered and unlikely to exhibit shrink-swell behavior. Where slopes are relatively flat, the erosion hazard is low.



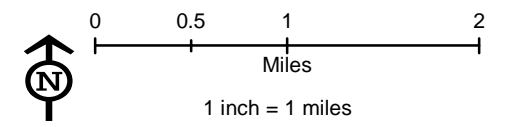


**Legend**

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road AWWP
- Alternative 2 Reservoir AWWP
- Landslide Zone of Required Investigation
- Liquefaction Zone of Required Investigation
- City Boundary



Sources:  
 California Department of Conservation, 2018;  
 ESRI World Topo Map; ESRI World Street Map

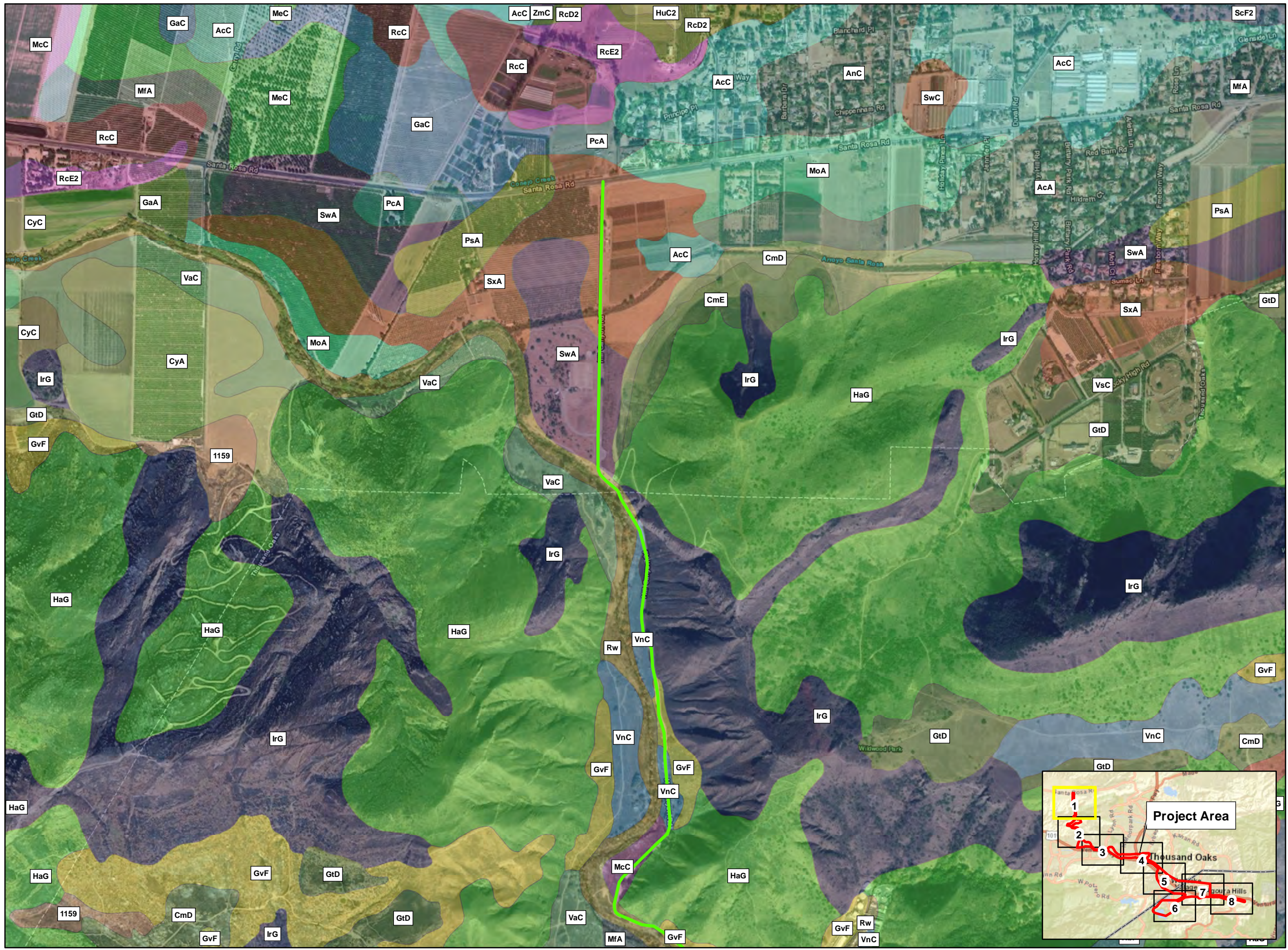


**Figure 8-3**  
**Slope Stability and Liquefaction Potential**



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### Legend

**Concentrate Alignment Options**

- Concentrate Alignment Options

**USDA Soils**

- 1159: Topdeck loam, 10 to 35 percent slopes
- AcA: Anacapa sandy loam, 0 to 2 percent slopes
- AcC: Anacapa sandy loam, 2 to 9 percent slopes
- AnC: Anacapa gravelly sandy loam, 2 to 9 percent slopes
- CmD: Cibo clay, 5 to 15 percent slopes
- CmE: Cibo clay, 15 to 30 percent slopes, MLRA 20
- CyA: Croyley clay, 0 to 2 percent slopes, warm MAAT, MLRA 19
- CyC: Croyley clay, 2 to 9 percent slopes, warm MAAT, MLRA 19
- GaA: Garretson loam, 0 to 2 percent slopes
- GaC: Garretson loam, 2 to 9 percent slopes
- GtD: Gilroy-Cibo complex, 5 to 15 percent slopes
- GvF: Gilroy loam, 15 to 50 percent slopes, very rocky
- HaG: Hambright very rocky loam, 15 to 75 percent slopes
- HbF: Hambright rocky clay loam, 30 to 50 percent slopes, eroded
- HuC2: Huerhuero very fine sandy loam, 5 to 9 percent slopes, eroded
- HuD2: Huerhuero very fine sandy loam, 9 to 15 percent slopes, eroded
- IrG: Igneous rock land
- McC: Metz loamy fine sand, 2 to 9 percent slopes
- MeC: Metz loamy sand, 2 to 9 percent slopes
- MfA: Metz loamy sand, loamy substratum, 0 to 2 percent slopes
- MoA: Mocho loam, 0 to 2 percent slopes, warm MAAT, MLRA 19
- PcA: Pico sandy loam, 0 to 2 percent slopes
- PsA: Pico loam, sandy substratum, 0 to 2 percent slopes
- RcC: Rincon silty clay loam, 2 to 9 percent slopes, MLRA 19
- RcD2: Rincon silty clay loam, 9 to 15 percent slopes, eroded, warm MAAT, MLRA 19
- RcE2: Rincon silty clay loam, 15 to 30 percent slopes, eroded
- Rw: Riverwash
- ScD2: San Benito clay loam, 9 to 15 percent slopes, eroded
- ScF2: San Benito clay loam, 30 to 50 percent slopes, eroded, MLRA 20
- SwA: Sorrento loam, 0 to 2 percent slopes, MLRA 14
- SwC: Sorrento loam, 2 to 9 percent slopes, warm MAAT, MLRA 19
- SxA: Sorrento silty clay loam, 0 to 2 percent slopes, warm MAAT, MLRA 19
- VaC: Vina loam, 2 to 9 percent slopes
- VnC: Vina gravelly loam, 2 to 9 percent slopes
- VsC: Vina silty clay loam, 2 to 9 percent slopes
- ZmC: Zamora loam, 2 to 9 percent slopes
- County Boundary

**Sources:**  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

0 500 1,000 2,000  
 Feet  
 1 inch = 1,000 feet

**Project Area**

FIGURE 8-4





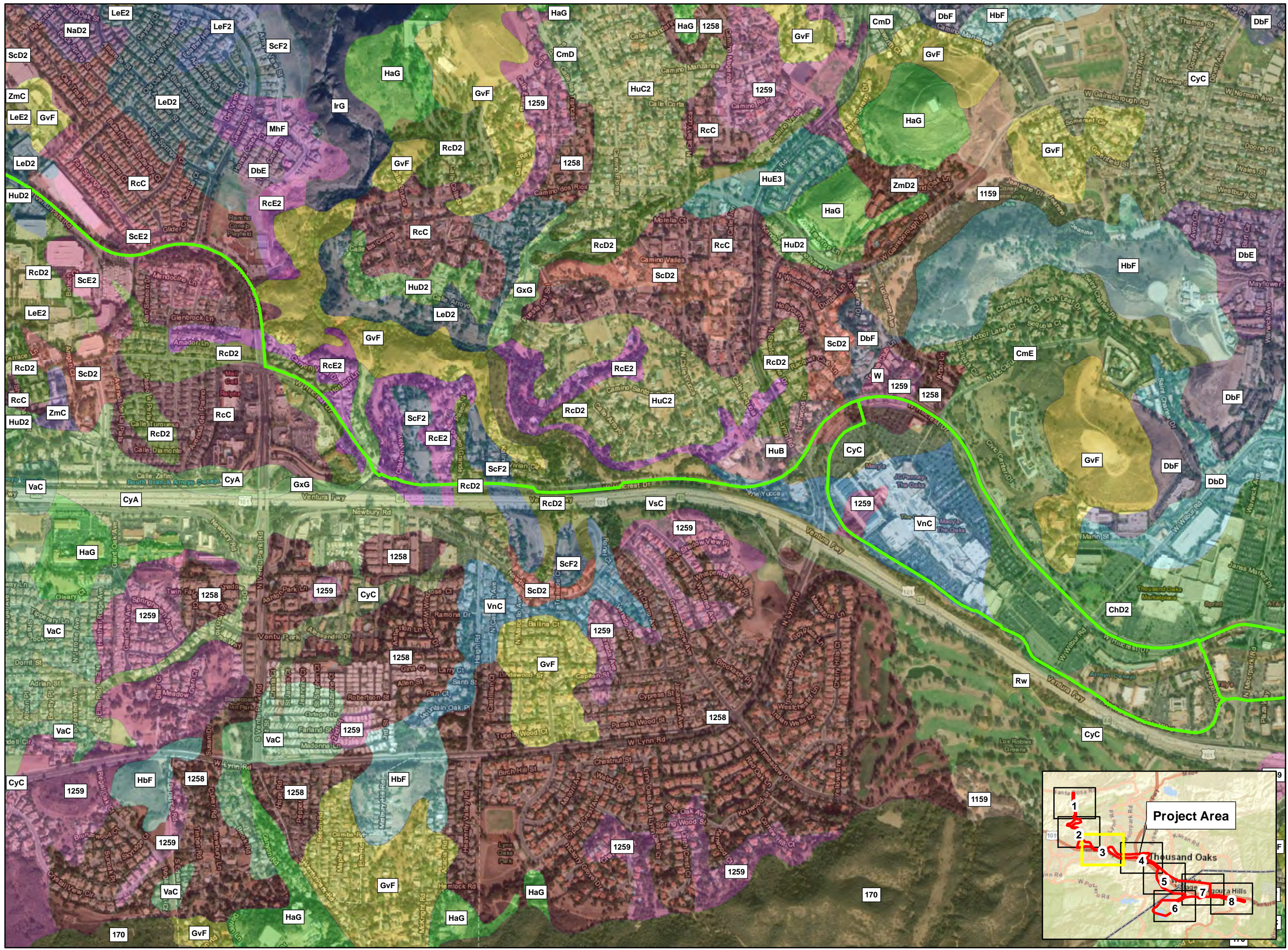
- Legend**
- Concentrate Alignment Options
- USDA Soils**
- 1159: Topdeck loam, 10 to 35 percent slopes
  - 1258: Urban land-Typic Xerorthents, terraced-Gilroy complex, 5 to 20 percent slopes
  - 1259: Urban land-Typic Xerorthents, very gravelly-Topdeck complex, 10 to 35 percent slopes
  - AuB: Azule loam, 0 to 5 percent slopes
  - AuC2: Azule loam, 2 to 9 percent slopes, eroded
  - AuD: Azule loam, 9 to 15 percent slopes, warm
  - CaF: Calleguas very channery loam, 30 to 50 percent slopes
  - CmD: Cibo clay, 5 to 15 percent slopes
  - CyA: Cropley clay, 0 to 2 percent slopes, warm MAAT, MLRA 19
  - CyC: Cropley clay, 2 to 9 percent slopes, warm MAAT, MLRA 19
  - DbD: Diablo clay, 9 to 15 percent slopes, warm MAAT
  - DbE: Diablo clay, 15 to 30 percent slopes
  - GtD: Gilroy-Cibo complex, 5 to 15 percent slopes
  - GvF: Gilroy loam, 15 to 50 percent slopes, very rocky
  - GxG: Gullied land
  - HaG: Hambright very rocky loam, 15 to 75 percent slopes
  - HbF: Hambright rocky clay loam, 30 to 50 percent slopes
  - HuB: Huerhuero very fine sandy loam, 0 to 5 percent slopes
  - HuC2: Huerhuero very fine sandy loam, 5 to 9 percent slopes, eroded
  - HuD2: Huerhuero very fine sandy loam, 9 to 15 percent slopes, eroded
  - IrG: Igneous rock land
  - LeD2: Linne silty clay loam, 9 to 15 percent slopes, eroded
  - LeE2: Linne silty clay loam, 15 to 30 percent slopes, eroded
  - LeF2: Linne silty clay loam, 30 to 50 percent slopes, eroded
  - McC: Metz loamy fine sand, 2 to 9 percent slopes
  - MfA: Metz loamy sand, loamy substratum, 0 to 2 percent slopes
  - MhF: Millsholm loam, 15 to 50 percent slopes
  - NaD2: Nacimientio silty clay loam, 9 to 15 percent slopes, eroded
  - RcC: Rincon silty clay loam, 2 to 9 percent slopes, MLRA 19
  - RcD2: Rincon silty clay loam, 9 to 15 percent slopes, eroded, warm MAAT, MLRA 19
  - RcE2: Rincon silty clay loam, 15 to 30 percent slopes, eroded
  - Rw: Riverwash
  - ScD2: San Benito clay loam, 9 to 15 percent slopes, eroded
  - ScE2: San Benito clay loam, 15 to 30 percent slopes, eroded, MLRA 20
  - ScF2: San Benito clay loam, 30 to 50 percent slopes, eroded, MLRA 20
  - ScG: San Benito clay loam, 50 to 75 percent slopes, MLRA 20
  - SeG: Santa Lucia shaly silty clay loam, 50 to 75 percent slopes
  - VaC: Vina loam, 2 to 9 percent slopes
  - VnC: Vina gravelly loam, 2 to 9 percent slopes
  - VsC: Vina silty clay loam, 2 to 9 percent slopes
  - ZmC: Zamora loam, 2 to 9 percent slopes
- County Boundary

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

0 500 1,000 2,000  
 Feet  
 1 inch = 1,000 feet

FIGURE 8-4  
 Soils  
 Pure Water Project Las Virgenes-Triunfo





- Legend**
- Concentrate Alignment Options
  - USDA Soils**
    - 1159: Topdeck loam, 10 to 35 percent slopes
    - 1258: Urban land-Typic Xerorthents, terraced-Gilroy complex, 5 to 20 percent slopes
    - 1259: Urban land-Typic Xerorthents, very gravelly-Topdeck complex, 10 to 35 percent slopes
    - 170: Cocharin clay loam, 30 to 75 percent slopes
    - AzC: Azule gravelly loam, 5 to 9 percent slopes, warm
    - ChD2: Chesterton coarse sandy loam, 5 to 15 percent slopes, eroded
    - CmD: Cibo clay, 5 to 15 percent slopes
    - CmE: Cibo clay, 15 to 30 percent slopes, MLRA 20
    - CyA: Cropley clay, 0 to 2 percent slopes, warm MAAT, MLRA 19
    - CyC: Cropley clay, 2 to 9 percent slopes, warm MAAT, MLRA 19
    - DbD: Diablo clay, 9 to 15 percent slopes, warm MAAT
    - DbE: Diablo clay, 15 to 30 percent slopes
    - DbF: Diablo clay, 30 to 50 percent slopes, warm MAAT, MLRA 20
    - GvF: Gilroy loam, 15 to 50 percent slopes, very rocky
    - GxG: Gullied land
    - HaG: Hambright very rocky loam, 15 to 75 percent slopes
    - HbF: Hambright rocky clay loam, 30 to 50 percent slopes
    - HuB: Huerhuero very fine sandy loam, 0 to 5 percent slopes
    - HuC2: Huerhuero very fine sandy loam, 5 to 9 percent slopes, eroded
    - HuD2: Huerhuero very fine sandy loam, 9 to 15 percent slopes, eroded
    - HuE3: Huerhuero very fine sandy loam, 9 to 30 percent slopes, severely eroded
    - IrG: Igneous rock land
    - LeD2: Linne silty clay loam, 9 to 15 percent slopes, eroded
    - LeE2: Linne silty clay loam, 15 to 30 percent slopes, eroded
    - LeF2: Linne silty clay loam, 30 to 50 percent slopes, eroded
    - MhF: Millsholm loam, 15 to 50 percent slopes
    - NaD2: Nacimiento silty clay loam, 9 to 15 percent slopes, eroded
    - RcC: Rincon silty clay loam, 2 to 9 percent slopes, MLRA 19
    - RcD2: Rincon silty clay loam, 9 to 15 percent slopes, eroded, warm MAAT, MLRA 19
    - RcE2: Rincon silty clay loam, 15 to 30 percent slopes, eroded
    - Rw: Riverwash
    - ScD2: San Benito clay loam, 9 to 15 percent slopes, eroded
    - ScE2: San Benito clay loam, 15 to 30 percent slopes, eroded, MLRA 20
    - ScF2: San Benito clay loam, 30 to 50 percent slopes, eroded, MLRA 20
    - ScG: San Benito clay loam, 50 to 75 percent slopes, MLRA 20
    - VaC: Vina loam, 2 to 9 percent slopes
    - VnC: Vina gravelly loam, 2 to 9 percent slopes
    - VsC: Vina silty clay loam, 2 to 9 percent slopes
    - W: Water
    - ZmC: Zamora loam, 2 to 9 percent slopes
    - ZmD2: Zamora loam, 9 to 15 percent slopes, eroded
    - County Boundary

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

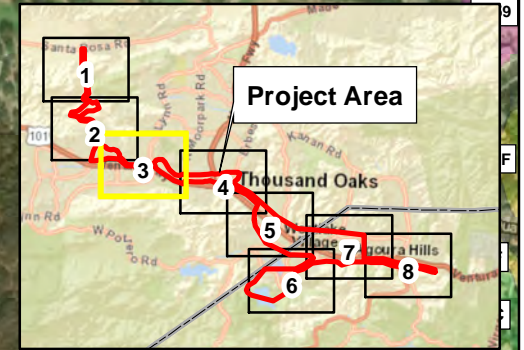
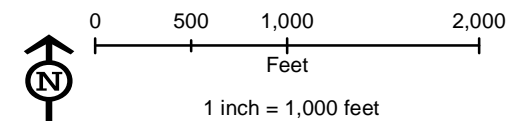
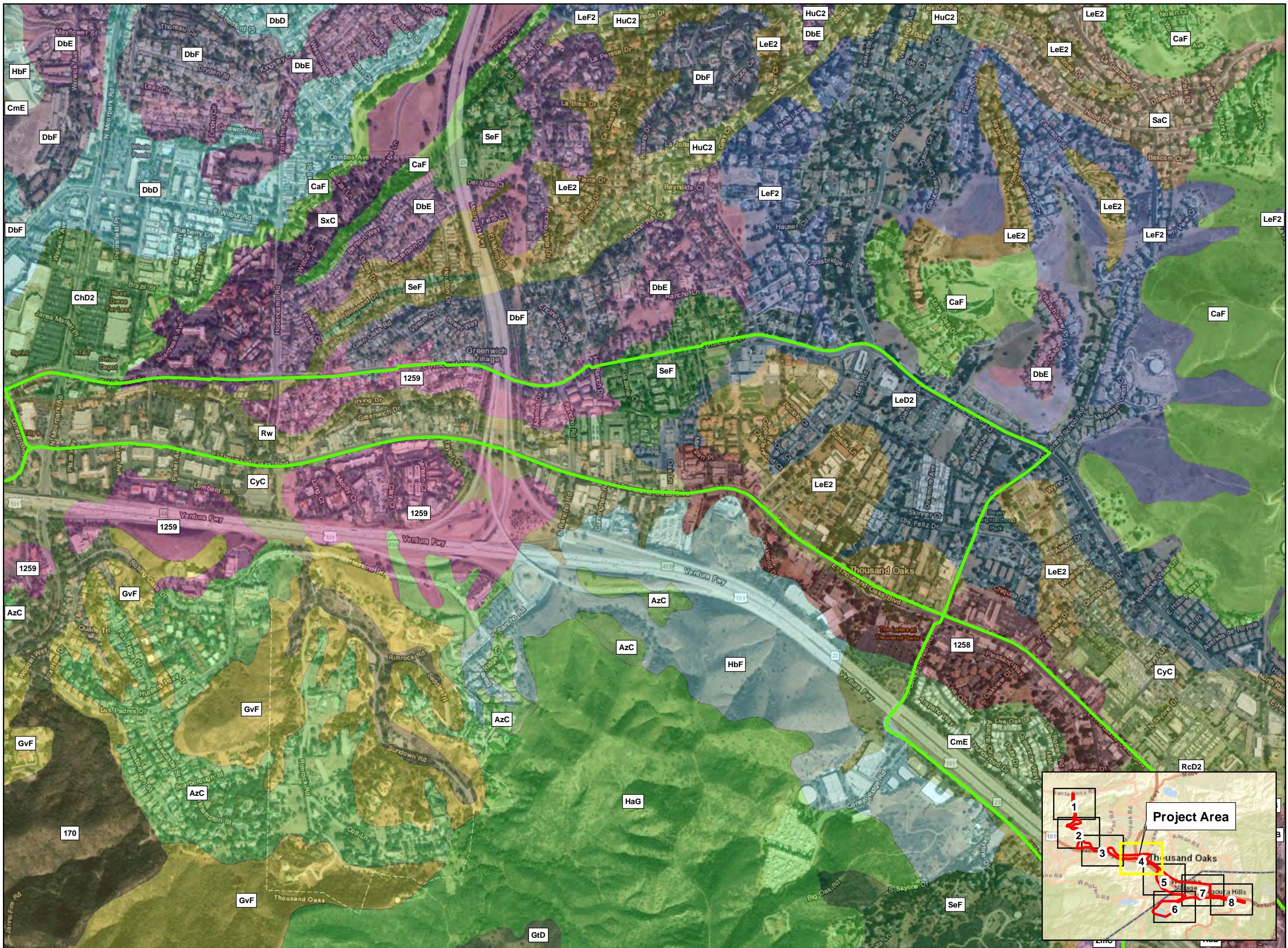


FIGURE 8-4  
**Soils**  
 Pure Water Project Las Virgenes – Triunfo





**Legend**

**Concentrate Alignment Options**

**USDA Soils**

- 1258: Urban land-Typic Xerorthents, terraced-Gilroy complex, 5 to 20 percent slopes
- 1259: Urban land-Typic Xerorthents, very gravelly-Topdeck complex, 10 to 35 percent slopes
- 170: Cotharin clay loam, 30 to 75 percent slopes
- AzC: Azule gravelly loam, 5 to 9 percent slopes, warm
- CaF: Calleguas very channery loam, 30 to 50 percent slopes
- ChD2: Chesterton coarse sandy loam, 5 to 15 percent slopes, eroded
- CmE: Cibo clay, 15 to 30 percent slopes, MLRA 20
- CyC: Cropley clay, 2 to 9 percent slopes, warm MAAT, MLRA 19
- DbD: Diablo clay, 9 to 15 percent slopes, warm MAAT
- DbE: Diablo clay, 15 to 30 percent slopes
- DbF: Diablo clay, 30 to 50 percent slopes, warm MAAT, MLRA 20
- GtD: Gilroy-Cibo complex, 5 to 15 percent slopes
- GvF: Gilroy loam, 15 to 50 percent slopes, very rocky
- HaG: Hambright very rocky loam, 15 to 75 percent slopes
- HbF: Hambright rocky clay loam, 30 to 50 percent slopes
- HuB: Huerhuero very fine sandy loam, 0 to 5 percent slopes
- HuC2: Huerhuero very fine sandy loam, 5 to 9 percent slopes, eroded
- LeD2: Linne silty clay loam, 9 to 15 percent slopes, eroded
- LeE2: Linne silty clay loam, 15 to 30 percent slopes, eroded
- LeF2: Linne silty clay loam, 30 to 50 percent slopes, eroded
- RcC: Rincon silty clay loam, 2 to 9 percent slopes, MLRA 19
- RcD2: Rincon silty clay loam, 9 to 15 percent slopes, eroded, warm MAAT, MLRA 19
- RcE3: Rincon silty clay loam, 9 to 30 percent slopes, severely eroded
- Rw: Riverwash
- SaC: Salinas clay loam, 2 to 9 percent slopes
- SeF: Santa Lucia shaly silty clay loam, 30 to 50 percent slopes
- SxC: Sorrento silty clay loam, 2 to 9 percent slopes, warm MAAT, MLRA 19
- ZmC: Zamora loam, 2 to 9 percent slopes
- County Boundary

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

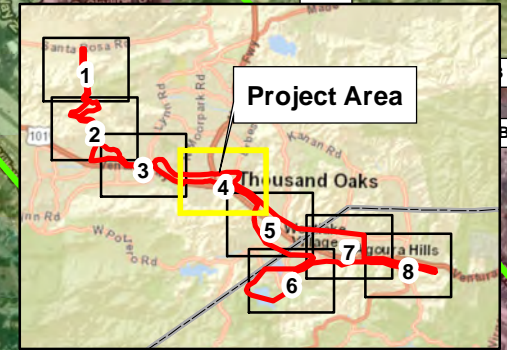
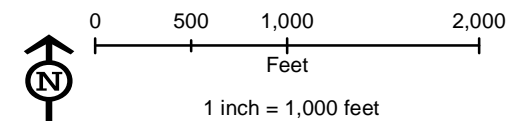
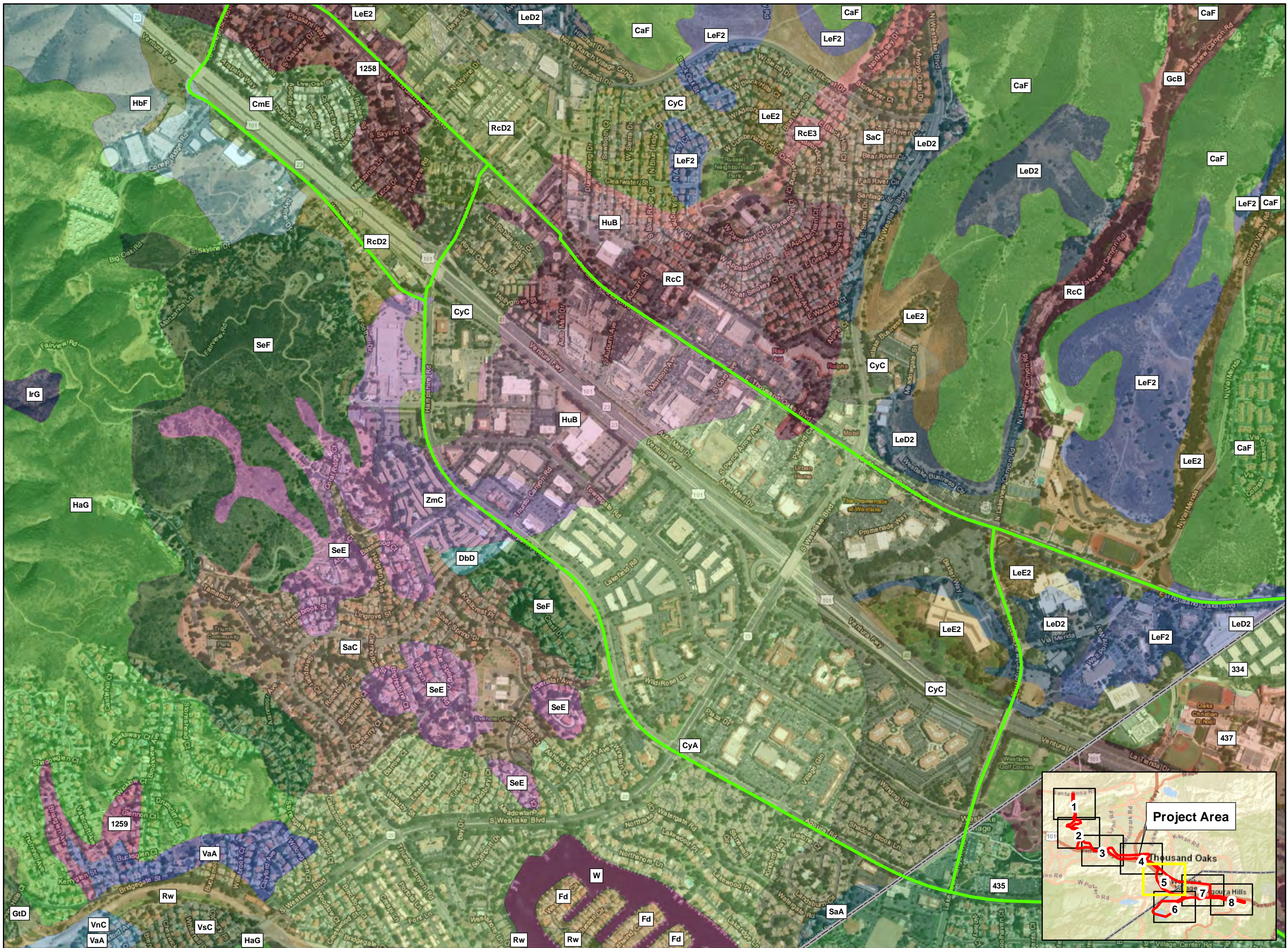


FIGURE 8-4  
**Soils**  
 Pure Water Project Las Virgenes – Triunfo





**Legend**

Concentrate Alignment Options

**USDA Soils**

- 1258: Urban land-Typic Xerorthents, terraced-Gilroy complex, 5 to 20 percent slopes
- 1259: Urban land-Typic Xerorthents, very gravelly-Topdeck complex, 10 to 35 percent slopes
- 254: Urban land-Xerorthents, fill complex, 0 to 30 percent slope, freeway
- 334: Urban land-Linne-Los Osos, warm complex, 0 to 30 percent slopes
- 435: Urban land-Cropley, fill complex, 0 to 8 percent slopes, residential
- 436: Cropley, fill consociation, 0 to 8 percent slopes, landscaped
- 437: Urban land-Cropley, fill complex, 0 to 8 percent slopes, commercial
- CaF: Calleguas very channery loam, 30 to 50 percent slopes
- CmE: Cibo clay, 15 to 30 percent slopes, MLRA 20
- CyA: Cropley clay, 0 to 2 percent slopes, warm MAAT, MLRA 19
- CyC: Cropley clay, 2 to 9 percent slopes, warm MAAT, MLRA 19
- DbD: Diablo clay, 9 to 15 percent slopes, warm MAAT
- Fd: Fill land
- GcB: Garretson silt loam, calcareous variant, 2 to 5 percent slopes
- GtD: Gilroy-Cibo complex, 5 to 15 percent slopes
- HaG: Hambright very rocky loam, 15 to 75 percent slopes
- HbF: Hambright rocky clay loam, 30 to 50 percent slopes
- HuB: Huerhuero very fine sandy loam, 0 to 5 percent slopes
- IrG: Igneous rock land
- LeD2: Linne silty clay loam, 9 to 15 percent slopes, eroded
- LeE2: Linne silty clay loam, 15 to 30 percent slopes, eroded
- LeF2: Linne silty clay loam, 30 to 50 percent slopes, eroded
- RcC: Rincon silty clay loam, 2 to 9 percent slopes, MLRA 19
- RcD2: Rincon silty clay loam, 9 to 15 percent slopes, eroded, warm MAAT, MLRA 19
- RcE3: Rincon silty clay loam, 9 to 30 percent slopes, severely eroded
- Rw: Riverwash
- SaA: Salinas clay loam, 0 to 2 percent slopes, warm MAAT, MLRA 19
- SaC: Salinas clay loam, 2 to 9 percent slopes
- SeE: Santa Lucia shaly silty clay loam, 15 to 30 percent slopes
- SeF: Santa Lucia shaly silty clay loam, 30 to 50 percent slopes
- VaA: Vina loam, 0 to 4 percent slopes, MLRA 19
- VnC: Vina gravelly loam, 2 to 9 percent slopes
- VsC: Vina silty clay loam, 2 to 9 percent slopes
- W: Water
- ZmC: Zamora loam, 2 to 9 percent slopes

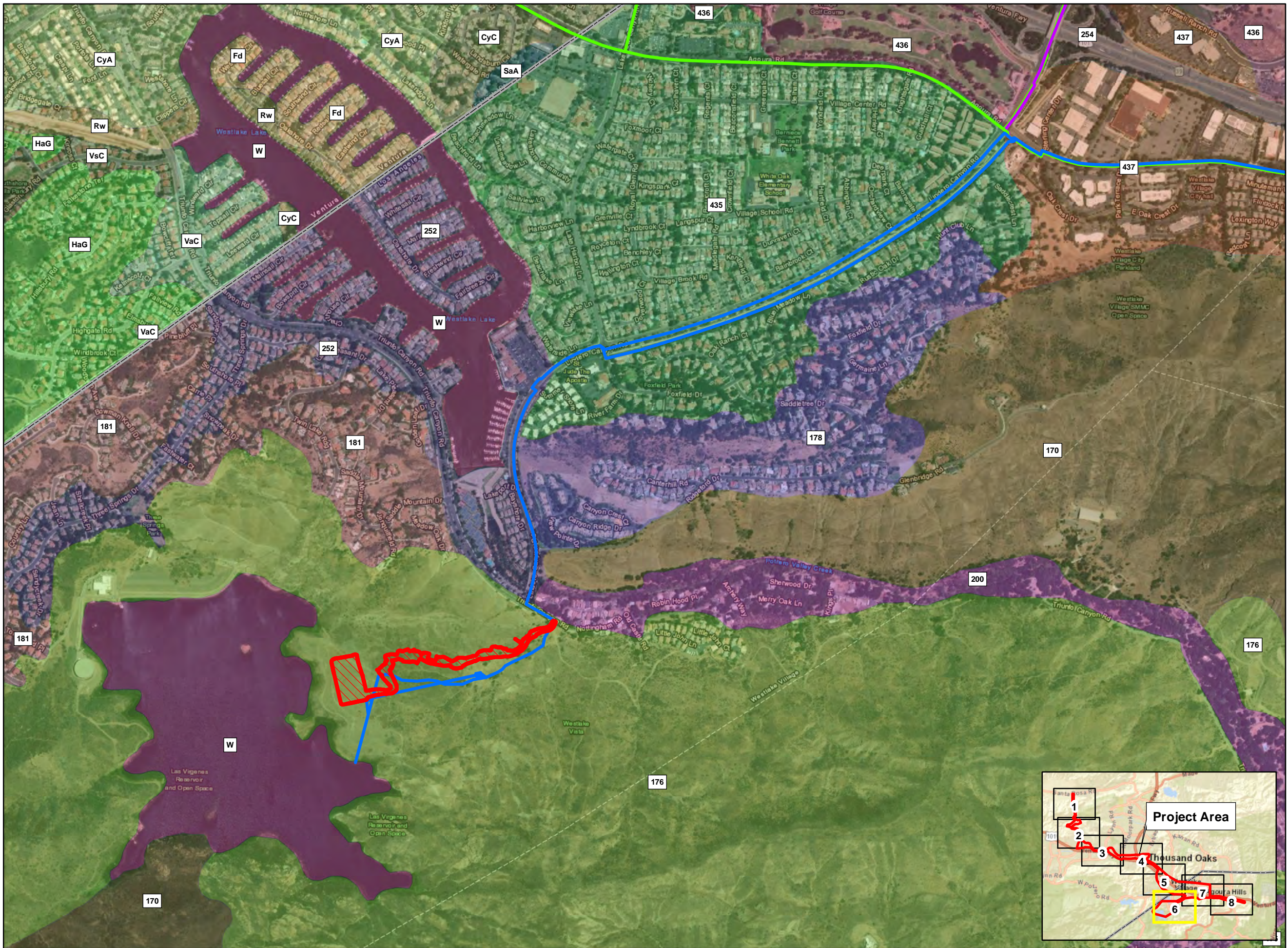
County Boundary

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

0 500 1,000 2,000  
 Feet  
 1 inch = 1,000 feet

**FIGURE 8-4**  
**Soils**  
 Pure Water Project Las Virgenes-Triunfo





- Legend**
- Alternative 2 Reservoir AWP
  - Concentrate Alignment Options
  - Purified Water Alignment Options
  - Source Water Alignment Options
- USDA Soils**
- 170: Cotharin clay loam, 30 to 75 percent slopes
  - 176: Cotharin-Talepop association, 15 to 50 percent slopes, MLRA 20
  - 178: Cotharin-Talepop-Urban land complex, 0 to 50 percent slopes
  - 181: Urban land-Hambright, landscaped-Talepop complex, 0 to 50 percent, residential
  - 200: Cumulic Haploxerolls, 0 to 9 percent slopes
  - 252: Urban land-Xerorthents, landscaped, complex, rarely flooded, 0 to 5 percent slopes
  - 254: Urban land-Xerorthents, fill complex, 0 to 30 percent slope, freeway
  - 435: Urban land-Cropley, fill complex, 0 to 8 percent slopes, residential
  - 436: Cropley, fill consociation, 0 to 8 percent slopes, landscaped
  - 437: Urban land-Cropley, fill complex, 0 to 8 percent slopes, commercial
  - CyA: Cropley clay, 0 to 2 percent slopes, warm MAAT, MLRA 19
  - CyC: Cropley clay, 2 to 9 percent slopes, warm MAAT, MLRA 19
  - Fd: Fill land
  - HaG: Hambright very rocky loam, 15 to 75 percent slopes
  - Rw: Riverwash
  - SaA: Salinas clay loam, 0 to 2 percent slopes, warm MAAT, MLRA 19
  - VaC: Vina loam, 2 to 9 percent slopes
  - VsC: Vina silty clay loam, 2 to 9 percent slopes
  - W: Water
  - County Boundary

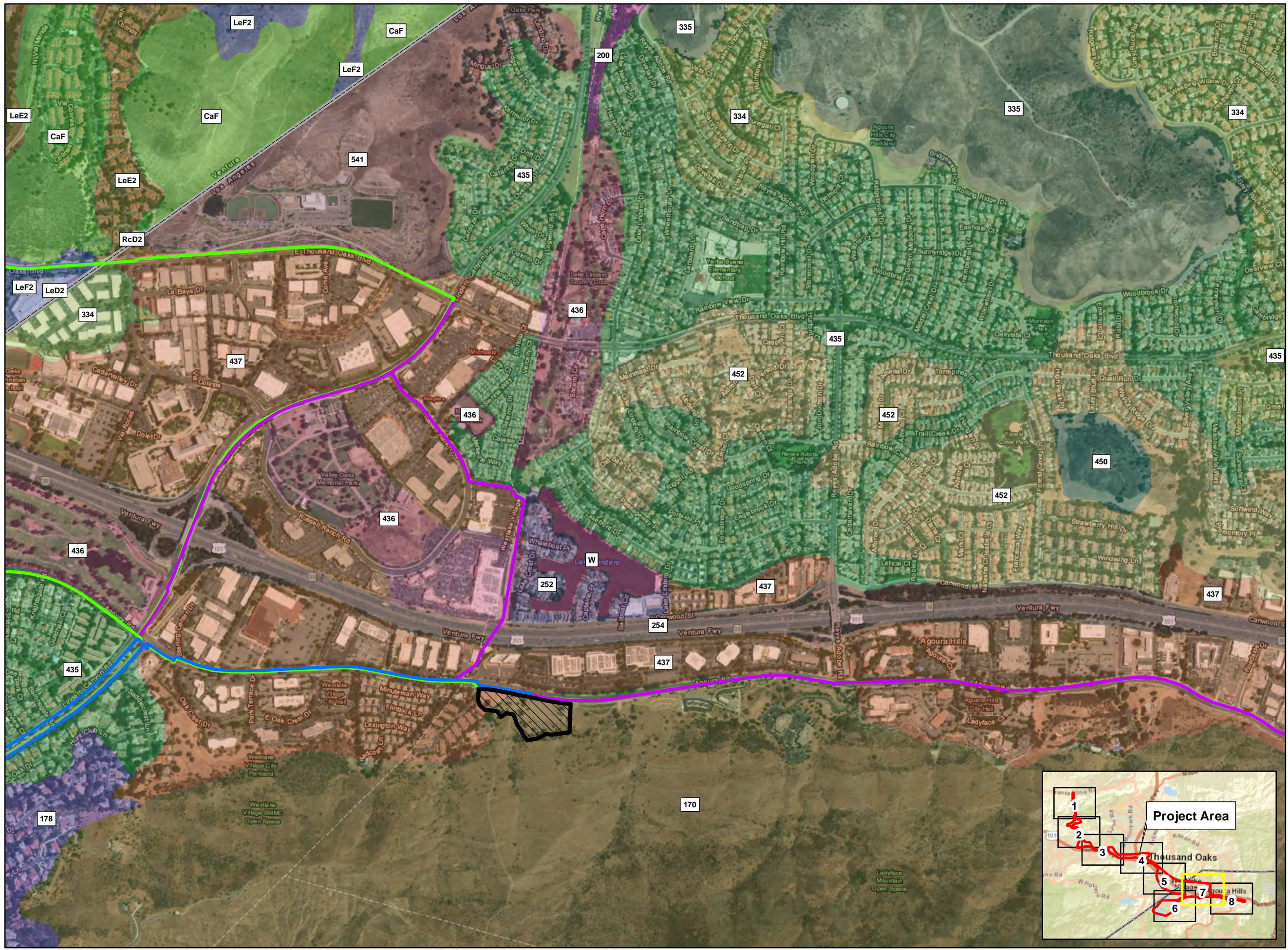
Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

**Project Area**

0 500 1,000 2,000  
 Feet  
 1 inch = 1,000 feet

FIGURE 8-4  
**Soils**  
 Pure Water Project Las Virgenes-Triunfo





**Legend**

- Alternative 1 Agoura Road
- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options

**USDA Soils**

- 170: Cotharin clay loam, 30 to 75 percent slopes
- 178: Cotharin-Talepop-Urban land complex, 0 to 50 percent slopes
- 200: Cumulic Haploxerolls, 0 to 9 percent slopes
- 252: Urban land-Xerorthents, landscaped, complex, rarely flooded, 0 to 5 percent slopes
- 254: Urban land-Xerorthents, fill complex, 0 to 30 percent slope, freeway
- 334: Urban land-Linne-Los Osos, warm complex, 0 to 30 percent slopes
- 335: Linne-Calcic Haploxeralfs-Calcic Haploxerepts complex, 30 to 75 percent slopes
- 435: Urban land-Cropley, fill complex, 0 to 8 percent slopes, residential
- 436: Cropley, fill consociation, 0 to 8 percent slopes, landscaped
- 437: Urban land-Cropley, fill complex, 0 to 8 percent slopes, commercial
- 450: Sapwi loam, 30 to 75 percent slopes
- 452: Urban land-Sapwi, landscaped-Kawenga, landscaped complex, 0 to 20 percent slopes, residential
- 541: Calcic Haploxerepts-Linne-Haploxerepts complex, 15 to 75 percent slopes
- CaF: Calleguas very channery loam, 30 to 50 percent slopes
- LeD2: Linne silty clay loam, 9 to 15 percent slopes, eroded
- LeE2: Linne silty clay loam, 15 to 30 percent slopes, eroded
- LeF2: Linne silty clay loam, 30 to 50 percent slopes, eroded
- RcD2: Rincon silty clay loam, 9 to 15 percent slopes, eroded, warm MAAT, MLRA 19
- W: Water
- County Boundary

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

0 500 1,000 2,000  
 Feet  
 1 inch = 1,000 feet

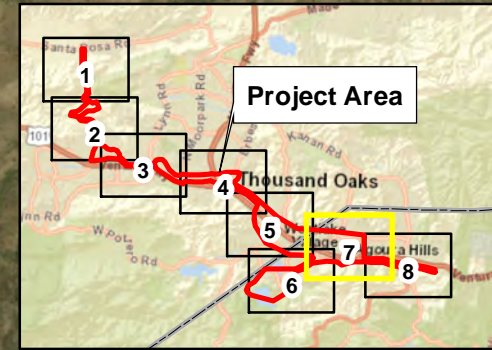
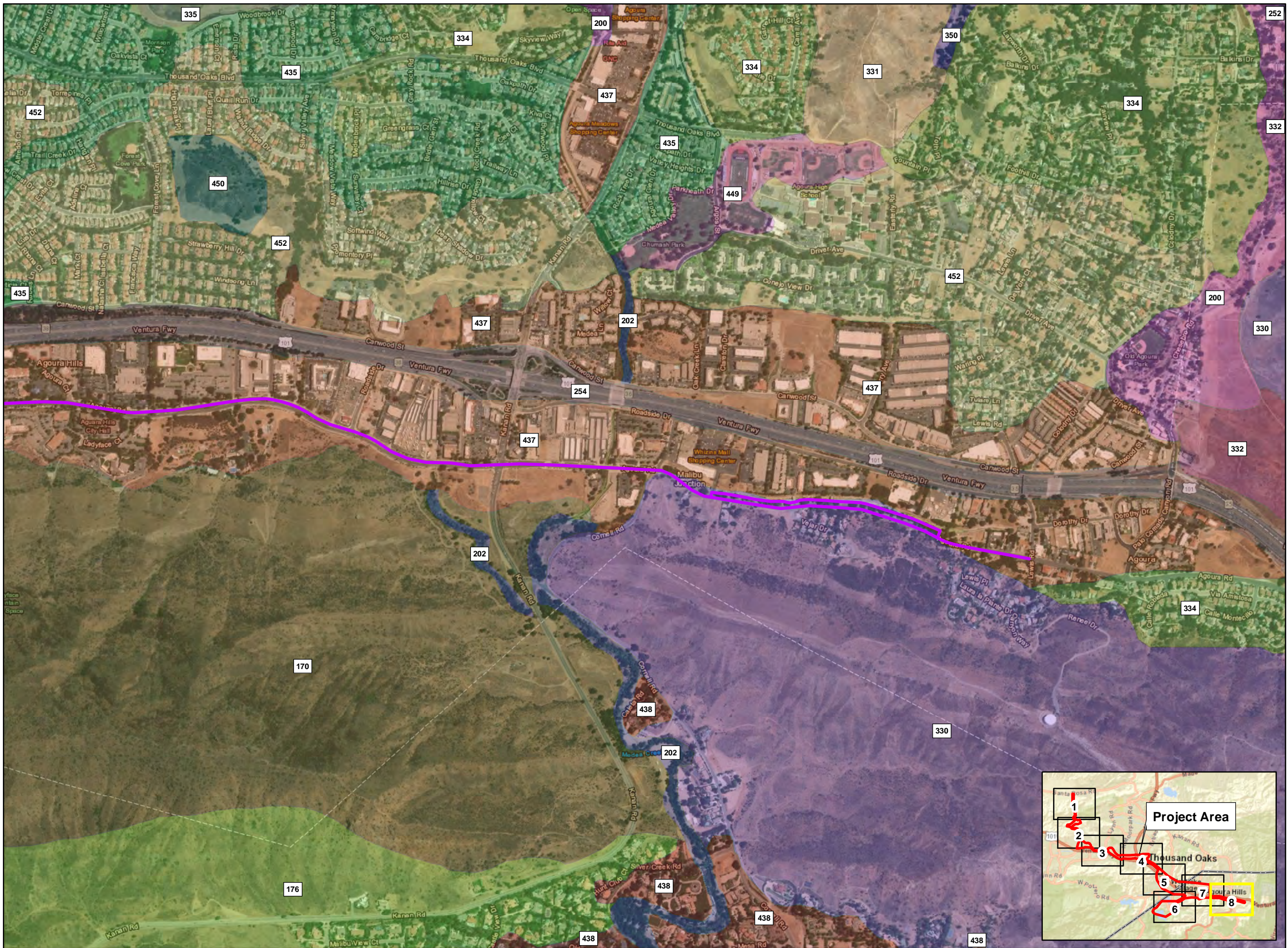


FIGURE 8-4  
**Soils**  
 Pure Water Project Las Virgenes – Triunfo





**Legend**

**Source Water Alignment Options**

- Source Water Alignment Options (Purple line)

**USDA Soils**

- 170: Cotharin clay loam, 30 to 75 percent slopes
- 176: Cotharin-Talepop association, 15 to 50 percent slopes, MLRA 20
- 200: Cumulic Haploxerolls, 0 to 9 percent slopes
- 202: Fluvaquents-Riverwash complex, 0 to 5 percent slopes
- 252: Urban land-Xerorthents, landscaped, complex, rarely flooded, 0 to 5 percent slopes
- 254: Urban land-Xerorthents, fill complex, 0 to 30 percent slope, freeway
- 330: Linne-Los Osos, warm-Calcic Haploxerepts association, 15 to 65 percent slopes
- 331: Linne silty clay loam, 15 to 50 percent slopes
- 332: Linne silty clay loam, 9 to 15 percent slopes
- 334: Urban land-Linne-Los Osos, warm complex, 0 to 30 percent slopes
- 335: Linne-Calcic Haploxerafls-Calcic Haploxerepts complex, 30 to 75 percent slopes
- 350: Los Osos clay loam, warm, 20 to 50 percent slopes
- 435: Urban land-Cropley, fill complex, 0 to 8 percent slopes, residential
- 437: Urban land-Cropley, fill complex, 0 to 8 percent slopes, commercial
- 438: Urban land-Cumulic Haploxerolls, fill-Cropley, fill complex, 0 to 15 percent slopes, residential
- 441: Urban land-Rincon, landscaped-Antioch, landscaped complex, 0 to 8 percent slopes, residential
- 449: Kawenga-Sapwi-Rincon complex, 0 to 8 percent slopes, landscaped
- 450: Sapwi loam, 30 to 75 percent slopes
- 452: Urban land-Sapwi, landscaped-Kawenga, landscaped complex, 0 to 20 percent slopes, residential

County Boundary

Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USDA NRCIS Soils, 2021

0 500 1,000 2,000  
 Feet  
 1 inch = 1,000 feet

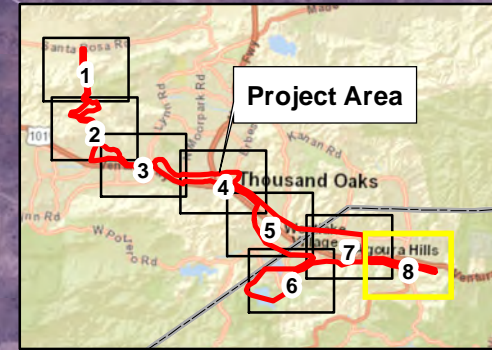


FIGURE 8-4  
**Soils**  
 Pure Water Project Las Virgenes – Triunfo



## 8.2 Regulatory Framework

This section describes the federal and state laws and regulations, and local policies and ordinances applicable to Pure Water Project implementation with respect to geology and soil resources.

### 8.2.1 Federal Regulations

This section describes the federal regulations applicable to Pure Water Project implementation with respect to geology and soil resources.

#### 8.2.1.1 Clean Water Act

The federal CWA, as amended, is the fundamental federal law for regulating discharges of waste into waters of the United States. CWA Section 402 provides NPDES requirements, which have been established for stormwater discharges from a range of industrial discharge categories, including construction activities.

The EPA has delegated administrative authority for implementing the NPDES program in California. The California Water Quality Control Board (State Board) and nine Regional Boards have authority to implement the CWA in California. Region 4, the Los Angeles Regional Board, oversees implementation of the NPDES program in the project area (California Water Boards 2022a).

Construction projects that disturb more than 1 acre and are implemented as part of the Pure Water Project would require coverage under the State's CGP (CAS0000001, Order 2009-0009-DWQ, as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ). The permit requires development and implementation of a site-specific SWPPP, which must include BMPs to provide an effective combination of erosion and sediment controls.

#### 8.2.1.2 National Earthquake Hazards Reduction Act (Title 42 U.S. Code Section 7704)

The National Earthquake Hazards Act (NEHA) and associated National Earthquake Hazards Reduction Program (NEHRP) were enacted in 1977, with amendments made in 1990. Regulations were developed to "...reduce the risks to life and property from future earthquakes."

Primary goals, measures, and objectives to reduce potential hazards include:

*(A) improved design and construction methods and practices, (B) land-use controls and redevelopment, (C) prediction techniques and early-warning systems, (D) coordinated emergency preparedness plans, and (E) public education and involvement programs"*

(NEHRP 2008)

### 8.2.2 State Regulations

This section describes the state regulations applicable to Pure Water Project implementation with respect to geology and soil resources.

#### 8.2.2.1 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act provides for protection of the quality of all waters of the State of California. The act gives the State Board and the Regional Boards regulatory authority to establish water quality standards and an implementation plan for achieving those standards. State Board and Regional Board authority under the act includes implementation of the NPDES program in California.



### **8.2.2.2 Seismic Hazards Mapping Act of 1990**

The Seismic Hazards Mapping Act of 1990 (PRC, Chapter 7.8, Sections 2690–2699.6) directs the Department of Conservation, California Geological Survey (CGS), to identify and map areas prone to earthquake hazards, including liquefaction, earthquake-induced landslides, and amplified ground shaking. In addition, the act requires local permitting agencies to regulate certain development projects within these hazard zones. Before a local development permit is issued for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted, and appropriate mitigation measures incorporated into the project design.

### **8.2.2.3 Alquist-Priolo Earthquake Fault Zoning Act of 1972**

The Alquist-Priolo Act prohibits the siting of structures for human occupancy across traces of active faults that represent a potential hazard to structures because of surface faulting or fault creep. The Alquist-Priolo Act only addresses the hazard of surface fault rupture but not other earthquake hazards. The act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for use in planning and controlling new or renewed construction. All land divisions and most structures for human occupancy are regulated by local agencies within the Earthquake Fault Zones; however, local agencies can be more restrictive than state laws.

Before a project within an Alquist-Priolo Earthquake Fault Zone can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. An evaluation and written report for the specific site must be prepared by a California licensed geologist. If an active fault is found, structures for human occupancy must be set back from the fault (California Department of Conservation 2019).

### **8.2.2.4 California Building Code**

The California Building Code (CBC) is codified in 24 CCR 2. The California Building Standards Commission administers Title 24. The CBC establishes minimum standards to safeguard public health, safety, and general welfare through structural strength, means of egress facilities, and general stability. The CBC regulates and controls the following factors for all buildings and structures within its jurisdiction:

- Design
- Construction
- Quality of materials
- Use and occupancy
- Location
- Maintenance

In addition, the CBC contains requirements based on the American Society of Civil Engineers (ASCE) *7-10, Minimum Design Loads for Buildings and Other Structures* (2013), including requirements for general structural design and a means for determining earthquake loads and other loads (for example, flood and wind) for inclusion in building codes. CBC provisions apply to the construction, alteration, movement, replacement, and demolition of every building, structure, and appurtenance connected or attached to such buildings or structures throughout California.

CBC earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients used to determine a Seismic Design Category (SDC) for projects. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; classifications range from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are determined in accordance with the SDC.

**8.2.2.5 Surface Mining and Reclamation Act**

Enacted in 1975, the State Mining and Reclamation Act (SMARA) required implementation of a system to provide policies associated with past and potential surface mining and reclamation activities to minimize environmental impacts and consideration during land use planning. SMARA required the California State Geologist and California State Mining and Geology Board to classify and prioritize lands and mineral resource areas. The Mineral Resource Zone system identifies boundaries and prioritizes defining areas based on available information.

**8.2.3 Local Regulations**

This section describes the local regulations applicable to Pure Water Project implementation with respect to geology and soil resources.

**8.2.3.1 City of Agoura Hills**

Table 8-1 provides the geology and soil goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to the project.

**Table 8-1. City of Agoura Hills Geology and Soils Goals and Policies**

Goal or Policy Name	Goal or Policy Language
Goal LU-3: City of Open Spaces	<p><i>Open space lands that are preserved to maintain the visual quality of the City and provide recreational opportunities, protect the public from safety hazards, and conserve natural resources.</i></p> <p><i>Policy LU-3.2 Hillside. Preserve ridgelines, natural slopes, and bluffs as open space, minimize hillside erosion, and complement natural landforms through sensitive grading techniques in hillside areas.</i></p>
Goal NR-8: Mineral Resources	<p><i>Protection of access to and availability of mineral resources, while maintaining protection of the surrounding environment.</i></p> <p><i>Policy NR-8.1 Mineral Resource Zones. Protect access to and availability of lands designated MRZ, as mapped by the California Geological Survey, for potential further mining, and regulate any such activities consistent with the Surface Mining and Reclamation Act, mineral land classification information, and the California Environmental Quality Act.</i></p>
Goal S-2: Protection from Geologic Hazards	<p><i>Minimized adverse effects to residents, public and private property, and essential services caused by seismic and geologic hazards.</i></p> <p><i>Policy S-2.1 Review Safety Standards. Regularly review and enforce all seismic and geologic safety standards, including the City's Building Code, and require the use of best management practices (BMPs) in site design and building construction methods.</i></p> <p><i>Policy S-2.2 Geotechnical Investigations. Require geotechnical investigations to determine the potential for ground rupture, groundshaking, and liquefaction due to seismic events, as well as expansive soils and subsidence problems on sites, including steep slopes, where these hazards are potentially present.</i></p> <p><i>Policy S-2.3 Retrofit Critical Facilities. Encourage the upgrade, retrofitting, and/or relocation of all existing critical facilities (e.g., schools, police stations, fire stations, and medical facilities) and other important public facilities that do not meet current building code standards and are within areas susceptible to seismic or geologic hazards.</i></p> <p><i>Policy S-2.4 Funding Programs. Pursue federal and state programs to provide additional protection against seismic activity</i></p>

Source: City of Agoura Hills 2010b



### 8.2.3.2 City of Westlake Village

Table 8-2 provides excerpts of the goal, objective, and policy language established by the *City of Westlake Village General Plan* (City of Westlake Village 2019a) relative to geology and soils resources and applicable to the project.

**Table 8-2. City of Westlake Village Geology and Soils Goals, Objectives, and Policies**

Goal, Objective, or Policy Number	Goal, Objective, or Policy Language <sup>a</sup>
Goal 1	<i>Minimize hazards to public health, safety and welfare which may result from geologic conditions, seismic activity and flooding.</i>
Objective 2	<i>Ensure that construction and development activities within the community do not expose residents to avoidable natural hazards.</i>
Policy 2.1	<i>Require the preparation of a detailed geologic and soils report to accompany each grading permit application in all hillside management areas (I-4).</i>
Policy 2.3	<i>Enforce the provisions of the International Building Code, specifically Chapters 18 and 23 as they relate to earthquake-resistant design and excavation and grading (I-6).</i>

Source: City of Westlake Village 2019a

<sup>a</sup>Each policy listing “I-” and number in parentheses refers to a corresponding implementation program.

### 8.2.3.3 City Thousand Oaks

The City of Thousand Oaks Safety Element 2014 Update provides a complement to the long-range comprehensive guide for the physical development of the City's Planning Area (City of Thousand Oaks 2014). The *Thousand Oaks General Plan* and associated updates include a statement of goals and policies related to the community's development, and various elements that provide more detailed policies and standards in certain topic areas (City of Thousand Oaks 2022b).

Table 8-3 provides excerpts of the goal and policy language established by the *Thousand Oaks General Plan* (and updates) related to geology and soils resources and applicable to the project.

**Table 8-3. City of Thousand Oaks Geology and Soils Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Goal S-1	<i>Minimize the risk of loss of life, injury, damage to property, and economic and social dislocation resulting from fault rupture and seismically induced ground shaking.</i>
Policy A-1	<i>Require site-specific geologic and engineering investigations as specified in the California Building Code (International Building Code with California amendments) and Municipal Code for proposed new developments and/or when deemed necessary by the City Engineer and/or through the CEQA process.</i>
Policy A-2	<i>Adopt the latest California Building Code (CBC) and enforce provisions relating to earthquake resistant design.</i>
Policy A-4	<i>Continue to allocate a percentage of building permit fees (as specified in Chapter 8 of Division 2 of the Public Resources Code) to a trust fund (Strong Motion Instrumentation Program Fund) which is remitted to the State of California. The moneys are earmarked for seismic education pursuant to the Seismic Hazards Mapping Act of 1990.</i>
Policy A-5	<i>Provide setbacks, as determined to be necessary, for any proposed development located on or near an active or potentially active fault. Appropriate setback distances will be determined through engineering geologic investigation.</i>

**Table 8-3. City of Thousand Oaks Geology and Soils Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Policy A-6	<i>Require all developers and/or subdividers of a parcel or parcels in an area of known fault hazard to record a Notice of Geologic Hazards with the County Recorder describing the hazards on the parcel and the level of prior geologic investigation conducted.</i>
Policy A-7	<i>Require project modifications, including but not limited to hazard mitigation, project redesign, elimination of building sites, and the delineation of building envelopes, building setbacks and foundation requirements, as deemed necessary, in order to mitigate faulting/seismic hazards.</i>
Goal S-2	<i>Safeguard life, limb, health, property, and the public welfare by establishing minimum requirements for regulating grading and procedures by which such requirements may be enforced (Municipal Code Section 7-3.01).</i>
Goal S-3	<i>Provide minimum standards to safeguard life or limb, health, property and the public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, demolition, and maintenance of all buildings and structures within the City and certain equipment specifically regulated therein (Municipal Code Section 8-1.02).</i>
Policy B-1	<i>Require any alteration, grading, excavation or fill activity to comply with the City's Grading Ordinance.</i>
Policy B-2	<i>Require that all construction be in accordance with the most current version of the California Building Code and Title 8, Chapter 1 of the Municipal Code which incorporates the CBC with specific amendments.</i>
Policy B-3	<i>Perform site-specific geologic and engineering investigations for new developments as specified in the CBC and Municipal Code.</i>
Policy B-4	<i>Prohibit grading or relocation of earth on land having a natural slope greater than 25% unless approval is obtained from the Planning Commission or City Council and a grading permit has been obtained from the City Engineer (Municipal Code Section 7-3.07).</i>
Policy B-5	<i>Continue to regulate grading during the rainy season (November-April) in order to control erosion and protect life and property from damage due to flooding or erosion associated with grading activities.</i>
Policy B-6	<i>Conduct soils investigations to evaluate hazards potential for proposed developments in areas of potential liquefaction.</i>
Policy B-7	<i>Require project modifications, including but not limited to project redesign, elimination of building sites, building envelopes and drainage and foundation requirements, as necessary in order to mitigate liquefaction hazards.</i>
Policy B-8	<i>Require the developers and/or subdividers of a parcel or parcels in a Liquefaction Hazard Zone to record a Notice of Geologic Hazards with the County Recorder describing the potential hazards on the parcel and the level of prior geologic investigation conducted unless the condition has been mitigated.</i>
Policy B-9	<i>Require that all development activities provide a setback from potentially unstable areas or from the margins of potential debris flow channels and depositional areas as identified through engineering and geologic studies.</i>
Policy B-10	<i>Require drainage plans designed to direct runoff away from unstable areas.</i>
Policy B-11	<i>Where washouts or landslides have occurred on public or private roads, require that road reconstruction meet the conditions of appropriate geologic and engineering reports and provide for adequate engineering supervision.</i>



**Table 8-3. City of Thousand Oaks Geology and Soils Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Policy B-13	<i>In an area of known slope stability or debris flow hazards, require developers and/or subdividers of a parcel or parcels to record a Notice of Geologic Hazards with the County Recorder describing the potential hazards on the parcel and the level of prior geologic investigation conducted.</i>
Policy B-14	<i>Require project modifications, including but not limited to hazard mitigation, project redesign, elimination of building sites and development of building and septic system envelopes, building setbacks and foundation and drainage requirements as necessary in order to mitigate landslide and debris flow hazards.</i>
Policy B-15	<i>Require the preparation of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every subdivision and every individual lot where soils have been identified that are subject to expansion, settlement or hydrocompaction.</i>
Policy B-16	<i>Require a soils report where there is inadequate soils information prior to issuance of permits for habitable structures and private wastewater disposal (septic) systems.</i>
Policy B-17	<i>Require the developers and/or subdividers of a parcel or parcels in an area of known highly expansive soils hazard to record a notice of Geologic Hazards with the County Recorder describing the potential hazards on the parcel and the level of prior geologic investigation conducted.</i>
Policy B-18	<i>Require project modifications, including but not limited to hazard mitigation, project redesign, elimination of building sites, building envelopes and drainage and foundation requirements as necessary in order to mitigate hazards associated with soils that may be subject to expansion, settlement or hydro-compaction.</i>

Source: City of Thousand Oaks 2022b

**8.2.3.4 Ventura County**

Goals and policies established by the *Ventura County 2040 General Plan* (Ventura County 2020) associated with geology and soils resources that are applicable to the project fall within two elements, as shown in Table 8-4. The Conservation and Open Space Element (COS) includes policies intended to identify preservation and conservation goals for the county’s open space environment. The Hazards and Safety Element (HAZ) focuses on identifying risk and protecting the community from unreasonable risk.

**Table 8-4. Ventura County Geology and Soils Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Goal COS-5	<i>To preserve and protect soil resources in the county from erosion and for agricultural productivity.</i>
COS-5.1: Soil Protection	<i>The County shall strive to protect soil resources from erosion, contamination, and other effects that substantially reduce their value or lead to the creation of hazards.</i>
COS-5.2: Erosion Control	<i>The County shall encourage the planting of vegetation on soils exposed by grading activities, not related to agricultural production, to decrease soil erosion.</i>
COS-5.3: Soil Productivity	<i>The County shall encourage landowners to participate in voluntary programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Ventura County Resource Conservation District, University of California Cooperative Extension, and other similar agencies and organizations.</i>
Goal COS-6	<i>To manage mineral resources in a manner that identifies economically significant mineral deposits and plans for, and protects access to, extraction, and long-term conservation of mineral resources for existing and future generations.</i>

**Table 8-4. Ventura County Geology and Soils Goals and Policies**

Goal or Policy Number	Goal or Policy Language
COS-6.1: Balanced Mineral Resource Production and Conservation	<i>The County shall balance the development and conservation of mineral resources with economic, health, safety, and social and environmental protection values.</i>
COS-6.2: Significant Mineral Resource Deposits	<i>In accordance with California Code of Regulations Section 3676, the County shall maintain classification and/or designation reports and maps of mineral resources deposits as identified by the California State Geologist as having regional or statewide significance and any additional deposits as may be identified by the County, and as provided by the State Mining and Geology Board. The County shall provide notice to landowners and the general public on the location of significant mineral resource deposits.</i>
COS-6.3: Mineral Extraction Location Priority	<i>The County shall promote the extraction of mineral resources locally to minimize economic costs and environmental effects associated with transporting these resources.</i>
COS-6.4: Mineral Resource Area Protection	<i>Discretionary development within Mineral Resource Zones identified by the California State Geologist shall be subject to the Mineral Resource Protection (MRP) Overlay Zone and is prohibited if the use will significantly hamper or preclude access to or the extraction of mineral resources.</i>
COS-6.5: Mineral Resource Land Use Compatibility	<i>The County shall ensure that discretionary development is compatible with mineral resources extraction and processing if the development is to be located in areas identified on the Mineral Resource Zone Maps prepared by the California State Geologist or in County identified mineral resource areas. The County shall:</i> <ol style="list-style-type: none"> <li><i>1. Require an evaluation to ascertain the significance of the mineral resources deposit located in the area of a discretionary development and to determine if the use would significantly hamper or preclude access to or the extraction of mineral resources.</i></li> <li><i>2. Require discretionary development proposed to be located adjacent to existing mining operations to provide a buffer between the development and mining operations to minimize land use incompatibility and avoid nuisance complaints.</i></li> <li><i>3. Establish a buffer distance based on an evaluation of noise, community character, compatibility, scenic resources, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.</i></li> </ol>
COS-6.6: In-River Mining	<i>The County shall require discretionary development for in-river mining to incorporate all feasible measures to mitigate water, biological resource, flooding, and erosion impacts.</i>
Goal HAZ-4	<i>To minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from geologic and seismic hazards.</i>
HAZ-4.1: Projects in Earthquake Fault Zones	<i>The County shall prohibit new structures for human occupancy and subdivisions that contemplate the eventual construction of structures for human occupancy in Earthquake Fault Zones unless a geologic investigation is performed to delineate any hazard of surface fault rupture and appropriate and sufficient safeguards, based on this investigation, are incorporated into the project design.</i>
HAZ-4.2: Linear Project Intersection with Active Faults	<i>The County shall require that linear projects, including roads, streets, highways, utility conduits, water transmission facilities, and oil and gas pipelines, avoid intersecting active faults to the extent possible. When such locations are unavoidable, the project design shall include measures to minimize the effects of any fault movement.</i>
HAZ-4.3: Structural Design	<i>The County shall require that all structures designed for human occupancy incorporate engineering measures to reduce the risk of and mitigate against collapse from ground shaking.</i>
HAZ-4.4: Discretionary Development Below Rocky Outcrops	<i>The County shall require discretionary development below rocky outcrops to evaluate and mitigate potential rockfall hazards including but not limited to by avoiding placement of structures that could be impacted by rockfall hazards, rock removal, rock anchoring, walls, fence barriers, or other similar systems.</i>



**Table 8-4. Ventura County Geology and Soils Goals and Policies**

Goal or Policy Number	Goal or Policy Language
HAZ-4.5: Soil Erosion and Pollution Prevention	<i>The County shall require discretionary development be designed to prevent soil erosion and downstream sedimentation and pollution.</i>
HAZ-4.6: Vegetative Resource Protection	<i>The County shall require discretionary development to minimize the removal of vegetation to protect against soil erosion, rockslides, and landslides.</i>
HAZ-4.7: Temporary Revegetation on Graded Areas	<i>The County shall require, as necessary, the use of soil stabilization methods on graded areas to reduce the potential for erosion, particularly during the construction phase.</i>
HAZ-4.8: Seismic Hazards	<i>The County shall not allow development of habitable structures or hazardous materials storage facilities within areas prone to the effects of strong ground shaking, such as liquefaction, landslides, or other ground failures, unless a geotechnical engineering investigation is performed and appropriate and sufficient safeguards, based on this investigation, are incorporated into the project design.</i>
HAZ-4.9: Slope Development	<i>The County shall require geotechnical reports that demonstrate adequate slope stability and construction methods for building and road construction on slopes greater than 50 percent pursuant to the California Building Code Appendix J Section 108.6.</i>
HAZ-4.10: Development in Landslide/Debris Flow Hazard Areas	<i>The County shall not allow development in mapped landslide/debris flow hazard areas unless a geologic and geotechnical engineering investigation is performed and appropriate and sufficient safeguards, based on this investigation, are incorporated into the project design.</i>
HAZ-4.11: Alteration of Land in Landslide/Debris Flow Hazard Areas	<i>The County shall not allow alteration of land in landslide/debris flow hazard areas, including concentration of water through drainage, irrigation or septic systems, removal of vegetative cover, and undercutting of the bases of slopes or other grading activity unless demonstrated by geologic, geotechnical, and civil engineering analysis that the project will not increase the landslide/debris flow hazard.</i>
HAZ-4.12: Slope Drainage	<i>Drainage plans that direct runoff and drainage away from slopes shall be required for construction in hillside areas.</i>
HAZ-4.13: Design for Expansive Soils	<i>The County shall not allow habitable structures or individual sewage disposal systems to be placed on or in expansive soils unless suitable and appropriate safeguards are incorporated into the project design to prevent adverse effects.</i>
HAZ-4.14: Development in Seiche Hazard Areas	<i>The County shall not allow development in potential seiche hazard areas unless a geotechnical engineering investigation is performed and appropriate and sufficient safeguards, based on this investigation, are incorporated into the project design.</i>
HAZ-4.15: Subsidence Hazard – Extraction Wells	<i>The County shall require that potential ground surface subsidence be evaluated prior to approval of new oil, gas, water, or other extraction well drilling permits and appropriate and sufficient safeguards are incorporated into the project design and facility operation.</i>
HAZ-4.16: Subsidence and Hydroconsolidation Hazard – Structural Design	<i>Structural design of buildings and other structures shall recognize the potential for subsidence and hydroconsolidation and provide mitigation recommendations for structures that may be affected.</i>
HAZ-4.17: Earthquake Fault Zone Maps or Earthquake Zones of Required Investigation	<i>The County should, where feasible, require that land in Earthquake Fault Zones and potentially Holocene active fault areas be designated Open Space or Agriculture on the General Land Use Diagram.</i>
HAZ-4.18: Preparation of Plans in Seiche Hazard Areas	<i>The County shall consider Seiche Hazard Areas during the preparation of regional and area plans and special studies and be used to guide future investigations of the hazard.</i>

Source: Ventura County 2020

### 8.3 Assessment Methods and Thresholds of Significance

Potential impacts on geology and soil resources were evaluated using existing information regarding the geologic, soil, and seismic characteristics of the project area and overlaying project feature alternatives on maps of geological and soil constraints. Impact thresholds were based on criteria in Appendix G of the CEQA Guidelines. Impacts related to geology and soil resources may occur if the Pure Water Project would result in the following:

- Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault
  - Strong seismic ground shaking
  - Seismically related ground failure, including liquefaction
  - Landslides
- Substantial soil erosion or the loss of topsoil
- Unstable geologic unit or soil, potentially resulting in:
  - Onsite or offsite landslide
  - Lateral spreading
  - Subsidence
  - Liquefaction or collapse
- Locating infrastructure on expansive soil, creating substantial risks to life or property
- 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
- Directly or indirectly destroying a unique paleontological resource or site or unique geologic feature

### 8.4 Environmental Impacts

This section describes the environmental impacts likely to result from Pure Water Project implementation with respect to geology and soil resources.

#### 8.4.1 Overview

Due to the location of Pure Water Project, there are risks associated with potential seismic activity and composition of underlying geologic and soil units. These risks may increase when combined with periods of heavy rainfall. However, implementing proper design techniques and following local, state, and federal guidelines would minimize potential substantial adverse effects. Appendix G of the CEQA Guidelines provides the basis for impact analysis related to geology and soils in the form of six questions, which are summarized as impacts in Table 8-5 and described in subsequent sections in this chapter.



**Table 8-5. Geology and Soils Impact Questions**

Would the Pure Water Project	Alternative 1 Agoura Road AWPF	Alternative 2 Reservoir AWPF	Pipelines
<b>Impact 8.1:</b> Seismic Risks	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
<b>Impact 8.2:</b> Substantial Soil Erosion or Loss of Topsoil	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
<b>Impact 8.3:</b> Unstable Geologic Unit or Soils	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
<b>Impact 8.4:</b> Expansive Soils	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
<b>Impact 8.5:</b> Soils and Wastewater	No impact	No impact	No impact
<b>Impact 8.6:</b> Unique Geologic Feature	No impact	No impact	No impact

**8.4.2 Impact 8-1: Seismic Risks**

There are no active faults within the project area according to published geologic data (Dibblee and Ehrenspeck 1990, 1992, 1993; Yerkes and Showalter 1991, 1993; Yerkes and Campbell 1995a, 1995b, 1997a, 1997b; Campbell et al. 2014; USGS 2020); and the project area is not within an Alquist-Priolo Earthquake Fault Zone. Therefore, impacts related to rupture of a known earthquake fault would be less than significant.

The project area is located within a seismically active area and is susceptible to strong ground shaking during major earthquakes because of the proximity to earthquake sources. Ground shaking is amplified and lasts longer where soils are unconsolidated or saturated with water. Ground shaking impacts would be less severe in upland areas underlain by hard bedrock. Within the project area, ground shaking intensity is potentially very strong or violent (Figure 8-2). Potential damage to buildings and utilities would likely be greatest in areas underlain by alluvial deposits, as shown on Figure 8-1 and 8-2.

Ground shaking associated with earthquakes could affect Pure Water Project facilities by causing pipeline breakage or damage to aboveground pump station structures and the AWPF itself. Outside of the AWPF, most project structures would be unoccupied, with only occasional occupancy or visits by Operations staff for maintenance and related activities. The AWPF would be the only regularly occupied structure; damage to this building from ground shaking could expose people to potential adverse effects. Geotechnical engineering and seismic studies mandated by Mitigation Measure 8-1 would be conducted to test and evaluate site conditions; identify appropriate seismic design details; and confirm implementation of suitable construction measures following regulatory guidelines to reduce the potential for adverse impacts to a less than significant level.

The eastern portion of the source water pipeline and portions of the concentrate pipeline located along Hillcrest and Thousand Oaks Boulevard near The Oaks mall and Hill Canyon Fire Road are located within areas with liquefaction potential (Figure 8-3). Neither AWPF locations are within areas with liquefaction potential (Figure 8-3). Pipeline breaks resulting from ground displacement in liquefiable areas (including lateral spread areas) during earthquakes are common. Most of the pipelines would be placed in city rights-of-way (ROWs), primarily in streets, which are easily accessible. Geotechnical engineering and seismic studies mandated by Mitigation Measure 8-1 would be conducted to test and evaluate site conditions; identify appropriate seismic design details; and confirm implementation of suitable

construction measures following regulatory guidelines to reduce the potential for adverse impacts to a less than significant level.

#### **8.4.3 Impact 8-2: Substantial Soil Erosion or Loss of Topsoil**

Pure Water Project construction activities in urbanized areas and within city ROWs, including roadways, would limit disturbance acreage to the excavation footprint, thereby limiting the risk of erosion. Soils within the relatively flat urban areas have low erosion hazard, further reducing erosion risk. Hillside areas of the concentrate pipeline in the northwestern project area and the hillside area east of Las Virgenes Reservoir have a higher risk of erosion, and measures would need to be implemented during construction to control erosion and loss of topsoil (Figure 8-4).

Pure Water Project construction activities requiring substantial soil trenching or excavation, if not properly managed, could result in substantial erosion of stockpiled soils; and sediment could be transported into storm drains or sensitive receiving waters. Project construction activities, including stockpiling materials in a central location where they could be effectively managed, would reduce the risk of erosion and sediment transport outside of project work areas.

Individual project construction activities may require coverage under the State's CGP if the land disturbance area is greater than or equal to 1 acre. Because many of the project features are within paved, urbanized areas, land disturbance would likely be less than 1 acre; so CGP coverage would not be required. However, local policies require erosion control measures for all development sites where grading activities occur, including those with:

- Landslide deposits
- Past erosion problems
- The potential for stormwater quality impacts
- Slopes of 15% or greater that are to be altered

Therefore, even projects with land disturbance acreage less than 1 acre would be required to implement appropriate erosion and sediment control measures where there is substantial risk of erosion or impacts on water quality. With the implementation of Mitigation Measure 8-2, the impact would be less than significant.

#### **8.4.4 Impact 8-3: Unstable Geologic Unit or Soils**

Pure Water Project features are not located within mapped geologic or soil units identified as unstable. However, the project could have geological, seismic, and soil impacts where activities occur on certain geologic units and soils having potential for the following:

- Collapse
- Corrosion
- Erosion
- Landslides
- Lateral spreading
- Liquefaction
- Settlement
- Shrink-swell behavior
- Some combination of these

As mandated by Mitigation Measure 8-1, performing site-specific geotechnical and engineering studies, following regulatory guidelines, and implementing geotechnical and engineering recommendations would reduce the impact to less than significant.



#### 8.4.5 Impact 8-4: Expansive Soils

Most pipeline areas are urbanized and have previously been graded for development, including areas within city streets and easements. Engineered fill is well-graded and would not shrink or swell. Other project features may be underlain by soils that exhibit shrink-swell characteristics of expansive soils.

Subsurface investigations mandated by Mitigation Measure 8-1 would be conducted to test and evaluate soil conditions, identify appropriate design details, and confirm implementation of suitable construction measures following regulatory guidelines to reduce the potential for adverse impacts to a less than significant level.

#### 8.4.6 Impact 8-5: Soils and Wastewater

Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf would connect to an existing sewer system. Therefore, project construction activities would have no impact on future use of septic tanks or wastewater disposal systems, and no mitigation measures are needed.

#### 8.4.7 Impact 8-6: Unique Geologic Feature

There are no unique geologic features mapped within either AWPf location or along proposed pipeline alignment alternatives. Therefore, project construction activities would have no impact, and no mitigation measures are needed.

### 8.5 Mitigation Measures

Impacts 8-1 through 8-4 would be less than significant, and Impacts 8-5 and 8-6 would have no impacts. The following mitigation measures will be used during Pure Water Project implementation for geology and soil.

**Mitigation Measure 8-1. Review regulation requirements, perform site-specific geotechnical and engineering studies, and implement recommendations.** The project and its design engineers will perform site-specific geotechnical and engineering studies as required by local policies to meet the goals and objectives listed in Tables 8-1 through 8-4. The review will verify compliance with federal, state, and local regulations related to reducing earthquake and soils hazards. Approval will be granted for projects in areas of potential geologic hazards only where it can be demonstrated that the project will not be endangered by, or contribute to, the hazardous condition on the site or on adjacent properties.

The studies will include identification of site-specific geotechnical and engineering measures. Typical geotechnical or engineering report measures to reduce impacts related to liquefaction, settlement, or other ground failure could include earthwork and foundation remediation, which will comply with applicable provisions of the CBC.

**Mitigation Measure 8-2. Comply with regulations and policies for erosion control.** Prior to start of construction, the project's technical engineering team will review local policies (Tables 8-1 through 8-4) and work with construction contractors to develop and implement a project-specific SWPPP for construction projects with a land disturbance area equal to or greater than 1 acre. For projects with disturbance area less than 1 acre, a site-specific Erosion and Sediment Control Plan will be prepared. For projects with any land disturbance, construction will comply with local site development codes and incorporate an effective combination of erosion and sediment control measures identified in the California Stormwater Quality Association (CASQA) *Stormwater Best Management Practice Handbook* (CASQA 2003).

Construction erosion and sediment control BMPs typically include the following measures:

- Scheduling site grading during the dry season (April 15 to October 15), when possible
- Segregating topsoil during rough grading

- Temporarily stabilizing soil during site grading and active construction
- Permanently stabilizing site soil after construction
- Implementing erosion and sediment controls during construction dewatering activities
- Controlling site runoff and runoff to isolate the work area and prevent onsite or offsite erosion and sediment transport during construction
- Implementing dust suppression measures
- Managing stockpiles; in accordance with local standard construction practices, materials will be stockpiled at central locations instead of within work areas, where feasible



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## 9. Greenhouse Gas Emissions

This chapter describes the GHG emissions impacts resulting from implementation of the Pure Water Project.

### 9.1 Existing Setting

This section describes the project's existing setting as related to GHGs.

#### 9.1.1 Greenhouse Gases

GHGs include both naturally occurring and anthropogenic gases, such as (EPA 2021c):

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydro-chlorofluorocarbons
- Perfluorocarbons
- Sulfur hexafluoride (SF<sub>6</sub>)

The accumulation of GHGs in the atmosphere influences the long-term range of average atmospheric temperatures. These gases trap the energy from the sun and help maintain the temperature of the Earth's surface, creating a process known as the greenhouse effect (EPA 2021c).

The effect each GHG has on global warming is a combination of the amount of their emissions and their global warming potential (GWP). GWP is a measure of how much energy the emissions of 1 ton of a gas would absorb over a given period of time, relative to the emissions of 1 ton of CO<sub>2</sub>. The larger the GWP, the more that a given gas warms the Earth compared to CO<sub>2</sub> over that time period. CH<sub>4</sub> and N<sub>2</sub>O are substantially more potent than CO<sub>2</sub>. GHG emissions are typically presented in terms of metric tons (MT) of carbon dioxide equivalent (CO<sub>2</sub>e), which are calculated as the product of the mass emitted of a given GHG and its specific GWP (EPA 2021c).

The most important GHG in human-induced global warming is CO<sub>2</sub>. While many gases have higher GWP than the naturally occurring GHGs, CO<sub>2</sub> is emitted in higher quantities and accounts for 80% of all GHGs emitted by the U.S. (EPA 2021b). Fossil fuel combustion, especially from the generation of electricity and powering of motor vehicles, has led to substantial increases in CO<sub>2</sub> emissions; thus, leading to substantial increases in global atmospheric CO<sub>2</sub> concentrations over the last century.

CO<sub>2</sub> concentrations have increased substantially since the beginning of the industrial era, rising from an annual average of 280 ppm in the late 1700s to 414 ppm in 2021—a 48% increase (EPA 2021d). Almost all of this increase is due to human activities (USGCRP 2017). The National Aeronautics and Space Administration (NASA) reported average monthly measurements exceeding 420 ppm from April through June 2022 (NASA 2022). The buildup of CO<sub>2</sub> in the atmosphere is a result of increased emissions and CO<sub>2</sub>'s relatively long lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH<sub>4</sub>, have also increased due to human activities, such as:

- Rice production
- The degradation of waste in landfills
- Cattle farming
- Natural gas mining

In April 2022, the atmospheric level of CH<sub>4</sub> was nearly 1,910 ppb (Global Monitoring Laboratory 2022), more than double the preindustrial level (EPA 2021d). This increase is primarily due to agriculture



(IPCC 2022). CH<sub>4</sub> has a relatively short atmospheric lifespan of only 12 years, but it has a higher GWP potential than CO<sub>2</sub> (EPA 2021e).

N<sub>2</sub>O concentrations in the atmosphere have rarely exceeded 280 ppb over the past 800,000 years. Levels have risen since the 1920s and reached a new high of 334 ppb in 2021, primarily due to agricultural practices (EPA 2021d). N<sub>2</sub>O has a 120-year atmospheric lifespan, meaning that, in addition to its relatively large GWP, its influence is long lasting, which increases its role in global warming.

SF<sub>6</sub>, used in the electrical industry and refrigerants such as hydrofluorocarbons and perfluorinated compounds, is present in the atmosphere in relatively small concentrations but is very stable, with an atmospheric lifetime of 3,200 years, making it a potent GHG (EPA 2022b).

GHGs differ from criteria pollutants in that GHG emissions in the atmosphere do not cause direct adverse human health effects. Rather, the environmental effects of GHG emissions result from changes in global temperatures and climate; which, in turn, can have numerous indirect effects on the environment.

### 9.1.2 Greenhouse Gases Emission Inventories

The largest source of GHG emissions from human activities in the U.S. is from fossil fuels combustion for electricity, heating, and transportation. Based on the 2019 inventory data, the top contributors of GHG emissions in the U.S. are transportation, electricity production, and industrial sources (EPA 2021b).

In California, transportation sources make up the largest category of GHG-emitting sources (CARB 2021b). In 2019, the annual California statewide GHG emissions were 418.2 million metric tons (MMT) of CO<sub>2</sub>e. The transportation sector accounts for about 41% of the statewide GHG emissions. The industrial and electric power sectors account for 24 and 14%, respectively, of the total statewide GHG emissions. The dominant GHG emitted is CO<sub>2</sub>, primarily from fossil fuel combustion.

In Los Angeles County, Agoura Hills's GHG emissions were approximately 266,890 MT CO<sub>2</sub>e in 2018. The largest portion of the city's 2018 emissions were from transportation (73%), followed by emissions from electricity (12.67%) and natural gas use in buildings (9.99%) (City of Agoura Hills 2022a). The City of Westlake Village currently does not have a citywide GHG inventory.

In Ventura County, the GHG emissions from the County's unincorporated area was prepared for the Ventura County General Plan Update Project using a baseline year of 2015. The total community-wide emissions for the unincorporated area in 2015 were approximately 1.857 MMT CO<sub>2</sub>e. Transportation is the top contributor of GHG emissions, and accounted for 37% of the GHG from the county's unincorporated area (Ventura County 2020).

Ventura County Regional Energy Alliance prepared GHG emissions (2010 through 2012) for each of its local government member organizations. The GHG emissions from Thousand Oaks in 2012 were 886,369 MT CO<sub>2</sub>e. Emissions from energy use is the largest source of GHGs (51%). Onroad transportation on city roads (excluding state highways) was the second contributor, accounting for about 31% of the city's emissions each year (Ventura County Regional Energy Alliance 2015).

## 9.2 Regulatory Framework

This section describes the project's regulatory framework as related to GHGs.

### 9.2.1 Federal Regulations

EPA's authority to regulate GHG emissions stems from the 2007 U.S. Supreme Court decision in *Massachusetts v. EPA* (549 US 497). The Supreme Court ruled that GHGs meet the definition of air pollutants under the CAA and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, EPA finalized an endangerment

finding in December 2009. EPA found that the following six GHGs taken in combination endanger both the public health and the public welfare of current and future generations:

- 1) CO<sub>2</sub>
- 2) CH<sub>4</sub>
- 3) Hydrofluorocarbons
- 4) N<sub>2</sub>O
- 5) Perfluorocarbons
- 6) SF<sub>6</sub>

EPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse effect and, under Section 202(a) of the CAA, result in air pollution that endangers public health and welfare.

Based on the endangerment finding, the EPA and the National Highway Traffic Safety Administration took coordinated steps to produce a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from onroad vehicles and engines. EPA, in conjunction with the National Highway Traffic Safety Administration, issued a series of GHG emission standards for vehicles that significantly increased the fuel economy standards for new vehicles sold in the country (EPA 2022c).

In 2009, EPA issued the *Final Mandatory Reporting of Greenhouse Gases Rule*, which requires reporting of GHG emissions from large sources and suppliers in the U.S. This rule requires suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside the light-duty sector, and facilities that emit more than 25,000 MT CO<sub>2e</sub> per year from stationary sources to submit annual reports to the EPA (EPA 2009).

Upon taking office on January 20, 2021, President Joseph Biden issued his “Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis” (EO 13990). EO 13990 calls for all federal agencies to review climate-related regulations and actions taken in the past 4 years, and tasks the Council on Environmental Quality (CEQ) with updating its final guidance titled *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* (81 FR 51866), effective August 5, 2016. Pursuant to EO 13990, CEQ rescinded the draft GHG-related NEPA guidance issued in 2019 and is currently reviewing the 2016 final guidance for revision and update (CEQ 2021).

### **9.2.2 State Regulations**

Executive Order (EO) S-3-05, issued in 2005, established GHG emissions reduction targets for California. The targets called for a reduction of GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80% less than 1990 levels by 2050. The CalEPA Secretary is required to coordinate development and implementation of strategies to achieve the GHG reduction targets.

In 2006, the California State Legislature passed the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), which provides the framework for regulating GHG emissions in California. This law requires CARB to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. Calculation of the original 1990 limit approved in 2007 was revised in 2014 using the scientifically updated Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report GWP values, to 431 MMT of CO<sub>2e</sub> (CARB 2022c). Total California emissions in 2019 were 418.2 MMT of CO<sub>2e</sub> (CARB 2022d).

Part of CARB’s direction under AB 32 was to develop a scoping plan that contains the main strategies California would use to reduce the GHG emissions that contribute to climate change. CARB first approved the AB 32 Scoping Plan in 2008. and its latest adopted plan is the *2017 Climate Change Scoping Plan* (CARB 2017). The Draft 2022 Climate Change Scoping Plan was released in May 2022



and is currently under public and CARB review (CARB 2022e). The scoping plan includes a range of GHG reduction actions, which include:

- Direct regulations
- Alternative compliance mechanisms
- Monetary and nonmonetary incentives
- Voluntary actions
- Market-based mechanisms, such as a cap-and-trade system
- A fee regulation to fund the AB 32 program

One important regulation resulting from AB 32 was CARB's *Mandatory Greenhouse Gas Reporting Regulation*, which came into effect in April 2019 (CARB 2019b). This regulation requires annual GHG emissions reporting from entities that emit 10,000 MT or more of CO<sub>2</sub>e per year from stationary combustion or process sources, including:

- Electric power entities
- Fuel suppliers
- CO<sub>2</sub> suppliers
- Operators of petroleum and natural gas systems
- Industrial facilities

On April 29, 2015, Governor Jerry Brown issued EO B-30-15, directing state agencies to implement measures to reduce GHG emissions to 40% less than their 1990 levels by 2030 and to achieve the previously stated goal of an 80% GHG reduction by 2050. On September 8, 2016, Senate Bill (SB) 32 was enacted, which extends California's commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40% less than 1990 levels by 2030. The 2017 version of CARB's Scoping Plan established a path that would get California to its 2030 target that's reiterated in the 2022 draft update.

To best support the reduction of GHG emissions consistent with AB 32, CARB released the *Short-Lived Climate Pollutant (SLCP) Reduction Strategy* in March 2017. This plan, required by SB 605, established targets for statewide reductions in SLCP emissions as follows (CARB 2017a):

- 40% less than 2013 levels by 2030 for CH<sub>4</sub> and hydrofluorocarbons
- 50% less than 2013 levels by 2030 for anthropogenic black carbon

The SLCP Reduction Strategy was integrated into the 2022 draft update to CARB's Scoping Plan.

### 9.2.3 Local Regulations and Climate Actions

City of Agoura Hills is in the process of developing the city's Climate Action and Adaptation Plan; currently there is no officially adopted plan for the city. There are no climate action plans for the City of Westlake Village.

Ventura County developed an integrated approach to addressing climate change in its *Ventura County 2040 General Plan* by incorporating policies and programs that address climate change throughout the general plan elements. As such, the *Ventura County 2040 General Plan* also serves as the County's Climate Action Plan (Ventura County 2020), with a GHG reduction strategy for reducing community-wide GHG emissions in the unincorporated county, with a community GHG reduction target of 41% less than 2015 levels by 2030, 61% less than 2015 levels by 2040, and 80% less than 2015 levels by 2050. The plan documents the County's vulnerability to climate change and its climate adaptation strategy.

The GHG reduction targets for Thousand Oaks are 40% less than 2010 levels by 2030 and 80% less than 2010 levels by 2050, adopted by the City Council in January 2021. The targets are aligned with the state GHG emission reduction goals to guide the development of the City's *Climate and Environmental Action Plan* (City of Thousand Oaks 2021a).

### 9.3 Assessment Methods and Thresholds of Significance

This section describes the project’s GHG assessment methods and thresholds of significance.

#### 9.3.1 CEQA Thresholds of Significance and Impact Criteria

The significance thresholds used to evaluate the project’s GHG impacts are outlined in Appendix G of the CEQA Guidelines. According to these guidelines, a significant impact related to GHG would occur if a project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions

The South Coast AQMD has established a GHG Significance Threshold of 10,000 MT CO<sub>2</sub>e per year for industrial sources (South Coast AQMD 2019). The threshold applies to annual industrial operation emissions and also includes the amortized construction emissions over a project’s lifetime, typically set at 30 years (South Coast AQMD 2008b).

The Ventura County APCD has not yet adopted GHG thresholds. Because Ventura County is adjacent to the South Coast AQMD’s jurisdiction and both Los Angeles and Ventura counties are within the Southern California Governments’ planning areas, Ventura County APCD has historically used the South Coast AQMD GHG thresholds for industrial sources for its CEQA evaluation.

Impacts of GHG emissions from implementing the project were evaluated based on the comparison to the South Coast AQMD GHG emission threshold, the project’s consistency with the state’s and region’s GHG reduction policies, and whether the project’s GHG emissions would hinder or delay the State’s ability to meet the statewide GHG reduction targets.

### 9.4 Environmental Impacts

GHG impacts were evaluated based on the direct and indirect GHG emissions from the project. As summarized in Table 9-1, the project would cause less than significant GHG impacts. The project is not expected to generate GHG emissions that may have a significant impact on the environment; and it would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. Detailed impact discussions are presented in the following sections.

**Table 9-1. Summary of Greenhouse Gas Impacts**

Impact	Direct and Indirect GHG Emissions
Impact 4-1: GHG emissions	Less than significant impact
Impact 4-2. Policy consistency	Less than significant impact

#### 9.4.1 Impact 9-1: Greenhouse Gas Emissions

Project construction and operation would have the potential to emit direct and indirect GHG emissions in Los Angeles County (Agoura Hills and Westlake Village) and Ventura County (Thousand Oaks and unincorporated areas) where the AWP alternatives and pipeline would be built. Because GHG impacts are at global scale instead of at regional or local levels, GHG emissions from the project were combined in this study, regardless of the locations of the activities.



### 9.4.1.1 Construction Emissions

The project involves construction of either Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf and the associated pipelines that have the potential to generate direct GHG from the construction equipment and vehicles. GHG emissions from construction activities were estimated using CalEEMod (CAPCOA 2022).

AWPF construction GHG emissions were calculated based on the projected construction schedule and durations, and anticipated equipment and vehicle usage. Construction schedule and equipment activities for Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf would be the same, thus the GHG emissions were estimated using one set of construction information and assumptions.

Pipeline construction methods and alignment length would be similar for Alternatives 1 and 2. Pipeline construction GHG emissions were estimated based on the alignment length to be constructed and include those from both Los Angeles and Ventura counties. CalEEMod default values were used when project-specific information was not available.

Table 9-2 summarizes the GHG emissions from the AWPf and pipeline construction. Appendix A provides information on the construction calculations and CalEEMod modeling outputs

**Table 9-2. Estimated Construction Emissions of Greenhouse Gases**

Construction Activities	CO <sub>2</sub> e (MT)
AWPF 2025	217.96
AWPF 2026	923.30
AWPF 2027	370.66
Pipelines in Los Angeles County	804.19
Pipelines in Ventura County	1,191.88
Total Construction Emissions	3,507.98
Amortized Construction Emissions over 30 years	116.93

Total GHG emissions from project construction would be approximately 3,507.98 MT CO<sub>2</sub>e for Alternatives 1 and 2. The annual GHG construction emissions, amortized over a 30-year lifetime, would be 116.93 MT CO<sub>2</sub>e per year. Construction of the project would comply with the state and local regulations. In addition, implementation of the BMPs described in Chapter 4 for criteria pollutants and TAC emission control would also reduce or minimize GHG emissions from the project, such as:

- Maintaining equipment and vehicles in good operating conditions
- Limiting travel speeds
- Restricting equipment and vehicle idling time.

### 9.4.1.2 Operation Emissions

Project operation would cause both direct and indirect GHG emissions. Direct GHG emissions from the project would be due to the fuel combustion by vehicles and equipment used for the project's operation, including emissions from the vehicle trips for worker commutes and material delivery, as well as from testing and operation of the two emergency engines. Direct GHG emissions from AWPf operation were estimated based on the number of worker commute and delivery truck trips, and the routine maintenance and testing of the emergency generators.

Vehicle emissions factors were obtained from CARB's EMFAC2017 model (CARB 2017b). Emissions from emergency engine were estimated based on 50 hours of testing and maintenance per year, which is the maximum number of hours allowed by CARB's Air Toxics Control Measures for Tier 2 diesel

emergency engines (CARB 2011). Emissions factors for emergency engines used off-road engine emission factors from CalEEMod. GHG emissions from water purifying processes at the AWPf and from pipeline maintenance are expected to be negligible.

Indirect emissions from the project would be associated with the power generation needed to provide the electricity for project operation. The project would use electricity from SoCal Edison’s distribution grids. Indirect GHG emissions from power generation were estimated using CalEEMod’s default emission factors for SoCal Edison. The GHG emissions were calculated using the 100-year GWP values from 40 CFR Appendix Table A-1 to Subpart A of Part 98 - Global Warming Potentials.

Table 9-3 provides a summary of the direct and indirect GHG emissions from project operation, which would mostly be the indirect emissions from power generation to support water purifying process electricity needs. Appendix A provides detailed emission calculations for project operations.

**Table 9-3. Operation Emissions of Greenhouse Gases**

Emissions	MT CO <sub>2</sub> e per Year
Direct AWPf Emissions– Emergency Engine	8.81
Direct AWPf Emissions – Vehicle Trips	71.44
Indirect AWPf Emissions – Electricity Use – Power Generation	1,916.88
Total AWPf Operational Emissions	1,997.12

**9.4.1.3 Total Greenhouse Gases Emissions**

Table 9-4 summarizes the total GHG emissions from the project, which include both the direct and indirect GHG emissions of project operation and amortized construction emissions over the 30-year lifetime.

**Table 9-4. Total Project Greenhouse Gases**

Emissions	MT CO <sub>2</sub> e per Year
AWPf Direct and Indirect Operation Emissions	1,997.12
Amortized Construction Emissions over 30-Year Lifetime	116.93
Total Operational Emissions	2,114.06
South Coast AQMD GHG Threshold	10,000.00

As shown in Table 9-4, total GHG emissions from the project would be much less than the South Coast AQMD CEQA threshold of 10,000 MT CO<sub>2</sub>e per year. Therefore, the project’s GHG emissions would have a less than significant impact .

**9.4.2 Impact 9-2: Policy Consistency**

EO S-3-05 and AB 32 set the goals of reducing statewide GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and by 80% less than 1990 levels by 2050. To meet the GHG reduction goals, CARB prepared the first AB 32 Scoping Plan in 2008 and updated the plan every 5 years to provide guidelines on statewide GHG reduction strategies. The *2017 Climate Change Scoping Plan* (CARB 2017a) was the primary plan to reduce GHG emissions throughout California and was designed to reduce statewide GHG emissions by 40% by 2030 as compared to 1990 levels. Regional and local climate action plans in the project area, as discussed in Sections 9.2.2 and 9.2.3, have similar or more aggressive goals for GHG reduction.



The project is consistent with AB 32 and its scoping plan, the regional and local general plans, and climate action plans. One of the goals listed in the 2017 Scoping Plan under the water sector is to "...develop and support more reliable water supplies for people, agriculture, and the environment, provided by a more resilient, diversified, sustainably managed water resources system with a focus on actions that provide direct GHG reductions." The project would improve local water supply reliability and drought resilience and effectively eliminate discharges to Malibu Creek, which the Las Virgenes MWD has committed to doing by 2030.

The project would also provide customers of the Las Virgenes MWD with access to a renewable and sustainable source of water. This new supply of locally produced water would reduce the uncertainty of water supply associated with importing water due to climate change and natural disasters, such as earthquakes and long-term drought conditions. The project would also minimize or avoid the GHG emissions associated with importing water from outside of the region.

By incorporating indirect potable recycled water use into the local supply portfolio, and along with other water supply solutions, the project would help increase the water supply and improve resiliency to climate change effects. As such, the project is consistent with the state's AB 32 and the 2017 Scoping Plan goals. In addition, the project-related GHG emissions would be less than the South Coast AQMD threshold for industrial sources, which was developed based on the region's emission reduction goals. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. The project would have less than significant impacts.

### **9.5 Mitigation Measures**

Impacts would be less than significant; therefore, no mitigation is required.

## 10. Hazards and Hazardous Materials

This chapter describes the existing setting related to hazards and hazardous materials in the project area, as well as the regulatory setting. Hazards and hazardous materials associated with the Pure Water Project and the potential impacts on public health and safety through exposure to hazards and hazardous materials are described. The locations of known past and present hazardous materials sites identified in or near the project area and hazardous materials that would be used in project operations are also described.

For this analysis, the term “hazards” refers to risk associated with such issues as fires, explosions, exposure to hazardous materials, and interference with emergency response plans. The term “hazardous material” is defined in different ways for different regulatory programs. For this analysis, a material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in 22 CCR 66260.10 as follows:

*...A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.*

### 10.1 Existing Setting

Alternative 1 Agoura Road AWP is located on vacant, undeveloped land on the southern side of Agoura Road, within Agoura Hills. The adjacent lands to the south and east are similarly undeveloped, while the land to the west is developed with residential uses, and land to the north is predominantly commercial.

Alternative 2 Reservoir AWP is located near the eastern shoreline of Las Virgenes Reservoir and is undeveloped. The lands immediately adjacent to the north, east, and south of the site are undeveloped. Las Virgenes Reservoir is located west of the site. A residential neighborhood is located approximately 850 feet to the north.

The Pure Water Project pipelines would be located underground, primarily within existing roadways. The Los Robles well is within the existing Los Robles Greens golf course.

A review was conducted of the following databases that list hazardous materials sites:

- EnviroMapper for EnviroFacts (EPA 2022d)
- GeoTracker (State of California 2022a)
- The Cortese list in EnviroStor (DTSC 2022a)

Within 1.0 mile of the project area, there are 41 sites listed in GeoTracker, including 27 that have a status of “closed with no further action required”; and 14 that have a status of “open” with various stages of monitoring, remediation, or closure (Figure 10-1). Most open sites involve groundwater contamination.

Two sites, TFX Aviation Inc. and Lowes Home Center, located approximately 1 mile southwest of the project area, have required maintenance and land use restrictions (DTSC 2022b). The restrictions at TFX Aviation Inc. are the result of previous manufacturing of civilian and military aircraft components between 1956 and 1989. Hazardous wastes were generated during the manufacturing process, including metals, cyanide, chlorinated solvents, and waste oils. Soil and groundwater at the site were impacted from the onsite waste disposal practices that included use of leach fields and two evaporation ponds. Site surface soils have been remediated to industrial/commercial standards, which has allowed for commercial redevelopment. The groundwater remediation is ongoing and is expected to continue for the foreseeable future.



The land use restrictions at Lowes Home Center are the result of agricultural activities from the late 1930s to the mid-1960s and other unknown activities. Soil and soil vapor contain arsenic, tetrachloroethylene (PCE), and trichloroethylene (TCE). Monitoring at the site is conducted annually, and maintenance is performed as needed (DTSC 2022c).

Numerous other sites were identified within 1 mile of the project area, including investigations and active remediation sites (State of California 2022a). No spills, releases, or underground storage tanks were recorded in the GeoTracker, EnviroMapper, or EnviroStor databases for either the Alternative 1 Agoura Road AWPf or Alternative 2 Reservoir AWPf sites.

Other sites or facilities identified in the databases were located more than 1 mile from the project area or were identified as not representing a potential hazard related to the project area or activities.

## 10.2 Regulatory Framework

Hazardous materials use, transportation, and disposal are governed by laws and regulations at all levels of government. This section describes the regulatory framework for hazardous materials related to the Pure Water Project.

### 10.2.1 Federal Regulations

The EPA is the lead federal agency that regulates hazardous waste handling, transport, generation, and disposal. The EPA delegates permitting and compliance assurance to the State. Table 10-1 lists federal regulatory agencies that oversee hazardous materials handling and hazardous waste management, and the statutes and regulations they administer.

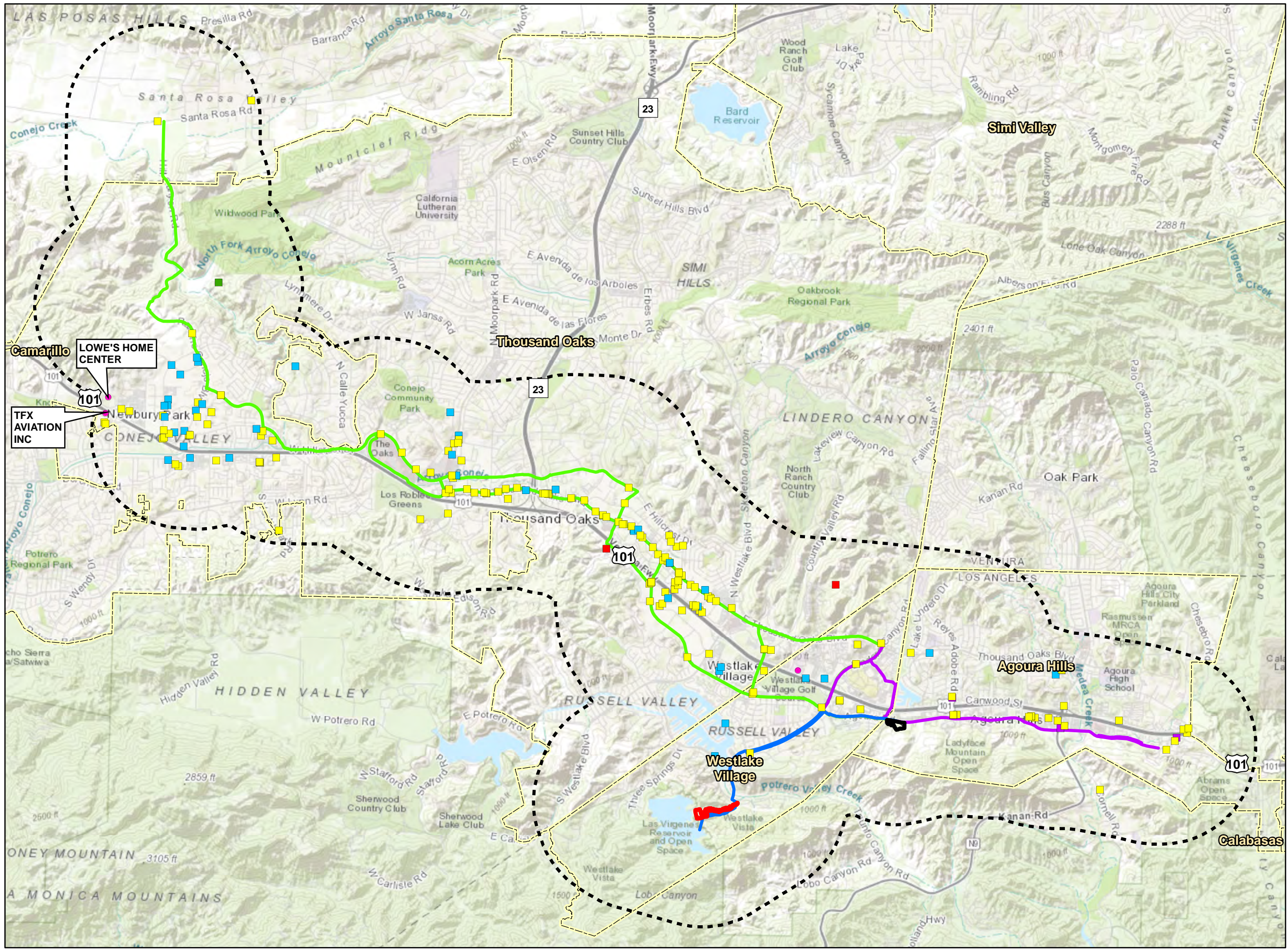
**Table 10-1. Summary of Federal Regulations for Hazardous Waste**

Regulatory Agency	Authority	Summary
EPA	CWA	Requires an NPDES permit to discharge water.
	CAA (42 USC 7401 et seq., as amended)	Regulates accidental releases of hazardous materials through hazard assessments and response programs.
	Resource Conservation and Recovery Act	Regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. DTSC is authorized to implement the State's hazardous waste management program for the EPA.
	Toxic Substances Control Act 1976 (15 USC 2605)	Requires reporting, record keeping and testing requirements, and restrictions relating to chemical substances and mixtures.
	Comprehensive Environmental Response, Compensation and Liability Act	Provides funding to clean up uncontrolled or abandoned hazardous waste sites, as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment.
U.S. Department of Transportation	Hazardous Materials Transport Act – CFR 49	Regulates the transportation of hazardous materials, types of hazardous materials, and vehicle marking during transport.
OSHA	Occupational Safety and Health Act (29 CFR 1910)	Protects workers by setting standards related to safety and health.

DTSC = California Department of Toxic Substance Control

OSHA = Occupational Safety and Health Administration





- ### Legend
- EnviroStor Hazardous Waste Site
  - Geotracker Site**
    - NPDES
    - Cleanup Program Site
    - LUST Cleanup Site
    - Land Disposal Site
    - Non-Case Information
  - Concentrate Alignment Options
  - Purified Water Alignment Options
  - Source Water Alignment Options
  - ▭ Alternative 1 Agoura Road
  - ▭ Alternative 2 Reservoir AWPf
  - ▭ City Boundary
  - ▭ 1-Mile Radius



Sources:  
 California Department of Conservation, 2020;  
 ESRI World Topo Map; ESRI World Street Map

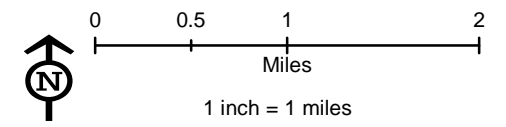


FIGURE 10-1  
**Hazards**  
 Pure Water Project Las Virgenes – Triunfo



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**10.2.2 State Regulations**

CalEPA and the State Water Board establish rules governing the use of hazardous materials and management of hazardous waste. Table 10-2 summarizes applicable state laws.

**Table 10-2. Summary of California Regulations for Hazardous Waste**

Regulatory Agency	Authority	Summary
CalEPA through the Ventura County Resource Management Agency	Ventura CUPA	Ventura County CUPA is certified by Cal/EPA to implement the following statewide environmental programs under their jurisdiction: <ol style="list-style-type: none"> <li>1. Hazardous Materials Business Plan (Ventura County 2022b)</li> <li>2. Hazardous Waste</li> <li>3. Tiered Permitting</li> <li>4. Underground Storage Tanks</li> <li>5. Aboveground Petroleum Storage</li> <li>6. California Accidental Release Prevention Program</li> </ol> A "hazardous material" includes any substance that: <ul style="list-style-type: none"> <li>▪ Requires an SDS (California Labor Code, Section 6360); or</li> <li>▪ Is a substance listed pursuant to 49 CFR; or</li> <li>▪ Is a substance listed in 8 CCR 339; or</li> <li>▪ Is listed as a radioactive material (10 CFR, Appendix B); or</li> <li>▪ Is a hazardous waste (California Health and Safety Code, Chapter 6.5).</li> </ul>
CalEPA through Los Angeles County	Los Angeles County Fire Department, Health Hazardous Materials Division, CUP	EPA works with its federal, state, and Tribal regulatory partners to assure compliance with its rules regarding the management of hazardous wastes under the federal Resource Conservation and Recovery Act. While much of the hazardous waste compliance responsibility is delegated to the State, EPA provides oversight of compliance activities to confirm facilities are properly inspected.
California Highway Patrol	California Vehicle Code	Designates routes to be used for the transportation of inhalation hazards.
Department of Industrial Relations	California Occupational Safety and Health Act	Requires employee training, safety equipment, prevention, and hazardous substance exposure warnings. Requires employer to monitor exposure to listed hazardous substances and notify employees of exposure.
The State Office of Emergency Services	Hazardous Materials Release Response Plans and Inventory Law (also known as the Business Plan Act)	Requires the preparation of hazardous materials business plans that include: <ul style="list-style-type: none"> <li>▪ An inventory of hazardous materials that are handled</li> <li>▪ Their storage locations</li> <li>▪ An emergency response plan</li> <li>▪ Employee safety training</li> <li>▪ Emergency response procedures</li> </ul>
California Office of Environmental Health Hazard Assessment	Safe Drinking Water and Toxic Enforcement Act	Protects drinking water from chemical contamination.
	Aboveground Petroleum Storage Act	Requires owners or operators of aboveground petroleum storage tanks to file a storage statement and implement measures to prevent spills as part of an inspection program for aboveground storage tanks..

CUP = Conditional Use Permit

CUPA = Certified Unified Program Agency

SDS = Safety Data Sheet



### 10.2.3 Local Regulations

Policies and guidance related to hazardous materials found in sections of local regulations are discussed in this section.

#### 10.2.3.1 City of Agoura Hills

The City of Agoura Hills has the following hazardous materials management systems in place:

- Hazardous Waste Management Plan Program (City of Agoura Hills 2022c): The City of Agoura Hills is a member of the Las Virgenes-Malibu Council of Governments (Las Virgenes-Malibu COG) and participates in the Las Virgenes-Malibu COG Hazard Mitigation Plan (Las Virgenes COG 2018). The cities within the Las Virgenes-Malibu COG experience similar hazards and combined efforts to create a thorough Hazard Mitigation Plan. While the Las Virgenes-Malibu region could experience a hazardous materials incident, incidents involving hazardous waste have a low historical frequency, and the types of businesses and industry in the area (other than traffic from major highways and railways) pose low risk. As a result, hazardous waste management was left out of the plan.
- Fire Code: The Fire Prevention Regulations of the City of Agoura Hills were adopted with reference to the 2019 edition of the California Fire Code published by the International Code Council, with additions, deletions, and amendments by the City of Agoura Hills.

The *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) includes policies related to hazardous waste, as summarized in Table 10-3.

**Table 10-3. City of Agoura Hills Aesthetics and Visual Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
S-5.1 Interjurisdictional Coordination	<i>Continue to coordinate with and support the Los Angeles County Sheriff's Department and Fire Department in carrying out inspections, emergency response, and enforcement of hazardous materials and waste compliance procedures for Agoura Hills.</i>
S-5.2 Hazardous Waste Collection	<i>Conduct frequent and convenient household hazardous waste round-ups.</i>
S-5.3 Educate Residents/Businesses	<i>Educate residents and businesses regarding methods to reduce or eliminate the use of hazardous materials, including the disposal of household hazardous materials, including medications, batteries, e-waste, etc., and the use of safer nontoxic equivalents.</i>
S-5.4 Hazardous Materials Regulation	<i>Work with relevant agencies regarding enforcement of applicable laws requiring all users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they store, use, produce, or transport, and to notify the appropriate county, state, and federal agencies in the event of a violation.</i>
S-5.5 Known Areas of Contamination	<i>Require proponents of projects in known areas of contamination from oil operations or other uses to perform comprehensive soil and groundwater contamination assessments, and undertake remedial procedures, as appropriate, prior to grading and development.</i>
S-5.6 Siting of Sensitive Uses	<i>Protect sensitive uses, such as schools, medical facilities and hospitals, daycare facilities, eldercare facilities, and residential, from significant impacts from uses that generate, use, or store hazardous materials.</i>

Source: City of Agoura Hills 2010b

**10.2.3.2 City of Westlake Village**

The City of Westlake Village has the following hazardous materials management systems in place:

- **Hazardous Waste Management Plan Program:** The City of Westlake Village is also a member of the Las Virgenes-Malibu COG and participates in the Las Virgenes-Malibu COG Hazard Mitigation Plan (Las Virgenes-Malibu COG 2018).
- **Fire Code:** The City of Westlake Village Fire Code was adopted with reference to:
  - Title 32 Fire Code of the Los Angeles County Code, as amended and in effect on April 9, 2020
  - California Fire Code, 2019 Edition
  - International Fire Code, 2018 Edition, with additions, deletions, and amendments

The *City of Westlake Village General Plan* (Westlake Village 2019) addresses the City’s approach to minimize the hazards to public health and safety, and to reduce damage to the built and natural environments. Specific policies on hazardous waste are not included.

**10.2.3.3 City of Thousand Oaks**

The City of Thousand Oaks has the following hazardous materials management systems in place:

- **Hazardous Waste Management:** The City of Thousand Oaks maintains a Household Hazardous Waste Program for households and a hazardous waste disposal program for small businesses (City of Thousand Oaks 2014). The programs provide information and guidance on recycling or disposing of hazardous products.
- **Fire Code** (City of Thousand Oaks 2022c): The Ventura County Fire Department provides fire protection services, medical aid, rescue, hazardous materials response, and a variety of other services to Thousand Oaks.

The *Thousand Oaks General Plan* (City of Thousand Oaks 2022b) includes a Safety Element for the protection of the community from natural and built hazards. The general plan is currently undergoing updates, but policies from the 2014 Safety Element are listed in Table 10-4.

**Table 10-4. City of Agoura Hills Aesthetics and Visual Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
E-1	<i>Manage hazardous wastes and materials in such a way that waste reduction through alternative technology is the first priority, followed by recycling and onsite treatment, with disposal as the last resort.</i>
E-2	<i>Continue to work with the County to implement the County Hazardous Materials Emergency Response Plan (developed by the Ventura County Environmental Health Department).</i>
E-3	<i>Strive to locate businesses that utilize hazardous materials in areas which will minimize risk to the public or the environment.</i>
E-4	<i>Coordinate with the Ventura County Environmental Health Department and the Regional Water Quality Control Board to encourage cleanup of sites that have been impacted by hazardous materials releases -- especially those that have impacted groundwater.</i>
E-5	<i>Implement programs to ensure proper disposal of household hazardous wastes. Educate the public about the importance of complying with such programs.</i>
E-6	<i>Continue to coordinate with the Ventura County Sheriff's Department, the California Highway Patrol, and the Ventura County Fire Protection District regarding regional plans for transportation corridors for hazardous materials.</i>

Source: City of Thousand Oaks 2014



### 10.2.3.4 Ventura County

Ventura County has the following hazardous materials management systems in place.

- **Hazardous Waste Management Plan Program:** The Ventura County Hazardous Waste Program (Ventura County 2022a) was created to properly manage hazardous wastes to protect public health and the environment. The program provides:
  - Assistance to small-quantity hazardous waste generators
  - Education
  - Coordinated identification
  - Permitting
  - Inspection of the waste generators
- **Fire Code:** The Ventura County Fire Code was adopted with reference to:
  - The 2019 California Fire Code
  - Portions of the 2018 International Fire Code
  - Portions of 19 CCR, with additions, deletions, and amendments by the Board of Directors of the Ventura County Fire Protection District

The *Ventura County 2040 General Plan* (Ventura County 2020) includes policies related to the usage, storage, and disposal of hazardous wastes, as summarized in Table 10-5.

**Table 10-5. Ventura County Hazardous Waste Goals and Policies**

Goal or Policy Name	Goal or Policy Language
HAZ-5.1 Hazardous Materials and Waste Management	<i>The County shall manage hazardous materials and wastes produced by County facilities and operations in such a way that waste reduction through alternative technology is the County's first priority. When not possible, the County's priorities will progress from recycling and reuse, then on-site treatment, and finally disposal as the last resort.</i>
HAZ-5.2 Hazardous Materials and Waste Management Facilities	<i>The County shall require discretionary development involving facilities and operations which may potentially utilize, store, and/or generate hazardous materials and/or wastes be located in areas that would not expose the public to a significant risk of injury, loss of life, or property damage and would not disproportionately impact Designated Disadvantaged Communities.</i>
HAZ-5.3 Preventing Contamination of Natural Resources	<i>The County shall strive to locate and control sources of hazardous materials to prevent contamination of air, water, soil, and other natural resources.</i>
HAZ-5.4 Household Hazardous Waste	<i>The County shall continue to develop and distribute educational materials and conduct educational outreach to inform the public about household hazardous waste and the proper disposal methods.</i>
HAZ-5.5 Hazardous Waste Reduction at the Source	<i>The County shall, as part of the discretionary review process, require that hazardous wastes and hazardous materials be managed in such a way that waste reduction through alternative technology is the first priority, followed by recycling and on-site treatment, with disposal as the last resort.</i>
HAZ-5.6 Hazardous Materials – County Regulatory Oversight	<i>The County shall continue to provide regulatory oversight for all facilities or activities that store, use, or handle hazardous materials.</i>
HAZ-5.7 Presence of Hazardous Wastes	<i>Applicants shall provide a statement indicating the presence of any hazardous wastes on a site, prior to discretionary development. The applicant must demonstrate that the waste site is properly closed, or will be closed, pursuant to all applicable state and federal laws before the project is inaugurated.</i>
HAZ-5.8 Siting Criteria for Hazardous Waste Generators	<i>The County shall require commercial or industrial uses which generate, store, or handle hazardous waste and/or hazardous materials to locate, operate, and maintain hazardous waste and/or hazardous materials in a manner that does not endanger public health and safety and is located based on objective criteria that do not disproportionately impact Designated Disadvantaged Communities.</i>

Source: Ventura County 2020

### 10.3 Assessment Methods and Thresholds of Significance

This section discusses the results of the government database searches, including from EPA and DTSC, and analysis of information about expected hazardous materials and practices relevant to Alternative 1 Agoura Road AWPf, Alternative 2 Reservoir AWPf, source water augmentation (Los Robles well), and all pipelines.

Impacts related to hazards and hazardous materials may occur if projects would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- 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
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- Be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment
- Result in a safety hazard or excessive noise for people residing or working in the project area for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport

There are no airports or private air strips within 2 miles of the project area. Construction activities within the project area would not be within an area addressed by an airport land use plan and would not create a significant safety hazard. Therefore, no hazards associated with airports would occur, and this issue is not discussed further.

### 10.4 Environmental Impacts

Table 10-6 summarizes the potential impacts from hazards and hazardous materials.

**Table 10-6. Hazards and Hazardous Materials Impacts Summary**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Source Water Augmentation	Pipelines
Impact 10-1: Transport, use, or disposal of hazardous materials	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Impact 10-2: Exposure to hazardous materials	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
Impact 10-3: Hazardous emissions within 0.25 mile of schools	No impact	No impact	Less than significant impact with mitigation	Less than significant impact with mitigation
Impact 10-4: Hazardous sites	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation



#### **10.4.1 Impact 10-1: Transport, Use, or Disposal of Hazardous Materials**

Construction of all Pure Water Project facilities would require the use of vehicles and other construction equipment, which would use hazardous materials, such as fuels, lubricants, and solvents. Accidental releases of small quantities of these materials could expose people and the environment to hazardous materials. However, the handling and storage of these materials would be in accordance with all DTSC, EPA, OSHA, and local Fire Department regulations and would comply with all applicable measures in the local general plans.

Routine activities require the handling, use, and storage of hazardous materials for the operation and maintenance of the AWPf. A Hazardous Materials Business Plan, as required by the *California Environmental Reporting System (CERS)* (State of California 2022c), would be prepared for the site and identify where flammable or toxic materials are used and stored, allowing appropriate response to a fire or other emergency. The Hazardous Materials Business Plan would also include:

- Emergency contact and notification information
- Containment and cleanup procedures
- Cleanup and first aid supplies onsite and their locations
- Facility evacuation procedures

The Hazardous Material Business Plan, training records, and SDSs would be on file at the AWPf.

Compliance with regulatory requirements would minimize potential impacts associated with the use, transport, and disposal of hazardous materials for all Pure Water Project facility construction and operation. Therefore, impacts would be less than significant.

#### **10.4.2 Impact 10-2: Exposure to Hazardous Materials**

As described for Impact 10-1, construction activities for all Pure Water Project facilities would include the handling of fuels, oils, and lubricants for construction equipment. Accidental releases of fuels, oils, and lubricants would be contained within the work site and addressed in accordance with all DTSC, EPA, OSHA, and local Fire Department regulations; impacts from the use of these materials during construction would be less than significant.

Likewise, some locations may include soil disturbance in areas of known or unknown contamination, as discussed for Impact 10-4. With implementation of *Mitigation Measure 10-1 Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate*, contaminated soil and groundwater would be identified and safely removed, and potential impacts would be less than significant.

Routine activities at the AWPf require the handling, use, and storage of hazardous materials for O&M. A Hazardous Materials Business Plan, as required by the CERS, would be prepared and identify where flammable or toxic materials are used and stored, allowing appropriate response to a fire or other emergency.

The Hazardous Materials Business Plan would also include:

- Emergency contact and notification information
- Containment and cleanup procedures
- Cleanup and first aid supplies onsite and their locations
- Facility evacuation procedures

The Hazardous Material Business Plan, training records, and SDSs would be on file at the AWPf. Therefore, impacts would be less than significant.

#### **10.4.3 Impact 10-3: Hazardous Emissions Within 0.25 Mile of Schools**

There are no existing schools within 0.25 mile of the Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf locations. Therefore, there would be no impact.

Ten schools are located within 0.25 mile of the Los Robles well and pipelines:

- 1) Ascension Lutheran School 0.01 mile
- 2) Colina Middle School 0.01 mile
- 3) St. Jude the Apostle school approximately 0.01 mile
- 4) Enriching Hour Preschool approximately 0.10 mile
- 5) Little Dreamers Early Childhood 0.10 mile
- 6) Westlake High School approximately 0.10 mile
- 7) White Oak Elementary approximately 0.15 mile
- 8) Oaks Christian School approximately 0.15 mile
- 9) Carden Conejo School 0.19 mile
- 10) Conejo Elementary School 0.23 mile

As discussed for Impacts 10-1 and 10-2, the use, storage, transport, and disposal of hazardous materials would occur under existing regulations, programs, and plans, including a Hazardous Materials Business Plan and Spill Prevention Control and Countermeasures Plan. Safety, training, and emergency response procedures would remain in effect during construction and operation of the AWPFS and pipelines and would be updated regularly to account for changes in hazardous materials use.

As discussed for Impact 10-4, with implementation of *Mitigation Measure 10-1 Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate*, contaminated soil and groundwater would be identified and safely removed and disposed. No significant impacts would be expected due to handling of soils of unknown origin at sites within the project area. Therefore, impacts related to hazardous emissions within 0.25 mile of schools would be less than significant with mitigation for the pipelines.

#### **10.4.4 Impact 10-4: Hazardous Sites**

With mitigation, Impact 10-4 would be less than significant.

##### **10.4.4.1 Alternative 1 Agoura Road Advanced Water Purification Facility**

Construction of Alternative 1 Agoura Road AWPFS would include excavation and other soil-disturbing activities. There are no cases listed in the GeoTracker (State of California 2022a) or EnviroStor (DTSC 2022b, c) in the exact location of the Agoura Road AWPFS. However, during excavation, localized contamination could potentially be encountered in soils or groundwater from leaking underground fuel tanks identified by EnviroStor, from previously excavated soils of unknown origin placed on the site, or other sources of known or unknown contamination. Contaminated soils or groundwater could expose workers, the environment, and the public to hazardous materials.

With implementation of *Mitigation Measure 10-1 Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate*, contaminated soil and groundwater would be identified and safely removed and disposed; and impacts would be less than significant.

##### **10.4.4.2 Alternative 2 Reservoir Advanced Water Purification Facility**

Impacts of Alternative 2 Reservoir AWPFS would be the same as described for the Agoura Road AWPFS. There are no cases listed in the GeoTracker (State of California 2022a) or EnviroStor (DTSC 2022b, c) in the exact location of the Reservoir AWPFS. With implementation of *Mitigation Measure 10-1 Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate*, contaminated soil and groundwater would be identified and safely removed and disposed; and impacts would be less than significant.



#### 10.4.4.3 Source Water Augmentation

Use of the Los Robles well for source water augmentation only includes construction activities associated with the pipeline (Section 10.4.4.4 discusses the pipelines). Therefore, there would be no construction impacts.

Operation of the Los Robles well would extract between 400 and 700 AFY of groundwater from the Conejo Valley groundwater basin. As part of a recent City of Thousand Oaks project review for groundwater pumping from the Los Robles well, DTSC expressed concerns that additional pumping could destabilize the groundwater contamination plume at the TFX Aviation site (City of Thousand Oaks 2021b). This could result in groundwater contamination exceeding the existing treatment system design. Additional studies by the City of Thousand Oaks indicated a limited potential for a significant impact; however, a monitoring program was recommended to confirm the potential impact was addressed (City of Thousand Oaks 2021b). For this reason, source water augmentation system impacts are potentially significant but would be reduced to a less than significant level with the implementation of *Mitigation Measure 10-2 Los Robles Well Monitoring Program*.

#### 10.4.4.4 Pipelines

Impacts from pipeline construction would be the same as described for the Agoura Road AWP. Along the pipeline alignment options, there are 41 cases listed in the GeoTracker (State of California 2022a) or EnviroStor (DTSC 2022b, c), including:

- 27 that have a status of “closed with no further action required”
- 14 that have a status of “open” with various stages of monitoring, remediation, or closure required

Most open sites involve groundwater contamination. With implementation of *Mitigation Measure 10-1 Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate*, contaminated soil and groundwater would be identified and safely removed and disposed; and impacts would be less than significant.

### 10.5 Mitigation Measures

Impacts 10-1 through 10-4 would be less than significant with mitigation, or would not have an impact. The following mitigation measure will be used to control contaminated materials resulting from the project.

**Mitigation Measure 10-1. Perform a Phase I investigation as needed prior to construction; and remediate, control, or dispose of contaminated materials as appropriate.** New facility locations will be reviewed for inclusion in the lists of hazardous materials compiled pursuant to Government Code Section 65962.5. Where contamination is suspected, a Phase I site assessment of the proposed work area will be performed prior to start of construction activities, including excavation and other soil-disturbing activities, such as tunneling. The Phase I site assessment will comply with the applicable ASTM International (ASTM) standard for site assessments (currently *E-1527-21, Standard Practice For Environmental Site Assessments: Phase I Environmental Site Assessment Process*) and will include recommendations for reducing or eliminating the source or mechanisms of contamination, if contamination is found. Recommendations may include removing the contaminated soil and disposing of it at a licensed facility in accordance with regulations.

**Mitigation Measure 10-2. Los Robles Well Monitoring Program.** Monitoring will specifically look at groundwater level changes and migration of the groundwater plume. The monitoring system will assess changes in hydraulic control of the TFX Aviation groundwater plume. The monitoring will be performed quarterly after resuming pumping from the Los Robles well as part of the Pure Water Project. The JPA will submit a sampling plan to DTSC that includes this quarterly sampling from the existing TFX Aviation monitoring well sites (or replacement monitoring wells) prior to operating the well for the Pure Water Project. The quarterly sampling will start after the well starts operating and may be reduced to semiannually or annually if there is no destabilization of the groundwater plume (with time frame provided in the sampling plan). Should monitoring indicate that hydraulic control of the groundwater plume is being affected, the JPA will reassess the project impact on plume migration in the next quarter subject to review and approval by DTSC.

## 11. Hydrology and Water Quality

This chapter describes the Pure Water Project's impact on hydrology and water quality.

### 11.1 Existing Setting

This section describes the project's existing setting as it relates to hydrology and water quality.

#### 11.1.1 Climate and Precipitation

The climate in the project area is generally characterized as a Mediterranean type with mild, wet winters and hot, dry summers. Coastal fog, produced by a marine inversion layer, commonly occurs in valleys in the spring and summer between the months of May and July (USACE and CDPR 2017). Annual temperatures at the nearest measuring station (in Woodland Hills) range from an average high of 80.6°F to an average low of 48.1°F. Average maximum temperatures are highest in June and July (WRCC 2022a).

Nearly all rainfall occurs between November and April. Rainfall during storm events is not evenly distributed around the watershed and is typically higher across the Santa Monica Mountains, diminishing northward toward the Simi Hills (Las Virgenes-Malibu COG 2001). The average total mean annual precipitation at the nearest measuring station (in Woodland Hills) is 14.14 inches (WRCC 2022a).

#### 11.1.2 Watersheds

The Pure Water Project is located primarily within the Malibu Creek watershed (a subwatershed of the larger Malibu Hydrologic Unit), which encompasses approximately 110 square miles in Los Angeles and Ventura counties (USGS 2021). Approximately two-thirds of the watershed is located in northwestern Los Angeles County, and the remaining one-third is in southeastern Ventura County. Malibu Creek and its tributaries drain into Malibu Lagoon and Santa Monica Bay. Elevations in the watershed range from over 3,100 feet at Sandstone Peak in Ventura County, to sea level at Santa Monica Bay. The western portion of the concentrate pipeline is within the Calleguas Creek watershed.

Pure Water Project features would be developed within portions of four subwatersheds (USGS 2021), as shown on Figure 11-1:

- 1) Potrero Creek
- 2) Madea Creek
- 3) Upper Conejo Arroyo
- 4) Lower Arroyo Conejo

Natural waterways intersected by project pipelines include:

- Madea Creek and Potrero Valley Creek – Tributaries to Malibu Creek
- Arroyo Conejo and Arroyo Santa Rosa – Tributaries to Conejo Creek in the Calleguas Creek watershed

#### 11.1.3 Local Drainage Systems

This section describes the project's local drainage systems.

##### 11.1.3.1 Pure Water Project Features

Most of the project area is urbanized, with local drainage flowing through constructed features and an underground storm drainage system. The Los Angeles County Flood Control District (Los Angeles FCD) maintains the larger drainage features in Los Angeles County, with additional surface runoff and storm



drains managed by the cities of Agoura Hills and Westlake Village. Los Angeles FCD drainage in the project area include (Los Angeles County 2022b):

- **Triunfo Creek Flood Control Channel:** Along Lindero Canyon Road, the former Triunfo Creek is now a trapezoidal channel between Agoura Road and Lakeview Canyon Road (Facility P.D. 728), and an underground culvert connecting to Westlake Lake, which drains to Potrero Valley Creek.
- **Lindero Canyon Flood Control Channel:** The Alternative 1 Agoura Road AWPf site drains to Los Angeles County Sanitation District storm drains on Agoura Road, which discharge to the larger Lindero Canyon channel downstream of Lake Lindero. The Lindero Canyon channel discharges to an unnamed tributary of Medea Creek.
- **Cheseboro Canyon Flood Control Channel:** The Cheseboro Canyon channel follows Agoura Road between Lewis Road and Kanan Road, discharging to Medea Creek.

The Ventura County Watershed Protection District (Ventura County Watershed District) maintains the larger drainage features in Ventura County, with additional surface runoff and storm drains along the concentrate pipeline alignment managed by the City of Thousand Oaks.

### 11.1.3.2 Malibu Creek

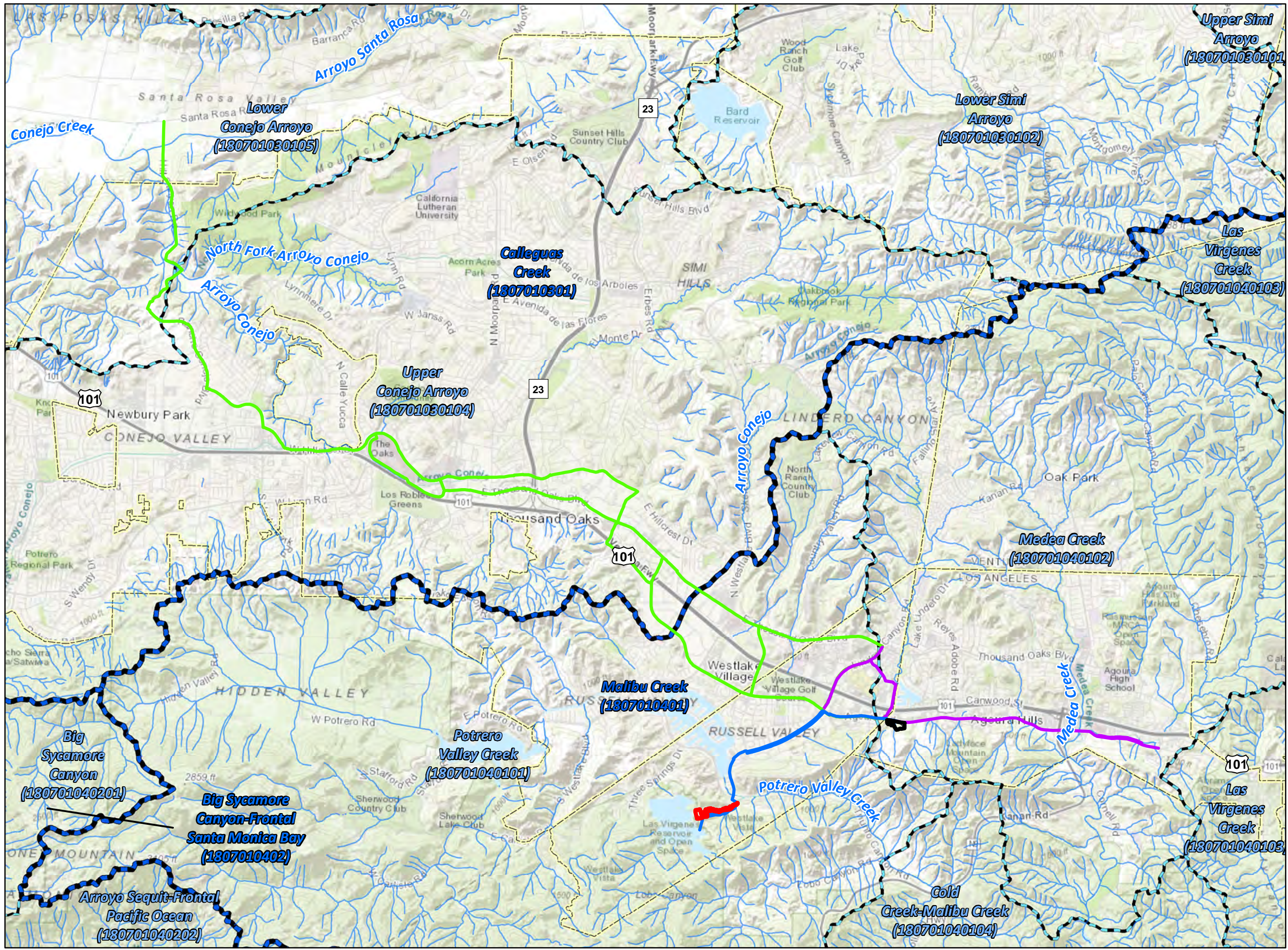
Once seasonal, Malibu Creek flows are now predominantly perennial. Historically, zero-flow conditions occurred in the lower reaches of Malibu Creek (mostly during the dry summer months), but no days with zero flow have occurred since the Tapia WRF began discharging treated effluent to Malibu Creek in the late 1960s. Flows in Malibu Creek are monitored at the existing Stream Gage F130-R near Malibu Canyon Road, south of Piuma Road (Figure 11-2). At this location, flows include storm runoff, local runoff, and permitted reclaimed water discharge. Annual flows from 1931 through 2002 averaged 20,100 AF, compared to a maximum-recorded annual flow of 120,000 AF in 1969. For the period of record from 1931–2002, the average daily flow was 27.1 cfs, the maximum daily flow was 24,200 cfs, and the minimum flow was 0 cfs (USACE and CDPR 2017). During this period of record, the instantaneous peak flow was 33,800 cfs.

Stream flow in Malibu Creek increases rapidly in response to rainfall. Flood hydrographs from single storm events are typically less than 12 hours in duration and are almost always less than 48 hours in duration. Stream flows in Malibu Creek downstream of the Tapia WRF discharge point have been monitored for a number of years (Stream Gage F130-R). Figures 11-3 and 11-4 show monitoring data at this gage location for the 2017 to 2020 water years.

Discharge of recycled water from the Tapia WRF into Malibu Creek generally contributes only a small percentage (less than 10%) of the flow during storm events. Tapia WRF discharges are generally less than 25 cfs, and peak flows often exceed 300 cfs (Figure 11-3). The discharge from the Tapia WRF augments flows during low-flow periods. When stream flows at the Malibu Creek gage are less than 15 cfs, Tapia WRF discharges make up a considerable portion of the flow and, at times, may be the only source of water in Malibu Creek downstream of the discharge point (Figure 11-4).

The JPA is currently building a summer flow augmentation project, consisting of a new pipeline to convey water into Malibu Creek from a nearby Metropolitan potable water pipeline after additional treatment at the existing Tapia WRF overflow structure (JPA 2019). This new pipeline would help maintain minimum instream flows in Malibu Creek during the summer and would support maintaining the instream flow requirements once the Pure Water Project is in operation.





### Legend

- Concentrate Alignment
- Purified Water Alignment
- Source Water Alignment
- Alternative 1 Agoura Road
- Alternative 2 Reservoir
- Creek
- Watershed Boundary (HUC10)
- Watershed Boundary (HUC12)
- City Boundary

Notes: HUC (xx): The number of digits in the code indicates the scale of the hydrologic unit. More digits specify a smaller watershed within a larger river basin. A ten-digit hydrologic unit (HUC10) is a bit smaller than a county, a twelve digit hydrologic unit (HUC12) is a bit smaller than a township.



Sources:  
 ESRI World Topo Map; ESRI World Street Map;  
 USGS NHD, 2021

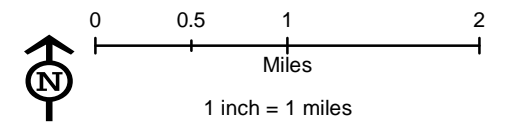
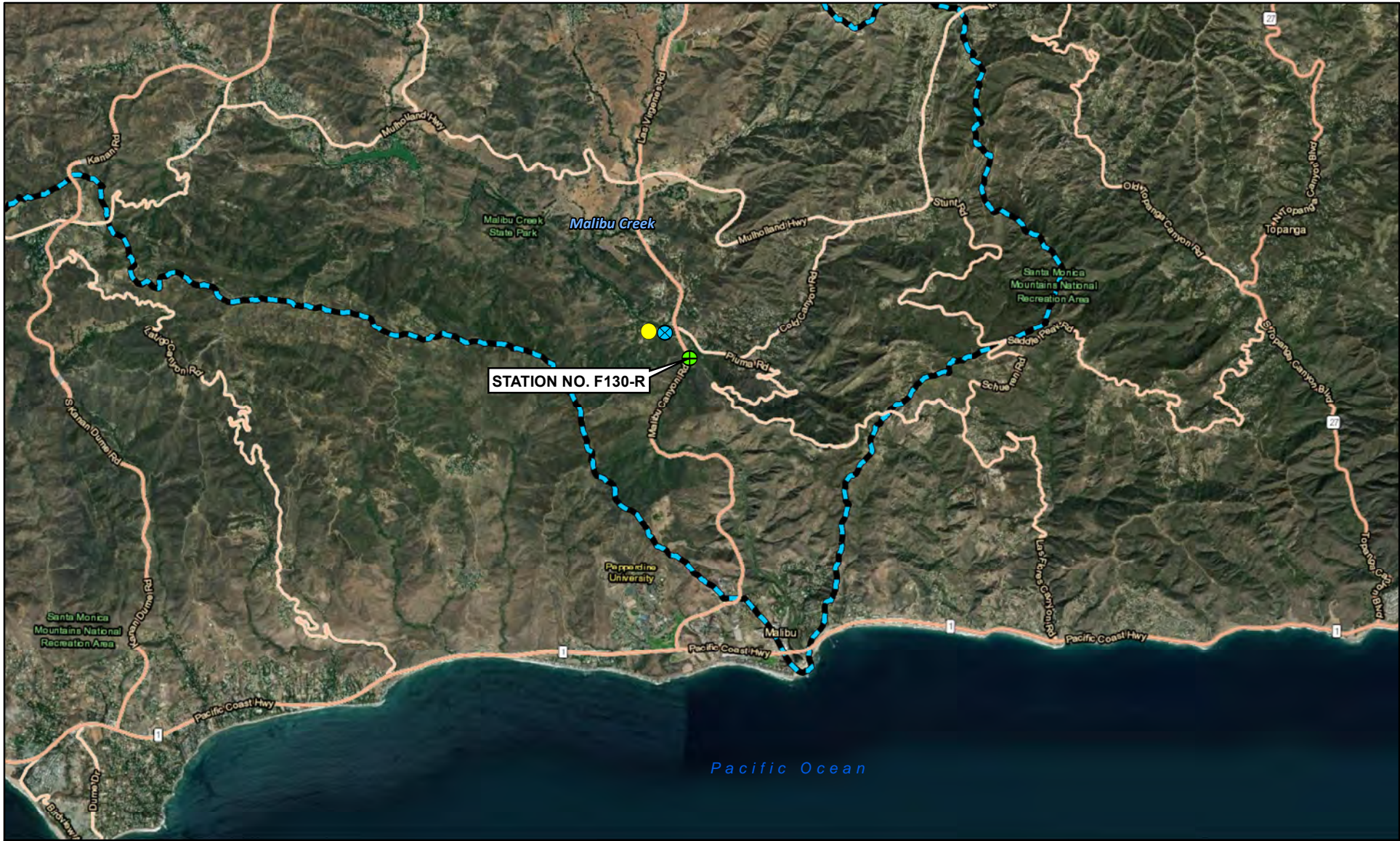


FIGURE 11-1  
 Surface Water Features  
 Pure Water Project Las Virgenes – Triunfo

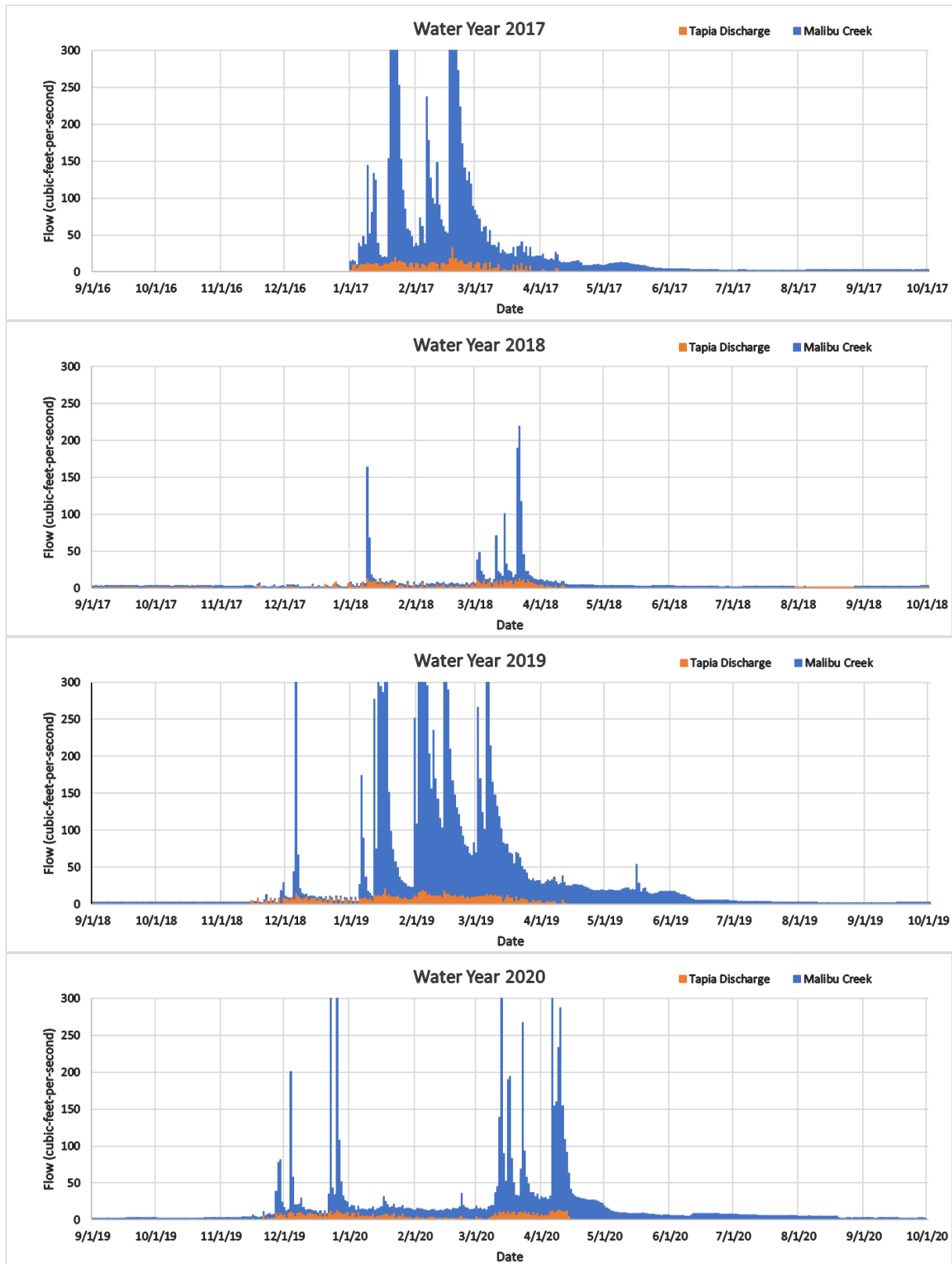


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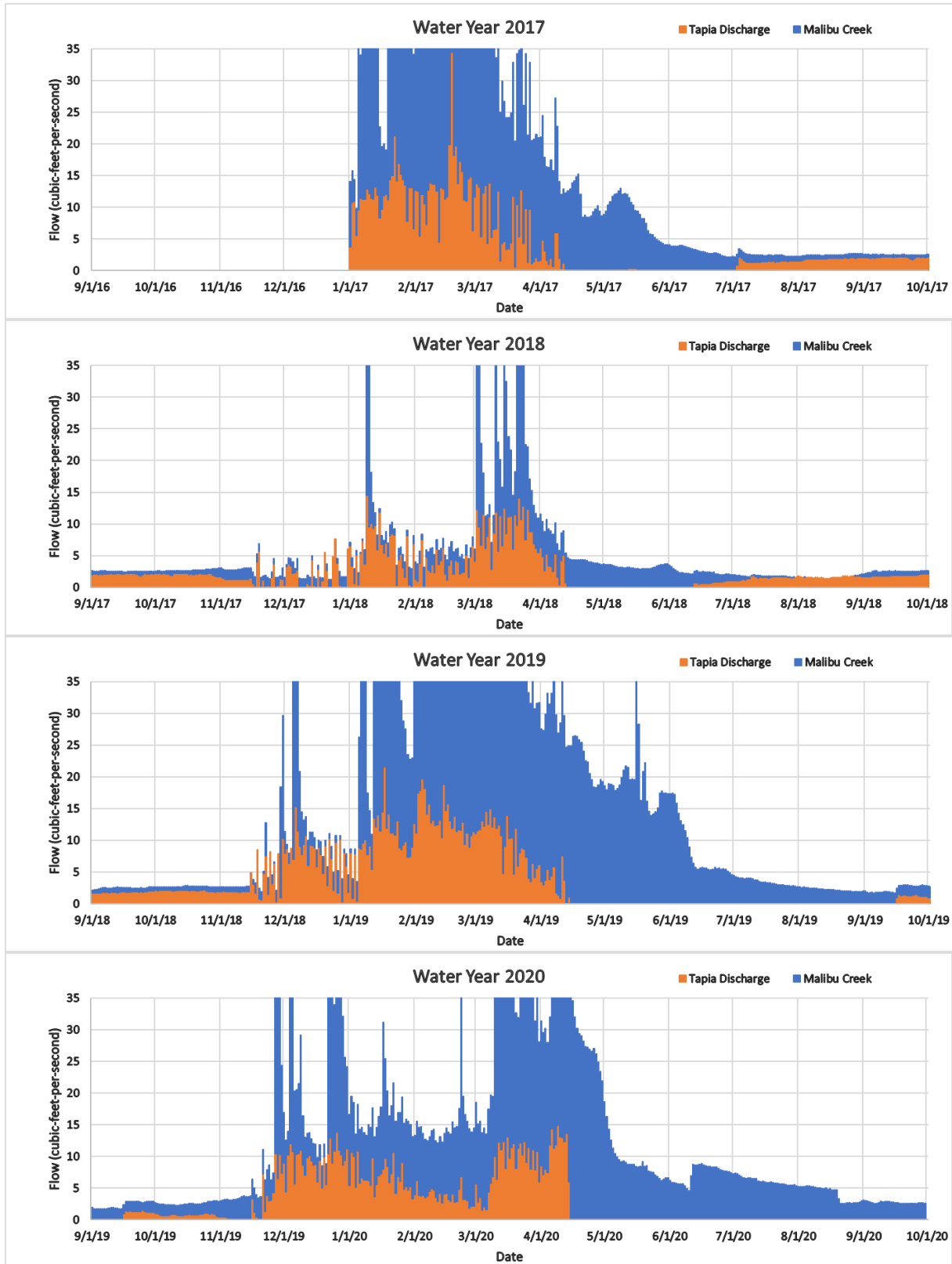


<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="color: yellow;">●</span> Tapia Water Reclamation Facility</li> <li><span style="color: blue; font-size: 2em;">X</span> Tapia WRF Discharge Point</li> <li><span style="color: green;">⊕</span> Flow Measurement Gauge</li> <li><span style="border-bottom: 2px dashed blue; width: 20px; display: inline-block;"></span> Malibu Creek Watershed (HUC10)</li> </ul>	<p>Sources: USGS, 2021 ESRI World Street Map</p>	<p>Project Area</p>	<p><b>Figure 11-2</b> <b>Tapia Water Reclamation Facility</b></p> <p>Pure Water Project Las Virgenes – Triunfo</p> <p></p> <p>0 0.5 1 1.5 2 Miles</p>
<p style="text-align: center; font-size: 2em; font-weight: bold;">Jacobs</p> <p style="text-align: center;">July 19, 2022</p>			





**Figure 11-3. Tapia Discharge Contribution to Peak Flows**  
 Source: Malibu Creek flow (Los Angeles County 2018, 2019, 2020a, 2021)



**Figure 11-4. Tapia Discharge Contribution to Low Flows**  
 Source: Malibu Creek flow (Los Angeles County 2018, 2019, 2020a, 2021)



### 11.1.4 Groundwater

Groundwater is not widely used in the project area, with only two wells providing supplemental water to the JPA recycled water system via discharge to the sewer system and to the Tapia WRF for recycled water production (Las Virgenes MWD 2021).

The Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf sites do not overlie groundwater basins. The Agoura Road AWPf site is near the southern boundary of the Russell Valley groundwater basin, which is described as a relatively small alluvial basin with a total storage capacity of 10,570 AF (DWR 2004).

Pipeline sections would be constructed in the Russell Valley groundwater basin and in three other nearby groundwater basins: Thousand Oaks Area, Conejo Valley, and Arroyo Santa Clara Valley. Source water augmentation would use the Los Robles well, which is in the Conejo Valley groundwater basin. None of the four groundwater basins are in a state of overdraft, and all four are designated as Very Low Priority, meaning that a Groundwater Sustainability Plan is not needed (DWR 2022).

## 11.2 Regulatory Framework

The Pure Water Project is subject to all federal, state, and local regulations pertaining to water quality, pollutant emissions, and drainage. Regulations pertaining to hydrology and water quality in the service area are discussed in this section.

### 11.2.1 Federal Regulations

The federal CWA, originally passed in 1972, is the primary surface water protection legislation in the U.S. By using a variety of regulatory and nonregulatory tools and practices, including established water quality standards, permits, and monitoring discharges, and management of polluted runoff, the CWA aims to restore and maintain the chemical, physical, and biological integrity of surface waters to support "...the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." The CWA regulates both the pollutant content of point source discharges and addresses polluted runoff.

In California, the State Water Board administers the CWA water pollution control and water quality functions. The State Water Board provides policy guidance and delegates authority to nine Regional Boards that regulate surface water and groundwater quality within their respective regions, including planning, permitting, and enforcement activities. The Los Angeles Regional Board administers the federal CWA and state Porter-Cologne Water Quality Control Act in the project area (State Water Board 2022).

The Pure Water Project is subject to federal regulations governing discharge from point sources, such as the Tapia WRF and the proposed discharge into Las Virgenes Reservoir, and wet weather point sources, such as urban storm sewer systems and construction sites. Because these federal regulations are implemented by the state, additional information is described in the Subsection 11.2.2, State Regulations.

### 11.2.2 State Regulations

The State Water Board makes statewide regulations governing water use and point source and nonpoint source pollutant discharges; the Regional Boards work in regions of the state to implement State Water Board policies and regulations, while also establishing additional region- and area-specific regulations and policies to achieve water quality goals. The Malibu Creek watershed is under the jurisdiction of the Los Angeles Regional Board (Region 4).

With the joint federal and state regulatory framework for protecting water quality, the Pure Water Project is required to follow the following regulatory processes:

- **Tapia WRF Discharges:** As described in Chapter 1, discharges from the Tapia WRF into Malibu Creek are regulated by NPDES Permit CA0056014 (Order R4-2017-0124). The NPDES permit considers several important state regulations, including:
  - The Malibu Creek Watershed Nutrients TMDL and the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments (see discussion in Chapter 5 Biological Resources).
  - California Water Code Section 1211 requires that the State Water Board authorize any changes to the point of discharge, place of use, or purpose of use by approving a Wastewater Change Petition. The State Water Board has determined that the Pure Water Project is a change in the amount of water discharged to Malibu Creek and a change in the purpose of use; therefore, a Wastewater Change Petition is needed. There are no downstream water right holders that would be affected by the change. Impacts to Malibu Creek are described in Chapter 5, Biological Resources and in Impact 11-1b: Water Quality Standards and WDRs during Operation.
- **Las Virgenes Reservoir Discharges:** As described in Chapter 2, discharge of purified recycled water from the AWPf into Las Virgenes Reservoir would require a discharge permit ~~pursuant to~~. Consideration of the discharge permit would be in the context of various state regulations for indirect potable reuse through surface water augmentation, including:
  - The State Water Board encourages the safe use of recycled water from wastewater sources in its Policy for Water Quality Control of Recycled Water, commonly known as the Recycled Water Policy (State Water Board 2018). The Recycled Water Policy provides direction to the Regional Water Board to use when considering permits to maximize consistency in the permitting of recycled water projects while preserving sufficient flexibility to address site-specific conditions.
  - California Water Code Section 13562 authorized the State Water Board to adopt uniform water recycling criteria for indirect potable reuse through surface water augmentation. Criteria were developed and reviewed through the mid-2010s, including peer review by an expert panel. The State Water Board adopted the new surface water augmentation regulations on March 6, 2018 (Resolution No. 2018-0014), which added new text to various sections of the CCR, Title 22.
- **AWPF Site Development:** The designs for Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf are required to follow regional guidelines for wet weather point source discharges from new site development and, potentially, for industrial facilities.
- **AWPF and Pipeline Construction:** Construction of all project features is required to follow the statewide program for wet weather point source discharges from construction sites.

Stormwater runoff from urban impervious surfaces and roadways can overwhelm drainage systems and pollute streams, bays, and the ocean. Federal CWA Section 402 prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by an NPDES permit. Point sources include stormwater discharges from discrete conveyances, such as pipes, storm drains, or constructed ditches and channels. Each Regional Board is responsible for addressing nationwide water quality concerns by adopting, monitoring compliance with, and enforcing NPDES permits.

Under its CWA and Porter-Cologne Water Quality Control Act authority, the Los Angeles Regional Board issued WDRs and NPDES permits for Municipal Separate Storm Sewer System (MS4) Discharges Within the Coastal Watersheds of Los Angeles and Ventura Counties (Regional MS4 Permits) to 85 incorporated cities within the coastal watersheds of Los Angeles County, Ventura County and its Watershed Protection District, and 10 incorporated cities within Ventura County (Order R4-2021-0105). These dischargers are subject to WDRs for their MS4 discharges originating from within their jurisdictional boundaries.

The Regional MS4 Permit Planning and Land Development Program prescribes minimum control measures to be applied to new development. New development projects, such as Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf, are required to implement hydrological control measures



to prevent accelerated downstream erosion and protect stream habitat. Such control measures typically include site design for low-impact development, such as:

- Protecting natural drainages
- Minimizing impervious surfaces
- Installing biofiltration systems, such as grassy swales and wet detention basins
- Installing flow-through treatment systems, such as sand filters and cartridge media filters

Onsite features for low-impact development and hydromodification control require ongoing monitoring and reporting to verify compliance with the Regional MS4 Permit. Where onsite measures are infeasible, projects may comply by agreeing to offsite improvements or by retrofitting existing development.

Site development may also require a permit under the General Permit for Storm Water Discharges from Industrial Activities (NPDES CAS000001). The Industrial General Permit applies to recycled water and wastewater treatment facilities under the Standard Industrial Classification codes for wastewater treatment and water supply, specifically sewage or wastewater treatment works, including facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage with a design flow of 1 MGD or more. The Pure Water Project AWPf meets this criteria and is assumed to require authorization under the Industrial General Permit in addition to the Regional MS4 Permit.

Under the federal CWA, construction site stormwater discharge must comply with the conditions of an NPDES permit. The State Water Board has adopted a statewide CGP that applies to projects resulting in 1 or more acre of soil disturbance. For projects disturbing more than 1 acre of soil, a construction SWPPP is required that specifies site management activities to be implemented during site development. These management activities include:

- Construction stormwater BMPs
- Erosion and sedimentation controls
- Dewatering
- Runoff controls
- Construction equipment maintenance

The Los Angeles Regional Board requires a Notice of Intent to be filed prior to any stormwater discharge from construction activities, and that the SWPPP be implemented and maintained onsite. Each construction contractor building a Pure Water Project feature, such as the AWPf or one of the pipeline sections, would be required to prepare and implement an SWPPP.

### **11.2.3 General Plans – Policies and Guidance**

Policies and guidance related to hydrology and water quality found in sections of each general plan are discussed in this section.

#### **11.2.3.1 City of Agoura Hills**

Table 11-1 provides the hydrology and water quality goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to the project. Applicable goals and policies are categorized in:

- A Community Conservation and Development (LU) chapter that contains goals and policies for Land Use and Community Form, Economic Development, Historic and Cultural Resources, and Housing
- A Utilities and Infrastructure (U) chapter that contains goals and policies that provide for high-quality and efficient utility services in Agoura Hills, promote sustainability, and seek to limit impacts to environmentally sensitive areas
- A Natural Resources (NR) chapter that contains goals and policies that address the preservation and maintenance of Agoura Hills' environmental resources
- A Community Safety (S) chapter that contains goals and policies to reduce hazards, mitigate noise impacts, provide for emergency response strategies, and coordinate emergency response agencies

**Table 11-1. City of Agoura Hills Hydrology and Water Quality Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Goal LU-3: City of Open Spaces	<i>Open space lands that are preserved to maintain the visual quality of the City and provide recreational opportunities, protect the public from safety hazards, and conserve natural resources.</i>
Policy LU-3.2: Hillside	<i>Preserve ridgelines, natural slopes, and bluffs as open space, minimize hillside erosion, and complement natural landforms through sensitive grading techniques in hillside areas.</i>
Policy LU-3.5: Creeks and Natural Drainages	<i>Maintain the form and health of resources and habitat in the City's natural drainages. Explore restoration of those that have been degraded or channelized, such as Medea Creek and Chesebro Creek, as feasible to maintain storm water conveyance and property protection requirements.</i>
Goal LU-23: Business Park and Natural Open Spaces	<i>An economically viable business park that is scaled and designed to reflect its natural setting at the base of Ladyface Mountain, while providing high-quality jobs and incorporating a diversity of uses that minimize the need for employees to travel off site.</i>
Policy LU-23.3: Development Clustering and Location	<i>Require that buildings be clustered to minimize grading and modifications of the natural topography, with development located below the 1,100-foot elevation.</i>
Policy LU-26.2 Site Development and Design	<i>Create a walkable, vibrant pedestrian-oriented district through such techniques as: Minimization of grading and preservation of oak trees and other native landscapes.</i>
Goal U-3: Stormdrain System	<i>Stormwater drainage facilities and services that are environmentally sensitive, accommodate growth, and protect residents, businesses, and property.</i>
Policy U-3.3: Drainage Plans and Studies	<i>Require developers to prepare watershed drainage plans and studies for proposed developments that define needed drainage improvements per City standards.</i>
Policy U-3.4: Conservation of Open Space Areas	<i>Conserve undeveloped, designated open space areas and drainage courses to the extent feasible for the purpose of protecting water resources in the City's watersheds.</i>
Policy U-3.5: Protection of Water Bodies	<i>Require new development to protect the quality of water bodies and natural drainage systems through site design, stormwater treatment, and best management practices (BMPs) consistent with the City's NPDES permit.</i>
Goal NR-1: Open Space System	<i>Preservation of open space to sustain natural ecosystems and visual resources that contribute to the quality of life and character of Agoura Hills.</i>
Policy NR-1.3: Slope Preservation	<i>Require that uses involving grading or other alteration of land maintain the natural topographic character and ensure that downstream properties and watercourses are not adversely affected by siltation or runoff.</i>
Goal NR-2: Visual Resources	<i>Preservation of significant visual resources as important quality of life amenities for residents, and as assets for commerce, recreation, and tourism.</i>
Policy NR-2.1: Maintenance of Natural Topography	<i>Require development to be located and designed to maintain the visual quality of hills, ridgelines, canyons, significant rock outcroppings, and open space areas surrounding the City and locate and design buildings to minimize alteration of natural topography.</i>
Goal NR-4: Natural Areas	<i>Protection and enhancement of open space resources, other natural areas, and significant wildlife and vegetation in the City as an integral component of a sustainable environment.</i>
Policy NR-4.2: Conserve Natural Resources	<i>Continue to enforce the ordinances for new and existing development in the City's hillside areas, such that development maintains an appropriate distance from ridgelines, creek and natural drainage beds and banks, oak trees, and other environmental resources, to prevent erosion, preserve viewsheds, and protect the natural contours and resources of the land.</i>
Policy NR-4.11: Creeks and Natural Resources	<i>Support the restoration of creeks and other natural resources. Activities include creek cleanup, erosion and urban runoff control, and weeding of non-native plants.</i>



**Table 11-1. City of Agoura Hills Hydrology and Water Quality Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Goal NR-6 Water Quality	<i>Protection of the water quality of local watersheds and groundwater resources.</i>
Policy NR-6.1: Riparian Habitat	<i>Protect and enhance the natural qualities of riparian habitat.</i>
Policy NR-6.4: Protect Open Space Areas and Water Resources	<i>Conserve undeveloped open space areas and drainage courses and channels for the purpose of protecting water resources in the City's watershed. For construction and post-development runoff, control sources of pollutants and improve and maintain urban runoff water quality through stormwater protection measures consistent with the City's National Pollution Discharge Elimination System (NPDES) Permit.</i>
Policy NR-6.8: New Development	<i>The City shall require new development to protect the quality of waterbodies and natural drainage systems through site design, stormwater treatment, and best management practices (BMPs) consistent with the City's NPDES permit.</i>
Goal S-1: Protection from Flood Hazards	<i>Residents, workers, and visitors that are protected from flood hazards.</i>
Policy S-1.7: Flood Mitigation Design	<i>Require that new development incorporates sufficient measures to mitigate flood hazards, including the design of on-site drainage systems linking with citywide storm drainage, grading of the site so that runoff does not impact adjacent properties or structures on the site, and elevation of any structures above any flooding elevation.</i>

Source: City of Agoura Hills 2010b

### 11.2.3.2 City of Westlake Village

The *City of Westlake Village General Plan* (City of Westlake Village 2019a) contains:

- A Community Development chapter that addresses community development issues within Westlake Village
- A Natural Resources chapter that includes goals, objectives, and policies for Biological and Visual Resources, Open Space, and Watershed Areas in Westlake Village
- A Hazards chapter that identifies policies and programs to mitigate potential impacts through preventive and response measures

Table 11-2 provides the hydrology and water quality goals and policies established by the *City of Westlake Village General Plan* (City of Westlake Village 2019a) that are applicable to the project.

**Table 11-2. City of Westlake Village Hydrology and Water Quality Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>Community Development Chapter</b>	
Watershed Areas Overlay Goal	<i>It shall be the goal of the City of Westlake Village to protect Westlake Village watershed areas.</i>
Objective 14.1:	<i>Assure that proposed new development within or adjacent to identified watershed areas does not adversely impact Las Virgenes Reservoir, Triunfo Creek and Westlake Lake.</i>
Policy 14.1.1:	<i>Require that developments proposed within a designated watershed area incorporate design measures to fully mitigate the impacts of runoff, siltation, erosion and pollutants on affected water bodies.</i>
<b>Natural Resources Chapter</b>	
Biological Resources Goal	<i>It shall be the goal of the City of Westlake Village to preserve and enhance the City's biological resources by assuring that development occurs in a manner which reflects the characteristics, sensitivities and constraints of these resources.</i>
Objective 2:	<i>Minimize the impacts of new development on sensitive biological resources.</i>
Policy 2.1:	<i>Require development to blend indigenous/native plants into new development landscaping which abut natural vegetation.</i>
Policy 2.5:	<i>Prohibit development in riparian habitats to the greatest extent feasible.</i>
Policy 2.6:	<i>Review proposed projects in the "Sensitive Biological Communities" to evaluate their conformance with the following standards: a. The development plan shall retain watercourses, riparian habitat and wetlands in their natural condition to the maximum extent feasible. b. Development shall incorporate habitat linkages (wildlife corridors) to adjacent open spaces where appropriate. c. Roads and utilities shall be located and designed such that conflicts with biological resources, habitat areas, linkages or corridors are minimized.</i>
Visual Resources Goal:	<i>It shall be the goal of the City of Westlake Village to maintain and enhance the visual quality and character of the community's urban and natural environments.</i>
Objective 3:	<i>Provide for the preservation and maintenance of the visual quality of the Community's natural landforms and water bodies.</i>
Policy 3.5:	<i>Protect the visual quality of the community's water bodies through the maintenance of building setbacks and landscape treatments, and effective control of erosion and urban runoff.</i>
Open Space Goal:	<i>It shall be the goal of the City of Westlake Village to provide for the planned management, preservation and wise utilization of the City's natural resources.</i>
Objective 2:	<i>Maximize the potential for open space derived from hillside management, ridgeline protection, and other natural resource preservation/protection policies.</i>
Policy 2.2:	<i>Require development to be sited and designed to protect significant environmental resources, including significant ridgelines, hillsides, and watershed areas.</i>
Watershed Areas Goal:	<i>It shall be the goal of the City of Westlake Village to protect the quality of water contained in Las Virgenes Reservoir and Westlake Lake.</i>
Objective 1:	<i>Protect and enhance the water quality of Westlake Lake by effectively managing erosion and urban runoff within its extended watershed area.</i>
Policy 1.1:	<i>Maintain the high water quality of the City's water bodies through interagency coordination and pesticide/fertilizer/herbicide monitoring.</i>
Policy 1.2:	<i>Limit the impacts of development on Triunfo Canyon Creek and other riparian habitat areas through interagency coordination and development review.</i>
Policy 1.3:	<i>Ensure the effective erosion control and drain maintenance programs.</i>



**Table 11-2. City of Westlake Village Hydrology and Water Quality Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
Objective 2:	<i>Protect the drinking water quality of the Las Virgenes Reservoir through the preservation and effective management of its tributary watershed area.</i>
Policy 2.1:	<i>Regulate development of properties adjacent to the Las Virgenes Reservoir to assure that all new urban uses are located outside of the Reservoir watershed area.</i>
Policy 2.2:	<i>Assure that low intensity recreational uses (i.e., hiking trails, nature walks, vista points, etc.) permitted within the Las Virgenes Reservoir watershed area are located, managed and maintained in a manner that preserves significant natural resources and protects the drinking water quality of the Reservoir.</i>
<b>Hazards Chapter</b>	
Geologic, Seismic and Flooding Hazards Goal:	<i>It shall be the goal of the City of Westlake Village to minimize hazards to public health, safety and welfare which may result from geologic conditions, seismic activity and flooding.</i>
Objective 2:	<i>Ensure that construction and development activities within the community do not expose residents to avoidable natural hazards.</i>
Policy 2.1:	<i>Require the preparation of a detailed geologic and soils report to accompany each grading permit application in all hillside management areas.</i>
Policy 2.3:	<i>Enforce the provisions of the International Building Code, specifically Chapters 18 and 23 as they relate to earthquake-resistant design and excavation and grading.</i>

Source City of Westlake Village 2019a

### 11.2.3.3 City of Thousand Oaks

Project activities within Thousand Oaks are limited to underground pipelines, most of which would be located under existing paved roadways. Although temporary construction impacts would occur and are discussed in Section 11.4, no general plan goals and policies are applicable.

### 11.2.3.4 Ventura County

The *Ventura County 2040 General Plan* (Ventura County 2020) is a long-range plan that guides decision making; establishes rules and standards for development and county improvements; and helps to inform residents, developers, and decision makers in Ventura County. The general plan is made up of a collection of elements, or topic categories. Each element contains the goals and policies the County uses to guide future land use, development, resource management, and environmental protection decisions.

Table 11-3 provides the hydrology and water quality goals and policies established by the *Ventura County 2040 General Plan* (Ventura County 2020) that are applicable to the project.

**Table 11-3. Ventura County Hydrology and Water Quality Goals and Policies**

Goal or Policy Name	Goal or Policy Language <sup>a</sup>
<b>Conservation and Open Space Element</b>	
Goal COS-4: Soil and Mineral Resources	<i>To preserve and protect soil resources in the county from erosion and for agricultural productivity.</i>
Policy COS-5.1: Soil Protection	<i>The County shall strive to protect soil resources from erosion, contamination, and other effects that substantially reduce their value or lead to the creation of hazards.</i>
Policy COS-5.2: Erosion Control	<i>The County shall encourage the planting of vegetation on soils exposed by grading activities, not related to agricultural production, to decrease soil erosion.</i>
<b>Hazards and Safety Element</b>	
Goal HAZ-4: Geologic and Seismic Hazards	<i>To minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from geologic and seismic hazards.</i>
Policy HAZ-4.2: Linear Project Intersection with Active Faults	<i>The County shall require that linear projects, including roads, streets, highways, utility conduits, water transmission facilities, and oil and gas pipelines, avoid intersecting active faults to the extent possible. When such locations are unavoidable, the project design shall include measures to minimize the effects of any fault movement.</i>
Policy HAZ-4.5 Soil Erosion and Pollution Prevention	<i>The County shall require discretionary development be designed to prevent soil erosion and downstream sedimentation and pollution.</i>
Policy HAZ-4.6 Vegetative Resource Protection	<i>The County shall require discretionary development to minimize the removal of vegetation to protect against soil erosion, rockslides, and landslides.</i>
Policy HAZ-4.7 Temporary Revegetation on Graded Areas	<i>The County shall require, as necessary, the use of soil stabilization methods on graded areas to reduce the potential for erosion, particularly during the construction phase.</i>

Source: Ventura County 2020

### 11.3 Assessment Methods and Thresholds of Significance

This impact analysis focuses on potential effects on drainage, flooding, and water quality associated with implementation of the Pure Water Project. The analysis considered available water quality and hydrologic characteristic information for the project area, and applicable regulations and guidelines. Impacts on hydrology and water quality may occur if a program or project would result in the following:

- Violate any water quality standards or WDRs or otherwise substantially degrade water quality
- 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 onsite or offsite
  - Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite
  - 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
  - Impede or redirect flood flows
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan



The project area is not subject to risk of inundation by seiche or tsunami (State of California 2009 a-f; 2021); therefore, impacts associated with inundation impacts are not discussed further.

## 11.4 Environmental Impacts

Table 11-4 summarizes the potential hydrology and water quality impacts.

**Table 11-4. Summary of Hydrology and Water Quality Impacts**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Source Water Augmentation	Pipelines	Malibu Creek
Impact 11-1a: Water Quality Standards and WDRs during Construction	Less than significant with mitigation	Less than significant with mitigation	-	Less than significant with mitigation	-
Impact 11-1b: Water Quality Standards and WDRs during Operation	Less than significant	Less than significant	-	Less than significant	-
Impact 11-2: Drainage and Flood Risk	Less than significant	Less than significant	-	No impact	Less than significant
Impact 11-3: Groundwater	No impact	No impact	Less than significant	No impact	-

### 11.4.1 Impact 11-1a: Water Quality Standards and WDRs during Construction

With mitigations described in this section, Impact 11-1a would be less than significant.

#### 11.4.1.1 Alternative 1 Agoura Road Advanced Water Purification Facility

The Alternative 1 Agoura Road AWPf site drains to Agoura Road and to the larger Los Angeles FCD drainage system, including the Lindero Creek Channel. The site includes a small, unnamed surface drainage that enters the storm drain system at an inlet along Agoura Road. Development of the site includes:

- Grading the 2.7-acre eastern portion of the site to create the building pad and associated paved surfaces for ancillary uses, such as chemical storage, parking, and vehicle circulation
- Temporary construction activities occurring on the smaller, western portion of the site for construction staging and materials storage, with a temporary crossing of the onsite drainage feature

Upon completion of project construction activities, the onsite drainage would be protected and would remain unchanged from its current condition. In addition, the western portion of the site would be restored following its use for construction staging and materials storage, with no impervious surfaces. For these reasons, low-impact development site design requirements are being met. However, the 2.7-acre area containing the new AWPf and associated paved surfaces would create approximately 2.7 acres of impervious areas generating new stormwater runoff (approximately 40% of the 7.1-acre parcel).

Based on design calculations prepared for the site consistent with the hydromodification requirements of the Regional MS4 Permit, postconstruction runoff volumes would exceed preconstruction levels. There is no room on the site to install detention features without further encroaching onto the undeveloped portions of the site, including the onsite drainage. The AWPf design includes onsite measures to protect the downstream water quality associated with increased runoff volumes. Based on the preliminary design,

BMPs would be used to intercept onsite stormwater runoff prior to entering the storm drain on Agoura Road, including:

- Planters
- Infiltration basins
- Roof cisterns
- Pervious pavement
- Bioswales

By avoiding the western portion of the site, including the onsite drainage, and installing BMPs to protect stormwater quality, Alternative 1 Agoura Road AWWP would comply with water quality standards and WDRs for municipal stormwater discharges. In addition, site construction would comply with the CGP and local land development policies by preparing an SWPPP following best industry practices for erosion and sediment control during construction, and as prescribed by *Mitigation Measure 8-2: Comply with regulations and policies for erosion control*. For these reasons, impacts would be less than significant.

#### **11.4.1.2 Alternative 2 Reservoir Advanced Water Purification Facility**

The Alternative 2 Reservoir AWWP site is mostly flat, with no impervious surfaces. There is no stormwater infrastructure located at or near the site. Upon completion of project construction activities, the new AWWP and associated paved surfaces, including the access road, would create approximately 1.7 acres of impervious areas generating new stormwater runoff. To meet the site development requirements consistent with the Regional MS4 Permit, postconstruction runoff volumes would exceed preconstruction levels. The AWWP design would include onsite measures to protect downstream water quality, including both Las Virgenes Reservoir and storm drains on Triunfo Canyon Road, associated with increased runoff volumes.

Given the flat site and the design features included to protect stormwater quality, Alternative 2 Reservoir AWWP would comply with water quality standards and WDRs for municipal stormwater discharges. In addition, site construction would comply with the CGP and local land development policies by preparing an SWPPP following best industry practices for erosion and sediment control during construction, and as prescribed by *Mitigation Measure 8-2: Comply with regulations and policies for erosion control*. For this reason, impacts would be less than significant.

#### **11.4.1.3 Pipelines**

Temporary construction impacts associated with pipeline installation would comply with the CGP and local land development policies, with the construction contractor for each pipeline section preparing an SWPPP following industry best practices for erosion and sediment control during construction, and as prescribed by *Mitigation Measure 8-2: Comply with regulations and policies for erosion control*. Therefore, construction of these project features would comply with water quality standards and WDRs, and the impact would be less than significant.

### **11.4.2 Impact 11-1b: Water Quality Standards and WDRs during Operation**

Impact 11-1b results in less than significant or no impacts.

#### **11.4.2.1 Advanced Water Purification Facility**

Both Alternative 1 Agoura Road AWWP and Alternative 2 Reservoir AWWP are being designed to comply with State Water Board regulations for surface water augmentation. Prior to adopting the regulations, the State Water Board conducted an external scientific peer review (Gerba 2016; Lim 2016; Mahendra 2016; Wells 2016). In addition, the State Water Board convened an expert panel to review the proposed



regulations, and they found that the proposed regulations would adequately protect public health (State Water Board 2017). The Pure Water Project complies with the State Water Board regulations as follows:

- Treatment at the AWPf would use an advanced, multibarrier membrane approach – in this case, microfiltration or ultrafiltration followed by RO – to remove constituents remaining in the treated Tapia WRF source water, and an advanced oxidation process using ultraviolet disinfection to remove constituents not effectively removed by RO.
- Discharge into Las Virgenes Reservoir would be sufficiently diluted with enough residence time to promote mixing and to provide a buffer in case of a temporary AWPf failure that results in the delivery of purified water that does not fully meet the required specification.
- Treatment at the Westlake Filtration Plant would meet all drinking water criteria, including pathogen removal.

In addition to meeting the State Water Board regulations, discharge of purified water into Las Virgenes Reservoir requires a project-specific NPDES permit and WDRs from the Los Angeles Regional Board. The project would not operate until the Los Angeles Regional Board has completed its regulatory review, including public hearings.

Based on Pure Water Project compliance with the State Water Board regulations and permit review by the Los Angeles Regional Board, operation of the project would comply with water quality standards and WDRs; therefore, the impact would be less than significant.

### 11.4.2.2 Pipelines

The Calleguas SMP is currently operational from just east of Camarillo to the Pacific Ocean near Port Hueneme; within the next few years, a new branch of the pipeline would be installed along Santa Rosa Road to Simi Valley (Calleguas MWD 2022). The Pure Water Project concentrate pipeline would discharge into the future SMP at the intersection of Santa Rosa Road at Hill Canyon Road.

Discharge into the SMP would comply with the project's NPDES permit (Order R4-2019-0075, NPDES CA0064521), including verifying that concentrate remains within the permit discharge limitations for the following factors:

- Physical and chemical characteristics
- Pathogens
- Metals
- Organic chemicals
- Radioactivity

Pursuant to Calleguas MWD's Ordinance 19, the Pure Water Project would enter into a discharge service connection agreement, pay the associated connection fees, and discharge into the SMP per agreement requirements, including monitoring discharges to the SMP to comply with the discharge limits. By complying with the NPDES permit and Calleguas MWD service agreement standards, the impact would be less than significant.

### 11.4.2.3 Malibu Creek

Discharges to Malibu Creek are regulated by the Regional Board pursuant to NPDES Permit CA0056014 (Order R4-2017-0124). The order regulates all Tapia WRF discharges, including maintaining the existing Malibu Creek discharge prohibitions, setting a minimum instream flow requirement of 2.5 cfs, and increasing the discharge quality requirements, especially for nitrogen and phosphorus. The JPA would comply with the permit requirements by eliminating Tapia WRF discharges into Malibu Creek (except under an operational emergency or qualifying storm event) and by providing supplemental potable water to meet the instream flow requirements. For these reasons, the Pure Water Project would comply with applicable Malibu Creek water quality standards and WDRs; therefore, the impact would be less than significant.

### **11.4.3 Impact 11-2: Drainage and Flood Risk**

By complying with the regulatory requirements described in this section, Impact 11-2 would be less than significant.

#### **11.4.3.1 Advanced Water Purification Facility and Pipelines**

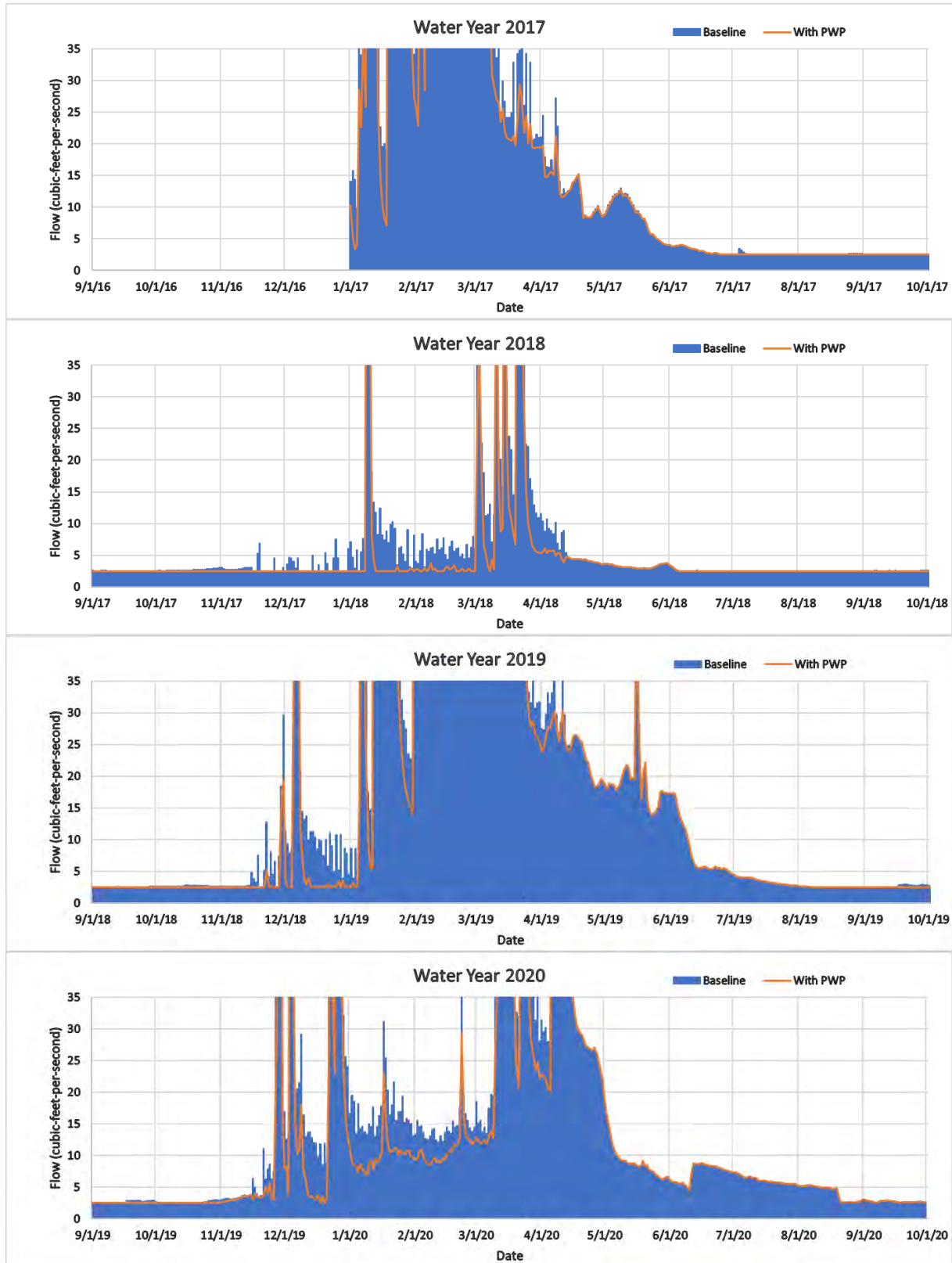
Development of Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf would comply with site development standards of the Regional MS4 Permit, and the AWPf and all pipeline sections would prepare SWPPPs as required by the CGP. Neither AWPf site is located within a special flood hazard area (FEMA 2021). For these reasons, there would be only minor, local changes to stormwater runoff patterns; and impacts to drainage and flood risk would be less than significant.

#### **11.4.3.2 Malibu Creek**

The JPA would comply with the permit requirements by eliminating Tapia WRF discharges into Malibu Creek (except under an operational emergency or qualifying storm event) and by providing supplemental potable water to meet the instream flow requirements. These changes would largely affect stream flow in Malibu Creek during low-flow conditions (Figure 11-5).

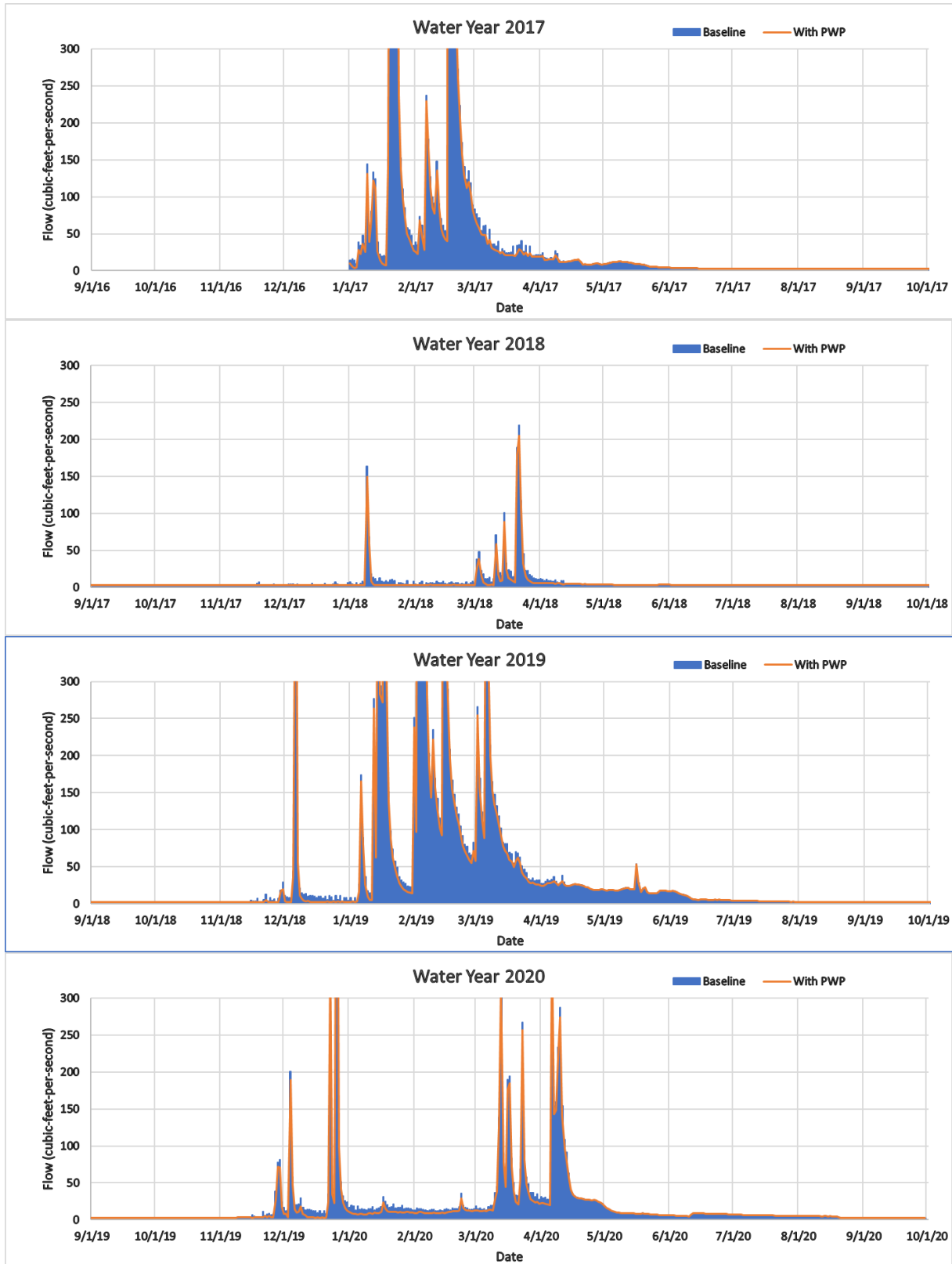
Under Impact 11-1b, flows in Malibu Creek downstream of the discharge point would not fall to less than the 2.5-cfs minimum stream flow requirement in the NPDES permit. During storm events, flows in Malibu Creek rise rapidly, peak, and then recede almost as rapidly. If Tapia WRF discharges to Malibu Creek are eliminated during operation of the project, Malibu Creek stream flows would be slightly less than baseline conditions during storm events (Figure 11-6). Therefore, impacts to drainage and flood risk would be less than significant.





**Figure 11-5. Streamflow Conditions in Malibu Creek During Low-flow Conditions**

Source: Baseline (Los Angeles County 2018, 2019, 2020a, 2021); With PWP calculated from baseline minus Tapia discharge



**Figure 11-6. Streamflow Conditions in Malibu Creek During Storm Events**

Source: Baseline (Los Angeles County 2018, 2019, 2020a, 2021); With PWP calculated from baseline minus Tapia discharge



#### **11.4.4 Impact 11-3: Groundwater**

The Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf sites do not overlie a groundwater basin; therefore, development of the sites would not interfere with groundwater recharge. For these reasons, site development and the new impervious surfaces created would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Therefore, there would be no impact.

Source water augmentation using the Los Robles well would extract groundwater from the Conejo Valley groundwater basin for use by the Pure Water Project. The annual volume of groundwater production from the Los Robles well is estimated to be 400 to 700 AFY, based on the estimated sustainable yield of the groundwater basin (Kennedy Jenks 2021). Because groundwater pumping at the Los Robles well would not exceed the sustainable yield, the impact would be less than significant.

#### **11.5 Mitigation Measures**

No impacts to hydrology and water quality would be significant; therefore, no mitigation is needed. Construction of all Pure Water Project features will be subject to the CGP and local land development policies by preparing an SWPPP following best industry practices for erosion and sediment control during construction, and as prescribed by *Mitigation Measure 8-2: Comply with regulations and policies for erosion control*.

## 12. Land Use and Planning

This chapter describes existing land uses in the project area. Applicable plans and policies related to land use and planning are provided, and potential impacts and mitigation measures are identified.

### 12.1 Existing Setting

The project area is in the northwestern portion of the greater Los Angeles region, within portions of the cities of Agoura Hills, Westlake Village, Thousand Oaks, and unincorporated Ventura County. Most of the project area is located within an urban setting; however, portions are located within Open Space areas.

Major transportation corridors within the project area include U.S. 101 and SR-23. No airports or railways are in the vicinity.

### 12.2 Regulatory Framework

This section summarizes existing land use regulations that would apply to the project area. Land use is regulated primarily at the local level.

#### 12.2.1 General Plans – Policies and Guidance

This section discusses city and county general plan land use guidance relevant to the project.

##### 12.2.1.1 City of Agoura Hills

The City of Agoura Hills adopted the current *City of Agoura Hills General Plan* in 2010 as a strategic document to guide the physical development of Agoura Hills. The Land Use Element is in the process of being updated to reflect the housing sites identified in the Housing Element, including an update to the Land Use Map (City of Agoura Hills 2021).

The Land Use Element guides development of Agoura Hills' built environment to the year 2035 and manages how existing neighborhoods, commercial centers, business districts, and open spaces would be conserved and how growth would be managed to protect the city's resources. Additionally, the Land Use Element reflects the City of Agoura Hills' intentions for economic development, job generation, and fiscal balance.

Table 12-1 lists the land use goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to the Pure Water Project.

**Table 12-1. City of Agoura Hills Land Use Goals and Policies**

Goal or Policy Name	Goal or Policy Language
Goal LU-1: Growth and Change	<i>Sustainable growth and change through orderly and well-planned development that provides for the needs of existing and future residents and businesses, ensures the effective and equitable provision of public services, and makes efficient use of land and infrastructure.</i>
Policy LU-1.2: Development Locations	<i>Prioritize future growth as infill of existing developed areas re-using and, where appropriate, increasing the intensity of development on vacant and underutilized properties, in lieu of expanded development outward into natural areas and open spaces. Allow for growth on the immediate periphery of existing development in limited designated areas, where this is guided by standards to assure seamless integration and connectivity with adjoining areas and open spaces.</i>



**Table 12-1. City of Agoura Hills Land Use Goals and Policies**

Goal or Policy Name	Goal or Policy Language
Policy LU-1.3: Development Phasing	<i>Phase development and public facilities working with other public entities to assure that adequate public facilities are available at the time of occupancy.</i>
Policy LU-2.5: Community Services	<i>Provide a diversity of uses and services supporting Agoura Hills’ residents, such as facilities for civic governance and administration, public safety (police and fire), parks and recreation, seniors and youth, community meetings, and comparable activities. Work with external agencies supporting their provision of services and facilities not under the City’s jurisdiction, such as public schools and quasi-public infrastructure.</i>
Goal LU-3: City of Open Spaces	<i>Open space lands that are preserved to maintain the visual quality of the City and provide recreational opportunities, protect the public from safety hazards, and conserve natural resources.</i>
Policy LU-3.1: Scenic and Natural Areas	<i>Provide for the preservation of significant scenic areas and corridors, significant plant and animal habitat and riparian areas, and physiographic features within the City.</i>
Policy LU-3.5: Creeks and Natural Drainages	<i>Maintain the form and health of resources and habitat in the City’s natural drainages. Explore restoration of those that have been degraded or channelized, such as Medea Creek and Chesebro Creek, as feasible to maintain storm water conveyance and property protection requirements.</i>
Policy LU-3.6: Development Respect for Environmental Setting	<i>Encourage development to be located and designed to respect Agoura Hills’ natural environmental setting and preserve public views, including scenic hillside areas. Regulate building height and location to avoid obtrusive breaks in the natural skyline.</i>
Policy LU-3.7: Public Viewsheds	<i>Whenever possible, preserve vistas of the community from public use areas.</i>
Policy LU-3.8: Night Sky	<i>Preserve view of the night sky through control of outdoor lighting.</i>
Policy LU-3.9: Open Space Preservation	<i>For any change in allowed use on properties in the OS land use district, a two-thirds vote of the voters of the City is required.</i>
Policy LU-5.1 Sustainable Building Practices	<i>Promote sustainable building practices that utilize materials, architectural design features, and interior fixtures and finishings to reduce energy and water consumption, toxic and chemical pollution, and waste in the design and construction of buildings.</i>
Policy LU-5.4: Sustainable Land Development Practices	<p><i>Promote land development practices that reduce energy and water consumption, pollution, greenhouse gas emissions, and waste, incorporating such techniques as:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Concentration of uses and design of development to promote walking and use of public transit in lieu of the automobile</i></li> <li>▪ <i>Capture and re-use of stormwater on-site for irrigation</i></li> <li>▪ <i>Orientation of buildings to maximize opportunities for solar energy use, daylighting, and ventilation</i></li> <li>▪ <i>Use of landscapes that protect native soil, conserve water, provide for wildlife, and reduce green waste</i></li> <li>▪ <i>Use of permeable paving materials</i></li> <li>▪ <i>Shading of surface parking, walkways, and plazas</i></li> <li>▪ <i>Management of wastewater and use of recycled water</i></li> </ul>

Source: City of Agoura Hills 2010b

### 12.2.1.2 City of Westlake Village

The City of Westlake Village adopted an updated *City of Westlake Village General Plan* in 2019 (2019a), as well as additional updates to the Hazards and Housing Elements in 2021. The general plan gives

guidance to decision-makers on issues affecting the allocation of resources and future direction of Westlake Village.

The Community Development chapter contains the Land Use Element, which is the primary land use policy document and serves as the blueprint for the future development of the community.

Table 12-2 lists the land use goals and policies established by the *City of Westlake Village General Plan* that are applicable to the Pure Water Project.

**Table 12-2. City of Westlake Village Land Use Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Goal 1	<i>Provide for new land use development and adaptive reuse which is reflective of and complements the overall pattern and scale of existing development, and offers the opportunity for the revitalization and/or reuse of selected subareas as distinctly identifiable activity centers of the City.</i>
Policy 1.1.2	<i>Provide for the maintenance and possible expansion of open space and recreation uses in those areas designated as Open Space and Recreation areas on the General Development Policy map.</i>
Goal 2	<i>Ensure that new development is adequately served by supporting transportation facilities, and utility infrastructure and public services.</i>
Policy 2.1.1	<i>Implement and maintain public infrastructure improvements necessary to support land uses accommodated by the Land Use Plan (as defined in the Circulation, Utility Service, Facilities, and Conservation Elements of the General Plan).</i>
Policy 2.2.1	<i>Implement public service improvements necessary to support land uses accommodated by the Land Use Plan (as defined in the Institutions, Public Safety, and Recreation Elements of the General Plan).</i>
Goal 7	<i>Provide for public and institutional uses which support the needs and functions of the residents and businesses within the City of Westlake Village.</i>
Policy 7.1.1	<i>Accommodate governmental administrative, parks and recreation, public open space, police, fire, educational (schools), cultural (libraries, etc.), health, human services, public utility, religious and other public uses in areas designated as Public-Quasi public.</i>
Policy 7.1.3	<i>Require that public sites be designed to incorporate landscaped setbacks, walls, and other appropriate elements to mitigate operational and visual impacts on adjacent land uses.</i>
Goal 8	<i>Preserve and protect the City's open space resources as important scenic, environmental, and recreational amenities for all City residents and visitors.</i>
Policy 8.1.1	<i>Retain existing publicly and privately owned open space lands which are permanently dedicated or for which an easement has been granted, including areas designated as "Open Space" on the Land Use Plan map.</i>
Policy 8.2.1	<i>Require that development be sited and designed to protect significant environmental resources, including the provision of open space, in accordance with the Biological Resources Element policies.</i>
Goal 11	<i>Preserve and maintain the natural character and visual amenities of hillsides as a scenic resource.</i>
Policy 11.1.1	<i>Permit development within designated Hillside Management areas in accordance with the Hillside Development Standards contained in the Zoning Ordinance (refer to Visual Resources and Scenic Highways Element).</i>
Goal 12	<i>Preserve sites of archaeological and historic significance.</i>



**Table 12-2. City of Westlake Village Land Use Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Policy 12.1.1	<i>Prior to authorizing development within designated Cultural Reconnaissance areas, require an intensive and systematic surface reconnaissance to identify significant resources and establish appropriate mitigation measure.</i>
Goal 14	<i>Protect Westlake Village watershed areas.</i>
Policy 14.1.1	<i>Require that developments proposed within a designated watershed area incorporate design measures to fully mitigate the impacts of runoff, siltation, erosion and pollutants on affected water bodies (refer to Watershed Areas section).</i>
Goal 15	<i>Protect highly sensitive biological habitats.</i>
Goal 15.1.1	<i>Evaluate the impact of a proposed development on affected habitat areas and require appropriate mitigation measures as a condition of development approval (refer to Sensitive Biological Communities Map) (I-7, Biological Resources' I-1, Biological Resources' I-2, Biological Resources' I-4, and Biological Resources' I-8).</i>
Goal 16	<i>Ensure compatibility among the various types and densities of land uses to be accommodated within the City.</i>
Policy 16.1.2	<i>Require that the on-site lighting of commercial and industrial uses be unobtrusive and designed or located so that only the intended area is illuminated, off-site glare is minimized, and adequate safety is provided.</i>
Policy 16.1.4	<i>Control the development of industrial and other uses which use, store, produce, or transport toxics, air emissions, and other pollutants; requiring adequate mitigation measures confirmed by environmental review and monitoring.</i>
Goal 17	<i>Ensure that the City's built environment, including its architecture, landscape, public open spaces, and rights-of-way maintain a high quality of design which is compatible with the City's established suburban character and environmental setting.</i>
Policy 17.1.1	<i>Limit the use of reflective glass, bright colors, expansive metal skins and other materials and designs which detract from the community's established character.</i>
Policy 17.1.2	<i>Require that air conditioning and other mechanical equipment located on the rooftop of a structure be visually screened from public view and adjacent properties.</i>

Source: City of Westlake Village 2019a

### 12.2.1.3 City Thousand Oaks

The *Thousand Oaks General Plan* (City of Thousand Oaks 2022b) provides a long-range comprehensive guide for the physical development of the City's planning area. The general plan includes a statement of goals and policies related to the community's development, and various elements that provide more detailed policies and standards for certain topic areas.

The City of Thousand Oaks does not have a typical stand-alone Land Use Element with associated written text. As of February 2022, a Land Use and Circulation Map is available, as well as a list of goals and policies that were adopted via several resolutions in the 1990s. The City of Thousand Oaks is in the process of the first comprehensive update to the *Thousand Oaks General Plan*.

Table 12-3 lists the land use goals and policies established by the *Thousand Oaks General Plan* that are applicable to the Pure Water Project.

**Table 12-3. City of Thousand Oaks Land Use Goals and Policies**

Goal or Policy	Goal or Policy Language
Goal	<i>To provide the framework for a planned and unified community containing a balance of living, working, shopping, educational, civic, cultural and recreational facilities.</i>
Goal	<i>To develop appropriate additional tools enabling commercial, industrial and residential development to flourish in an efficient and compatible manner.</i>
Industrial Policy	<i>Industrial development should comply with the City's height restrictions. Exceptions, through height overlays, may be appropriate under certain conditions.</i>
Institutional Policy	<i>The City shall strive to coordinate planning goals with those of other governmental entities having jurisdiction in the Conejo Valley.</i>

Source: City of Thousand Oaks 2022b

**12.2.1.4 Ventura County**

The *Ventura County 2040 General Plan* sets forth the goals, policies, and programs the County would implement to manage future growth and land uses. The general plan, adopted by the Board of Supervisors in September 2020, embodies the vision for the future of unincorporated Ventura County.

The Land Use Element includes policies establishing land use designations that identify the type and intensity of uses permissible in unincorporated areas. In addition, the Land Use Element includes a series of goals and policies identifying the Ventura County's philosophy for future change, development, and natural resource protection. The focus of this section is to preserve agricultural, rural, and open space lands while directing growth to cities and unincorporated communities.

Table 12-4 lists the land use goals and policies established by the *Ventura County 2040 General Plan* that are applicable to the project.

**Table 12-4. Ventura County Land Use Goals and Policies**

Goal or Policy Number	Goal or Policy Language
Goal LU-1	<i>To ensure that the County can accommodate anticipated future growth and development while promoting orderly growth and development that enhances quality of life, maintains a safe and healthful environment, preserves valuable natural resources, and plans for adequate public facilities and services.</i>
LU-1.5	<i>Infill Development- The County shall encourage infill development within Existing communities and within or adjacent to existing development within unincorporated urban centers to maximize the efficient use of land and existing infrastructure.</i>
Goal LU-6	<i>To provide appropriate land use designations that provide for the long-term preservation of the county's rural lifestyle, productive farmland and supporting services, and the vast open space resources that define the county.</i>
LU-6.1	<i>Agricultural Buffers- The County shall require non-agricultural land uses adjacent to agricultural uses to incorporate adequate buffers (e.g., fences, setbacks) to limit conflicts with adjoining agricultural operations.</i>

Source: Ventura County 2020

**12.2.2 Land Use and Zoning Designations**

While land use designations define what types of general uses are allowed on a particular property, the zoning designation regulates specific characteristics, such as specific permitted uses and development standards. The intent of zoning regulations are to protect the character and stability of neighborhoods and reduce land use conflicts. Local land use and zoning designations within the project area are discussed in this section and shown on Figures 12-1 and 12-2 (located at the end of this section).



The discussion of land use and zoning designations is limited to the Agoura Hills and Westlake Village. Pure Water Project activities within Thousand Oaks and unincorporated Ventura County are limited to underground pipelines. Although temporary construction impacts would occur (as discussed in Section 12.3), no land use plans and zoning designations, specific plans, resource management overlays, or development standards are applicable.

### 12.2.2.1 City of Agoura Hills

The Alternative 1 Agoura Road AWPf site has both land use and zoning designations of Planned Development. The Planned Development land use designation is intended to designate certain areas of the city for special development and land use regulations that cannot be addressed through the citywide zoning ordinances. Specific regulations are necessary to guide development and land uses in an orderly manner, such that they are compatible with the existing setting, as well as so development seamlessly and cohesively integrates uses and buildings. Specific land use regulations are governed by specific plans adopted by the City of Agoura Hills.

Underground pipelines would be placed underneath existing paved roadways and would not be subject to land use and zoning restrictions.

The Planned Development zoning designation, where the Alternative 1 Agoura Road AWPf site is located, refers to the *Ladyface Mountain Specific Plan* (City of Agoura Hills 1991). The intent of the *Ladyface Mountain Specific Plan* is to provide the City of Agoura Hills with a comprehensive set of plans, policies, regulations, and conditions for guiding and verifying the orderly development and implementation of the Ladyface Mountain Overlay District.

Per Exhibit II-22 of the *Ladyface Mountain Specific Plan*, the AWPf site is located within the Business Park Sub Area. Public utility and public services are conditionally permitted uses within the Business Park Sub Area, meaning that a CUP would normally be required.

Table 12-5 summarizes the development standards for the Alternative 1 Agoura Road AWPf site, within the Business Park Sub Area of the *Ladyface Mountain Specific Plan*.

**Table 12-5. Development Standards for Program Components Within Agoura Hills**

Zone District	Feature	Standard
Ladyface Mountain Specific Plan	Total Developable Pad Area	2.42 acres.
	Developable Building Square Footage	24,000 ft <sup>2</sup> .
	Maximum Building Height	35 feet and no more than 1,100 feet in elevation above sea level.
	Minimum Front Setback	Twice the height of any building; not less than 25 feet.
	Minimum Rear Setback	Twice the height of any building.
	Minimum Side and Street-side Setback	If a building is situated adjacent to an undeveloped parcel, the minimum side setback will equal the height of the building. If two buildings are on the same parcel (adjacent to an undeveloped parcel), the minimum side yard will be 0.75 times the sum of the two building heights.

Source: City of Agoura Hills 2010c

**12.2.2.2 City of Westlake Village**

The Alternative 2 Reservoir AWPf site has both a land use and zoning designation of Open Space. The Open Space designation is intended to apply to publicly and privately owned land primarily maintained in an unimproved form, such as common open space, lakes, reservoirs, hillsides, and watershed areas.

Per Section 93.313.020 of the City of Westlake Village Municipal Code, water treatment plants, including filtration systems; gauging stations; pumping stations; and any use related to the obtainment, storage, and distribution of water, are a conditionally permitted use.

Underground pipelines would be placed underneath existing paved roadways and would not be subject to land use and zoning restrictions. However, aboveground pump stations may be required for Alternative 2 Reservoir AWPf. Table 12-6 summarizes the program components within Westlake Village and permitted use information.

**Table 12-6. Program Components and Zoning Within Westlake Village**

Program Component	Location	Zone District	Permitted Use
Alternative 2 Reservoir AWPf	Eastern shoreline of Las Virgenes Reservoir	Open Space	CUP required (water treatment plant)
Pump Station (potential option)	Western side of Lindero Canyon Road, approximately 400 feet northeast of Agoura Road	Commercial Recreation	Not a permitted use; per Section 9.4.050, public utility uses would require a Planning Commission determination
Pump Station (potential option)	Southeastern corner of Lindero Canyon Road and Russel Ranch Road	Multiple Use	CUP required (public utility)

The Alternative 2 Reservoir AWPf site is located on parcels that are not subject to a specific plan. However, several resource management overlays have been applied to the area:

- **Hillside Management Area:** Intended to further the preservation and maintenance of the natural character and visual amenities of hillsides as a scenic resource, and to afford protection from geologic, fire, and other natural hazards. The areas identified as hillside management areas are also classified as Open Space; and as such, would not be developed in the future.
- **Cultural Reconnaissance Area:** Intended to preserve, where feasible, sites of archaeological and historic significance or the information they contain where site preservation is not possible. Biophysical and physiographic features similar to those of areas where cultural resources were previously discovered exist in the unsurveyed portions of the city; therefore, there is a very strong possibility that additional, potentially significant cultural resource remains lie within city limits. As part of any development proposal for property located within or adjacent to a designated cultural reconnaissance area, an intensive, systematic surface reconnaissance program conducted by a qualified archaeologist is required to identify and evaluate the impact of the proposed development and recommend measures to mitigate any such impacts.
- **Watershed Area:** Intended to minimize the effects of development on Las Virgenes Reservoir and Triunfo Canyon. As part of any development proposal for property located within a designated watershed area, measures would be incorporated into the program's design to minimize the impacts of runoff, erosion, and pollutants on affected water bodies.
- **Significant Habitat Area:** Intended to minimize the negative effects of development on the highly sensitive biological habitats identified in the *City of Westlake Village General Plan*. As part of any development proposal for property located within or adjacent to a designated significant habitat area, an analysis by a qualified biologist (subject to City approval) would be required to evaluate the impact of the proposed development on the affected habitats or communities and recommend measures to mitigate any impacts.



Table 12-7 summarizes the development standards for the Alternative 2 Reservoir AWPf site, within the Open Space district, and potential pump stations within Westlake Village that may be required with Alternative 2 Reservoir AWPf.

**Table 12-7. Development Standards for Program Components Within Westlake Village**

Zone District	Feature	Standard
Open Space	Maximum Building Height	1 story, 20 feet
	Maximum Lot Coverage	-
	Minimum Setback from Abutting Public ROW	20 feet
	Minimum Setback from an Abutting Side Yard	10 feet (landscaped)
Multiple Use (refers to Commercial Planned Development)	Maximum Building Height	2 stories, 35 feet
	Maximum Lot Coverage	35%
	Minimum Setback from Abutting Public ROW	20 feet
	Minimum Setback from an Abutting Side Yard	10 feet (landscaped)
Commercial Recreation	Maximum Building Height	2 stories, 35 feet
	Maximum Lot Coverage	35%
	Minimum Setback from Abutting Public ROW	20 feet
	Minimum Setback from an Abutting Side Yard	10 feet (landscaped)

### 12.2.3 Water Utility Exemptions

Generally, local agencies are required to comply with the building and zoning ordinances of the cities and counties where facilities are located. However, per Government Code Section 53091(d) and (e), certain water facilities are exempt from building and zoning ordinances. Subdivision (d) provides an absolute exemption for "...facilities for the production, generation, storage, or transmission of water."

Subdivision (e) provides an exemption for facilities "...related to storage or transmission of water..." that are integral to the proper operation of particular storage and transmission functions of water districts.

While Government Code Section 53091 applies to permits and zoning ordinances, Government Code Sections 65401, 65402, and 65403 concern general plan compliance. Per these regulations, the water agency would be required to submit its program to the applicable planning department. The submissions to local jurisdictions are for advisory purposes only. Government Code Section 65401 provides:

*If a general plan or part thereof has been adopted, within such time as may be fixed by the legislative body, each county or city officer, department, board, or commission, and each governmental body, commission, or board, including the governing body of any special district or school district, whose jurisdiction lies wholly or partially within the county or city, whose functions include recommending, preparing plans for, or constructing, major public works, shall submit to the official agency, as designated by the respective county board of supervisors or city council, a list of the proposed public works recommended for planning, initiation or construction during the ensuing fiscal year. The official agency receiving the list*

*of proposed public works shall list and classify all such recommendations and shall prepare a coordinated program of proposed public works for the ensuing fiscal year. Such coordinated program shall be submitted to the county or city planning agency for review and report to said official agency as to conformity with the adopted general plan or part thereof.*

A submission requirement is also stated under Government Code Section 65402, which requires that local agencies not construct or authorize a public structure in any county until the project has been submitted to and reported upon by the planning agency having jurisdiction over the project as to conformity with the local general plan.

### 12.3 Assessment Methods and Thresholds of Significance

The assessment of potential impacts was based on Appendix G of the CEQA Guidelines. Impacts on land use may occur if the project results in the following:

- Physically divides an established community.
- Conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the program, including the general plan, specific plan, local coastal program, or zoning ordinance adopted to avoid or mitigate an environmental effect.

According to Section 15002(g) of the CEQA Guidelines, "...a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, "...the significance of an activity may vary with the setting." Per Appendix G of the CEQA Guidelines, the potential significance of program impacts on land use and planning were evaluated for each of the criteria.

### 12.4 Environmental Impacts

This section describes the project's environmental impacts related to land use.

#### 12.4.1 Overview

Potential land use impacts are summarized in Table 12-8 and described in subsequent sections.

**Table 12-8. Summary of Land Use Impacts**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Pipelines
Impact 12.1: Physically Divides an Established Community	Less than significant impact	Less than significant impact	No impact
Impact 12.2: Conflicts with Land Use Plans, Policies, or Regulations	Less than significant impact	Less than significant impact	No impact

#### 12.4.2 Impact 12-1: Physically Divides an Established Community

The effects of Pure Water Project infrastructure on land use as discussed in this section would be less than significant or have no impact.

##### 12.4.2.1 Alternative 1 Agoura Road Advanced Water Purification Facility

The Alternative 1 Agoura Road AWPf site is currently a vacant, undeveloped property. Surrounding land uses include high-density residential units with associated recreational amenities (tennis courts) to the west, Agoura Road and a business park to the north, and open space to the east and south.



An unofficial north–south oriented trail leading from Agoura Road to the Ladyface Mountain Open Space area is located on the property. During construction, a portion of the trail would not be accessible to the public due to the construction activity. Following the completion of construction activity, trail use could resume; therefore, the impact would be less than significant.

### **12.4.2.2 Alternative 2 Reservoir Advanced Water Purification Facility**

The Alternative 2 Reservoir AWPf site is currently a vacant, undeveloped property. Surrounding land uses include the Las Virgenes Reservoir to the west and open space to the north, east, and south. Although the Reservoir AWPf would include a security fence around the facility, no project features or other built components would introduce a new barrier that physically divides the established community.

Upon construction and operation of the project, the Pentachaeta Trailhead near Triunfo Canyon Road would require a slight permanent relocation, as the Alternative 2 Reservoir AWPf access road would use the same area. Additionally, several unofficial access roads and recreation trails meander through the Alternative 2 Reservoir AWPf site and would require permanent relocation.

Although the Pentachaeta Trail and various unofficial access roads and recreation trails would require a permanent relocation around the Reservoir AWPf, construction and operation of Alternative 2 Reservoir AWPf would not result in a significant physical divide of an established community. The Reservoir AWPf security fence would be a physical barrier from the public using the existing unofficial access roads and recreation trails, resulting in less than significant impacts.

### **12.4.2.3 Pipelines**

Pipelines included in the program would be placed underground; therefore, no pipeline component would introduce a new permanent barrier that physically divides the established community. Temporary lane closures would be required during construction. However, temporary lane closures would not result in the physical division of the established community. Construction and operation of the pipelines would not physically divide an established community, and no impact would occur.

Under Alternative 2 Reservoir AWPf, the two potential pump stations would require a security fence or wall around them. However, no public access would be disrupted at any of the proposed sites. Each pump station would allow for continued access around the perimeter of the facilities. The surrounding community character and uniformity would not be divided as a result of the pump stations. Construction and operation of the pump stations would not physically divide an established community, and no impact would occur.

## **12.4.3 Impact 12.2: Conflicts with Land Use Plans, Policies, or Regulations**

The effects of Pure Water Project infrastructure on land use as discussed in this section would be less than significant.

### **12.4.3.1 Alternative 1 Agoura Road Advanced Water Purification Facility**

Per Government Code Section 53091(d) and (e), the AWPf is exempt from local zoning and building ordinances. However, the Pure Water Project would work with the City of Agoura Hills to comply with the *Ladyface Mountain Specific Plan* and the *City of Agoura Hills General Plan*, including land use and development standards, as much as possible. As shown in Table 12-6, the AWPf is a permitted use in the *Ladyface Mountain Specific Plan* area upon the issuance of a CUP. Based on the site layout and concept design drawings, Alternative 1 Agoura Road AWPf would comply with some *Ladyface Mountain Specific Plan* development standards, including all height and setback requirements. At 2.7 acres, the AWPf exceeds the total developable pad area standard of 2.42 acres. The AWPf habitable area is generally consistent with the developable building square footage standard of 24,000 ft<sup>2</sup>, but the overall building footprint (including exterior storage area) is 47,750 ft<sup>2</sup>.

Due to Government Code Section 53091(d) and (e) and continued engagement with the City of Agoura Hills regarding the *Ladyface Mountain Specific Plan's* development standards, the AWPf would have a less than significant impact on land use plans, policies, or regulations adopted to avoid or mitigate an environmental effect.

#### **12.4.3.2 Alternative 2 Reservoir Advanced Water Purification Facility**

Per Government Code Section 53091(d) and (e), the AWPf is exempt from local zoning and building ordinances. However, the Pure Water Project would work with the City of Westlake Village to comply with the *City of Westlake General Plan* and Municipal Code, including land use and development standards, as much as possible. As shown in Table 12-7, the AWPf is a permitted use in the Open Space zone district upon the issuance of a CUP. Based on the site layout and concept design drawings, Alternative 2 Reservoir AWPf would comply with some City of Westlake Village development standards for the Open Space zone but, at 33 feet high, would exceed the Open Space development standard of 20 feet.

Due to Government Code Section 53091(d) and (e) and continued engagement with the City of Westlake Village, the AWPf would have a less than significant impact on land use plans, policies, or regulations adopted to avoid or mitigate an environmental effect.

#### **12.4.3.3 Pipelines**

Per Government Code Section 53091(d) and (e), the program is exempt from local zoning and building ordinances. Further, the pipelines would be located underground and would not be subject to land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. No impact would result from construction and operation of the pipelines.

The aboveground pump station would comply with the *City of Westlake Village General Plan* and Municipal Codes, including land use and development standards. As shown in Table 12-8, utility structures are permitted upon the issuance of a CUP, with the exception of the potential location on the western side of Lindero Canyon Road, where public utility structures are not a permitted use. At this location, Planning Commission authorization is required.

Compliance with applicable development standards is anticipated, so the program would avoid environmental effects related to land use. Due to Government Code Section 53091(d) and (e) and anticipated compliance with the City of Westlake Village and City of Agoura Hills Municipal Codes' development standards, the program would have no impact on land use plans, policies, or regulations adopted to avoid or mitigate an environmental effect.

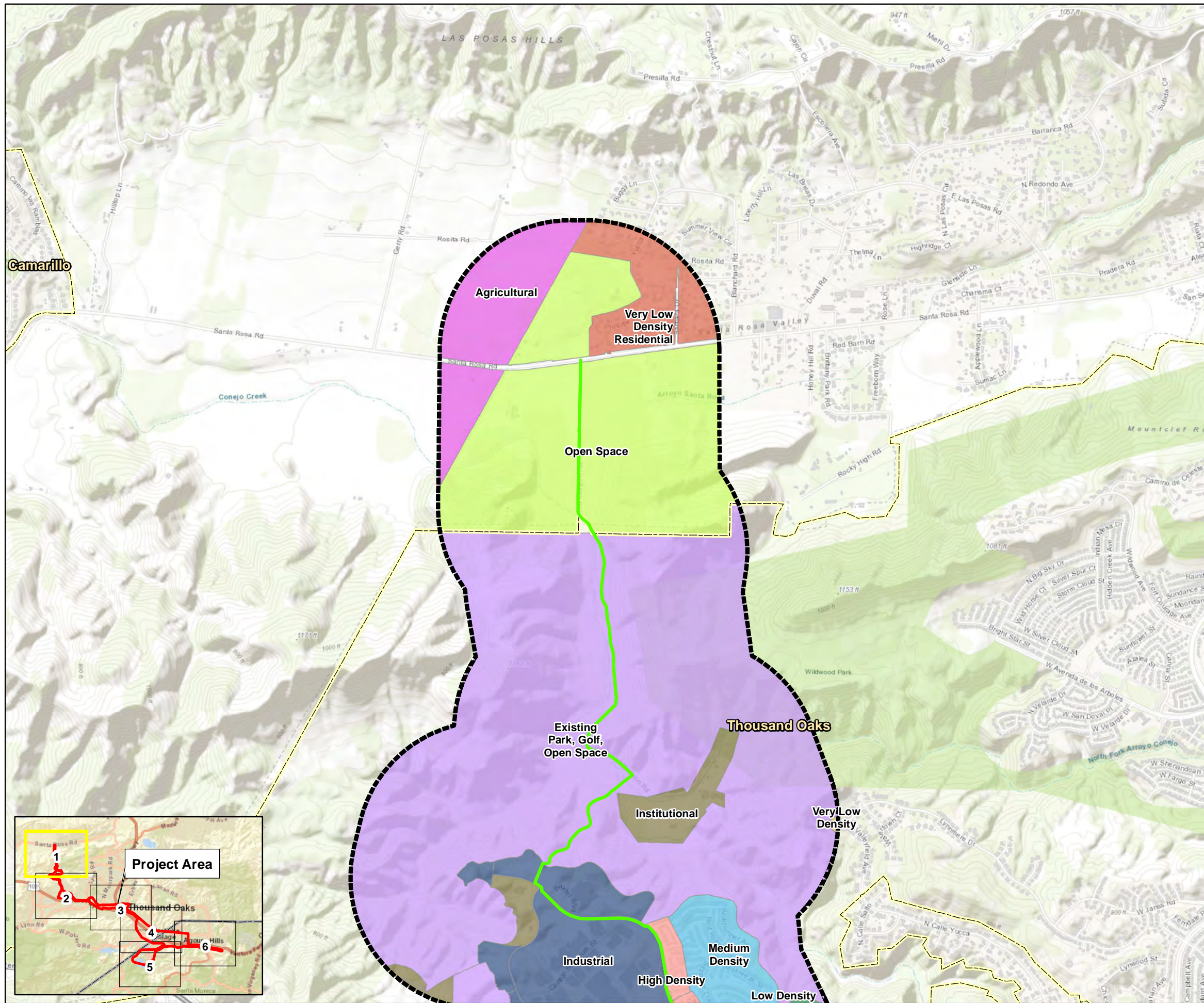
### **12.5 Mitigation Measures**

Land use impacts would be less than significant; therefore, no mitigation measures are required.



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- Legend**
- Concentrate Alignment Options
  - Half-Mile Radius
  - Ventura County Land Use**
  - Agricultural
  - Open Space
  - Very Low Density Residential
  - Thousand Oaks Land Use**
  - Existing Park, Golf, Open Space
  - High Density
  - Industrial
  - Institutional
  - Low Density
  - Medium Density
  - Very Low Density

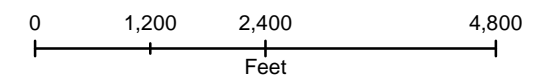
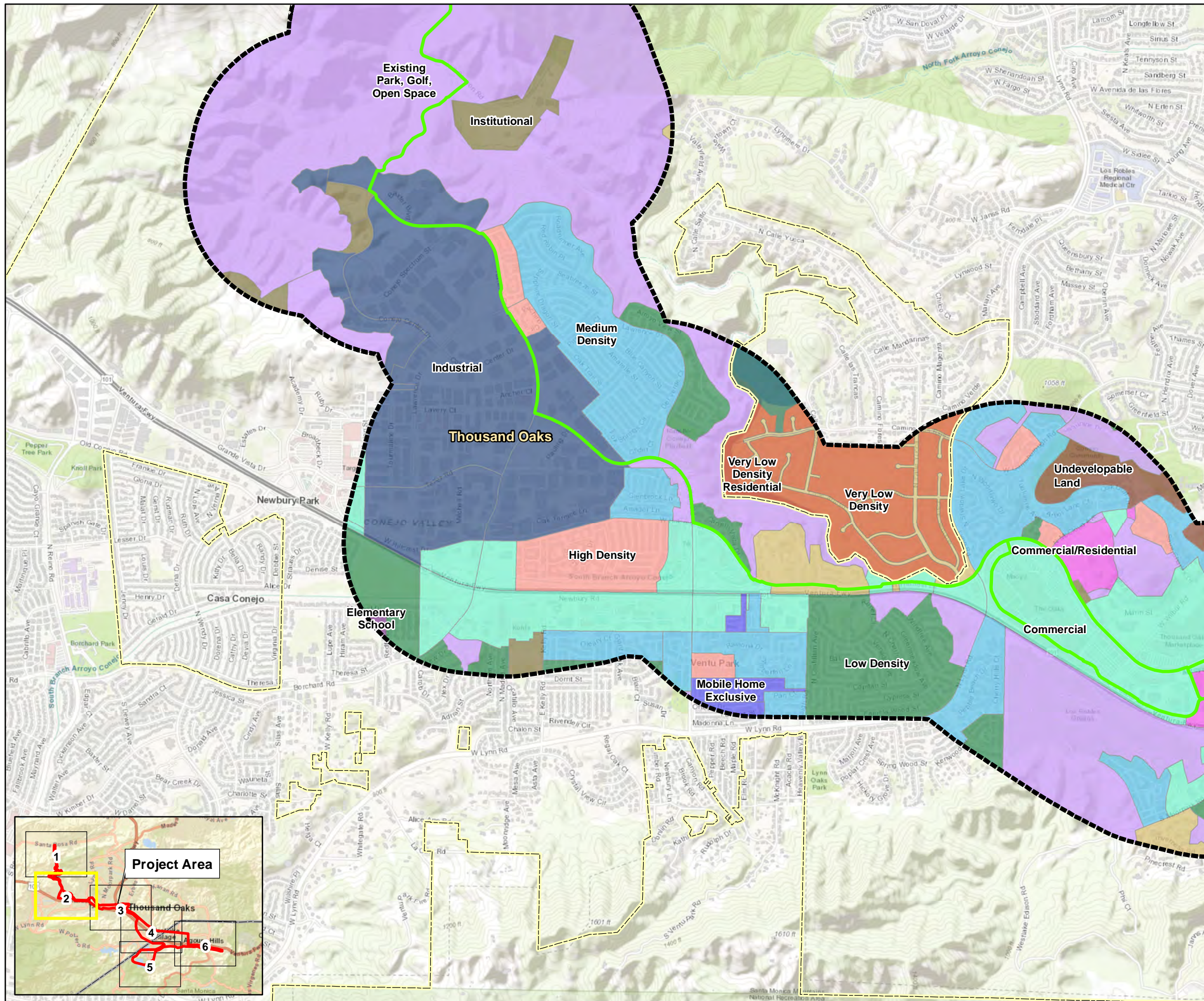


FIGURE 12-1  
**General Plan Land Use Designations**  
*Pure Water Project Las Virgenes – Triunfo*





- Legend**
- Concentrate Alignment Options
  - Half-Mile Radius
  - Ventura County Land Use**
  - Industrial
  - Very Low Density Residential
  - Thousand Oaks Land Use**
  - Commercial
  - Commercial/Residential
  - Elementary School
  - Existing Park, Golf, Open Space
  - High Density
  - Industrial
  - Institutional
  - Low Density
  - Medium Density
  - Mobile Home Exclusive
  - Undevelopable Land
  - Very Low Density

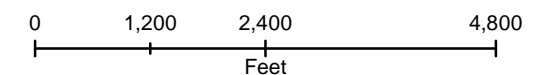
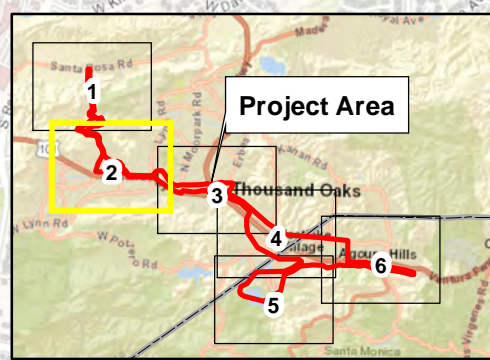
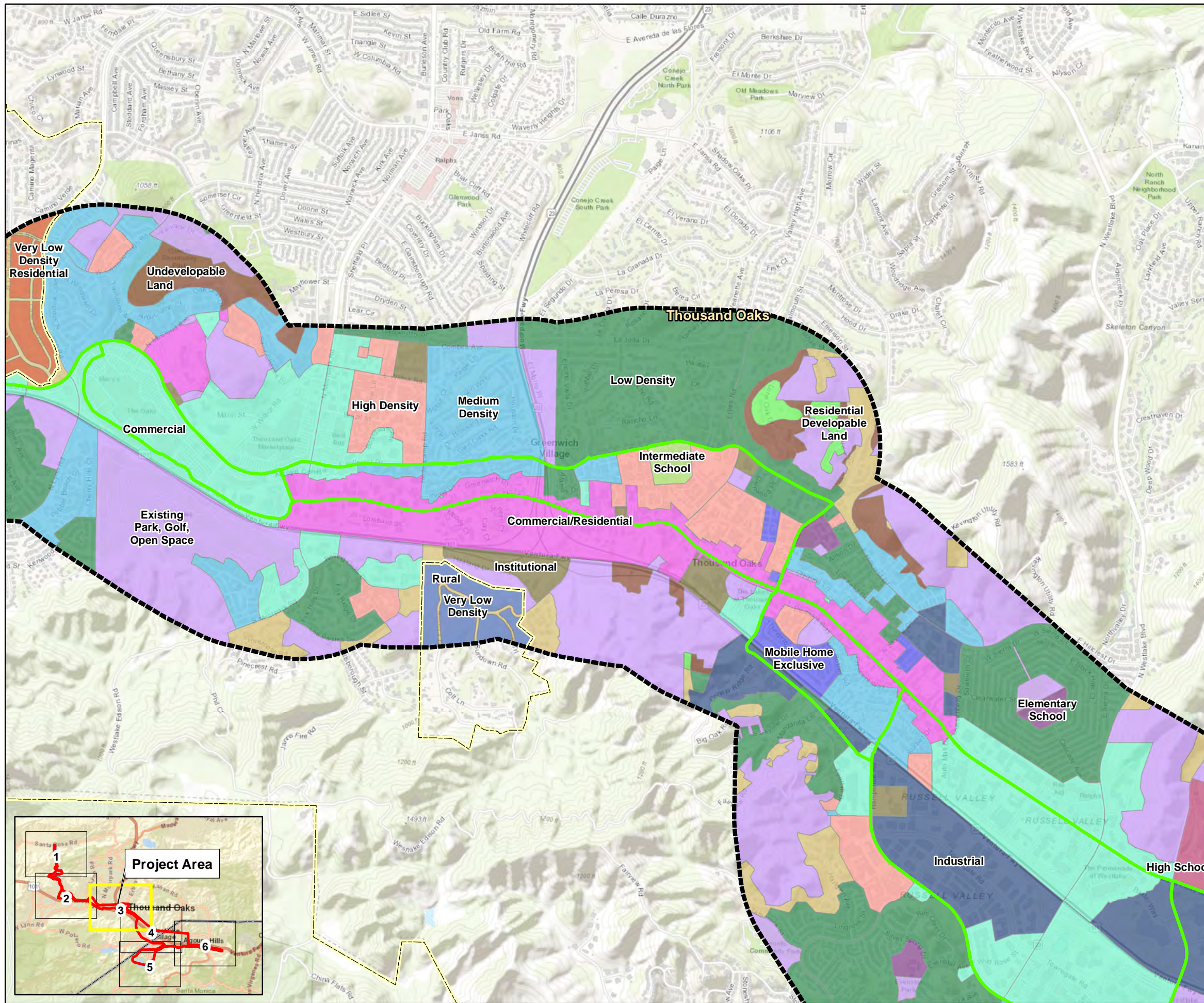


FIGURE 12-1  
**General Plan Land Use Designations**  
*Pure Water Project Las Virgenes – Triunfo*





- ### Legend
- Concentrate Alignment Options
  - Half-Mile Radius
  - Ventura County Land Use**
  - Rural
  - Very Low Density Residential
  - Thousand Oaks Land Use**
  - Commercial
  - Commercial/Residential
  - Elementary School
  - Existing Park, Golf, Open Space
  - High Density
  - High School
  - Industrial
  - Institutional
  - Intermediate School
  - Low Density
  - Medium Density
  - Mobile Home Exclusive
  - Residential Developable Land
  - Undevelopable Land
  - Very Low Density
  - Westlake Village Land Use**
  - CR

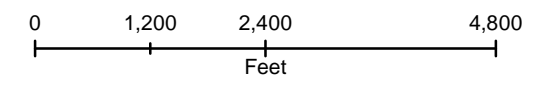
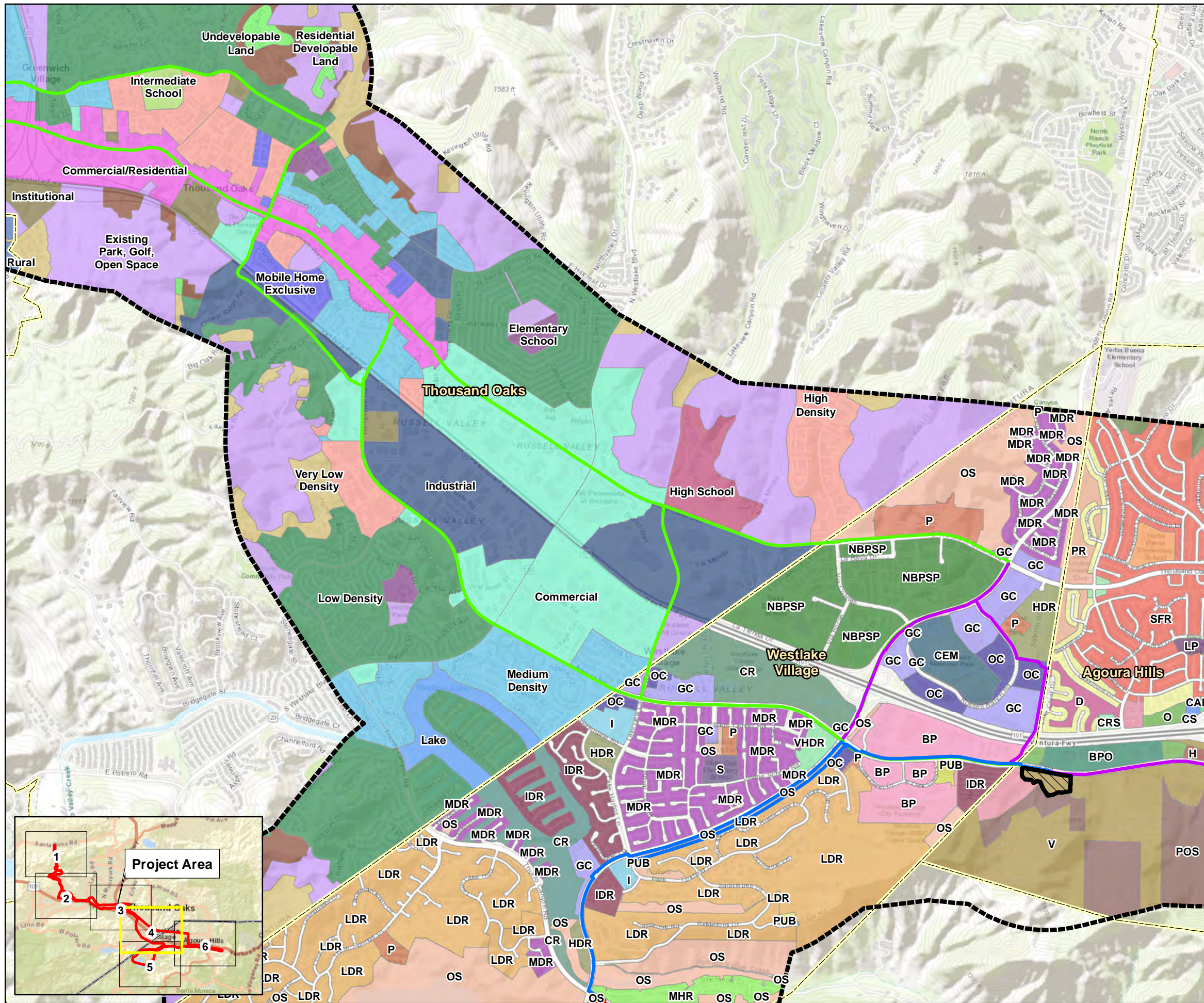


FIGURE 12-1  
**General Plan Land Use Designations**  
*Pure Water Project Las Virgenes – Triunfo*





**Legend**

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road AWWP
- Alternative 2 Reservoir AWWP
- Half-Mile Radius

**Ventura County Land Use**

- Rural

**Thousand Oaks Land Use**

- Commercial
- Commercial/Residential
- Elementary School
- Existing Park, Golf, Open Space
- High Density
- High School
- Industrial
- Institutional
- Intermediate School
- Lake
- Low Density
- Medium Density
- Mobile Home Exclusive
- Residential Developable Land
- Undevelopable Land
- Very Low Density

**Westlake Village Land Use**

- BP
- CEM
- CR
- GC
- HDR
- I
- IDR
- LDR
- MDR
- MHR
- NBPSP
- OC
- OS
- P
- PUB
- S
- VHDR

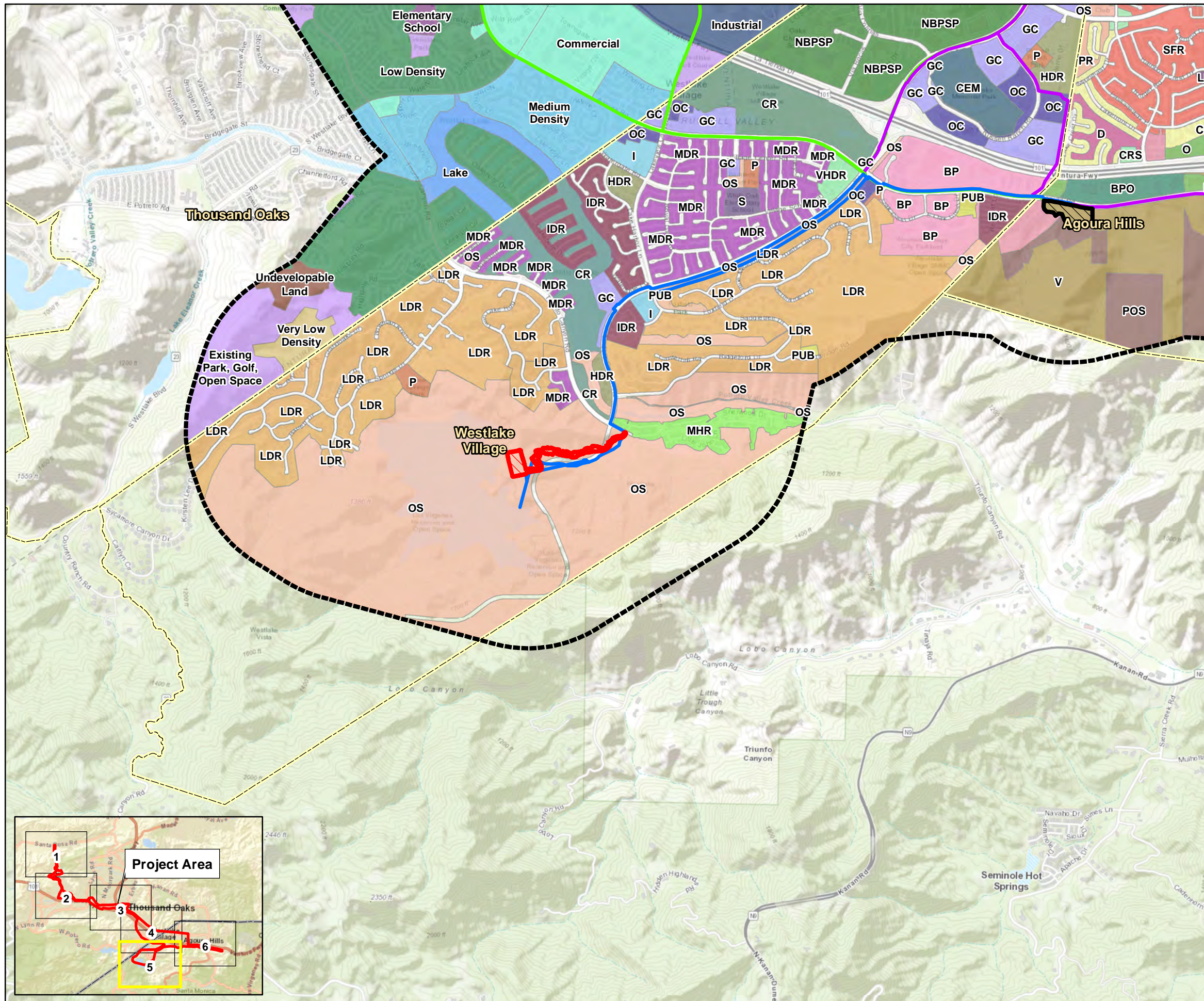
**Agoura Hills Land Use**

- Business Park Office (BPO)
- Commercial Auto Related (CAR)
- Commercial Retail/Service (CRS)
- Commercial Shopping Center (CS)
- Drainage, Floodplain, Water Course (D)
- High Density Residential (15-25 du/ac.) (HDR)
- Hotel (H)
- Local Park (LP)
- Medium Density Residential (6-15 du/ac.) (MDR)
- Office (O)
- Open Space (OS)
- Permanent Open Space (POS)
- Private Recreation (PR)
- School (S)
- Single Family Residential (2-6 du/ac.) (SFR)
- Vacant (V)

0 1,200 2,400 4,800  
Feet

FIGURE 12-1  
**General Plan Land Use Designations**  
Pure Water Project Las Virgenes – Triunfo





- ### Legend
- Concentrate Alignment Options
  - Purified Water Alignment Options
  - Source Water Alignment Options
  - Alternative 1 Agoura Road AWP
  - Alternative 2 Reservoir AWP
  - Half-Mile Radius
- #### Thousand Oaks Land Use
- Commercial
  - Elementary School
  - Existing Park, Golf, Open Space
  - Industrial
  - Lake
  - Low Density
  - Medium Density
  - Undevelopable Land
  - Very Low Density
- #### Westlake Village Land Use
- BP
  - CEM
  - CR
  - GC
  - HDR
  - I
  - IDR
  - LDR
  - MDR
  - MHR
  - NBPSP
  - OC
  - OS
  - P
  - PUB
  - S
  - VHDR
- #### Agoura Hills Land Use
- Business Park Office (BPO)
  - Commercial Retail/Service (CRS)
  - Commercial Shopping Center (CS)
  - Drainage, Floodplain, Water Course (D)
  - High Density Residential (15-25 du/ac.) (HDR)
  - Hotel (H)
  - Local Park (LP)
  - Medium Density Residential (6-15 du/ac.) (MDR)
  - Office (O)
  - Permanent Open Space (POS)
  - Private Recreation (PR)
  - Single Family Residential (2-6 du/ac.) (SFR)
  - Vacant (V)

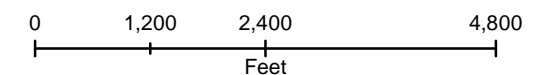
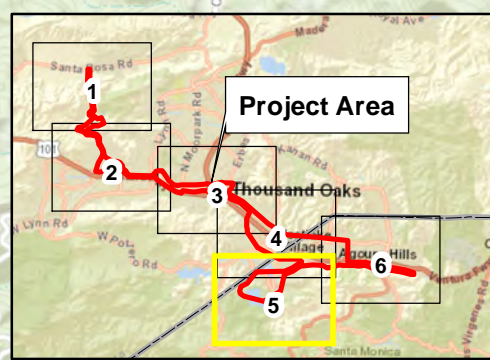
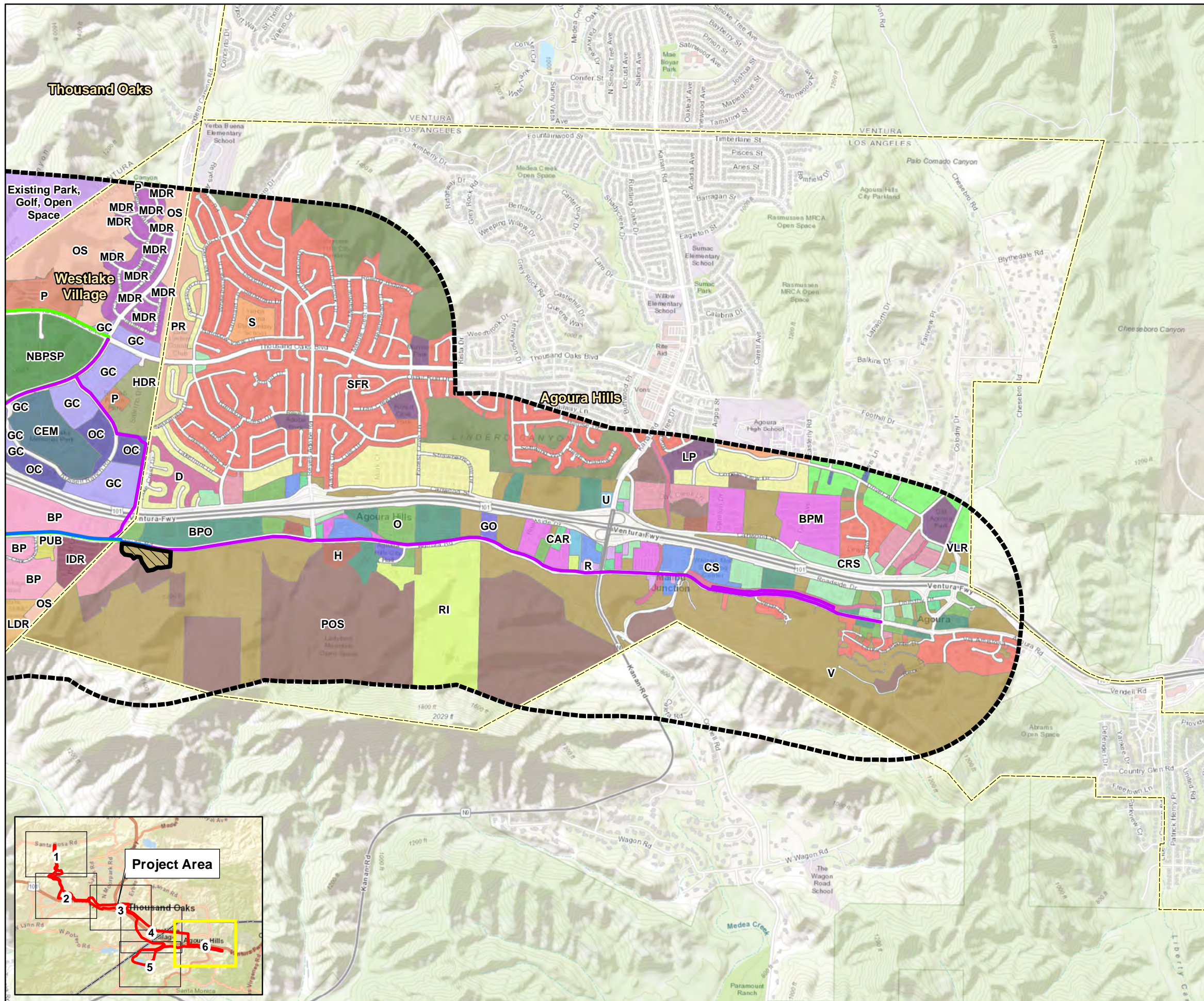


FIGURE 12-1  
**General Plan Land Use Designations**  
*Pure Water Project Las Virgenes – Triunfo*





- ### Legend
- Concentrate Alignment Options
  - Purified Water Alignment Options
  - Source Water Alignment Options
  - Alternative 1 Agoura Road AWP
  - Half-Mile Radius
- #### Thousand Oaks Land Use
- Existing Park, Golf, Open Space
- #### Westlake Village Land Use
- BP
  - CEM
  - GC
  - HDR
  - IDR
  - LDR
  - MDR
  - NBPSP
  - OC
  - OS
  - P
  - PUB
- #### Agoura Hills Land Use
- Business Park Office (BPO)
  - Business Park-Manufacturing (BPM)
  - Commercial Auto Related (CAR)
  - Commercial Retail/Service (CRS)
  - Commercial Shopping Center (CS)
  - Drainage, Floodplain, Water Course (D)
  - Government Office (GO)
  - High Density Residential (15-25 du/ac.) (HDR)
  - Hotel (H)
  - Local Park (LP)
  - Low Density Residential (1-2 du/ac.) (LDR)
  - Medium Density Residential (6-15 du/ac.) (MDR)
  - Office (O)
  - Open Space (OS)
  - Permanent Open Space (POS)
  - Private Recreation (PR)
  - Religious Institution (RI)
  - Restaurant (R)
  - School (S)
  - Single Family Residential (2-6 du/ac.) (SFR)
  - Utility (U)
  - Vacant (V)
  - Very Low Density Residential (<2 du/ac.) (VLR)

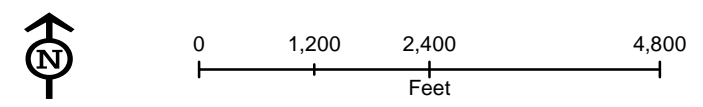
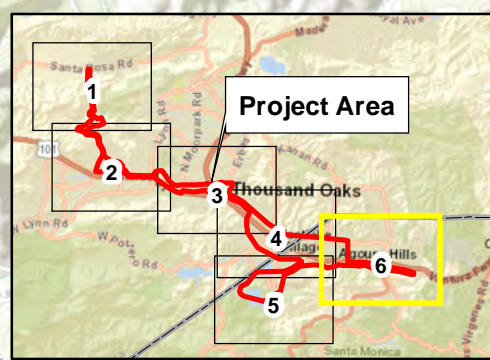
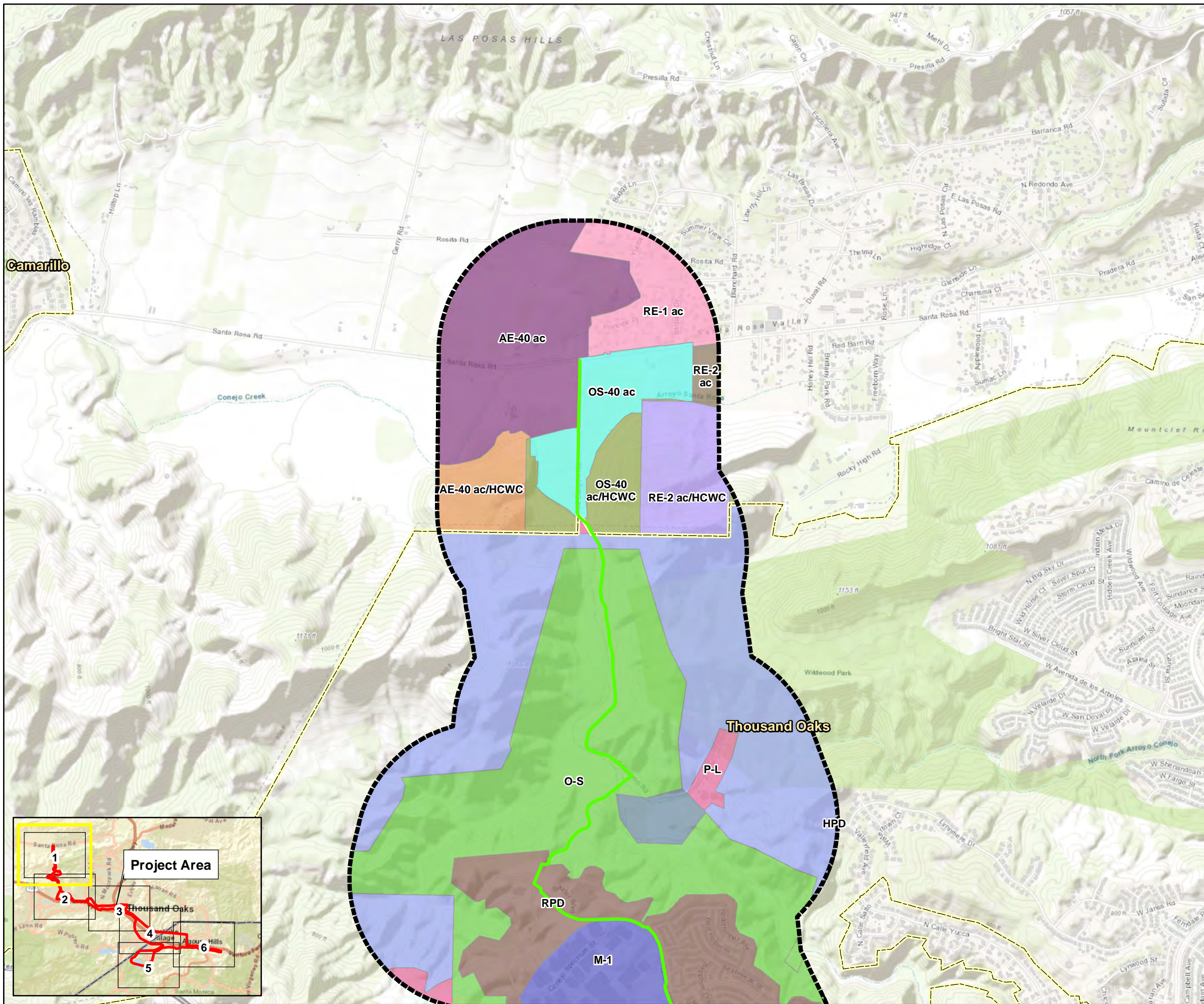


FIGURE 12-1  
**General Plan Land Use Designations**  
*Pure Water Project Las Virgenes – Triunfo*





- Legend**
- Concentrate Alignment Options
  - Half-Mile Radius
  - Ventura County Zoning**
  - AE-40 ac
  - AE-40 ac/HCWC
  - OS-40 ac
  - OS-40 ac/HCWC
  - RE-1 ac
  - RE-2 ac
  - RE-2 ac/HCWC
  - Thousand Oaks Zoning**
  - HPD
  - M-1
  - O-S
  - OS-PR
  - P-L
  - RPD-0.76U-OS
  - RPD-0.76U-SP

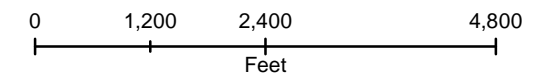
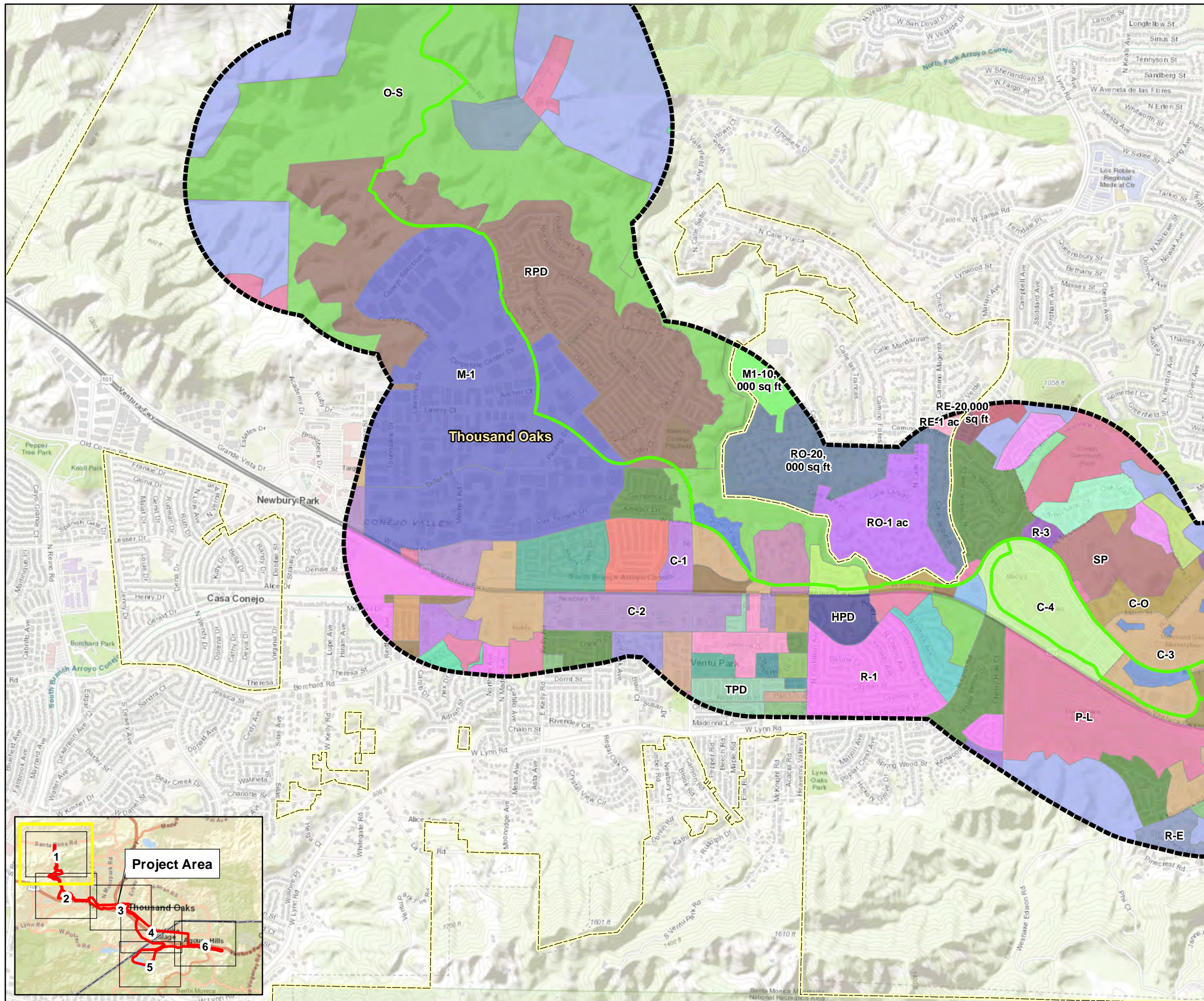


FIGURE 12-2

**Zoning Designations**

Pure Water Project Las Virgenes – Triunfo





### Legend

- Concentrate Alignment Options
- Half-Mile Radius

#### Ventura County Zoning

- M1-10,000 sq ft
- RE-1 ac
- RE-20,000 sq ft
- RO-1 ac
- RO-20,000 sq ft

#### Thousand Oaks Zoning

- C-1
- C-2
- C-2 (HL)
- C-3
- C-3-H
- C-4
- C-O
- HPD
- HPD-SFD
- M-1
- OS-PR
- P-L
- R-1-8
- R-1-9
- R-3
- R-E-1AC
- R-E-20
- R-E-20AV
- RPD-0.76U-OS
- RPD-0.76U-SP
- RPD-10U
- RPD-11.5U
- RPD-15U
- RPD-16.5U
- RPD-1U
- RPD-2.75U-SFD
- RPD-20.5U
- RPD-20U
- RPD-25U
- RPD-2U
- RPD-3U-SFD
- RPD-4.1U-SFD
- RPD-4.5U-SFD
- RPD-4U
- RPD-5U
- RPD-6.4U
- RPD-7.4U
- RPD-7.5U
- RPD-7U
- RPD-8.6U
- RPD-8U
- RPD-9.4U
- RPD-9U
- SPECIFIC PLAN 17
- SPECIFIC PLAN 20
- TPD

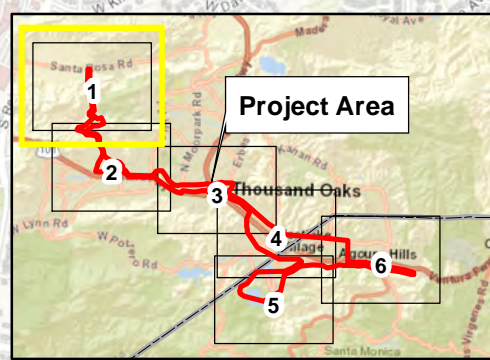
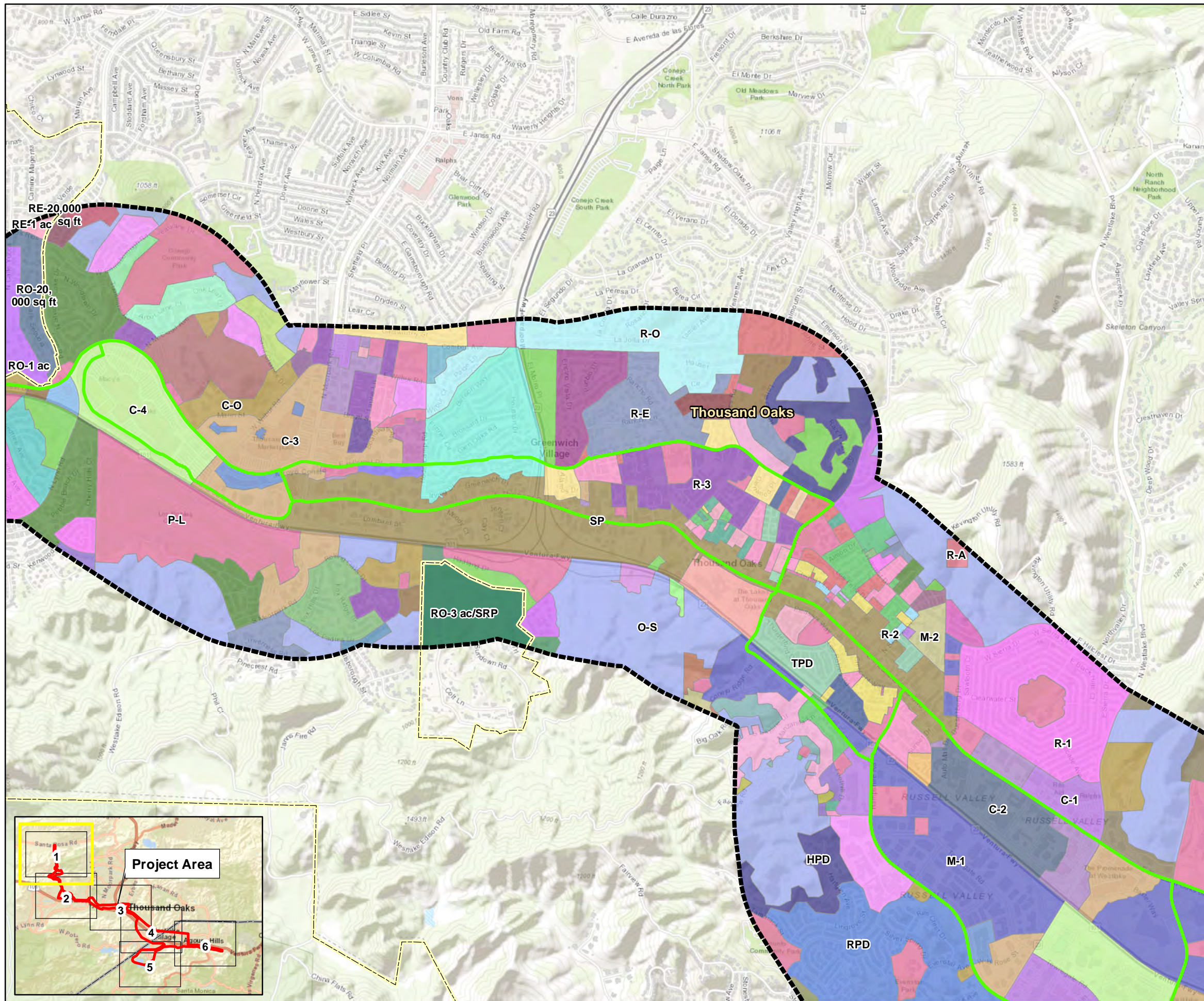


FIGURE 12-2  
**Zoning Designations**  
*Pure Water Project Las Virgenes – Triunfo*





### Legend

- Concentrate Alignment Options
- Half-Mile Radius

#### Ventura County Zoning

- RE-1 ac
- RE-20,000 sq ft
- RO-1 ac
- RO-20,000 sq ft
- RO-3 ac/SRP

#### Thousand Oaks Zoning

- C-1
- C-2
- C-2 (HL)
- C-2/AM
- C-3
- C-3-H
- C-4
- C-O
- HPD-PR
- HPD-SFD
- HPD-SFD-PR
- M-1
- M-2
- O-S
- OS-PR
- P-L
- R-1
- R-1-10
- R-1-13
- R-1-13AV
- R-1-8
- R-1-9
- R-2
- R-3
- R-A
- R-A-5AC-PR
- R-E
- R-E-13
- R-E-13-PR
- R-E-1AC
- R-E-20
- R-E-20-PR
- R-E-20AV

#### Westlake Village Zoning

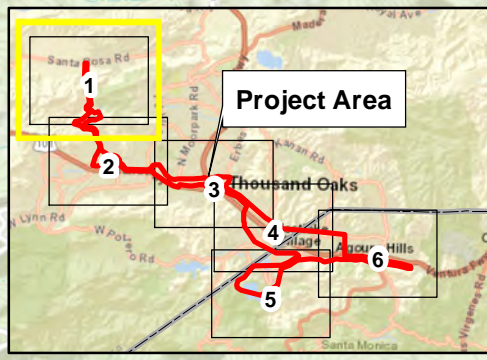
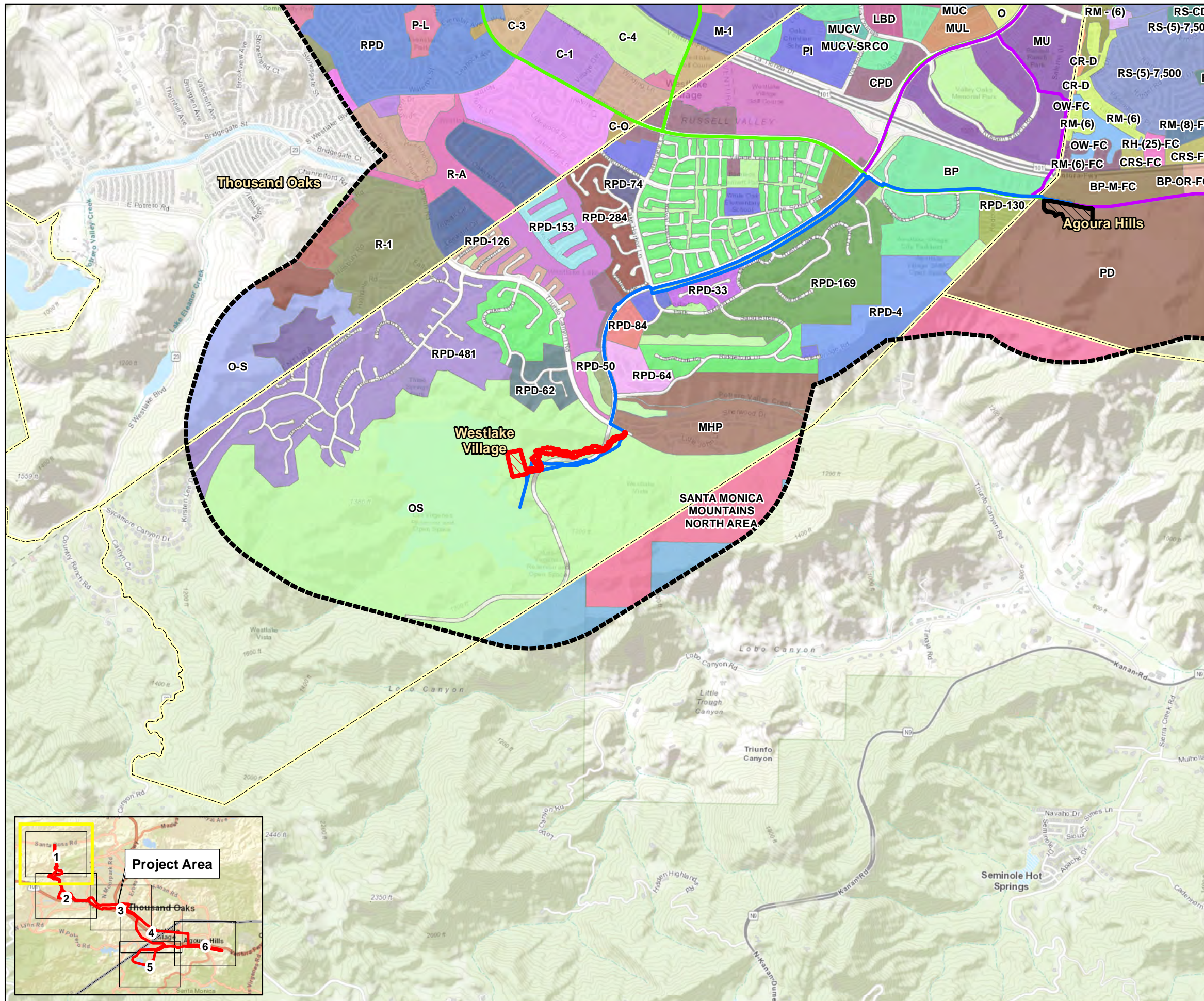
- R-E-20AV-PR
- R-O
- R-O-1AC
- R-O-3AC
- R-O-3AC-PR
- R-P-D 12 U
- RPD-0.5U-SFD
- RPD-0.8U-SFD
- RPD-1.5U-OS
- RPD-1.5U-SP
- RPD-10U
- RPD-11.5U
- RPD-12U
- RPD-12U-SFD
- RPD-13U
- RPD-14U
- RPD-15U
- RPD-16.5U
- RPD-18U
- RPD-2.75U-SFD
- RPD-20U
- RPD-22U
- RPD-25U
- RPD-26U
- RPD-2U-SFD
- RPD-30U
- RPD-3U-SFD
- RPD-4.5U
- RPD-4.5U-SFD
- RPD-4U
- RPD-5U
- RPD-6.3U-SFD
- RPD-6.4U
- RPD-7.4U
- RPD-8.6U
- RPD-9.4U
- SPECIFIC PLAN 11
- SPECIFIC PLAN 17
- SPECIFIC PLAN 20
- TPD
- CR

FIGURE 12-2  
**Zoning Designations**  
 Pure Water Project Las Virgenes – Triunfo









### Legend

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road AWPf
- Alternative 2 Reservoir AWPf
- Half-Mile Radius

#### Thousand Oaks Zoning

- C-1
- C-3
- C-3-H
- C-4
- C-O
- M-1
- OS-PR
- P-L
- R-1-13AV
- R-1-8
- R-A
- RPD-0.1U-SFD-PR
- RPD-0.4U-SFD
- RPD-1.8U-SFD
- RPD-15U
- RPD-25U
- RPD-4.5U
- RPD-4U
- RPD-7U

#### Westlake Village Zoning

- BP
- CPD
- CR
- LBD
- MHP
- MU
- MUC
- MUCV
- MUCV-SRSCO
- MUL
- O
- OS

#### LA County Zoning

- A-1-20
- O-S

#### Agoura Hills Zoning

- BP-M-FC
- BP-OR-FC
- CN
- CR
- CR-D
- CRS-FC
- OW-FC
- P
- PD
- RH-(25)-FC
- RM - (6)
- RM-(6)
- RM-(6)-FC
- RM-(8)-FC
- RS-(5)-7,500
- RS-CD

#### Other Zoning

- PI
- R-1
- RPD
- RPD-126
- RPD-130
- RPD-153
- RPD-169
- RPD-284
- RPD-33
- RPD-4
- RPD-481
- RPD-50
- RPD-62
- RPD-64
- RPD-74
- RPD-84

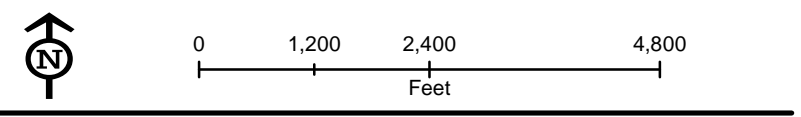
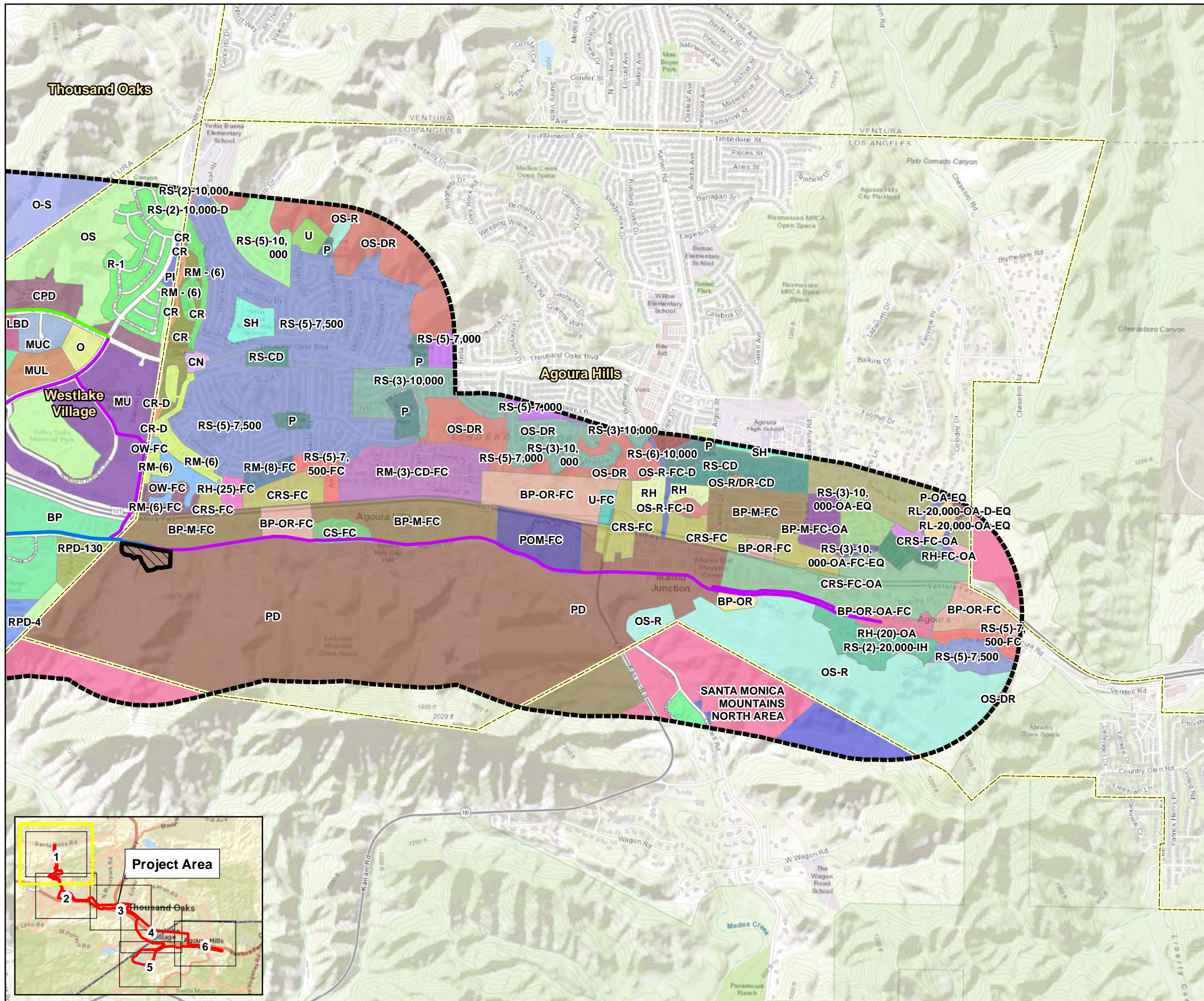


FIGURE 12-2  
**Zoning Designations**  
 Pure Water Project Las Virgenes – Triunfo





### Legend

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road AWP
- Half-Mile Radius

#### Thousand Oaks Zoning

- OS-PR
- OS-R
- OS-R-FC-D
- OS-R-OA-EQ
- OS-R/DR-CD
- OW-FC
- P
- P-OA-D-EQ
- P-OA-EQ
- PD
- POM-FC
- RH
- RH-(20)-OA
- RH-(25)-FC
- RH-(25)-OA-EQ
- RH-(25)-OA-FC-EQ
- RH-FC-OA
- RL-20,000-OA-D-EQ
- RL-20,000-OA-EQ
- RM - (6)
- RM-(3)-CD-FC
- RM-(6)
- RM-(6)-FC
- RM-(8)-FC
- RS-(2)-10,000
- RS-(2)-10,000-D
- RS-(2)-20,000-IH
- RS-(3)-10,000
- RS-(3)-10,000-OA-EQ
- RS-(3)-10,000-OA-FC-EQ
- RS-(5)-10,000
- RS-(5)-7,000
- RS-(5)-7,500
- RS-(5)-7,500-FC
- RS-(6)-10,000
- RS-CD
- SH
- U
- U-FC

#### Westlake Village Zoning

- BP
- CPD
- LBD
- MU
- MUC
- MUL
- O
- OS
- PI
- R-1
- RPD-130
- RPD-4

#### LA County Zoning

- A-1-2
- O-S
- RPD-2-0.5U
- RPD-5-0.2U

#### Agoura Hills Zoning

- BP-M-FC
- BP-M-FC-OA
- BP-OR
- BP-OR-FC
- BP-OR-OA-FC
- CN
- CR
- CR-D
- CRS-FC
- CRS-FC-OA
- CS-FC
- OS-DR

FIGURE 12-2  
**Zoning Designations**  
 Pure Water Project Las Virgenes – Triunfo



## 13. Noise

This chapter evaluates the potential noise impacts caused by construction and operation of the Pure Water Project. The chapter summarizes the relevant existing setting and regulatory framework, identifies the thresholds of significance, and identifies impacts and mitigation measures related to potential noise generation.

### 13.1 Fundamentals of Acoustics

Acoustics is the study of sound, and noise is defined as unwanted sound. Airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure creating a sound wave. Table 13-1 provides the definitions of some acoustical terms used in this chapter.

**Table 13-1. Definitions of Acoustical Terms**

Term	Definition
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise or sound at a given location. The ambient noise level is typically defined by the Leq level.
Background Noise Level	The underlying, ever-present, lower-level noise that remains in the absence of intrusive or intermittent sounds. Distant sources, such as traffic, typically make up the background noise level. The background level is generally defined by the L90 percentile noise level.
Intrusive	Noise that imposes over the existing ambient noise level at a given location. The relative intrusiveness of a sound depends upon the following factors: <ul style="list-style-type: none"> <li>▪ Amplitude</li> <li>▪ Duration</li> <li>▪ Frequency</li> <li>▪ Time of occurrence</li> <li>▪ Tonal content</li> <li>▪ Prevailing ambient noise level</li> <li>▪ Sensitivity of the receiver</li> </ul> The intrusive level is generally defined by the L10 percentile noise level.
Sound Pressure (Noise) Level Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 $\mu\text{Pa}$ (20 $\mu\text{N}/\text{m}^2$ ).
A-Weighted Sound Pressure (Noise) Level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound (noise) levels in this report are A-weighted.
Equivalent Noise Level (Leq)	The average A-weighted noise level, on an equal energy basis, during the measurement period.
Percentile Noise Level (Ln)	The noise level exceeded during $n\%$ of the measurement period, where $n$ is a number between 0 and 100 (e.g., L90).
Day-Night Noise Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 dB from 10:00 p.m. to 7:00 a.m.

Source: Caltrans 2013, 2015

$\mu\text{N}/\text{m}^2$  = micronewton(s) per square meters

$\mu\text{Pa}$  = micropascal(s)

dB = decibel(s)

dBA = A-weighted decibel(s)

Ldn = day-night sound level

Leq = equivalent noise level

Ln = percentile noise level



The most common metric is the overall A-weighted sound level measurement. The A-weighting network mimics the human ear's response to typical environmental sounds. There is consensus that A-weighting is appropriate for estimating the hazard of noise-induced hearing loss. With respect to other effects, such as annoyance, A-weighting is acceptable for typical sounds dominated by middle and high frequencies; however, if the noise is unusually high at low frequencies or contains prominent low-frequency tones, the A-weighting may not give a valid measure.

A-weighted sound levels are typically measured or presented as equivalent noise level (Leq), which is defined as the average noise level, on an equal energy basis for a stated period of time, and is commonly used to measure steady-state sound or noise that is usually dominant, such as highway traffic or equipment operation. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by Lxx, where xx represents the percentile of time the sound level is exceeded. The L90 measurement represents the noise level exceeded during 90% of the measurement period. Similarly, L10 represents the noise level exceeded for 10% of the measurement period.

Some metrics used in determining the impact of environmental noise consider the different responses that people have to daytime and nighttime noise levels. During the nighttime, exterior background noises are generally less noticeable than during the daytime. However, most household noise also decreases at night, so exterior noise becomes more noticeable. Furthermore, most people sleep at night and are sensitive to intrusive noises. The day-night sound level (Ldn) index accounts for greater human sensitivity to nighttime noise levels.

Ldn values are calculated by averaging hourly Leq sound levels for a 24-hour period, and applying a weighting factor to nighttime Leq values. The weighting factor, which reflects the increased sensitivity to noise at night, is added to each hourly Leq sound level before the 24-hour Ldn is calculated. To assess noise, the 24-hour day is divided into two time periods, with the following weightings:

- Daytime: 7:00 a.m. to 10:00 p.m. (15 hours), with weighting factor of 0 dB
- Nighttime: 10:00 p.m. to 7:00 a.m. (9 hours), with weighting factor of 10 dB

The two time periods are averaged to compute the overall Ldn value. For a continuous noise source, the Ldn value is easily computed by adding 6.4 dBA to the overall 24-hour noise level (Leq). For example, if the expected continuous noise level from a facility was 60.0 dBA, the resulting Ldn from the facility would be 66.4 dBA. The Community Noise Equivalent Level (CNEL) is similar to the Ldn, but adds an evening weighting factor of 5 dB for the hours from 7 to 10 p.m. For a continuous noise source, the CNEL value is computed by adding 6.7 dBA to the overall 24-hour noise level (Leq).

The effects of noise on people can be listed in three general categories:

- 1) Subjective effects of annoyance, nuisance, and dissatisfaction
- 2) Interference with activities, such as speech, sleep, and learning
- 3) Physiological effects, such as startling and hearing loss

In most cases, environmental noise produces effects in the first two categories only. However, workers in industrial plants may experience noise effects in the third category. There is no completely accurate way to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, one way of determining a person's subjective reaction to a new noise is by comparing it to the existing, ambient environment that person has adapted to. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise would be, as judged by the exposed individual.

Figure 13-1 shows the relative A-weighted sound levels from common sounds.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 mph	— 80 —	Food blender at 3 feet Garbage disposal at 3 feet
Noisy urban area, daytime	— 70 —	Vacuum cleaner at 10 feet Normal speech at 3 feet
Gas lawn mower, 100 feet Commercial area	— 60 —	
Heavy traffic at 300 feet	— 50 —	Large business office Dishwasher next room
Quiet urban daytime	— 40 —	Theater, large conference room (background)
Quiet urban nighttime	— 30 —	Library
Quiet suburban nighttime	— 20 —	Bedroom at night, concert hall (background)
Quiet rural nighttime	— 10 —	Broadcast or recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013

**Figure 13-1. Typical A-weighted Sound Levels**

## 13.2 Existing Setting

The project is located within portions of Agoura Hills, Westlake Village, Thousand Oaks, and unincorporated Ventura County. This section describes the project area’s existing setting.

### 13.2.1 Alternative 1 Agoura Road Advanced Water Purification Facility

The Alternative 1 Agoura Road AWPf site has both land use and zoning designations of Planned Development. The Planned Development land use designation is intended to designate certain areas of the city for special development and land use regulations that cannot be addressed through the citywide zoning ordinances. The AWPf site is located within the Business Park Sub Area. Public utility and public services are conditionally permitted uses within the Business Park Sub Area (City of Agoura Hills 1991).

The AWPf site is currently a vacant, undeveloped property. Surrounding land uses include high-density residential units with associated recreational amenities (tennis courts) to the west, Agoura Road and a business park to the north, and open space to the east and south.

### 13.2.2 Alternative 2 Reservoir Advanced Water Purification Facility

The Alternative 2 Reservoir AWPf site has land use and zoning designations of Open Space. The Open Space designation is intended to apply to publicly and privately owned land primarily maintained in an unimproved form, such as (City of Westlake Village 2019a):

- Common open space
- Lakes
- Reservoirs
- Hillsides
- Watershed areas

The AWPf site is currently a vacant, undeveloped property. Surrounding land uses include the Las Virgenes Reservoir to the west and open space to the north, east, and south.



### 13.2.3 Pipelines

The project would require pipeline construction throughout the project area. Pipeline construction would occur mostly along existing city streets in Agoura Hills, Westlake Village, Thousand Oaks, and unincorporated Ventura County. In many areas, pipeline construction would occur in proximity to single-family and multi-family residences and other noise-sensitive land uses, such as parks and schools. The pipelines include appurtenant facilities in some areas, including a pump station along the source water pipeline (Alternative 2 Reservoir AWPf only).

## 13.3 Regulatory Framework

This section describes the federal, state, and local noise regulations applicable to the project.

### 13.3.1 Federal Regulations

This section describes the federal noise regulations applicable to the project.

#### 13.3.1.1 U.S. Environmental Protection Agency

EPA guidelines (1974) assist state and local governments in developing state and local laws, ordinances, regulations, and standards for noise. Because local regulations apply to the project, the EPA guidelines are not applicable.

#### 13.3.1.2 Occupational Safety and Health Administration

Onsite and occupational noise levels are regulated through OSHA. The noise exposure level of workers is regulated at 90 dBA over an 8-hour work shift to protect hearing (29 CFR 1910.95). Areas where noise levels exceed 85 dBA would be posted as high-noise level areas, and hearing protection would be required when entering or working in those areas. The project would implement a hearing conservation program for applicable employees and maintain exposure levels to less than applicable requirements.

#### 13.3.1.3 Federal Transit Administration

The Federal Transit Administration (FTA) issued the *Transit Noise and Vibration Assessment Manual* (FTA manual) to guide the assessment of noise and vibration impacts for federally funded transportation projects consistent with NEPA requirements (FTA 2018). This project does not meet the criteria for a transit project defined by the FTA; however, the construction activities and equipment associated with this project are similar to those addressed in the FTA manual. The FTA manual establishes useful and reasonable guidelines for assessing construction noise, particularly when local criteria are not well defined. The FTA manual also establishes absolute noise levels (thresholds) and considers the duration of construction to determine noise impacts on adjacent land uses (Tables 13-2 and 13-3).

**Table 13-2. General Construction Noise Impact Evaluated Compared to Land Use**

Land Use	Leq,equip (1-hour) (dBA)	
	Day	Night
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: FTA 2018

Leq,equip = average A-weighted noise level for a receiver from the operation of the two noisiest pieces of equipment for each phase of construction over a specified time period

**Table 13-3. Detailed Construction Noise Impact Evaluated Compared to Land Use**

Land Use	Leq,equip (8-hour) (dBA)		Ldn,equip (30-day) (dBA)
	Day	Night	30-day Average
Residential	80	70	75
Commercial	85	85	80 <sup>a</sup>
Industrial	90	90	85 <sup>a</sup>

Source: FTA 2018

<sup>a</sup> Use a 24-hour Leq(24hr) instead of Ldn,equip(30day).

Leq,equip = average A-weighted noise level for a receiver from the operation of all equipment for each phase of construction over a specified time period

Ldn,equip = average A-weighted noise level during a 24-hour day, obtained after addition of 10 dB from 10:00 p.m. to 7:00 a.m. for a receiver from the operation of all equipment for each phase of construction over a specified time period

For most projects, the highest levels of vibration occur during construction, so the assessment focuses on evaluating the potential for damage to nearby buildings. The FTA manual establishes construction damage criteria in terms of peak particle velocity (PPV). Table 13-4 summarizes these criteria, which range from a threshold of 0.12 inch per second for "...buildings extremely susceptible to vibration damage..." to 0.5 inch per second for "...reinforced concrete, steel or timber (no plaster)..." (FTA 2018).

**Table 13-4. Federal Transit Administration Construction Vibration Damage Criteria**

Building Category	PPV (in/sec)	Single Event PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster) buildings in steel or reinforced concrete, such as: <ul style="list-style-type: none"> <li>▪ Factories</li> <li>▪ Retaining walls</li> <li>▪ Bridges</li> <li>▪ Steel towers</li> <li>▪ Open channels</li> <li>▪ Underground chambers</li> <li>▪ Tunnels with and without concrete alignment</li> </ul>	0.5	1.2
Engineered concrete and masonry (no plaster) buildings with: <ul style="list-style-type: none"> <li>▪ Foundation walls and floors in concrete</li> <li>▪ Walls in concrete or masonry</li> <li>▪ Stone masonry retaining walls</li> <li>▪ Underground chambers and tunnels with masonry alignments</li> <li>▪ Conduits in loose material</li> </ul>	0.3	0.7
Nonengineered timber and masonry buildings, with wooden ceilings and walls in masonry	0.2	0.5
Buildings extremely susceptible to vibration damage, such as construction very sensitive to vibration and objects of historic interest	0.12	0.3

Notes:

These limits and building categories align with the Caltrans (2020) summary of the Swiss Association of Standardization Vibration Damage Criteria for continuous sources. The Swiss criteria provide additional details regarding the building category and a single event limit not addressed by FTA.

in/sec = inch(es) per second



### 13.3.2 State Regulations

This section describes the state noise regulations applicable to the project.

#### 13.3.2.1 State of California General Plan Guidelines

The State of California requires each county and city to develop a general plan for physical development within the county or city. Noise is one of the seven required elements to be included in the plan. The general plan's Noise Element provides a basis for comprehensive local programs to control and abate environmental noise and to protect residents from excessive exposure to noise (OPR 2017). The content for local general plans is provided by Government Code Section 65040.2.

#### 13.3.2.2 California Department of Industrial Relations, Division of Occupational Safety and Health

The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) enforces state noise regulations that are the same as the federal OSHA regulations described previously. Agency regulations are contained in CCR, Title 8, General Industrial Safety Orders, Article 105, Control of Noise Exposure, Sections 5095, et seq.

### 13.3.3 Local Regulations

Local regulations include noise elements of general plans and noise ordinances established by the City of Agoura Hills, the City of Westlake Village, the City of Thousand Oaks, and Ventura County.

#### 13.3.3.1 City of Agoura Hills

Alternative 1 Agoura Road AWP and portions of all pipelines are located in Agoura Hills. The Noise Element in the *City of Agoura Hills General Plan (2010b)* establishes goals, objectives, and policies that address how operational noise effects are evaluated within the City's jurisdiction. The City established land use compatibility guidelines for various land uses in Table N-1 and interior and exterior noise standards in Table N-2 of the general plan; these are summarized in Tables 13-5 and 13-6, respectively.

**Table 13-5. City of Agoura Hills Noise and Land Use Compatibility Matrix**

Land Use Category	CNEL (dBA)			
	Clearly Compatible	Normally Compatible	Normally Incompatible	Clearly Incompatible
Single-Family, Duplex, Multi-Family Residential	50 to 59	60 to 69	70 to 74	> 75
Mobile Homes Residential	50 to 59	60 to 64	65 to 74	> 75
Hotel, Motel, Transient Lodging	50 to 59	60 to 69	70 to 79	> 80
Commercial Retail, Bank, Restaurant, Movie Theater	50 to 69	70 to 79	> 80	-
Office Building, Research and Development, Professional Offices, City Office Building	50 to 64	65 to 74	75 to 79	> 80
Amphitheater, Concert Hall, Auditorium, Meeting Hall	-	50 to 59	60 to 69	> 70
Children's Amusement Park, Miniature Golf Courses, Go-cart Track, Equestrian Center, Sports Club	50 to 64	65 to 74	-	> 75

**Table 13-5. City of Agoura Hills Noise and Land Use Compatibility Matrix**

Land Use Category	CNEL (dBA)			
	Clearly Compatible	Normally Compatible	Normally Incompatible	Clearly Incompatible
Automobile, Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	50 to 69	> 70	-	-
Hospitals, Church, Library, School Classroom	50 to 59	60 to 64	65 to 74	> 75
Parks	50 to 64	65 to 69	70 to 74	> 75
Golf Course, Cemeteries, Nature Centers, Wildlife Habitat	50 to 69	70 to 74	> 75	-

Source: City of Agoura Hills 2010b

- = not applicable

> = greater than

**Table 13-6. City of Agoura Hills Interior and Exterior Noise Standards**

Category	CNEL (dBA)	
	Interior	Exterior
Single-Family, Duplex, Multi-Family Residential	45	55
Mobile Homes Residential	45	55
Hotel, Motel, Transient Lodging	45	-
Commercial Retail, Bank, Restaurant	55	-
Office Building, Research and Development, Professional Offices, City Office Building	50	-
Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	-
Gymnasium (multipurpose)	50	-
Sports Club, Movie Theaters	55	-
Manufacturing, Warehousing, Wholesale, Utilities	65	-
Hospitals, Church, Library, School Classroom	45	55
Parks	-	65

Source: City of Agoura 2010b

The general plan also includes a goal pertaining to minimizing noise impacts from construction on sensitive noise receptors. Goal N-3.3 establishes restrictions on construction activities:

*Continue to enforce restrictions on hours of construction activity so as to minimize the impacts of noise and vibration from the use of trucks, heavy drilling equipment, and other heavy machinery, including property maintenance equipment, to adjacent uses, particularly in residential areas.*

The restricted hours are not stated in the general plan. Rather, the noise implementation program outlined in the general plan states the City will continue to implement the City's noise regulations established by the Agoura Hills Municipal Code. Table 13-7 lists the noise regulations pertaining to residential properties within residentially zoned districts.



**Table 13-7. City of Agoura Hills Noise Standards for Residential Properties**

Category	Exterior (dBA)		Interior (dBA)	
	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Residential Properties within Designated Noise Zone (Zoned Residential)	55	50	45	45

In addition, Sections 9656.2(B) and 9656.3(B) of the municipal code state noise as measured on any other residential property, either incorporated or unincorporated, may not exceed the following:

- The exterior noise standard for a cumulative period of more than 15 minutes in any hour or the interior noise standard for a cumulative period of more than 5 minutes in any hour
- The exterior noise standard plus 5 dBA for a cumulative period of more than 10 minutes in any hour or the interior noise standard plus 5 dBA for a cumulative period of more than 1 minute in any hour
- The exterior noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour or the interior noise standard plus 10 dBA for any period of time
- The exterior noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour
- The exterior noise standard plus 20 dBA for any period of time

Sections 9656.2(C) and 9656.3(C) address ambient noise levels. In the event the ambient noise level exceeds the noise limit categories, the noise level applicable to each category is increased to reflect the ambient noise level. For interior noise, if the ambient noise level exceeds the interior noise standard plus 10 dBA, the maximum allowable noise level is increased to the ambient noise level.

According to Section 9656.4(E) of the municipal code, construction noise is exempted from the noise regulations provided in Sections 9656.2 and 9656.3, provided construction activities are limited to between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction is prohibited outside these hours, or at any time on Sunday or a legal holiday.

Although Section 9656.4(E) of the municipal code includes limits on construction time frames, Section 9656.9 outlines the variance process for owners or operators of a noise source that cannot meet noise ordinance provisions. The application is to be submitted to the health officer stating reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for its accomplishment. Granted variances will include terms, conditions, and requirements, including limitations on noise levels and operating hours.

**13.3.3.2 City of Westlake Village**

Alternative 2 Reservoir AWPf, portions of all pipelines, and pump station options (needed for Alternative 2 Reservoir AWPf) are located in Westlake Village. The Noise Element in the *City of Westlake Village General Plan (2019a)* establishes goals, objectives, and policies that address how operational noise effects are evaluated within the City’s jurisdiction. The City established land use compatibility guidelines for various land uses on Figure 31 and interior and exterior noise standards in Table 17 of the general plan; these are summarized in Tables 13-8 and 13-9, respectively.

**Table 13-8. City of Westlake Village Land Use Compatibility with Noise**

Land Use Category	CNEL in dB			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 to 59	55 to 69	70 to 74	> 70
Residential - Multi-family	50 to 64	60 to 69	70 to 74	> 70
Transient Lodging - Motels, Hotels	50 to 64	60 to 69	70 to 79	> 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 to 64	60 to 69	70 to 79	> 80
Auditoriums, Concert Halls, Amphitheaters	-	50 to 69	-	> 65
Sports Arena, Outdoor Spectator Sports	-	50 to 69	-	> 70
Playgrounds, Neighborhood Parks	50 to 69	-	65 to 74	> 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 to 74	-	70 to 79	> 80
Office Buildings, Business Commercial, and Professional	50 to 69	65 to 74	75 to 84	-
Industrial, Manufacturing, Utilities, and Agriculture	50 to 69	70 to 79	75 to 84	-

Source: City of Westlake Village 2019a

**Table 13-9. City of Westlake Village Interior and Exterior Noise Standards**

Category	Exterior (dBA)		Interior (dBA)	
	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Residential	50	45	45	40
Commercial	60	55	-	-
Industrial	70	70	-	-

Source: City of Westlake Village 2019a

The interior and exterior noise standards in Table 13-9 are not applicable to construction noise. The general plan specifically addresses construction noise with time limits and maximum noise thresholds for stationary and mobile equipment. Operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work is limited to weekday hours between 7:00 a.m. and 7:00 p.m. Table 13-10 summarizes the stationary and mobile equipment maximum noise levels for 10 days or more.



**Table 13-10. City of Westlake Village Stationary and Mobile Equipment**

Category	Stationary Equipment (dBA)		Mobile Equipment (dBA)	
	Daily, Except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	Daily, 7:00 p.m. to 7:00 a.m., and All Day Sunday and Legal Holidays	Daily, Except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	Daily, 7:00 p.m. to 7:00 a.m., and All Day Sunday and Legal Holidays
Single-Family Residential	75	60	60	50
Multi-Family Residential	80	64	65	55
Semi-Residential and Commercial	85	70	70	60
Commercial	85	85	-	-

Source: City of Westlake Village 2019a

Vibration is addressed in the general plan (City of Westlake Village 2019a) by prohibiting operation of any device that creates vibration exceeding the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public ROW.

Noise regulations are established by the Noise Control Ordinance of the City of Westlake Village in the *Westlake Village Municipal Code*. Section 4.4.035(A) pertains to residential properties and establishes a noise level threshold at 5 dBA more than the local ambient noise level as measured at any property line. For any other property, the noise level threshold at 8 dBA more than the local ambient noise level as measured at any property line is established by Section 4.4.035(B).

Two additional regulations prohibit specific noise and vibration potentially applicable to facility operations. Unless enclosed within a sound-insulated structure to prevent noise and sound from being plainly audible at a distance of 50 feet from such structure, or within 10 feet of any residence, Section 4.4.040(B) prohibits the sustained operation or use between the hours of 10:00 p.m. and 7:00 a.m. of any electric or gasoline-powered motor or engine or the repair, modification, reconstruction, testing, or operation of any of the following:

- Automobile
- Motorcycle
- Machine
- Mechanical device
- Other contrivance or facility

Section 4.4.040(A) prohibits the unnecessary or unreasonable making of, or knowingly and unnecessarily permitting to be made, any loud, boisterous, and unusual noise, disturbance, commotion, or vibration in any of the following areas:

- Boarding facility
- Dwelling
- Place of business
- Other structure
- Public street
- Park
- Other place or building

Only ordinary and usual sounds, noises, commotion, or vibration incidental to the operation of these places is allowed when conducted:

- In accordance with the normal standard of practice
- In a manner that would not disturb the peace and comfort of adjacent residences
- In a manner that would not detrimentally affect the operators or customers of adjacent places of business

No specific noise thresholds are provided in the code for construction noise. Instead, construction is limited to specific hours by Section 4.4.040(G). Allowed construction hours are between 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction noise is permitted on Sundays or holidays. Construction noise includes the operation of any of the following during any aspect of construction, including drilling, repair, alteration, demolition, or earthwork:

- Tools
- Equipment
- Impact devices
- Derricks
- Hoists used in or otherwise engaging

Although Section 4.4.040(G) of the municipal code includes these construction prohibitions, Section 4.4.050(D) describes special circumstances allowing for construction noise outside of the allowed hours:

- The provisions of Section 4.4.040 do not apply to any person who performs construction, repair, excavation, or earthmoving work pursuant to the express written permission of the City Manager to perform such work at times prohibited in Section 4.4.040.
- An application must be submitted to the City Manager in writing, stating the reasons for the request. The City Manager may grant written permission for the construction if it is found that:
  - The work proposed to be done is in the public interest
  - The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense

### **13.3.3.3 City of Thousand Oaks**

For all alternatives, only construction noise is associated because most of the project's concentrate pipeline is located within Thousand Oaks. While no operational noise is anticipated with the pipelines, applicable limits for operation and construction are provided for reference and completeness.

The Noise Element in the *Thousand Oaks General Plan (2022b)* establishes goals, policies, and noise control strategies that address how operational noise effects are evaluated within the City's jurisdiction. The two noise goals identified in the general plan are:

- Goal N-1: Achieve and maintain an environment where noise-sensitive uses are not disturbed by noise that exceeds exposure guidelines established in the Noise Element
- Goal N-2: Preserve quiet and diminish existing noise levels in areas of noise-sensitive uses to the extent reasonable and feasible, while permitting development in accordance with the Land Use and Circulation Elements of the general plan

The City established land use compatibility guidelines for various land uses on Figure 1 of the general plan, as summarized here in Table 13-11.



**Table 13-11. City of Thousand Oaks Land Use Compatibility with Noise**

Land Use Category	CNEL or L <sub>dn</sub> (dBA)				
	Clearly Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 to 55	55 to 59	60 to 64	70 to 74	> 75
Residential - Multi-family	50 to 55	55 to 59	60 to 64	70 to 74	> 75
Commercial – Motels, Hotels, Transient Lodging	50 to 59	60 to 64	65 to 69	70 to 79	> 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	-	50 to 59	60 to 69	70 to 79	> 80
Amphitheaters, Concert Halls, Auditoriums, Meeting Halls	-	-	50 to 64	65 to 69	> 70
Sports Arena, Outdoor Spectator Sports	-	-	50 to 69	70 to 74	> 75
Playgrounds, Neighborhood Parks	50 to 54	55 to 67	68 to 74	-	> 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 to 54	55 to 74	75 to 79	-	> 80
Office Buildings, Business Commercial, and Professional	50 to 59	60 to 64	65 to 74	75 to 89	-
Industrial, Manufacturing, Utilities, and Agriculture	50 to 64	65 to 69	70 to 79	80 to 89	-

Source: City of Thousand Oaks 2022b

The general plan (City of Thousand Oaks 2022b) includes the objective of determining noise considerations in environmental impact reports using the CEQA thresholds of significance (Figure 13-2).

If the annual average noise level with the proposed project, cumulative projects and general plan buildout in an area currently used for or designated in the general plan for a noise-sensitive land use <sup>1</sup> is expected to be:	A significant project or cumulative impact may result if the change in annual average noise levels from existing conditions due to all sources in an area currently used for or designated in the general plan for a noise-sensitive land use <sup>1</sup> is:	The project alone may be considered to make a substantial contribution to significant cumulative impact if the change in annual average noise level due to the project is:
Less than 55 dB CNEL	Not significant for any change in noise level	Not significant for any change in noise level
55 to 60 dB CNEL	Equal to or greater than 3.0 dB	Equal to or greater than 1.0 dB
60 to 70 dB CNEL	Equal to or greater than 1.5 dB	Equal to or greater than 0.5 dB
Greater than 70 dB CNEL	Equal to or greater than 1.0 dB	Equal to or greater than 0.5 dB

<sup>1</sup> A noise-sensitive land use is a use for which the lower limit of the noise level considered “normally unacceptable” for development because of noise impact is 70 dB CNEL or lower. In identifying land use areas, areas which are undevelopable for noise-sensitive uses because of slope, development restriction, easement, etc., or which are used for non-noise-sensitive components of a multiple-use or mixed-use project, should not be considered noise-sensitive.

**Figure 13-2. City of Thousand Oaks Thresholds of Significance for Noise Impact**

For projects that would result in a potentially significant impact, the City may require an acoustical study to identify mitigation measures to reduce impacts to a less than significant level.

The general plan states that nuisance noise control is addressed through the City's noise ordinance, described in Chapter 21 of the Municipal Code. Section 5-21.02 addresses powered equipment in residential areas:

*Between the hours of 9:00 p.m. and 7:00 a.m. of the following day, no person shall operate any lawnmower, backpack blower, lawn edger, riding tractor, or any other machinery, equipment, or other mechanical or electrical device, or any hand tool which creates a loud, raucous or impulsive sound, within any residential zone or within any commercial zone which can be heard from any inhabited real property in a residential zone.*

No specific noise thresholds are provided in the code; instead, to determine whether a noise source is in violation of the code, Section 5-21.03 provides criteria to evaluate a violation against:

- *The level of noise when standing on the property line;*
- *Whether the nature of the noise is usual or unusual for the approved use of the property;*
- *Whether the origin of the noise is natural or unnatural;*
- *The level and intensity of the background or ambient noise, if any;*
- *The proximity of the noise source to residential sleeping facilities;*
- *The nature and zoning of the area within which the noise emanates;*
- *The density of the inhabitation of the area within which the noise emanates;*
- *The time of the day and night the noise occurs;*
- *The duration of the noise;*
- *Whether the noise is recurrent, intermittent, or constant; and*
- *Whether the noise is produced by a commercial or noncommercial activity.*

Section 5-21.04 states that emergency activities are exempt from the noise ordinance; and the ordinance does not apply to any public equipment; public vehicle; or public action taken by the City needed to protect the public health, safety, and welfare.

Construction is limited to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, unless a permit for each work at different hours or days has first been issued by the Public Works Director per Section 8-11.01 of the City's municipal code. This includes the following activities:

- Any activity associated with the construction of any building or structure
- Earthmoving
- Laying pavement, including excavating
- Clearing or grading of surface land
- Loading or unloading of material, equipment, or supplies.

Permits applications would be made in writing to the Public Works Director and would state the following:

- Name of the applicant
- Business address
- Location of the proposed work
- Reason for seeking a permit to do such work on Sunday or between 7:00 p.m. and 7:00 a.m.
- Estimated time of the proposed operation

Permits would only be granted if the public peace, health, or welfare would not be adversely affected by such issuance or would be harmed by failure to perform the work at the times indicated. According to Section 8-11.02, limitations to construction work hours are not applicable to projects taking place more than 1 mile from any occupied residence.

#### **13.3.3.4 Ventura County**

For all alternatives, only construction noise is associated with the project within unincorporated Ventura County. Most of the pipelines associated with the project are located within Thousand Oaks, and only a small portion is located in unincorporated Ventura County. While no operational noise is anticipated with the pipelines, limits for operation and construction are provided for reference and completeness.



Noise is incorporated into the Health and Safety Element of the *Ventura County 2040 General Plan*, adopted in September 2020. Noise is identified in policy HAZ-9, with the goal "...to protect the health, safety, and general welfare of county residents by striving to eliminate or avoid the adverse noise impacts on existing and future noise sensitive uses." The general plan states new noise generators, proposed to be located near any noise-sensitive use, will incorporate noise control measures so that ongoing outdoor noise levels received by the noise-sensitive receptors, measured at the exterior wall of the building, do not exceed any of the following standards:

- Leq1H of 55 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.
- Leq1H of 50 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.
- Leq1H of 45 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.

This policy does not apply to noise generated during the construction phase of a project. Instead, construction noise and vibration are to be evaluated and, if necessary, mitigated in accordance with the *Construction Noise Threshold Criteria and Control Plan* (Ventura County 2010a). As specific construction noise limits for noise-sensitive receptors are not specified in the general plan or the administrative code, the *Construction Noise Threshold Criteria and Control Plan* establishes construction noise thresholds and standard noise monitoring and control measures. The threshold criteria, monitoring, and control measures are to be applied to all public projects. Guidelines for effective noise mitigation measures are provided for projects that exceed the noise threshold criteria. Table 13-12 summarizes the daytime, evening, and nighttime construction activity noise thresholds.

**Table 13-12. Ventura County Construction Activity Noise Threshold Criteria**

Construction Duration Affecting Noise-sensitive Receptors	Noise Threshold Criteria will be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>a,b</sup>
0 to 3 days	75	Ambient Leq(h) + 3 dB
<b>Daytime (7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 7 p.m., Saturday, Sunday, and local holidays)</b>		
4 to 7 days	70	Ambient Leq(h) + 3 dB
1 to 2 weeks	65	Ambient Leq(h) + 3 dB
2 to 8 weeks	60	Ambient Leq(h) + 3 dB
Longer than 8 weeks	55	Ambient Leq(h) + 3 dB
<b>Evening (7 p.m. to 10 p.m.)</b>		
Residential	50	Ambient Leq(h) + 3 dB
<b>Nighttime (10 p.m. to 7 a.m., Monday through Friday, and 10 p.m. to 9 a.m., Saturday, Sunday, and local holidays)</b>		
Residential, Live-in Institutional	45	Ambient Leq(h) + 3 dB

Source: Ventura County 2010a

<sup>a</sup> The instantaneous Lmax will not exceed the noise threshold criteria by 20 dBA more than 8 times per daytime hour, more than 6 times per evening hour, or more than 4 times per nighttime hour.

<sup>b</sup> Local ambient Leq measurements will be made on any mid-week day prior to the project work. Hourly evening local ambient noise measurements will be made on a typical mid-week evening prior to the project work. Hourly nighttime local ambient noise measurements will be made on a typical mid-week night prior to the project work.

Lmax = maximum sound level

### 13.4 Assessment Methods and Thresholds of Significance

This section describes the impact analysis using the CEQA thresholds of significance and impact evaluation questions for noise and provides the impact findings resulting from the construction and O&M of the project.

#### 13.4.1 CEQA Thresholds of Significance Evaluation

According to the CEQA Guidelines, a significant impact related to noise would occur if a project would:

- Generate a substantial temporary or permanent increase in ambient noise levels near the project exceeding standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generate excessive ground-borne vibration or ground-borne noise levels.
- Expose people residing or working in the project area to excessive noise levels if the project is located near 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.

Project construction may temporarily affect noise receptors within and adjacent to the project area. Section 13.5 discusses the CEQA significance conclusions.

#### 13.4.2 General Construction Noise Evaluation

Project construction would use heavy equipment (such as bulldozers, compactors, and scrapers). Noise levels from heavy equipment operations were estimated based on data and methods derived from the *Roadway Construction Noise Model* (FHWA 2006) and the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). The data represent the most recent and comprehensive tabulation of noise from common pieces of heavy equipment. Table 13-13 summarizes the construction equipment noise levels.

**Table 13-13. Construction Equipment Noise Levels from the Roadway Construction Noise Model User’s Guide**

Equipment Description	Acoustical Usage Factor (%)	Specified Lmax at 50 feet (dBA)	Actual Measured Lmax at 50 feet (dBA)	Actual Data Samples (No.)
All other equipment > 5 hp	50	85	-	0
Auger drill rig	20	85	84	36
Backhoe	40	80	78	372
Bar bender	20	80	-	0
Blasting	-	94	-	0
Boring jack power unit	50	80	83	1
Chain saw	20	85	84	46
Clam shovel (dropping)	20	93	87	4
Compactor (ground)	20	80	83	57
Compressor (air)	40	80	78	18
Concrete batch plant	15	83	-	0
Concrete mixer truck	40	85	79	40
Concrete pump truck	20	82	81	30
Concrete saw	20	90	90	55



**Table 13-13. Construction Equipment Noise Levels from the Roadway Construction Noise Model User's Guide**

Equipment Description	Acoustical Usage Factor (%)	Specified Lmax at 50 feet (dBA)	Actual Measured Lmax at 50 feet (dBA)	Actual Data Samples (No.)
Crane	16	85	81	405
Dozer	40	85	82	55
Drill rig truck	20	84	79	22
Drum mixer	50	80	80	1
Dump truck	40	84	76	31
Excavator	40	85	81	170
Flatbed truck	40	84	74	4
Front end loader	40	80	79	96
Generator	50	82	81	19
Generator (less than 25 kVA, variable message signs )	50	70	73	74
Gradall	40	85	83	70
Grader	40	85	-	0
Grapple (on backhoe)	40	85	87	1
Horizontal boring hydraulic jack	25	80	82	6
Hydra break ram	10	90	-	0
Impact pile driver	20	95	101	11
Jackhammer	20	85	89	133
Person lift	20	85	75	23
Mounted impact hammer (hoe ram)	20	90	90	212
Pavement scarifier	20	85	90	2
Paver	50	85	77	9
Pickup truck	40	55	75	1
Pneumatic tools	50	85	85	90
Pumps	50	77	81	17
Refrigerator unit	100	82	73	3
Rivet buster and chipping gun	20	85	79	19
Rock drill	20	85	81	3
Roller	20	85	80	16
Sand blasting (single nozzle)	20	85	96	9
Scraper	40	85	84	12
Shears (on backhoe)	40	85	96	5
Slurry plant	100	78	78	1
Slurry trenching machine	50	82	80	75
Soil mix drill rig	50	80	-	0
Tractor	40	84	-	0

**Table 13-13. Construction Equipment Noise Levels from the Roadway Construction Noise Model User's Guide**

Equipment Description	Acoustical Usage Factor (%)	Specified Lmax at 50 feet (dBA)	Actual Measured Lmax at 50 feet (dBA)	Actual Data Samples (No.)
Vacuum excavator (Vac-truck)	40	85	85	149
Vacuum street sweeper	10	80	82	19
Ventilation fan	100	85	79	13
Vibrating hopper	50	85	87	1
Vibratory concrete mixer	20	80	80	1
Vibratory pile driver	20	95	101	44
Warning horn	5	85	83	12
Welder or torch	40	73	74	5

Source: FHWA 2006

hp = horsepower

kVA = kilovolt(s)-ampere

Decibels cannot be directly added arithmetically (for example, 50 dBA plus 50 dBA does not equal 100 dBA). When two sources with equal noise levels are added together, the result will always be 3 dB greater; for example:

$$50 \text{ dBA} + 50 \text{ dBA} = 53 \text{ dBA}$$

$$70 \text{ dBA} + 70 \text{ dBA} = 73 \text{ dBA}$$

If the difference between the two sources is 10 dBA, the level (when rounded to the nearest whole dB) would not increase; for example (Caltrans 2013):

$$40 \text{ dBA} + 50 \text{ dBA} = 50 \text{ dBA}$$

$$60 \text{ dBA} + 70 \text{ dBA} = 70 \text{ dBA}$$

The decrease in sound level caused by distance from any single sound source normally follows the inverse square law: the sound pressure level changes in inverse proportion to the square of the distance from the sound source. In a large, open area without obstructive or reflective surfaces, a general rule is that at distances greater than approximately the largest dimension of the noise-emitting surface, the sound pressure level from a single source of sound drops off at a rate of 6 dB with each doubling of the distance from the source. Sound energy is absorbed in the air as a function of temperature, humidity, and sound frequency; this attenuation can be up to 2 dB over 1,000 feet (Caltrans 2013). The drop-off rate will also vary based on terrain conditions and the presence of obstructions in the sound's propagation path.

As described by FTA, the average noise level from each piece of equipment is determined by the following equation for geometric spreading:

$$\text{Typical Noise Level at 50 feet} + 10 \times \log (A_{j\text{usage}}) - 20 \times \log (\text{distance to receptor}/50) - 10 \times G \times \log (\text{distance to receptor}/50)$$

Because specific construction methods or daily schedules for the project have not been determined, and construction is, by its nature, a dynamic activity, the following typical values were used.



Where:

Usage factor ( $Adj_{usage}$ ) = 1 (such as equipment is operating continuously)

Ground effect factor ( $G$ ) = 0, representing hard ground (such as a ground condition that does not result in additional attenuation)

The total noise level then becomes solely a function of the type of equipment operating and the distance from the equipment to the noise receptor.

A review of the equipment noise levels presented in Table 13-13 indicates that the loudest equipment generally emits noise in the range of 80 to 90 dBA at 50 feet. Noise at any specific receptor is dominated by the closest and loudest equipment. The types, numbers, and duration of equipment anticipated to be used near any specific receptor location would vary over time. Therefore, a typical noise estimate was developed based on the general assumption of multiple pieces of loud equipment operating near each other, with the exception of impact pile driving, which is addressed separately. Specifically, the scenario evaluated uses five pieces of general construction equipment working near each other, as follows:

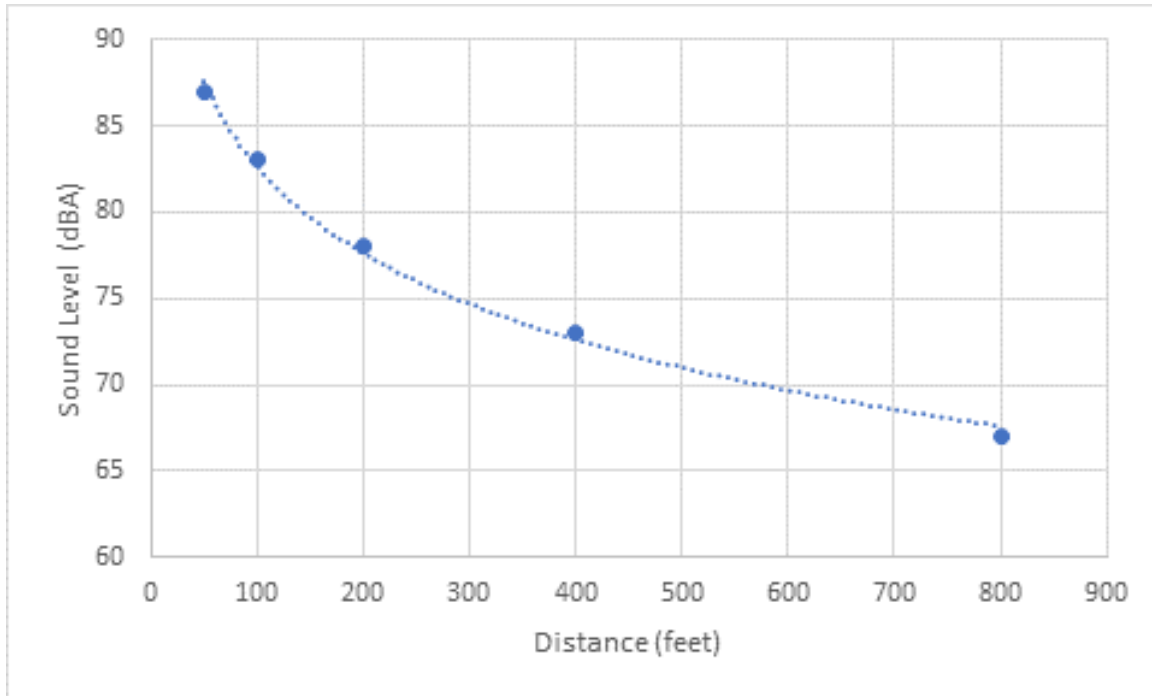
- One piece of equipment generating a reference noise level of 85 dBA at 50 feet at the edge of the construction or work area
- Two pieces of equipment generating 85 dBA reference noise levels located 50 feet farther away from the edge of construction or work area
- Two more pieces of equipment generating 85 dBA reference noise levels located 100 feet farther away the edge of construction or work area

Table 13-14 summarizes the expected average equipment noise levels at various distances, based on this scenario.

**Table 13-14. Average Equipment Noise Levels Versus Distance**

Distance from Activity (feet)	Average Noise Level (dBA)
50	87
100	83
200	78
400	73
800	67
1600	62
3200	56

Figure 13-3 shows a plot of sound level versus distance.



**Figure 13-3. Sound Level Versus Distance**

**13.4.3 General Construction Vibration Evaluation**

Construction activities have the potential to result in varying degrees of temporary ground-borne vibration, depending on the specific equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Table 13-15 summarizes vibration levels for typical construction equipment.

**Table 13-15. Typical Construction Equipment Vibration Levels**

Equipment	PPV at 25 feet (in/sec)
Pile driver (impact – upper range)	1.518
Pile driver (impact – typical)	0.644
Pile driver (sonic – upper range)	0.734
Pile driver (sonic – typical)	0.170
Large bulldozer	0.089
Caisson drilling	0.089
Trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: FTA 2018

Bulldozers and other heavy civil construction equipment would be regularly used during project construction. In addition, heavy trucks would be used to deliver and remove material to and from the site. As referenced in Table 13-15, the largest vibration source is an impact pile driver. According to FTA,



vibration levels associated with the upper range of an impact pile driver are 1.518 inches per second PPV at 25 feet. Trucks generate lower vibration levels of 0.076 inch per second PPV at 25 feet.

The risk of construction vibration damage from each piece of equipment can be assessed by adjusting the PPV from the reference PPV at 25 feet to the actual distance from the equipment to the receiver using the following equation:

$$PPV_{equip} = PPV_{ref} \times \left(\frac{25}{D}\right)^{1.5}$$

Where:

PPV<sub>equip</sub> = The peak particle velocity of the equipment adjusted for distance (inches per second)

PPV<sub>ref</sub> = The source reference vibration level at 25 feet (inches per second)

D = The distance from the equipment to the receiver (feet)

To determine the closest distance each building type by building category (Table 13-5) can be to each type of equipment before sustaining damage, the equation was solved to find the distance at which the construction vibration damage criteria were met for each building criterion (Table 13-16).

**Table 13-16. Typical Construction Equipment Vibration Levels in Peak Particle Velocity**

Equipment	PPV at 25 feet (in/sec)	Building Category (Construction Vibration Damage Criteria)			
		1 (0.5 in/sec)	2 (0.3 in/sec)	3 (0.2 in/sec)	4 (0.12 in/sec)
Pile driver (impact – upper range)	1.518	50	75	100	135
Pile driver (impact – typical)	0.644	30	40	55	75
Pile driver (sonic – upper range)	0.734	30	45	60	85
Pile driver (sonic – typical)	0.170	<25	<25	<25	30
Large bulldozer	0.089	<25	<25	<25	<25
Caisson drilling	0.089	<25	<25	<25	<25
Trucks	0.076	<25	<25	<25	<25
Jackhammer	0.035	<25	<25	<25	<25
Small bulldozer	0.003	<25	<25	<25	<25

Source: FTA 2018

The distances determined indicate that for all building categories, general construction equipment must be less than 25 feet from the building to cause damage. Impact pile driving in the upper range has the greatest potential to cause damage to buildings; 135 feet is the closest that pile driving can occur to a Category 4 building. Category 4 buildings are "...extremely susceptible to vibration damage..." (FTA 2018), with construction very sensitive to vibration and may be objects or buildings of historic interest.

Pile driving is not expected to be required, and in the unlikely event that it is, it would be limited to the treatment facility, which is located over 200 feet away from other structures.

### 13.5 Environmental Impacts

This section presents an evaluation of the project’s environmental impacts regarding noise for both the construction and operation phases. Table 13-17 summarizes the potential noise impacts.

**Table 13-17. Summary of Noise Impacts**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Pipelines	Pump Station
Impact 13-1: Construction Noise and Vibration	Less than significant	Less than significant with mitigation	Less than significant with mitigation	Less than significant
Impact 13-2: Noise and Vibration from Facility Operation	Less than significant	Less than significant	Less than significant	Less than significant

#### 13.5.1 Impact 13-1: Construction Noise and Vibration

With the mitigation measures described in this section, Impact 13-1 would result in less than significant impacts.

##### 13.5.1.1 Alternative 1 Agoura Road Advanced Water Purification Facility

The City of Agoura Hills Municipal Code exempts construction noise from regulations, provided construction activities are limited to 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction is prohibited outside these hours, or at any time on Sunday or a legal holiday. Section 9656.9 of the municipal code outlines the variance process for owners or operators of a noise source that cannot meet the provisions of the noise ordinance. Granted variances would include terms, conditions, and requirements, including limitations on noise levels and operating hours.

The western site boundary for the Agoura Road AWPf is adjacent to apartment complexes and single-family residences (Figure 13-4). The treatment building would be 360 feet from the closest residence. The expected noise level for general construction at this distance is approximately 73 dBA. Nighttime work is not anticipated during the construction of the AWPf. Therefore, impacts would be less than significant.





**Figure 13-4. Agoura Road Advanced Water Purification Facility and Surrounding Area**

**13.5.1.2 Alternative 2 Reservoir Advanced Water Purification Facility**

The location of the Alternative 2 Reservoir AWPf site, where most construction activities would occur, is farther from residences than the Agoura Road AWPf, with the nearest sensitive receptor located more than 1,000 feet away (Figure 13-5). The construction of the access road to Reservoir AWPf is located within 160 feet of residences at its termination at Triunfo Canyon Road. No numeric noise thresholds are provided in the City of Westlake Village’s Municipal Code for construction noise. Instead, construction is limited to between 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction noise is permitted on Sundays or holidays.

Construction noise includes the operation of any tools, equipment, impact devices, derricks, or hoists used in or otherwise engaging in any aspect of construction, drilling, repair, alteration, demolition, or earthwork. Special circumstances allow for construction noise outside of the allowed hours if the work is done in the public interest. To address construction noise prior to construction, *Mitigation Measure 13-1, Noise Control Plan* is prescribed. With implementation of this measure, construction noise impacts would be less than significant.

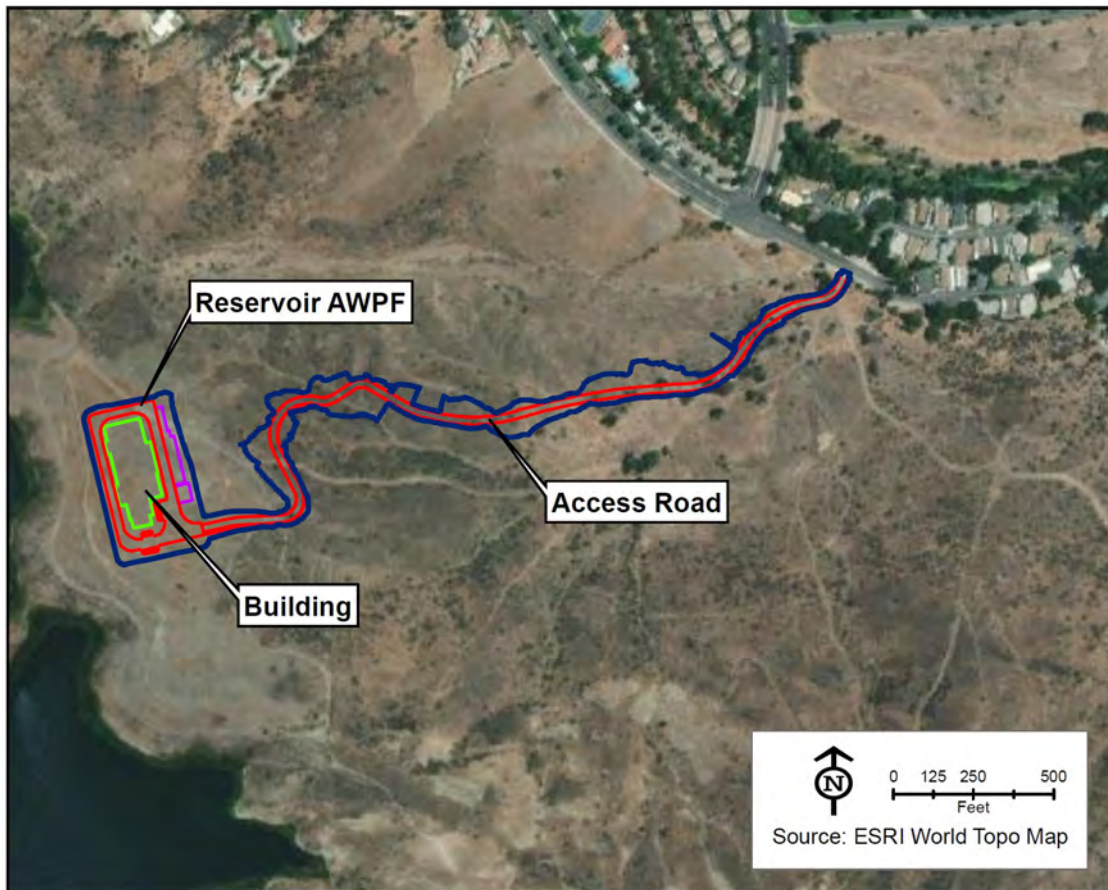


Figure 13-5. Reservoir Advanced Water Purification Facility and Surrounding Area

### 13.5.1.3 Pipelines

Pipelines would be constructed within all municipal jurisdictions. Applicable regulations for construction are as follows:

- **City of Agoura Hills:** No specified noise thresholds are applicable to construction, but construction activities are limited to between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction is prohibited outside these hours, or at any time on Sunday or a legal holiday.
- **City of Westlake Village:** No specific noise thresholds are applicable to construction noise. Instead, construction is limited to between 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction noise is permitted on Sundays or holidays.
- **City of Thousand Oaks:** No noise threshold is established for construction, but construction is limited to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, unless a permit for each type of work at different hours or days has first been issued by the Public Works Director. Limitations to construction work hours are not applicable to projects taking place more than 1 mile from any occupied residence.
- **Ventura County:** Noise thresholds are applicable to construction work performed in unincorporated Ventura County but are dependent on the duration of work affecting noise-sensitive receptors (Table 13-14). Thresholds vary from:
  - 55 to 75 dBA from 7:00 a.m. to 7:00 p.m., Monday through Friday and from 9:00 a.m. to 7:00 p.m., Saturday, Sunday, and local holidays
  - 50 dBA from 7:00 to 10:00 p.m., 7 days per week
  - 45 dBA from 10:00 p.m. to 7:00 a.m., 7 days per week



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Noise-sensitive receptors are located in proximity to a number of areas along the pipeline routes. Ventura County has the most stringent noise thresholds. The County's daytime construction noise thresholds (Table 13-12) vary with duration of the activity. In summary, limits are as follows:

- Activities of 3 days or less: 75 dBA
- Activities of 4 to 7 days: 70 dBA
- Activities longer than 8 weeks: 55 dBA
- Longer-duration activities: Lower levels are permitted

While most of pipeline in unincorporated Ventura County is not near noise-sensitive uses, the farthest limit of the pipeline is within 400 feet of a residence (Figure 13-6). General construction at this distance would result in a noise level of approximately 73 dBA at the residence. The lowest limit of 55 dBA is predicted to be achieved at approximately 3,200 feet. While Table 13-14 indicates 56 dBA at 3,200 feet, this is expected to be a conservative estimate, as it does not consider the additional attenuation afforded by atmospheric absorption or other effects.

Pipeline construction is anticipated to proceed at a rate of 200 feet per day. Conservative evaluation indicates the lowest limit of 55 dBA may be exceeded for the approximately 16 days when activities would be occurring closer than 3,200 feet. If this segment's construction duration is between 2 to 8 weeks, the sound limit would be 60 dBA, which is expected to be achieved within approximately 2,000 feet. Thus, the duration of the potential exceedance may be more limited in duration (10 days) when activities are occurring in proximity to the residences.



Figure 13-6. Pipeline Alignment in Unincorporated Ventura County with Closest Residence

Specialized construction would be used in two areas that present special challenges: in Triunfo Creek Park and within the Rancho Conejo Open Space area. Both areas are undeveloped, difficult to access, and contain rocky ground that makes open-trench construction difficult. Pipeline installation is expected to occur at a rate of approximately 50 feet per day in these areas. Within these areas, the following construction methods may be used:

- Rockwheel Trencher: A rockwheel is a specialized trench excavation tool that can be used where ground conditions are too rocky for standard excavators. Rockwheels grind the native material into smaller pieces that can be removed with standard excavators or backhoes.
- Jackhammering: In areas where standard or specialized construction equipment, such as a rockwheel, are not sufficient to break up hard rock and create the necessary trench width, jackhammering may be needed.
- Blasting: If necessary, blasting would be used if other methods are infeasible. Highly localized blasting using charges in drilled holes would be used.

In the Triunfo Creek Park area (located in Westlake Village), trenchless construction methods would be used within 1,000 feet of a residential area (Figure 13-7). Noise levels associated with these trenchless construction methods are expected to vary between 85 and 94 dBA at 50 feet (Table 13-14), with blasting being the method with the highest expected noise and vibration level. If blasting is required, a blasting plan would be developed to address noise and vibration. Blasting would occur in the daytime only.



**Figure 13-7. Trenchless Construction Option for Pipeline in Triunfo Creek Park Area**

Unlike construction at the treatment plant, nighttime construction may be needed for portions of the pipelines. Because the pipelines are generally located within roadways, there may be portions where



some nighttime construction work is necessary to minimize conflicts with other resources, such as traffic. Nighttime construction is generally not permitted, but variance procedures are available to permit nighttime work if it is in the public interest (for example, to minimize traffic conflicts). So that construction noise is addressed prior to construction, *Mitigation Measure 13-1, Noise Control Plan* is prescribed. With implementation of this measure, construction noise impacts would be less than significant.

### 13.5.1.4 Pump Station

Under Alternative 2 Reservoir AWPf, a pump station would be required along Lindero Canyon Road, at one of two optional locations. For the option at Lindero Canyon Road and Russell Ranch Road, the pump station would be within a commercial and office park development located approximately 700 feet from the nearest residence. For the option on Lindero Canyon Road south of U.S. 101, the pump station would be within the Westlake Village Golf Course located approximately 750 feet from the nearest residence.

The City of Westlake Village has no specific noise thresholds applicable to construction noise, but construction is limited to between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on Saturdays. No construction noise is permitted on Sundays or holidays.

Nighttime construction is not anticipated to be needed for the pump station. Pump station construction would follow local requirements; therefore, the impact would be less than significant.

### 13.5.2 Impact 13-2: Noise and Vibration from Facility Operation

With the mitigation measures described in this section, Impact 13-2 would result in less than significant impacts.

Operation of the project is expected to result in the generation of some noise at the AWPf and pump station. No operational noise is expected to be associated with the pipelines. The facility would operate when excess Tapia WRF recycled water supply or supplemental supplies are available: likely about 6 months per year, from late fall through early spring at startup, but may operate year-round in the future. Some year-to-year variation is expected depending on factors such as rainfall amounts.

#### 13.5.2.1 Alternative 1 Agoura Road Advanced Water Purification Facility

Alternative 1 Agoura Road AWPf is subject to the noise limits of the City of Agoura Hills Municipal Code. The noise thresholds depend on the zoning of the noise-sensitive unit. The Agoura Road AWPf site is designated as a Ladyface Mountain Specific Plan Planned Development. The *Ladyface Mountain Specific Plan* indicates the Agoura Road AWPf site is located within the Business Park Sub Area (City of Agoura Hills 1991). As the facility is not within a residentially zoned area, operational noise from the Agoura Road AWPf measured on any residential property may not exceed the following:

- 55 dBA in the daytime (7:00 a.m. to 10:00 p.m.)
- 50 dBA at nighttime (10:00 p.m. to 7:00 a.m.)

In addition, Sections 9656.2(B) and 9656.3(B) of the municipal code state noise as measured on any other residential property may not exceed the following:

- The exterior noise standard for a cumulative period of more than 15 minutes in any hour or the interior noise standard for a cumulative period of more than 5 minutes in any hour
- The exterior noise standard plus 5 dBA for a cumulative period of more than 10 minutes in any hour or the interior noise standard plus 5 dBA for a cumulative period of more than 1 minute in any hour
- The exterior noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour or the interior noise standard plus 10 dBA for any period of time
- The exterior noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour
- The exterior noise standard plus 20 dBA for any period of time

In the event the ambient noise level exceeds the noise limit categories, the noise level applicable to each category would be increased to reflect the ambient noise level.

The major noise-generating equipment would be located within the treatment plant building, which is located 360 feet away from the closest residence. The Agoura Road AWPf would be designed to comply with applicable limits. Operational noise is, therefore, less than significant.

### 13.5.2.2 Reservoir Advanced Water Purification Facility

The Reservoir AWPf is located in the City of Westlake Village's jurisdiction. Noise regulations are established by the Noise Control Ordinance of the City of Westlake Village in the Westlake Village Municipal Code. The following sections of the code may apply to operations:

- Section 4.4.035(A) of the code establishes a noise level threshold at 5 dBA greater than the local ambient noise level as measured at any residential property line, and 8 dBA greater than the local ambient noise level as measured at any other property line.
- Unless enclosed within a sound-insulated structure to prevent noise and sound from being plainly audible at a distance of 50 feet from such structure, or within 10 feet of any residence, Section 4.4.040(B) prohibits the sustained operation or use between the hours of 10:00 p.m. and 7:00 a.m. of any electric or gasoline-powered motor or engine or the repair, modification, reconstruction, testing, or operation of any of the following:
  - Automobile
  - Motorcycle
  - Machine
  - Mechanical device
  - Other contrivance or facility
- Section 4.4.040(A) prohibits the unnecessary or unreasonable making of, or knowingly and unnecessarily permitting to be made, any loud, boisterous, and unusual noise, disturbance, commotion, or vibration in any:
  - Boarding facility
  - Dwelling
  - Place of business
  - Other structure
  - Public street
  - Park
  - Other place or building

Only ordinary and usual sounds, noises, commotion, or vibration incidental to the operation of these places is allowed when conducted:

- In accordance with the normal standard of practice
- In a manner that would not disturb the peace and comfort of adjacent residences
- In a manner that would not detrimentally affect the operators or customers of adjacent places of business

The major noise-generating equipment would be located within the treatment plant building, which is located more than 1,000 feet away from the closest residence. The Reservoir AWPf would be designed to readily comply with the regulations listed. Operational noise is, therefore, less than significant.

### 13.5.2.3 Pump Station

Under Alternative 2 Reservoir AWPf, the two options for the pump stations are located in Westlake Village. The regulations pertaining to noise and vibration resulting from operations of these facilities are



described in Section 13.5.2.2. Whichever option is selected, the pump station would be designed to readily comply with Westlake Village standards. Operational noise is, therefore, less than significant.

### 13.6 Mitigation Measures

During construction, the following measure would be incorporated to minimize construction noise impacts.

**Mitigation Measure 13-1 Noise Control Plan.** The contractor will be required to develop a Noise Control Plan identifying how noise would be minimized during construction, and as required, apply for a temporary construction noise variance. Noise-reducing methods that may be implemented include the following:

- Follow local noise control requirements as much as possible, with exceptions only as needed (such as nighttime construction to minimize traffic disruptions) in collaboration with local jurisdictions.
- Minimize the use of impact devices, such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal.
- Verify that pneumatic impact tools and equipment used at the construction site have intake and exhaust mufflers recommended by the manufacturers to meet relevant noise limitations.
- Provide impact noise-producing equipment, such as jackhammers and pavement breakers, with noise-attenuating shields, shrouds, or portable barriers or enclosures to reduce operating noise.
- Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material (for example, apply wood or rubber liners to metal bin impact surfaces).
- Avoid blasting and impact-type pile driving to the extent reasonable and feasible. Coordinate these highly intrusive construction activities with the local jurisdictions, and provide advance notice to nearby residents and other sensitive receptors.
- Use alternative procedures of construction, and select a combination of techniques that generate the least overall noise and vibration. Such alternative procedures could use electric welders powered by remote generators and mix concrete at nonsensitive offsite locations, instead of onsite.
- Turn off idling equipment when not in use of periods longer than 30 minutes.
- Where building foundation systems are needed, use drilling or alternate foundations systems instead of driven piles where reasonable and feasible.
- Operate equipment so as to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential and other noise-sensitive areas during the evening and nighttime hours.
- To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise-sensitive locations and nearby buildings.
- Consider the use of broadband or white noise backup alarms as allowed by Cal/OSHA during evening and nighttime hours.
- Maximize physical separation, as far as practicable, between noise generators and noise receptors. Separation includes providing enclosures for stationary items of equipment and noise barriers around particularly noisy areas at the project site, and locating stationary equipment to minimize noise and vibration impacts on the community.
- Minimize noise-intrusive impacts during most noise-sensitive hours. Plan noisier operations during times of highest ambient noise levels.

## 14. Recreation

This chapter evaluates potential impacts of the project on recreational facilities, including parks, located in the project area.

### 14.1 Existing Setting

This section describes the project's existing recreational setting.

#### 14.1.1 City of Agoura Hills

Agoura Hills has more than 2,000 acres of land dedicated to open space and recreational use (City of Agoura Hills 2010b). The Agoura Hills Department of Community Services maintains parks and recreation facilities throughout the city and offers various community services oriented toward recreation, education, and community engagement (City of Agoura Hills 2022b). Bicycle lanes are provided on both sides of Agoura Road; otherwise, there are no city park and recreation facilities within the project area.

Hikers currently use the Alternative 1 Agoura Road AWP site for access to trails in the Ladyface Mountain area. Access appears to be informal, and the trails do not appear to be actively managed by a local or regional parks authority.

#### 14.1.2 City of Westlake Village

Westlake Village encompasses 5.62 square miles and has seven parks. The city is also home to the Las Virgenes Reservoir and Westlake Lake (City of Westlake Village 2019a). The following Westlake Village park and recreation facilities are within or adjacent to the project area:

- Bicycle lanes along both sides of affected city streets
- Russell Ranch Park
- Westlake Golf Course
- Westlake Lake
- Westlake Village Dog Park
- Yarrow Family YMCA

Triunfo Creek Park, managed by the Santa Monica Mountains Conservancy in partnership with the Mountains Recreation and Conservation Authority (MRCA), is located within Westlake Village between Triunfo Canyon Road and Las Virgenes Reservoir (Figure 14-1). The 600-acre park is home to its main feature, the Pentachaeta Trail (MRCA 2022).

The trailhead (with an informational kiosk) is located on Triunfo Canyon Road, east of the southern terminus of Lindero Canyon Road. The other end of the trail is located at the west end of Triunfo Canyon Road, about 1.5 miles west of Kanan Road (MRCA 2022). The trail is about 1.9 miles long with 339-foot elevation and is used for hiking, mountain biking, and horseback riding, and allows dogs on leash. Triunfo Creek Park also hosts the Westlake Vista Trail, which begins at the Pentachaeta trailhead and extends east toward Las Virgenes Reservoir (Los Angeles County Parks 2022).

#### 14.1.3 City of Thousand Oaks

Thousand Oaks contains 1,658 acres of active open space, such as parks and golf courses (City of Thousand Oaks 2013b). The following Thousand Oaks park and recreation facilities are within or adjacent to the project area:

- Beyer Park
- Bicycle lanes along both sides of affected city streets
- Colina Middle School sports facilities



- Gardens of the World
- Hillcrest Center for the Arts
- Rancho Conejo Playfields and Arroyo Conejo Trailhead
- Westlake High School sports facilities

The City of Thousand Oaks maintains a partnership with the Conejo Recreation and Parks District to oversee the conservation and maintenance of over 15,000 acres of natural open space, including over 150 miles of publicly accessible hiking, biking, and horseback riding trails (City of Thousand Oaks 2022d). This partnership, finalized in a Joint Powers Agreement between the two agencies, was created in 1977 to become the Conejo Open Space Conservation Agency (COSCA) (COSCA 2020).

Within the COSCA, the project would intersect with the Arroyo Conejo Nature Preserve, which is a part of the 302-acre Arroyo Conejo Open Space (COSCA 2022b). A portion of the concentrate pipeline is on Rancho Conejo Boulevard that moves north, connecting to the Conejo Canyon Open Space Trail and then continuing up on Hill Canyon Fire Road, where it terminates at Santa Rosa Road in unincorporated Ventura County (Figure 14-2). The portion within Thousand Oaks likely coincides with the Conejo Canyons Unit of the COSCA's Natural Open Space Areas (COSCA 2021a).

### 14.1.4 Ventura County

Within unincorporated Ventura County, the pipeline corridor would be located on Hill Canyon Road, where it terminates at Santa Rosa Road. There are no bicycle or pedestrian features on Hill Canyon Road. This portion of the pipeline corridor passes Hill Canyon Trailhead and Santa Rosa Valley Park. Hill Canyon Trail to Hawk Canyon is a 3.6-mile trail with 250 feet of elevation change that offers multiple uses, including walking and mountain biking (VisitCamarillo.com 2022). Santa Rosa Valley Park is a regional park that offers 50 acres of natural open space for horseback riding, hiking, wilderness exploring, and other environmentally friendly activities (Ventura County 2022c).

### 14.1.5 Malibu Creek

Malibu Creek is a 14-mile water course within the Santa Monica Mountains that ends at Malibu Lagoon and is a part of Malibu Creek State Park. Located 25 miles east of Los Angeles, the park offers the following recreational activities (California Department of Parks and Recreation 2022a):

- Bird watching
- Fishing
- Horseback riding
- Hiking
- Mountain biking
- Rock climbing

Additionally, there is a popular surfing area where Malibu Creek discharges into Santa Monica Bay, near Malibu Lagoon (California Department of Parks and Recreation 2022b).

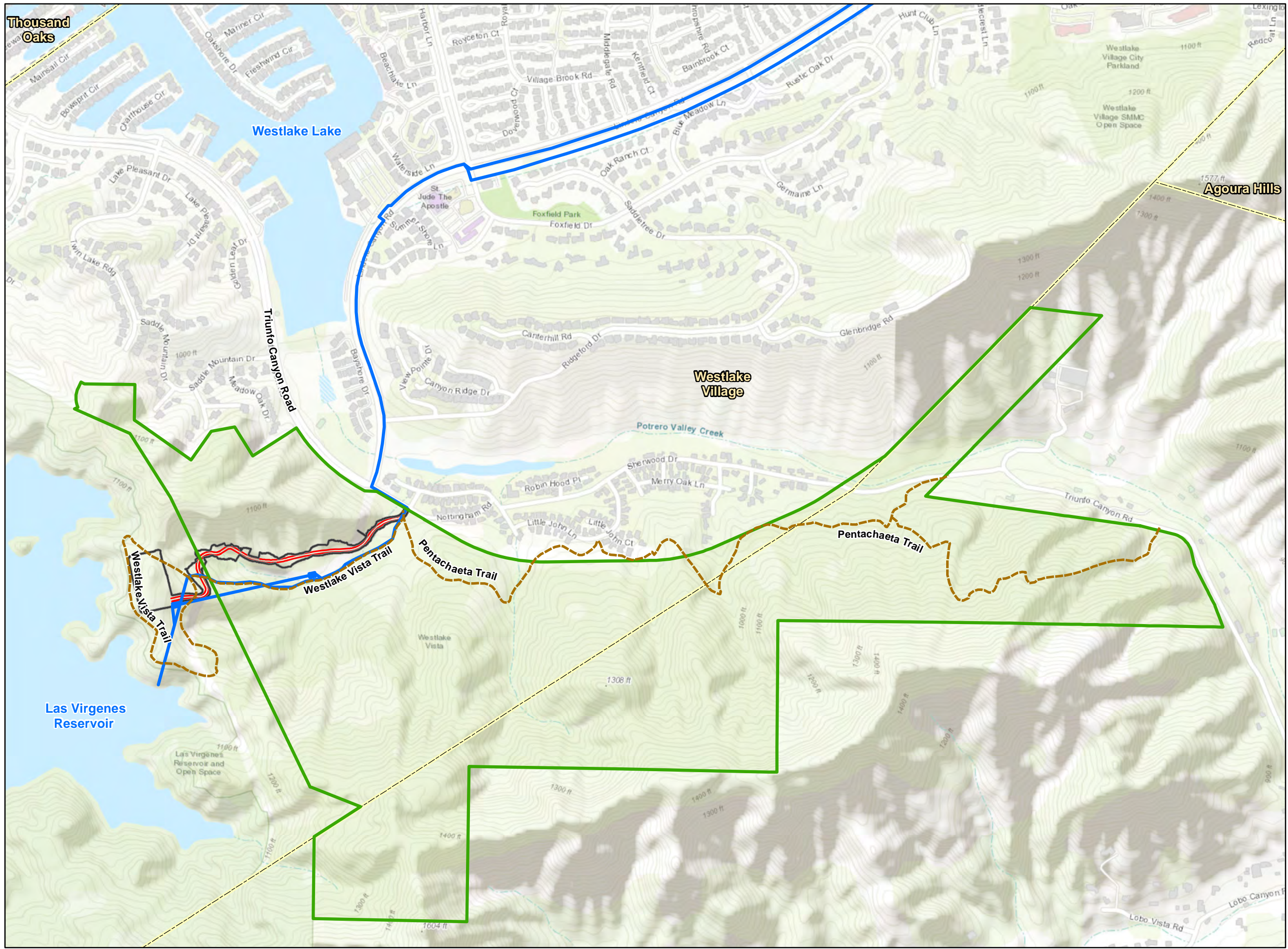
## 14.2 Regulatory Framework

This section discusses the regulatory framework applicable to recreation facilities and parks, including general plan policies and guidance related to recreation resources.

### 14.2.1 City of Agoura Hills

The City of Agoura Hills adopted the current *City of Agoura Hills General Plan* in 2010 as a strategic document to guide the physical development of Agoura Hills. The Land Use Element guides development of Agoura Hill's built environment to the year 2035 and manages how existing neighborhoods, commercial centers, business districts, and open spaces would be conserved and how growth would be managed to protect city resources.



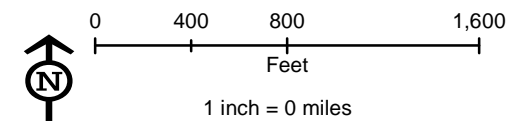


### Legend

- Trail
- Triunfo Creek Park
- Purified Water Alignment Options
- Alternative 2 Reservoir AWP
- Access Road
- City Boundary

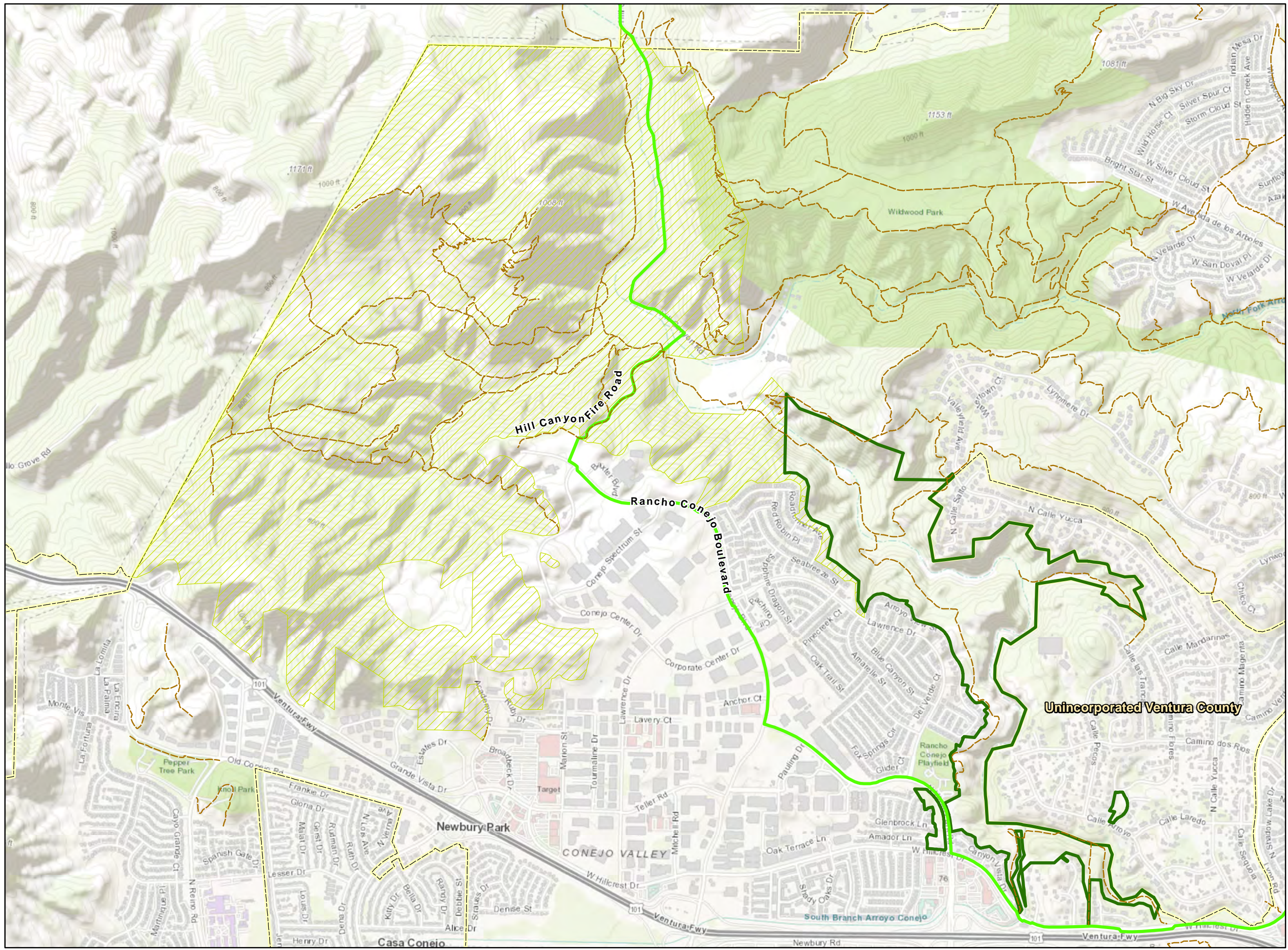


Sources:  
 LA County, 2022; ESRI World Topo Map;  
 ESRI World Street Map



**FIGURE 14-1**  
**Triunfo Creek Park**  
 Pure Water Project Las Virgenes-Triunfo



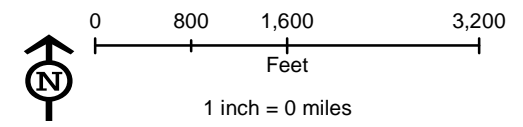


**Legend**

- Trail
- Arroyo Conejo Open Space
- Conejo Canyons Open Space
- Concentrate Alignment Options
- City Boundary



Sources:  
 Conejo Open Space Conservation Agency, 2022;  
 ESRI World Topo Map; ESRI World Street Map



**FIGURE 14-2**  
**Recreational Resources within the**  
**Conejo Open Space Conservation Agency**



The Infrastructure and Community Services Element addresses the City's priority to support high-quality community services and infrastructure systems that are well maintained and operated in a manner consistent with its commitment to sustainability. Ongoing access to education, recreation, transportation, and utility services are important to maintaining the quality of life in Agoura Hills. The Mobility portion of this element contains policies intended to create a well-connected network that supports a mix of uses, including walking or bicycling for short trips. Through the Community Services portion of this element, the City strives to provide quality recreational, educational, and cultural services through schools, libraries, parks, and community centers, as well as public safety services.

In the Natural Resources Element, the City expresses a commitment to the conservation of natural resources and ensures the ongoing availability of finite resources, such as open space, safe water supply, clean air, scenic vistas, and energy resources. Goals and policies in this element address the preservation and maintenance of Agoura Hills' environmental resources (including open space for recreation), not only to benefit current residents, but also to protect the sustainability of these resources for future generations.

Table 14-1 summarizes the goals and policies established by the *City of Agoura Hills General Plan* (City of Agoura Hills 2010b) that are applicable to recreation resources.

**Table 14-1. City of Agoura Hills Goals and Policies Supporting Recreation**

Goal or Policy Name	Goal and Policy Language
Goal LU-3: City of Open Spaces	<i>Open space lands that are preserved to maintain the visual quality of the City and provide recreational opportunities, protect the public from safety hazards, and conserve natural resources.</i>
Policy LU-3.3: Open Spaces and Greenbelts	<i>Provide a network of open spaces and greenbelts with pedestrian access where appropriate.</i>
Goal LU-18: Public and Quasi-Public Uses Supporting Resident Needs	<i>Governmental, utility, institutional, educational, recreational, cultural, religious, and social facilities and services that are located and designed to complement Agoura Hills' neighborhoods, centers, and corridors.</i>
Policy LU-19.1: City of Trees and Open Spaces	<i>Maintain a multi-functional "green infrastructure" consisting of natural areas, open spaces, urban forest, and parklands, which serves as a defining physical feature of Agoura Hills, provides visitors and residents with access to open spaces and recreation, is designed for environmental sustainability, and reduces greenhouse gas emissions.</i>
Policy LU-19.2: Open Space Preservation	<i>Place a high priority on acquiring and preserving open space lands for purposes of passive recreation, habitat protection and enhancement, resource conservation, flood hazard management, public safety purposes, and overall community benefit.</i>
Goal LU-23: Business Park and Natural Open Spaces	<i>An economically viable business park that is scaled and designed to reflect its natural setting at the base of Ladyface Mountain, while providing high-quality jobs and incorporating a diversity of uses that minimize the need for employees to travel off site.</i>
Policy LU-23.5: Trail Connectivity	<i>Require that developers provide pedestrian linkages to trails in the Ladyface Mountain Specific Plan area, as prescribed by the Citywide Trails and Parkways Master Plan.</i>
Goal M-8: Bikeways	<i>Enhanced bicycle facilities throughout Agoura Hills for short trips and recreational uses.</i>
Policy M-8.1: Bikeway Linkages	<i>Provide bikeway connectivity between residential areas and surrounding natural resource areas, parks, schools, employment centers, and other activity centers in the community.</i>
Policy M-8.2: Continuous Bikeway Connectivity	<i>Provide a bicycle network that is continuous, closes gaps in the existing system, and permits easy bicycle travel throughout the community and the region.</i>
Policy M-8.3: Recreational Biking	<i>Encourage recreational biking and promote the community's mountain biking trail system to residents and visitors.</i>



**Table 14-1. City of Agoura Hills Goals and Policies Supporting Recreation**

Goal or Policy Name	Goal and Policy Language
Goal CS-1: Park and Recreation Facilities	<i>Balanced and comprehensive recreation facilities for the Agoura Hills community.</i>
Policy CS-1.1: Service Level Goals	<i>Develop and maintain parks and recreational areas in accordance with the goals in Table CS-1 (Parks, Community Facility, and Recreation Facility Service Level Goals).</i>
Policy CS-1.2: Cooperation with External Agencies	<i>Work with agencies outside of the City that control park lands, including the counties of Ventura and Los Angeles, National Park Service, and Santa Monica Mountains Conservancy, to ensure maximum benefits to local residents.</i>
Policy CS-1.3: Bicycle and Pedestrian Connections	<i>Connect recreational facilities with walking paths, trails, bikeways, and equestrian trails.</i>
Policy CS-1.7: Accessible Facilities	<i>When renovating and creating new recreational facilities, ensure accessible standards as specified in state and federal laws, such as the Americans with Disabilities Act (ADA).</i>
Goal CS-5: Trail and Path Network	<i>A comprehensive trail and pathway system that makes pedestrian and equestrian travel healthy, feasible, safe, and enjoyable modes of transportation and forms of recreation in Agoura Hills.</i>
Policy CS-5.3: Coordinated Trail Planning	<i>Coordinate the City's trail system planning, implementation, and management efforts with those of regional jurisdictions and other public agencies.</i>
Policy CS-5.4: Coordination with Agencies	<i>Partner with neighborhood groups, private individuals, and local businesses to acquire various trail amenities.</i>
Policy CS-5.9: Connecting to Trail System	<i>Require that new development provide connections to adjacent trail systems, as applicable.</i>
Goal NR-1: Open Space System	<i>Preservation of open space to sustain natural ecosystems and visual resources that contribute to the quality of life and character of Agoura Hills.</i>
Policy NR-1.1: Open Space Preservation	<i>Continue efforts to acquire and preserve open space lands for purposes of recreation, habitat protection and enhancement, resource conservation, flood hazard management, public safety, aesthetic visual resource, and overall community benefit.</i>
Goal NR-2: Visual Resources	<i>Preservation of significant visual resources as important quality of life amenities for residents, and as assets for commerce, recreation, and tourism.</i>
Policy NR-2.2: Trails, Recreation Areas, and Viewing Areas	<i>Provide public trails, recreation areas, and viewing areas near significant visual resources, where appropriate.</i>
Goal NR-4: Natural Areas	<i>Protection and enhancement of open space resources, other natural areas, and significant wildlife and vegetation in the City as an integral component of a sustainable environment.</i>
Policy NR-4.5: Open Space Preservation	<i>Place a high priority on acquiring and preserving open space lands for purposes of recreation, habitat preservation and enhancement, resource conservation, flood hazard management, public safety purposes, and overall community benefits.</i>
Policy NR-4.7: Green Infrastructure	<i>Maintain a multi-functional "green infrastructure," consisting of natural areas, open spaces, urban forest, and parklands, that serves as a defining physical character of Agoura Hills, provides visitors and residents with access to open spaces and recreation, and is designed for environmental sustainability.</i>
Policy NR-4.8: Open Space and Activity Centers	<i>Link open space to activity centers, parks, other open space, and scenic routes to help define urban form and beautify the City.</i>

Source: City of Agoura Hills 2010b

**14.2.2 City of Westlake Village**

The City of Westlake Village adopted an updated general plan in 2019. The general plan guides decision-makers on issues affecting the allocation of resources and future direction of Westlake Village. The Community Development chapter contains the Land Use Element, which is the primary land use policy document and serves as the blueprint for the future development of the community. The Infrastructure and Community Services chapter contains the Recreation Element, which presents the goals, objectives, and policies for recreation facilities and programs within Westlake Village. The Natural Resources Element includes goals, objectives, and policies for Biological and Visual Resources, Open Space, and Watershed Areas.

Table 14-2 lists the goals and policies established by the *City of Westlake Village General Plan* (City of Westlake Village 2019a) that are applicable to recreation resources.

**Table 14-2. City of Westlake Village Goals and Policies Supporting Recreation**

Goal or Policy No.	Goal or Policy Language
<b>Land Use</b>	
Goal 1	<i>Provide for new land use development and adaptive reuse which is reflective of and complements the overall pattern and scale of existing development, and offers the opportunity for the revitalization and/or reuse of selected subareas as distinctly identifiable activity centers of the City.</i>
Policy 1.1.2	<i>Provide for the maintenance and possible expansion of open space and recreation uses in those areas designated as Open Space and Recreation areas on the General Development Policy map.</i>
Goal 7	<i>Provide for public and institutional uses which support the needs and functions of the residents and businesses within the City of Westlake Village.</i>
Policy 7.1.1	<i>Accommodate governmental administrative, parks and recreation, public open space, police, fire, educational (schools), cultural (libraries, etc.), health, human services, public utility, religious and other public uses in areas designated as Public-Quasi public.</i>
Goal 8	<i>Preserve and protect the City's open space resources as important scenic, environmental, and recreational amenities for all City residents and visitors.</i>
Policy 8.1.2	<i>Retain existing publicly-owned parks as recreational resources, including areas designated as "Parks" on the Land Use Plan map.</i>
Policy 8.1.3	<i>Provide for the preservation of additional open space areas for resource protection and recreational purposes in accordance with the Parks and Recreation Element.</i>
Policy 8.1.5	<i>Restrict the development of recreational facilities, including parcels designated as "CR" on the Land Use Plan map, to uses and facilities which are consistent with the intended recreational function.</i>
<b>Recreation</b>	
Goal 1	<i>Ensure that adequate park and recreational facilities are provided to meet the recreational needs of the existing and future residents while preserving the natural resources of the community.</i>
Policy 1.2	<i>Where appropriate, require new development to provide pedestrian paths, trails and/or sidewalks to facilitate and encourage pedestrian access and recreational enjoyment.</i>
Policy 1.4	<i>Cooperate with other jurisdictions to achieve the multiple-use management of public lands, specifically recognizing recreation as a desirable use and provide new opportunities for additional park and recreational facilities and services.</i>



**Table 14-2. City of Westlake Village Goals and Policies Supporting Recreation**

Goal or Policy No.	Goal or Policy Language
Policy 1.5	<i>Increase the City's recreational area through the joint use or multi-purpose use of existing and future open spaces and school facilities, including the coordination and cooperation with adjacent jurisdictions.</i>
Goal 3	<i>Ensure that the community has an effective bikeway and trail system which enhances the safety and enjoyment of cyclists, pedestrians and motorists.</i>
Policy 3.3	<i>Where appropriate, pursue trail development opportunities in the southern portion of the City to interconnect with trail systems of the National Recreation Area (NRA).</i>
<b>Natural Resources</b>	
Open Space Goal	<i>To provide for the planned management, preservation and wise utilization of the City's natural resources.</i>
Objective 1	<i>Maintain and enhance the number of acres dedicated to natural and/or recreational open space within the City.</i>
Policy 1.1	<i>Promote the public acquisition and maintenance of open space for the preservation of natural resources, provision of outdoor recreation, and protection of the public health and safety.</i>
Objective 2	<i>Maximize the potential for open space derived from hillside management, ridgeline protection, and other natural resource preservation/protection policies.</i>
Policy 2.1	<i>Encourage new development to cluster building units thereby minimizing the land used by development and maximizing the land remaining for natural and recreational open spaces.</i>
Watershed Areas Goal	<i>Protect the quality of water contained in Las Virgenes Reservoir and Westlake Lake.</i>
Objective 2	<i>Protect the drinking water quality of the Las Virgenes Reservoir through the preservation and effective management of its tributary watershed area.</i>
Policy 2.2	<i>Assure that low intensity recreational uses (i.e., hiking trails, nature walks, vista points, etc.) permitted within the Las Virgenes Reservoir watershed area are located, managed and maintained in a manner that preserves significant natural resources and protects the drinking water quality of the Reservoir.</i>

Source: City of Westlake Village 2019a

### 14.2.3 City of Thousand Oaks

The *Thousand Oaks General Plan* provides a long-range comprehensive guide for the physical development of the City's Planning Area. The Conservation Element (City of Thousand Oaks 2013a) identifies the City's policies and implementation measures for the conservation of natural and cultural resources. A policy is a specific statement that guides decision making. It indicates a clear commitment of the City Council. Implementation measures are fundamental rules and specific actions related to and guided by the policies. These measures are based on community values, generally accepted planning practice, and current technology.

The Open Space Element (City Thousand Oaks 2013b) provides the local planning policies for the use of unimproved land or water for:

- The preservation of natural resources
- The managed production of resources
- Outdoor recreation
- The enhancement of public health and safety

The purpose of this element is to identify policies and implementation measures for the conservation and use of open space resources.

Table 14-3 lists the goals, policies, and implementation measures identified in the *Thousand Oaks General Plan* (2013a, b, 2022b) that are applicable to recreation.

**Table 14-3. City of Thousand Oaks Goals and Policies Supporting Recreation**

Goal or Policy Name	Goal or Policy Language
<b>Conservation Element</b>	
<b>Streams and Creeks</b>	
Policy CO-12	<i>Major barrancas should be protected in a natural state. Appropriate land uses for these natural features include recreation trails and open space.</i>
<b>Open Space Element</b>	
<b>Open Space for Outdoor Recreation and Education</b>	
Policy OS-5	<i>Trails are a key component of the Open Space Element. A Trail Master Plan providing appropriate controlled access to open space within the Planning Area, and connecting to the regional trail system, is incorporated in the Conejo Recreation and Park District Master Plan. This Trail Master Plan is hereby incorporated as a component of the Open Space Element. In carrying out its responsibilities, the City shall support completion of this trail system in a manner compatible with the other policies of this Element.</i>
<b>Open Space Management</b>	
Policy OS-27	<i>Continue efforts to protect water quality of streams located within open space areas from adverse effects associated with recreational use; since the streams and creeks within open space drain the Conejo Valley in general, continue to implement and improve programs and measures to reduce pollution stormwater and nuisance water pollution.</i>
Implementation Measure 17	<i>Plan trails collaboratively with the Conejo Recreation and Park District to maximize the visitor's experience and minimize impacts to natural resources.</i>

Source: City of Thousand Oaks 2013a, b, 2022b

#### 14.2.4 Ventura County

The *Ventura County 2040 General Plan* sets forth the goals, policies, and programs the County would implement to manage future growth and land uses (Ventura County 2020). The Land Use Element includes policies establishing land use designations that identify the type and intensity of uses permissible in unincorporated areas. In addition, the Land Use Element includes a series of goals and policies identifying the County's philosophy for future change, development, and natural resource protection. The focus of this element is to preserve agricultural, rural, and open space lands while directing growth to cities and unincorporated communities.

The Circulation, Transportation, and Mobility Element identifies goals, policies, and programs that establish a framework for decisions in Ventura County concerning the countywide transportation system. Policies in this element encourage development of a "Complete Streets" strategy for public transportation services, and pedestrian and bicycle facility improvements in areas of the county where they would provide residents a range of options for travel to work, shopping, and leisure destinations. The transportation infrastructure promotes everyday physical activity, such as walking and biking, sometimes referred to as "active transportation."

The Public Facilities, Services, and Infrastructure Element provides the framework for decisions in Ventura County concerning public and private infrastructure, utilities, and services. The goals, policies, and programs in this element support the provision and maintenance of infrastructure, facilities, and



services in appropriate areas of the unincorporated county, and provide for their timely expansion, if required to maintain adequate services. This element also includes policies, in coordination with the Health and Safety Element, for the provision of facilities and services to protect the safety and welfare of residents and visitors and of property, and with the Water Element for water supply and delivery.

The Conservation and Open Space Element provides guidance and programs for the conservation, management, development, and use of natural and cultural resources; and provides guidance and programs for the long-term preservation and conservation of open space lands. This includes the preservation of natural resources and scenic resources, and the provision of land for outdoor recreation. Policies related to parks and recreational facilities are provided in the Public Facilities, Services, and Infrastructure Element.

Table 14-4 lists the goals and policies established by the *Ventura County 2040 General Plan* (Ventura County 2020) that are applicable to recreation.

**Table 14-4. Ventura County Goals and Policies Supporting Recreation**

Goal or Policy No.	Goal or Policy Language
<b>Land Use Element</b>	
LU-20	<i>To encourage the protection and use of state- and federally-owned beaches, hillsides, woodlands, grasslands, rivers, streams, wetlands, estuaries, and cultural resources for the education and enjoyment of Ventura County residents and visitors.</i>
LU-20.1	<i>Recreational Access and Use - The County shall encourage federal, state, and local agencies currently providing recreation facilities to maintain, at a minimum, and improve, if possible, their current levels of service.</i>
<b>Circulation, Transportation, and Mobility Element</b>	
CTM-3	<i>To develop an accessible and interconnected bicycle network that addresses resident and visitor needs for commuting, daily activities, and recreation.</i>
CTM-3.3	<i>Regional Destination Focus for Bicycle Network - The County shall encourage the development of a bicycle network that connects to regional destinations such as parks, trails, educational institutions, employment centers, transit, park and ride lots, and tourist destinations.</i>
CTM-3.5	<i>Bicycle Routes in Rural Areas - The County shall plan for bicycle network connectivity in rural, agricultural, and open space areas in a way that supports and complements business and agricultural activities in those areas.</i>
CTM-3.10	<i>Bicycle Storage Facilities - The County shall require adequate bicycle storage facilities (e.g., bicycle racks, lockers) for discretionary development as determined by allowable land uses at a given site.</i>
<b>Public Facilities, Services, and Infrastructure Element</b>	
PFS-10	<i>To develop and maintain a comprehensive system of parklands and recreational facilities that meet the active and passive recreational needs of residents and visitors, as funding is available.</i>
PFS-10.1	<i>Trail Network - The County shall encourage the establishment of a countywide network of trails to meet the needs of equestrians, bicyclists, hikers, and other trail user groups.</i>
PFS-10.2	<i>Recreational Use of Public Facilities - The County shall make public facilities, such as flood control channels and easements, available for recreational use, if feasible, safe, and appropriate for the site's primary function.</i>
<b>Conservation and Open Space Element</b>	
COS-9	<i>To develop and maintain a comprehensive system of parks, recreation, and natural open space lands that meet the active and passive recreation and open space needs of Ventura County residents and visitors.</i>
COS-9.3	<i>Open Space Preservation - The County shall place a high priority on preserving open space lands for recreation, habitat protection, wildlife movement, flood hazard management, public safety, water resource protection, and overall community benefit.</i>

Source: Ventura County 2020

### 14.3 Assessment Methods and Thresholds of Significance

The assessment of impacts was conducted based on consideration of the AWPf construction and operation activities and how they might affect use of parks and recreation facilities in the project area.

In accordance with Appendix G of the CEQA Guidelines (CCR Section 15000 et seq.), impacts on recreational resources may occur if the Pure Water Project would result in the following:

- *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.*
- *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

These requirements focus on the potential for population and employment growth induced by the project to increase use of recreation facilities or cause the development of new recreation facilities to accommodate induced growth. As described in Section 18.2, the Pure Water Project would not induce growth during construction or once the project is operational. For this reason, there would be no impact on recreation.

However, the Pure Water Project may affect recreation in other ways. Primarily, this would be from disruption in recreation access during construction. In addition, some permanent project features may change some recreation features in a way that affects use. Impacts to recreation are addressed from this perspective in the sections below.

### 14.4 Environmental Impacts

This section describes the environmental impacts related to recreation that would result from project implementation. Table 14-5 summarizes potential recreation impacts.

**Table 14-5. Summary of Recreation Impacts**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Pipelines	Malibu Creek
Impact 14-1: Recreation Access and Opportunities	Less than significant	Significant and unavoidable	Significant and unavoidable	Less than significant

#### 14.4.1 Impact 14-1: Recreation Access and Opportunities

With implementation of mitigations described in this section, Impact 14-1 would be less than significant for Alternative 1 and Malibu Creek, but significant and unavoidable for Alternative 2 and the pipelines.

##### 14.4.1.1 Alternative 1 Agoura Road Advanced Water Purification Facility

Development of the Alternative 1 Agoura Road AWPf site would not affect formal recreation sites or uses. Construction access to the site is not expected to close Agoura Road bike lanes or sidewalks except, perhaps, for short durations (for example, during delivery of heavy equipment). All construction access would be controlled pursuant to a standard traffic control plan (as described in Chapter 15, Transportation and Traffic).

The Agoura Road AWPf site appears to be used informally for access to trails in the Ladyface Mountain area. Use of this informal trail would not be possible during construction but could continue after construction is complete. Because the trails are not actively managed by a local or regional parks authority and given the availability of other trail access points in the area trails, the temporary loss of use would be a less than significant impact to recreation.



#### **14.4.1.2 Alternative 2 Reservoir Advanced Water Purification Facility**

Alternative 2 Reservoir AWPf would be constructed near Las Virgenes Reservoir, which is surrounded by a chain-link fence and closed for public use to protect the drinking water source. For this reason, the AWPf itself would have no impact on recreation uses.

However, access to the AWPf would be required both for construction and long-term during operation. The new access road, as well as the associated pipelines and electrical supply, would follow the Westlake Vista Trail within Triunfo Creek Park, resulting in a substantial change to existing recreation use of the trail and its shared trailhead with the Pentachaeta Trail along Triunfo Canyon Road.

During construction, disruption of the trailhead and closure of Westlake Vista Trail may occur over 4 to 6 months, assuming pipeline construction progress of 50 feet per day. Following the completion of construction activities, the trailhead would be repaired, and recreation access to the Pentachaeta Trail and Westlake Vista Trail would be restored.

The disruption of recreation access for 4 to 6 months at the Triunfo Creek Park trailhead and the temporary closure of Westlake Vista Trail is a potentially significant impact. Even with Mitigation Measure 14-1 that would reduce the impact, there would be significant and unavoidable impacts.

#### **14.4.1.3 Pipelines**

Most pipeline construction activity would have temporary impacts to recreation uses to parks and related facilities along the pipeline alignment and to bicycle and pedestrian uses along affected roadways. For example, vehicular access to the Rancho Conejo Playfields and Arroyo Conejo Trailhead parking lot may be blocked during construction of the concentrate pipeline. With pipeline construction occurring at a rate of approximately 200 feet per day, each of the two 50-foot-wide parking lot access points are expected to be closed for a portion of 1 day during trench excavation, pipe installation, and backfill, with a second, short closure likely during repaving of the affected area. Given the distance between the two access points (350 feet), it is likely that one entrance can remain open while work activities occur in the immediate vicinity of the other.

How traffic would be managed at this park access would be determined by the construction contractor in its Transportation Management Plan, which would be reviewed and approved by the City of Thousand Oaks (as described in Chapter 15 Transportation). Similar types of temporary impacts would occur for other parks and recreation facilities adjacent to city streets along the pipeline corridor.

Bike lanes along city streets also would be affected during construction, with temporary closures expected to be longer for these linear uses. The duration of each segment closure depends on the determination of reasonable access points, but in some areas, bike lanes could be closed for several weeks. Closures and the determination of acceptable detours would be specified in the contractor's traffic control plan subject to the approval of the City of Agoura Hills, City of Westlake Village, or City of Thousand Oaks.

Overall, pipeline construction would have temporary impacts to recreation uses along city streets, and there would be no long-term impacts once construction is complete. Impacts in these areas would be less than significant.

Pipeline construction would have substantial changes in two areas located away from city streets: within Triunfo Creek Park and in the Conejo Canyons area. In Triunfo Creek Park, construction of the purified water pipeline would disrupt access to the park and to Pentachaeta trailhead on Triunfo Canyon Road and would completely close the Westlake Vista Trail during construction. Based on expected pipeline construction progress of 50 feet per day, disruption of the trailhead and closure of Westlake Vista Trail may occur over 4 to 6 months. If trenchless construction is used for a portion of the purified water pipeline in this area, the upper portion of the trail would be preserved, but there is no possibility of public access through the construction zone.

In the Conejo Canyons area, concentrate pipeline construction would occur along the Conejo Canyon Open Space Trail between Rancho Conejo Boulevard and the Hill Canyon Fire Road.<sup>1</sup> Closure of the trail may occur over 4 to 6 months.

Following the completion of construction activities in both areas, the trails would be repaired, and recreation access would be restored. However, the loss of recreation access for 4 to 6 months in both the Triunfo Creek Park and Conejo Canyons areas is a potentially significant impact. Mitigation Measure 14-1 would reduce the impact, but not to a less than significant level.

#### 14.4.1.4 Malibu Creek

Project-related changes in Malibu Creek flows are described in Chapter 11, Hydrology. In summary, minimum flows of 2.5 cfs would be maintained year-round, and peak flows would remain largely unchanged. Malibu Creek flows would decrease whenever the Pure Water Project is operational, but the hydrologic impacts would be less than significant.

Recreation uses of Malibu Creek do not appear to be flow dependent. There would be no recreation impacts on activities, such as hiking, mountain biking, and rock climbing. Fishing is not expected to be affected because the hydrologic changes are not expected to affect sport fishery.

Project-related flow changes are not expected to adversely affect recreation uses downstream in Santa Monica Bay, including surfing; some effects may be beneficial. Impacts to surfing result from changes to Malibu Lagoon, including the occasional breaching of a natural sand bar during moderate to high Malibu Creek flow conditions. Breaching the sand bar is detrimental to surfing conditions. As described in Chapter 11, Hydrology, flows in Malibu Creek would decrease in general, which is expected to decrease the frequency of breaching the sand bar. Breaching the sand bar, however, would still occur under high-flow conditions because the Pure Water Project would not substantially change Malibu Creek flows during peak flow conditions.

For these reasons, overall impacts to Malibu Creek would be less than significant.

## 14.5 Mitigation Measures

Even implementing the mitigation measure described in this section, the impact for Alternative 2 and for the pipelines would remain significant and unavoidable. This section describes the project mitigation measure to protect recreation resources.

**Mitigation Measure 14-1: Prepare Trail Closure and Restoration Plan.** The JPA will prepare trail closure and restoration plans for the Westlake Vista Trail and Conejo Canyon Open Space Trail in collaboration with MRCA and COSCA, respectively, the City of Westlake Village, COSCA, and the City of Thousand Oaks. The plans will contain the following information:

- Notification procedures so that trail users are aware of the closures. Notification will consist of posting information at trailheads, newspaper notices, website updates, and other similar measures. The notifications will describe the closure start dates and expected closure durations, and will redirect trail users to other trails in the area.
- Provisions to maintain access to the Pentachaeta Trail as much as possible during construction, including the ability to park at the trailhead and safely access the trail while construction is occurring along the Westlake Vista Trail.
- Restoration of the trailhead area, including replacing demolished or damaged fencing, trailhead signage, and wayfinding features.

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<sup>1</sup> The City of Thousand Oaks is proposing to construct a new bridge – the Conejo Canyons Bridge – connecting the Hill Canyon Fire Road to recreational trails on the western side of Arroyo Conejo. The concentrate pipeline would be attached to the new bridge.



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- Trench backfill and surface restoration plans appropriate for restoration use. Grades along the restored pipeline corridor will match the existing grades to the extent possible. The top layer of backfill material will consist of decomposed granite or similar material using best practices for trail construction.
- If Alternative 2 Reservoir AWPf is selected as the preferred alternative, additional collaboration with MRCA will be required to determine whether use of the access road for recreation is feasible.

Because of the duration of the closure and the changed character of the trail surface following restoration, and because of the permanent changes under Alternative 2 Reservoir AWPf, the impact cannot be reduced to a less than significant level. The impact would remain significant and unavoidable.

## 15. Transportation and Traffic

This chapter evaluates the potential for the Pure Water Project to adversely affect transportation and traffic conditions in the project area.

### 15.1 Existing Setting

This section describes the existing setting for transportation and traffic conditions in the project area, focusing on regional and local roadways. Other transportation modes – bicycle facilities, pedestrian facilities, and transit – are also discussed. Roadway characteristics (cross sections, speed limits, pedestrian facilities) in the project area were determined via a desktop evaluation using Google Street View.

#### 15.1.1 Regional and Local Roadways

This section describes freeways, arterial roads, and collector and local roads in the project area.

##### 15.1.1.1 Freeways

Two freeways, U.S. 101 and SR-23, occur in the project area:

- **U.S. 101** is the backbone of the regional transportation system in the project vicinity. Also known as the Ventura Freeway, it is a north–south freeway that connects the cities of Thousand Oaks, Westlake Village, and Agoura Hills with Ventura and Santa Barbara counties to the north and Los Angeles to the south. U.S. 101 is maintained by Caltrans.

U.S. 101 would be used to access the project area during construction and O&M. In the project vicinity, U.S. 101 is generally an eight-lane freeway, with four travel lanes in each direction. The speed limit on U.S. 101 is 65 mph. The source water and concentrate disposal pipelines would cross under U.S. 101 along Hampshire Road and Conejo School Road and near Flintlock Lane. The source water and concentrate pipelines would cross over U.S. 101 along Lakeview Canyon Road and Lindero Canyon Road. 2019 average annual daily traffic (AADT) volumes north of Hampshire Road were 193,000 vehicles per day (vpd), and were 160,000 vpd south of Lindero Canyon Road (Caltrans 2022b).

- **SR-23** is a north–south freeway that connects Thousand Oaks with State Route 118 (SR-118) to the north. SR-23 runs concurrently with U.S. 101 for approximately 2 miles. South of U.S. 101, SR-23 becomes Westlake Boulevard, Mulholland Highway, and Decker Avenue before ending at Pacific Coast Highway in Malibu. SR-23 is maintained by Caltrans. The speed limit along SR-23 is 65 mph north of U.S. 101 and 40 mph south of U.S. 101.

The concentrate pipeline would cross under SR-23 along Hillcrest Road and Thousand Oaks Boulevard. 2019 AADT volumes north of U.S. 101 were 116,000 vpd (Caltrans 2022b).

##### 15.1.1.2 Arterial Roads

Pure Water Project features are proposed within 11 arterial roads in the project area, as described in this section.

**Agoura Road** is an east–west four-lane arterial road with a raised median from Westlake Boulevard and SR-23 to Kanan Road. East of Kanan Road, Agoura Road is a two-lane arterial road. ~~West of Lindero~~ Approximately 500 feet west of Lakeview Canyon Road, Agoura Road is maintained by the City of Thousand Oaks. Between Lindero Canyon Road and Flintlock Lane, Agoura Road is maintained by the City of Westlake Village. East of Flintlock Lane, Agoura Road is maintained by the City of Agoura Hills. The speed limit along most of Agoura Road is 45 mph. The section from Cornell Road to Kanan Road has a speed limit of 35 mph.



The source water, purified water, sewer, and concentrate pipeline options would be placed within the Agoura Road ROW. The 2015-2019 AADT for Agoura Road east of ~~Thousand Oaks~~ Westlake Boulevard was 18,725 vpd (KOA 2021). The 2015 AADT in the City of Westlake Village was 10,000-13,000 vpd.

**Hampshire Road** is a six-lane principal arterial road with a raised median. Hampshire Road is maintained by the City of Thousand Oaks. The speed limit along Hampshire Road is 45 mph.

The concentrate pipeline would be placed within the Hampshire Road ROW. The 2015-2019 AADT for Hampshire Road west of Thousand Oaks city limits was 18,725 vpd (KOA 2021).

**Thousand Oaks Boulevard** is an east–west four-lane arterial road with a raised median. West of Auto Mall Drive and Duesenberg Drive, Thousand Oaks Boulevard is undivided with a center turn lane. Thousand Oaks Boulevard is maintained by the City of Thousand Oaks west of the border between Thousand Oaks and Westlake Village, which is located 300 feet west of Via Colinas. East of the border between Thousand Oaks and Westlake Village, Thousand Oaks Boulevard is maintained by the City of Westlake Village. Speed limits along this road vary as follows:

- The speed limit along most of Thousand Oaks Boulevard is 45 mph.
- From Hillcrest Drive to Moorpark Road, the speed limit is 35 mph.
- From Moorpark Road to Westlake Boulevard, the speed limit is 40 mph.

The concentrate pipeline would be placed within the Thousand Oaks Boulevard ROW. The 2015-2019 AADT for Thousand Oaks Boulevard varied by segment, as follows (KOA 2021):

- 19,633 vpd between Wilbur Road and Erbes Road
- 23,033 vpd between Erbes Road and Westlake Boulevard
- 26,800 vpd between Westlake Boulevard and the eastern city limit

The 2015 AADT is presented as follows:

- 14,817 vpd west of Corsa Avenue
- 16,540 vpd east of Lindero Canyon Road

**Hillcrest Drive** is an east–west four-lane arterial road with a raised median between Avenida del Platino and Hodencamp Road. Between Lynn Road and Moorpark Road, Hillcrest Drive is a six-lane arterial road. Hillcrest Drive is maintained by the City of Thousand Oaks. The speed limit along most of Hillcrest Drive is 45 mph.

The concentrate pipeline would be placed within the Hillcrest Drive ROW. The 2015-2019 AADT for Hillcrest Drive varied as follows (KOA 2021):

- 11,450 vpd between Camino Dos Rios and Lynn Road
- 15,125 vpd between Lynn Road and Hodencamp Road
- 12,920 vpd between Hodencamp Road and Westlake Boulevard

**Conejo Boulevard** is a north–south two-lane minor arterial road with a raised median. Conejo Boulevard is maintained by the City of Thousand Oaks. The speed limit along Conejo Boulevard is not posted but is known in the area to be 25 mph.

The concentrate pipeline would be placed within the Conejo Boulevard ROW. Recent traffic volume data are not available for Conejo Boulevard.

**Lakeview Canyon Road** is a north–south two-lane minor arterial road north of U.S. 101 and a four-lane minor arterial road south of U.S. 101. Lakeview Canyon Road is maintained by the City of Thousand Oaks north of the city limit, approximately 100 feet south of Townsgate Road. South of the city limit, Lakeview Canyon Road is maintained by the City of Westlake Village. The speed limit along most of Lakeview Canyon Road is 40 mph north of Watergate Road and 45 mph south of Watergate Road.

The concentrate pipeline would be placed within the Lakeview Canyon Road ROW. Recent traffic volume data are not available for Lakeview Canyon Road.

**Lindero Canyon Road** is a north–south six-lane ~~minor~~ arterial road with a raised median north of Agoura Road and divided four-lane minor arterial south of Agoura Road. Lindero Canyon Road is maintained by the City of Westlake Village. The speed limit along most of Lindero Canyon Road is 45 mph.

The source water, purified water, and concentrate pipeline options would be placed within the Lindero Canyon Road ROW. ~~Recent traffic volume data are not available.~~ The 2015 AADT for Lindero Canyon Road varied as follows:

- 32,484 vpd north of Via Colinas
- 11,251 vpd north of Rustic Oak Drive
- 7,818 vpd at Westlake Dam

**Conejo School Road** is a north–south two-lane minor arterial road with a raised median south of Thousand Oaks Boulevard. Conejo School Road is maintained by the City of Thousand Oaks. The speed limit along Conejo School Road north of Thousand Oaks Boulevard is 30 mph and south of Thousand Oaks Boulevard is 35 mph.

The concentrate pipeline would be placed within the Conejo School Road ROW. Recent traffic volume data are not available for Conejo School Road.

**Rancho Conejo Boulevard** is a north–south four-lane minor arterial road with a center turn lane. Rancho Conejo Boulevard is maintained by the City of Thousand Oaks. The speed limit along most of Rancho Conejo Boulevard is 40 mph.

The concentrate pipeline would be placed within the Rancho Conejo Boulevard ROW. The 2015-2019 AADT for Rancho Conejo Boulevard between the northern terminus near Conejo Center Drive and Teller Road was 10,300 vpd (KOA 2021).

**Triunfo Canyon Road** is an east–west ~~two~~four-lane ~~minor~~ arterial road. Triunfo Canyon Road is maintained by the City of Westlake Village. The speed limit along most of Triunfo Canyon Road is 45 mph.

The purified water line would be placed within the Triunfo Canyon Road ROW. For Alternative 2 Reservoir AWPf, both source water and concentrate pipeline options would be placed in Triunfo Canyon Road. ~~Recent traffic volume data are not available.~~ The 2015 AADT for Triunfo Canyon Road was 6,476 vpd.

**Ventu Park Road** is a north–south four-lane minor arterial road with a raised median. Ventu Park Road is maintained by the City of Thousand Oaks. The speed limit along most of Ventu Park Road is 40 mph.

The concentrate pipeline would be placed within the Ventu Park Road ROW. The 2015-2019 AADT for Ventu Park between Rancho Conejo Boulevard and Lynn Road was 9,600 vpd (KOA 2021).

### 15.1.1.3 Collector and Local Roads

In addition to the potentially affected freeways and arterial roads, three smaller collector and local roads may be affected, as described in this section.

**Willow Lane** is an east–west two-lane major collector road. Willow Lane is maintained by the City of Thousand Oaks. The speed limit along most of Willow Lane is 40 mph.

The concentrate pipeline would be placed within the Willow Lane ROW. Recent traffic volume data are not available for Willow Lane.



**Russell Ranch Road** is a two-lane local roadway with a center turn lane. Russell Ranch Road is maintained by the City of Westlake Village. The speed limit along most of Russell Ranch Road is 40 mph.

The source water line would be placed within the Russell Ranch Road ROW. ~~Recent traffic volume data are not available for~~ The 2015 AADT was 5,445 vpd on the northern portion of Russell Ranch Road.

**Hill Canyon Road** is a north–south two-lane local roadway, which transitions to a one-lane fire service road 3,400 feet south of Santa Rosa Road. The two-lane portion of Hill Canyon Road is maintained by Ventura County. The fire service road is maintained by the City of Thousand Oaks. The speed limit along most of Hill Canyon Road is 20 mph.

The concentrate pipeline would be placed within the Hill Canyon Road ROW. Recent traffic volume data are not available for Hill Canyon Road.

### 15.1.2 Bicycle Facilities

Class I bikeways are separated bike paths or shared use paths providing bicyclists dedicated ROW independent from the roadway. Class II facilities are bike lanes. Class III bike routes are designated roads that provide for shared use with vehicular traffic (Caltrans 2020c).

There are Class I bikeways on Hillcrest Drive between Lynn Road and Conejo Boulevard, and on Lindero Canyon Road between Thousand Oaks Boulevard and Agoura Road. Most streets within the project area have bike lanes (that is, Class II facilities). Class III bikeways are provided on Conejo School Road, Willow Lane, and portions of Hillcrest Drive and Thousand Oaks Boulevard (Los Angeles County 2022a; City of Thousand Oaks 2019b).

### 15.1.3 Pedestrian Facilities

Sidewalks are generally provided along most roadways in the project area. However, there are several sections of roads without sidewalks:

- Agoura Road east of ~~Kanan~~ Cornell Road
- Hill Canyon Road
- Portions of Thousand Oaks Boulevard west of Wilbur Road and east of Via Colinas
- Portions of Willow Lane

### 15.1.4 Transit Services

The Los Angeles County Metropolitan Transportation Authority (LA Metro) and the City of Los Angeles Department of Transportation (Los Angeles DOT) provide regional transit service to Thousand Oaks, Westlake Village, and Agoura Hills. Thousand Oaks Transit (TOT) provides regional transit service to the following areas (City of Thousand Oaks 2022e):

- Thousand Oaks
- Westlake Village
- Unincorporated areas of Ventura County, including:
  - Hidden Valley
  - Lake Sherwood
  - Lynn Ranch
  - Newbury Park
  - Oak Park
  - Rolling Oaks
  - Ventu Park

The following transit lines serve the project area:

- **TOT Bus Route 40** provides service to Thousand Oaks between The Oaks mall and the residential area of Newbury Park. Bus stops within the project area are provided along Hillcrest Road (City of Thousand Oaks 2022e).
- **TOT Bus Route 43** provides service to Thousand Oaks between The Oaks mall and Westlake Village. Bus stops within the project area are provided along Thousand Oaks Boulevard, Westlake Boulevard, and Agoura Road (City of Thousand Oaks 2022e).
- **TOT Bus Route 44** provides service to Thousand Oaks between Rancho Conejo Boulevard to the Transportation Center. Bus stops within the project area are provided along Hillcrest Road. During some hours, the bus service is extended to Westlake Boulevard and Agoura Road (City of Thousand Oaks 2022e).
- **LA Metro Line 161** provides service to the cities of Thousand Oaks, Westlake Village, Agoura Hills, and Calabasas, and the neighborhood and business district of Warner Center in Los Angeles. Stops within the project area are provided along Thousand Oaks Boulevard, Westlake Boulevard, Agoura Road, Lakeview Canyon, and Lindero Canyon Road (LA Metro 2021-2022).
- **Los Angeles DOT Commuter Express 422** provides service to Thousand Oaks, Westlake Village, Agoura Hills, San Fernando Valley, and Hollywood. Stops within the project area are provided along Thousand Oaks Boulevard, Hampshire Road, Agoura Road, and Lindero Canyon Road (Los Angeles DOT 2022).
- **Los Angeles DOT Commuter Express 423** provides service to the following areas and businesses (Los Angeles DOT 2022):
  - Agoura Hills
  - Calabasas
  - Downtown Los Angeles
  - Encino Park & Ride
  - Los Angeles DOT
  - The University of Southern California
  - Thousand Oaks
  - Westlake Village

Stops within the project area are provided along Hampshire Road, Agoura Road, and Lindero Canyon Road.

## 15.2 Regulatory Framework

This section describes the project's regulatory framework considering transportation and traffic.

### 15.2.1 Federal Regulations

No federal regulations apply to the analysis of transportation and traffic impacts.

### 15.2.2 State Regulations

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways. Federal standards for interstate highways are implemented in California by Caltrans. In the project area, Caltrans operates and maintains U.S. 101 and SR-23, which provide regional access to the project area.

In 2020, Caltrans adopted the *Transportation Analysis Framework and Transportation Analysis for CEQA* (Caltrans 2020a). These documents, plus the updated *Transportation Impact Study Guide* (Caltrans 2020b), provide guidance for preparing traffic analysis to meet Caltrans requirements.



SB 743 (2013) addresses the limitations of measuring impacts using level of service (LOS) analysis and provides an alternative to using LOS in the environmental review process. The focus is on assessing project-related changes in vehicle-miles traveled (VMT), with implementation guidelines developed by the Governor's Office of Planning and Research (OPR) website (OPR 2018).

### 15.2.3 Local Regulations

This section describes the local regulations applicable in the project area. Because each general plan describes traffic conditions in terms of LOS standards, a description of these standards is provided in Table 15-1.

**Table 15-1. Level of Service Descriptions**

LOS	Description
A	<i>Free flow operation. Motorists are completely unimpeded in their ability to maneuver within the traffic stream. Delay at intersections is minimal and driver comfort level is very high.</i>
B	<i>Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and intersection delay is not significant. Overall driver comfort is still high.</i>
C	<i>Stable operation. The ability to maneuver and change lanes may be more restricted than at LOS B. Longer queues at intersections may contribute to lower travel speeds. Lower driver comfort level.</i>
D	<i>Less stable operation. Small increases in flow may cause substantial increases in delay and decreases in travel speed. Low driver comfort level.</i>
E	<i>Unstable operation and significant delay. Low speed and limited maneuverability lead to driver frustration.</i>
F	<i>Stop and go operation. Very low speed and congested intersections with extensive queuing cause great delay. Drivers are extremely [sic] frustrated.</i>

Source: City of Westlake Village 2019a

#### 15.2.3.1 City of Agoura Hills

The *City of Agoura Hills General Plan (2010a/2022d)* provides the framework for all zoning and land use decisions within Agoura Hills. State law requires that the general plan include a comprehensive, long-term plan for a city's physical development. Updates are being made to "...the Circulation Element to replace references to adopted LOS thresholds with VMT as a metric to evaluate traffic impacts of proposed projects."

LOS standards currently included in the general plan require an LOS C standard on most roadways in Agoura Hills. LOS standards D, E, or F are considered acceptable for Agoura Road east of Kanan Road due to heavy projected volumes and a desire to maintain a two-lane cross section with bicycle lanes (City of Agoura Hills ~~2010b~~2010a). One of the City's main goals is to enhance bicycle facilities throughout Agoura Hills for short trips and recreational uses.

The *City of Agoura Hills Transportation Assessment Guidelines (2020)* outline the requirements for CEQA VMT analysis and traffic impact analysis. A VMT analysis is not required for a project that generates less than 110 trips per day.

The 2010 amendment to the *Ladyface Mountain Specific Plan (City of Agoura Hills 2010c/2010b)* requires a Transportation Demand Management (TDM) program for new projects in the area and includes new requirements on providing electric vehicle charging stations, displaying transit and ridesharing information, and promoting alternative modes of travel.

### 15.2.3.2 City of Westlake Village

As a result of Proposition 111, Los Angeles County was required to develop a Congestion Management Program that affects local agencies. The City of Westlake Village's responsibilities include:

- Analyzing the traffic impacts of local land use decisions
- Adopting and implementing a Trip Reduction and Travel Demand Ordinance
- Adopting an annual self-certification resolution and Local Development Report

The City's adopted TDM Ordinance is intended to reduce the need for future capacity by implementing various types of trip reduction measures to reduce peak period trips. Trip reduction measures include rideshare information, carpool programs, and bike racks.

An LOS C or better is required throughout the City's circulation system. LOS D or better is considered acceptable for the portion of Lindero Canyon Road between Via Colinas and Agoura Road.

The City of Westlake Village Senate Bill 743 Implementation (City of Westlake Village 2020b) outlines the requirements for CEQA VMT analysis and traffic impact analysis. A VMT analysis is not required for a project that generates less than 110 trips per day.

The *City of Westlake Village General Plan (City of Westlake Village 2019a)* includes a section on noise restrictions during construction. Construction is prohibited on weekdays between 7:00 p.m. and 7:00 a.m. and on Sundays or holidays at any time. As part of the TDM Ordinance, there is a goal to reduce peak hour trips, including limiting construction truck trips to nonpeak commuter hours.

### 15.2.3.3 City of Thousand Oaks

The *Thousand Oaks General Plan (City of Thousand Oaks 2022b)* encourages the use of arterial roads through the city and to industrial areas to minimize traffic impacts on collector roads and local streets. Furthermore, street improvements should be focused on improving access to major arterial roads, such as Thousand Oaks Boulevard.

The general plan requires an LOS C on all roads and at all intersections: "Lower levels of service may be tolerated to preserve or enhance landscaping and aesthetic integrity." City goals include maintaining safe, continuous pedestrian and bicycle facilities in all residential, commercial, and industrial areas, in addition to the trail system and the scenic bike route system.

### 15.2.3.4 Ventura County

The *Ventura County 2040 General Plan (Ventura County 2020)* mentions VMT as a basis of evaluation but does not provide criteria for the evaluation. The general plan requires an LOS C for all minor collectors and local roadways.

## 15.3 Assessment Methods and Thresholds of Significance

The assessment of potential impacts was conducted using the four criteria defined by CEQA:

- 1) Consistency with Programs, Plans, Ordinances, and Policies: The relevant CEQA criterion asks whether the project would "...conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities." This criterion generally addresses traffic effects during and after construction.
- 2) VMT: The relevant CEQA criterion asks whether the project would "...conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)."



- 3) Design Hazards: The relevant CEQA criterion asks whether the project would "...substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)."
- 4) Emergency Access: The relevant CEQA criterion asks whether the project would "...result in inadequate emergency access."

## 15.4 Environmental Impacts

This section summarizes the environmental impacts related to transportation that would result from project implementation. Table 15-2 summarizes the potential impacts of the project on traffic and transportation.

**Table 15-2. Summary of Traffic and Transportation Impacts**

Impact	Alternative 1 Agoura Road AWWP	Alternative 2 Reservoir AWWP	Pipelines
Impact 15-1: Consistency with Programs, Plans, Ordinances, and Policies	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation
Impact 15.2: VMT	Less than significant impact	Less than significant impact	Less than significant impact
Impact 15.3: Design Hazards	Less than significant impact	Less than significant impact	Less than significant impact
Impact 15.4: Emergency Access	Less than significant impact with mitigation	Less than significant impact with mitigation	Less than significant impact with mitigation

### 15.4.1 Impact 15-1: Consistency with Programs, Plans, Ordinances, and Policies

With the mitigation described in this section, Impact 15-1 would be less than significant.

#### 15.4.1.1 Alternative 1 Agoura Road Advanced Water Purification Facility

Alternative 1 Agoura Road AWWP is located south of Agoura Road, approximately 1,000 feet east of Flintlock Lane within Agoura Hills. Construction of the Agoura Road AWWP would generate vehicle trips associated with equipment and materials hauling and construction worker trips (employee travel to and from work sites). Peak traffic during construction is expected during the building construction phase.

There would be an estimated 10 vendor trips per day during the building construction phase. An anticipated 65 workers would be driving to and from the worksite daily during the morning and afternoon periods. Construction-related traffic would be short term, lasting approximately 28 months. Most construction-related trips (vehicle and truck trips) would occur on:

- U.S. 101
- Agoura Road
- Lindero Canyon Road
- Reyes Adobe Road

Operations would likely be approximately 6 months per year, from late fall through early spring at startup, but may operate year-round in the future. When in operation, the facility would operate 24 hours per day with a total staff of about 10 (2 or 3 operators per shift). Delivery trucks would likely account for one trip per day.

Alternative 1 Agoura Road AWPf construction activities and operations effects on transportation would not cause substantive conflicts with programs, plans, ordinances, and policies of the affected jurisdictions. The limited AWPf operations trips would not have a substantive effect on traffic operations. Construction traffic could affect travel conditions on Agoura Road, including bicycle and pedestrian travel, through the construction of the new driveway access points, construction equipment and construction workers accessing site from Agoura Road, and delivery of building materials and equipment.

As part of standard preconstruction activity, the contractor would prepare a traffic control plan so that minimum safety standards are met. However, additional proactive engagement in transportation management during construction would further prevent significant impacts. A Transportation Management Plan (TMP) should be prepared to further describe how to minimize impacts on public transit and nonmotorized travel by maintaining access to transit, bicycle, and pedestrian facilities along the project construction area or by providing an alternative route during road and lane closures. The TMP should include procedures for notifying and coordinating with affected agencies, including transit operators, in advance of construction activities. With the implementation of *Mitigation Measure 15-1, Transportation Management Plan*, impacts would be less than significant.

#### **15.4.1.2 Alternative 2 Reservoir Advanced Water Purification Facility**

Alternative 2 Reservoir AWPf is located next to Las Virgenes Reservoir, within Westlake Village. A new, paved access road would be constructed and would connect to the eastern end of Triunfo Canyon Road. Construction of the AWPf and access road would generate vehicle trips associated with equipment and materials hauling and construction worker trips (employee travel to and from work sites).

Equipment and materials hauling and construction worker trips for the Reservoir AWPf are expected to be ~~identical~~ similar to the trips for Agoura Road AWPf. Grading and construction of an access road would be expected to result in more worker trips, a longer construction period, or both. Construction-related traffic would be short term, lasting approximately 28 months. Most construction-related trips (vehicle and truck trips) would occur on:

- U.S. 101
- Lindero Canyon Road
- Triunfo Canyon Road

The number of operations trips associated with the Reservoir AWPf is expected to be the same as for the Agoura Road AWPf.

Like the Agoura Road site, Alternative 2 Reservoir AWPf construction activities and operations effects on transportation would not have substantive conflicts with programs, plans, ordinances, and policies of the affected jurisdictions. The limited operations trips would not have a substantive effect on traffic operations. Although the contractor is required to prepare a traffic control plan, implementing *Mitigation Measure 15-1, Transportation Management Plan*, would make impacts less than significant.

#### **15.4.1.3 Pipelines**

The Pure Water Project would require a series of interrelated pipelines, with a total construction period of more than 2.5 years.

There would be about 20 miles of pipeline, mainly along city streets in the following areas:

- Agoura Hills: Agoura Road
- Westlake Village:
  - Agoura Road
  - Lindero Canyon Road



- Russell Ranch Road
- Thousand Oaks Boulevard
- Triunfo Canyon Road
- Thousand Oaks:
  - Agoura Road
  - Conejo Boulevard
  - Conejo School Road
  - Hampshire Road
  - Hill Canyon Fire Road
  - Hillcrest Drive
  - Lakeview Canyon Road
  - Rancho Conejo Boulevard
  - Thousand Oaks Boulevard
  - Ventu Park Road
  - Willow Lane
- Unincorporated Ventura County: Hill Canyon Road

It is estimated that approximately 200 feet of pipeline would be constructed per day, on average, along city streets. Most work would be conducted between the hours of 7 a.m. and 7 p.m., Monday through Saturday. However, it is possible that some work may occur at night, primarily in commercial areas, following local regulations.

Work crews would consist of approximately 14 workers. One vendor trip is expected per day. Hauling trips are expected to consist of 167 trips per 1,000 feet of pipeline. U.S. 101 and SR-23 would be used to access each section of the pipeline construction. Pipeline construction would result in lane closures on most roadways, with potential road closures on Hill Canyon Fire Road. Boulevards with a raised median may require one-way road closures with a detour.

The number of operations trips associated with the pipelines is negligible, limited to minor O&M of pump stations and other appurtenant facilities.

Pipeline construction activities and operations effects on transportation would not have substantive conflicts with programs, plans, ordinances, and policies of the affected jurisdictions. Roadway capacity changes associated with road and lane closures would be temporary, and the limited operations trips would not have a substantive effect on traffic operations. The contractor-prepared traffic control plan would meet minimum safety standards. Although the contractor is required to prepare a traffic control plan, the implementation of *Mitigation Measure 15-1, Transportation Management Plan*, would mean impacts would be less than significant.

### 15.4.2 Impact 15-2: Vehicle-Miles Traveled

SB 743 required the OPR to establish new CEQA Guidelines that moved away from vehicle delay and LOS and move toward more multimodal concepts "...that may include, but are not limited to, VMT, vehicle-miles traveled per capita, automobile trip generation rates, or automobile trips generated."

In 2018, Section 15064.3 was added to the CEQA Guidelines to reflect the provisions of SB 743. The section addresses both land use and transportation projects, and broadly describes the methodology, including the potential for qualitative analysis, used to assess VMT. Agencies are given "broad discretion" to select the methodology for analysis, or even apply a qualitative approach.

The *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018) addresses a variety of projects, with the recognition that the approach for evaluating impacts is necessarily project specific. As

described in Section 15.2.3, except for the City of Agoura Hills and the City of Westlake Village, the other affected jurisdictions do not have specific guidelines for assessing VMT impacts. The relevant portion of the City of Agoura Hills' guideline is that VMT analysis is not required for a project that generates less than 110 trips per day.

Without consistent VMT thresholds in all affected jurisdictions, the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018) is used as reference for best assessing VMT. The guidelines are focused on land development and transportation improvement projects and their long-term effects on VMT. The OPR guidance provides screening thresholds for land use projects guidelines that state that:

*"...absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy or General Plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact."*

This value is consistent with the one ~~used~~ <sup>what is</sup> used by the City of Agoura Hills and the City of Westlake Village. The Pure Water Project would generate a very small number of new vehicle trips, estimated as approximately 10 trips per day during operations. Therefore, there would be a less than significant impact related to VMT.

#### **15.4.3 Impact 15-3: Design Hazards**

Construction of Alternative 1 Agoura Road AWPf has the potential to increase hazards due to anticipated road or lane closures. Although most construction would occur onsite and outside of public ROWs, construction of some of the connections would require temporary, intermittent lane closure. These temporary closures would occur intermittently throughout the duration of construction.

Construction of Alternative 2 Reservoir AWPf has the potential to increase hazards due to anticipated road or lane closures, as well as the construction of a new, paved access road to the proposed site. The access road would be built during the site preparation phase of construction and would connect to the eastern end of Triunfo Canyon Road. Although most construction would occur onsite and outside of public ROWs, construction of some of the connections would require temporary, intermittent lane closures. These temporary closures would occur intermittently throughout the duration of construction. The proposed access road would comply with state and local design standards to reduce potential design hazards. No other design features are proposed that would substantially increase hazards.

Construction of the pipelines has the potential to increase hazards due to anticipated road or lane closures. These temporary closures would occur continuously throughout the duration of construction. All applicable local, state, and federal traffic control measures would be implemented for the safety of local traffic and construction traffic. For active construction zones, traffic control, including necessary vehicle, bicycle, and pedestrian detours, would be installed pursuant to industry standards and subject to review and approval of the local agency (City of Agoura Hills, City of Westlake Village, City of Thousand Oaks, or Ventura County). No other design features are proposed that would substantially increase hazards.

Therefore, impacts related to design hazards would be less than significant.

#### **15.4.4 Impact 15-4: Emergency Access**

Construction of all project features has the potential to result in inadequate emergency access due to road and lane closures. However, the construction contractor would prepare a traffic control plan and, as required by *Mitigation Measure 15-1, Transportation Management Plan*, would minimize impacts on emergency access, including notifying emergency responders prior to construction and providing access for emergency vehicles to and around construction areas. All applicable local, state, and federal traffic



control measures would be implemented for the safety of local traffic and construction traffic. Therefore, impacts related to emergency access would be less than significant with the implementation of Mitigation Measure 15-1.

## 15.5 Mitigation Measures

Potentially significant impacts are identified for construction activities that affect local roads. Implementation of the following mitigation measure would reduce these impacts to less than significant.

**Mitigation Measure 15-1 Transportation Management Plan:** A TMP will be prepared to address construction impacts on transportation facilities. The Pipeline construction will be planned and scheduled to minimize traffic impacts to the extent feasible, and the TMP will address further reduce impacts by addressing the following:

- Potential impacts from construction activities on vehicular, transit, pedestrian, and bicycle access
- Potential impacts from construction activities on mobility, including:
  - Temporary lane and roadway, sidewalk, bicycle facility, and freeway ramp closures
  - Detours
  - Increases in traffic volumes, including:
    - Regular traffic and construction traffic
    - Construction equipment
    - Materials delivery vehicles
    - Waste and haul vehicles
    - Employee commutes
  - Construction parking
  - Emergency services (such as fire, police, ambulances)

Development of the TMP will be coordinated with the affected local jurisdictions and other potentially affected parties (such as school bus and transit operators and police, fire, and emergency services providers). The TMP will identify:

- Specific TMP strategies
- The parties responsible for implementing those strategies
- The agencies and parties the TMP strategies will be coordinated with
- Implementation timing

Specific activities in the TMP may include:

- Install traffic control devices, as specified in Caltrans' *California Manual on Uniform Traffic Control Devices* (Caltrans 2021), where needed to maintain safe driving conditions, including:
  - Use of signage to alert motorists and bicyclists of construction activities, potential hazards, and travel detours
  - Flaggers when appropriate
- Coordinate with the applicable jurisdictions, including local agencies and transit providers.
- Provide construction notification procedures for:
  - Police, public works, fire departments, and other public service providers
  - Cycling organizations, bike shops, ~~and~~ schools, and homeowner associations
- Inform contractors and subcontractors of work hours, modes and locations of transportation, and parking for construction workers.

- Describe the procedures for construction area evacuation in case of an emergency declared by the city, county, or other local authorities.
- Identify emergency routes available and open for public emergency personnel.
- Designate areas where nighttime construction will occur, if needed.
- Provide information to the public for contact in case of emergency or complaint. Publicize and display contact information on signs in proximity to construction areas.



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## 16. Tribal Cultural Resources

This chapter assesses potential effects on Tribal cultural resources. Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe. A cultural landscape that meets these criteria is a Tribal cultural resource to the extent that the landscape is geographically defined in terms of its size and scope. Historical resources, unique archaeological resources, or nonunique archaeological resources may also be Tribal cultural resources.

In addition, this chapter also identifies applicable state and local regulations; identifies potential impacts; and proposes mitigation measures, where available, to reduce potentially significant impacts on Tribal cultural resources.

### 16.1 Existing Setting

This section describes the project's existing setting in regard to Tribal cultural resources.

#### 16.1.1 Background Information

Section 6.1, Cultural and Paleontological Resources provides a discussion about the prehistoric context and ethnohistoric setting of the project site, and relevant records search information.

#### 16.1.2 Tribal Outreach

The JPA requested a Sacred Lands File (SLF) search and Native American contact list from the Native American Heritage Commission (NAHC). On December 2, 2021, the NAHC responded with positive results, indicating the Native American resources are present in the project environs, and provided the contact information.

Notifications letters were sent via email to all 14 individuals from 13 Tribes in the NAHC contact list on December 16 and 20, 2021. One response was received on December 21, 2021, by the Fernandeno Tataviam Band of Mission Indians requesting an AB 52 consultation meeting with the lead agency. The Band requested copies of cultural and biological resources reports that may be prepared for the project, as well. On December 22, 2021, JPA representatives responded back to the Band, noting the cultural and biological resources information is still being prepared and set up a meeting with them to discuss the project in more detail.

Another response was received on December 27, 2021, from the Gabrieliño Tongva Indians of California Tribal Council and included information about:

- The Tribe's history
- Their preferred recovery and reburial procedures
- Their procedures for treatment and disposition of human remains and funerary objects
- Their monitoring methodologies

The Tribe also requested to be present during ground-disturbing activities. On January 6, 2022, the JPA responded, acknowledging receipt of the information, and asked whether they would like to have a meeting to discuss the project in more detail.

On January 19, 2022, an AB 52 meeting was held with Fernandeno Tataviam Band of Mission Indians and JPA representatives. The meeting was held via teleconference to:

- Provide additional information to the Band regarding the project
- Continue government-to-government consultation between the Band and the JPA regarding Tribal cultural resources within or near the Pure Water Project area
- Share questions, comments, and concerns



During the meeting, the JPA provided an overview of the main project features and updated the Band on the status of the technical studies, which included preparation of this Program EIR, completion of CHRIS records (State of California 2022b) and NAHC SLF searches, and preparation of a plan to complete archaeological surveys. The Band discussed the area's past land uses by Native Americans; types of cultural resources that may be present, particularly along major roadways in the area; and use of various mitigation measures.

Following the meeting, the JPA provided maps that included locations of project features and requested the Band provide information on constraints or resources of concern.

On August 22, 2022, a Notice of Availability was sent to the Tribes, notifying them that the Draft Program EIR had been released and was available for review. The Santa Ynez Band of Chumash Indians replied that they did not wish to consult further. No other tribes responded.

Appendix E provides copies of correspondence with the Fernandeano Tataviam Band of Mission Indians ~~and~~, the Gabrieliño Tongva Indians of California Tribal Council, and the Santa Ynez Band of Chumash Indians.

## 16.2 Regulatory Framework

This section discusses the regulatory framework related to potential Tribal cultural resources in the project area.

### 16.2.1 California Assembly Bill 52

AB 52 requires lead agencies to establish a meaningful consultation process with California Native American Tribal Governments at the earliest possible point in the CEQA review process. AB 52 also seeks to recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in Tribal cultural traditions, heritages, and identities. Tribes have expertise with regard to their Tribal history and practices that concern the Tribal cultural resources they are traditionally and culturally affiliated with. Tribal knowledge about the land and Tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources.

PRC Section 21074(a)(1) and (2) defines Tribal cultural resources as "...sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe..." that are either included or determined to be eligible for inclusion in the CRHR, or included in a local register of historical resources, or a resource that is determined to be a Tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence.

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics:

- The type of environmental review necessary
- The significance of Tribal cultural resources
- The significance of the project's impacts on the Tribal cultural resources
- Project alternatives or appropriate measures for preservation or mitigation

Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a Tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American Tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American Tribe

has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt a Mitigated Negative Declaration (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including the location, description, and use of the Tribal cultural resources, that is submitted by a California Native American Tribe during the environmental review process will not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the Tribe that provided the information. If the lead agency publishes any information submitted by a California Native American Tribe during the consultation or environmental review process, that information will be published in a confidential appendix to the environmental document unless the Tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

### 16.3 Assessment Methods and Thresholds of Significance

The analysis of Tribal cultural resources in this section is based on the following:

- Results of the NAHC SLF search
- Results of the CHRIS records search (File 23394.9454)
- Prehistoric context and ethnohistoric setting of the project area, as described in Chapter 6
- Coordination with Native American groups and individuals

Impacts on Tribal cultural resources may occur if a substantial adverse change occurs in the significance of a Tribal cultural resource, defined in PRC Section 21074 as either 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, the lead agency will consider the significance of the resource to a California Native American Tribe

### 16.4 Environmental Impacts

This section describes the potential environmental impacts related to Tribal cultural resources as a result of the project.

#### 16.4.1 Overview

Potential impacts are evaluated for the project in accordance with the assessment methods and standards of significance. Table 16-1 summarizes the potential impacts to Tribal cultural resources.

**Table 16-1. Summary of Tribal Cultural Resources Impacts**

Impact	Alternative 1 Agoura Road AWPf	Alternative 2 Reservoir AWPf	Pipelines
Impact 16-1 Change to a Tribal Cultural Resource	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation

#### 16.4.2 Impact 16-1: Change to a Tribal Cultural Resource

With mitigations described in this section, Impact 16-1 would be less than significant.



#### **16.4.2.1 Alternative 1 Agoura Road Advanced Water Purification Facility**

The archival search conducted in the CHRIS SCCIC, at California State University, Fullerton on February 18, 2022 (Record Search File 23394.9454), identified one cultural resource within the Alternative 1 Agoura Road AWPf site. The identified site P-19-000042 is a lithic scatter that intersects the southern portion of the project area.

This resource was not relocated during the field survey. No Tribal cultural resources were identified within the site as part of AB 52 consultation for the project. Therefore, no impacts to Tribal cultural resources are expected to occur within at the Alternative 1 Agoura Road AWPf site.

In the event a prehistoric resource is identified during construction activities, *Mitigation Measure 6-1b, Halt construction if archaeological resources are discovered* (as described in Chapter 6) would allow coordination with local Native American Tribes to determine whether the discovery qualifies as a Tribal cultural resource and whether implementation of proposed treatments is required.

In addition, the construction contractor is required to follow California Health and Safety Code Section 7050.5(b), which specifies protocols if human remains are discovered.

With implementation of Mitigation Measure 6-1b, impacts of Alternative 1 Agoura Road AWPf on Tribal cultural resources would be less than significant.

#### **16.4.2.2 Alternative 2 Reservoir Advanced Water Purification Facility**

The CHRIS records search conducted on February 18, 2022 (Record Search File 23394.9454), identified one cultural resource within the Alternative 2 Reservoir AWPf site. P-19-001791, a lithic scatter, intersects the central northern edge of the site.

The resource was not relocated during the field survey. No Tribal cultural resources were identified within the Alternative 2 Reservoir AWPf as part of AB 52 consultation for the project. Therefore, no impacts to Tribal cultural resources are expected to occur within the Alternative 2 Reservoir AWPf site.

In the event a prehistoric resource is identified during construction activities, *Mitigation Measure 6-1b, Halt construction if archaeological resources are discovered* (as described in Chapter 6) would allow coordination with local Native American Tribes to determine whether the discovery qualifies as a Tribal cultural resource and whether implementation of proposed treatments are required.

In addition, the construction contractor is required to follow California Health and Safety Code Section 7050.5(b), which specifies protocols if human remains are discovered.

With implementation of Mitigation Measure 6-1b, impacts from of Alternative 2 Reservoir AWPf on Tribal cultural resources would be less than significant.

#### **16.4.2.3 Pipeline Alignment Options**

The archival search conducted in the CHRIS SCCIC, at California State University, Fullerton on February 18, 2022 (Record Search File 23394.9454), identified 10 cultural resources within the pipeline alignment footprints, consisting of 8 prehistoric resources, 1 historic-era resource, and 1 multicomponent resource (consisting of prehistoric and historic-era resources).

None of the resources were relocated during the survey. Therefore, no impacts to Tribal cultural resources are expected to occur within the pipeline alignment options footprint.

In the event a prehistoric resource is identified during construction activities, *Mitigation Measure 6-1b, Halt construction if archaeological resources are discovered* (as described in Chapter 6) would allow coordination with local Native American Tribes to determine whether the discovery qualifies as a Tribal cultural resource and whether implementation of proposed treatments is required.

In addition, the construction contractor is required to follow California Health and Safety Code Section 7050.5(b), which specifies protocols if human remains are discovered.

With implementation of Mitigation Measure 6-1b, impacts from the pipelines on Tribal cultural resources would be less than significant.

## 16.5 Mitigation Measures

Pure Water Project impacts to Tribal cultural resources are potentially significant. Implementation of the following mitigation measure would reduce impacts to less than significant.

**Mitigation Measure 6-1b, Halt construction if archaeological resources are discovered.** In the event of the discovery of archaeological resources, the construction contractor will be responsible for halting construction activities, notifying the lead agency, and retaining a qualified archaeologist. The archaeologist will be required to evaluate the uniqueness of the find, contact local Native American Tribes and historical organizations, and recommend a course of action. The construction contractor will receive training regarding the identification of cultural resources by a qualified archaeologist prior to the start of the construction activities.



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## 17. Wildfire

This chapter addresses the wildfire impacts associated with construction and operation of the project. Included in this chapter is a description of the wildfire history and conditions in the project area, a summary of applicable regulations related to wildfire, and an evaluation of potential project impacts on wildfire.

### 17.1 Existing Setting

This section describes the project area setting as related to wildfire risk.

#### 17.1.1 Fire Environment

Fire environment is the surrounding conditions, influences, and modifying forces that determine the behavior of a fire. Fire environments are dynamic systems that incorporate various environmental factors and site conditions. The three major components of a fire environment are fuels, climate, and topography, with the interaction of each component determining the potential characteristics and behavior of a fire.

The Southern California climate generally provides for ideal wildfire conditions. Warm and dry summers result in dry vegetation in many undeveloped areas. As the summer season progresses into fall, high-pressure weather systems tend to develop over the Great Basin, which result in warm and dry offshore winds from the east (Santa Ana Winds). Dry vegetation, in combination with warm and dry wind, form a potent fire environment. Climate change is exacerbating these conditions and lengthening the fire season.

#### 17.1.2 Responsibility Areas and Fire Hazard Severity Zones

Pursuant to California PRC Sections 4125–4137, Responsibility for Fire Protection, State Responsibility Areas (SRAs) are areas where the State of California is financially responsible for the prevention and suppression of wildfires. SRAs do not include lands within city boundaries or in federal ownership. Local Responsibility Areas (LRAs) include incorporated cities and urban regions where the local government is responsible for wildfire protection (State Board of Forestry and Fire Protection 2018). Fire services in LRAs are typically provided by local agencies, such as city and county fire departments.

For SRAs, the California Department of Forestry and Fire Protection (CAL FIRE) maps Fire Hazard Severity Zones based on factors such as fuel, slope, and fire weather to identify the degree of fire hazard throughout California (for example, moderate, high, or very high). Pursuant to the California Government Code (Sections 51175–51189 Moderate, High Fire Hazard Severity Zone [HFHSZ], and Very High Fire Hazard Severity Zones [VHFHSZs]), CAL FIRE also provides recommendations for Fire Hazard Severity Zones within LRAs, but the responsibility for mapping LRAs is the local jurisdiction responsible for fire management and control within the LRA. Fire Hazard Severity Zones do not predict when or where a wildfire will occur; however, they do identify areas where wildfire hazards could be more severe.

Figure 17-1 shows the Fire Hazard Severity Zones and their respective responsible jurisdiction as they relate to the project. Much of the project is located in Local LRA VHFHSZ. The urban areas of incorporated cities of Agoura Hills, Westlake Village, and Thousand Oaks are within LRA jurisdiction but do not include fire hazard areas. The portion of concentrate pipeline along Hill Canyon Road in unincorporated Ventura County is located in SRA VHFHSZ and HFHSZ (CAL FIRE 2022a).

#### 17.1.3 Site Characteristics

The Pure Water Project includes project activities in several areas, as described in this section.



### **17.1.3.1 Alternative 1 Agoura Road Advanced Water Purification Facility**

The Alternative 1 Agoura Road AWPf would be located on vacant, undeveloped land on the southern side of Agoura Road, approximately 500 feet east of Flintlock Lane, within Agoura Hills. The property is hilly and generally slopes to lower elevation toward Agoura Road to the north. Various small hills are present, along with rocky outcroppings along the southern perimeter. Low-lying grassy vegetation, along with pockets of larger trees, are present.

The adjacent lands to the south and east share a similarly undeveloped character, while the land to the west is developed with residential uses, and land to the north is developed with roadway and business uses.

The AWPf site is within the wildland-urban interface, which is the zone between developed and undeveloped areas (Esri 2022). The significant regional geographic feature in the area is the Santa Monica Mountains to the south, including nearby Ladyface Mountain.

### **17.1.3.2 Alternative 2 Reservoir Advanced Water Purification Facility**

Located near the eastern shoreline of Las Virgenes Reservoir, the Alternative 2 Reservoir AWPf site is undeveloped, including the access road from Triunfo Canyon Road. The site is hilly and generally slopes to lower elevation toward Las Virgenes Reservoir to the west. Low-lying grassy vegetation, along with pockets of larger trees, are present. The adjacent lands to the north, east, and south are undeveloped, while the land to the west contains Las Virgenes Reservoir. A residential neighborhood is located approximately 850 feet to the north.

The site is partially within the wildland-urban interface (Esri 2022). The significant regional geographic feature in the area is the Santa Monica Mountains to the south.

### **17.1.3.3 Pipelines**

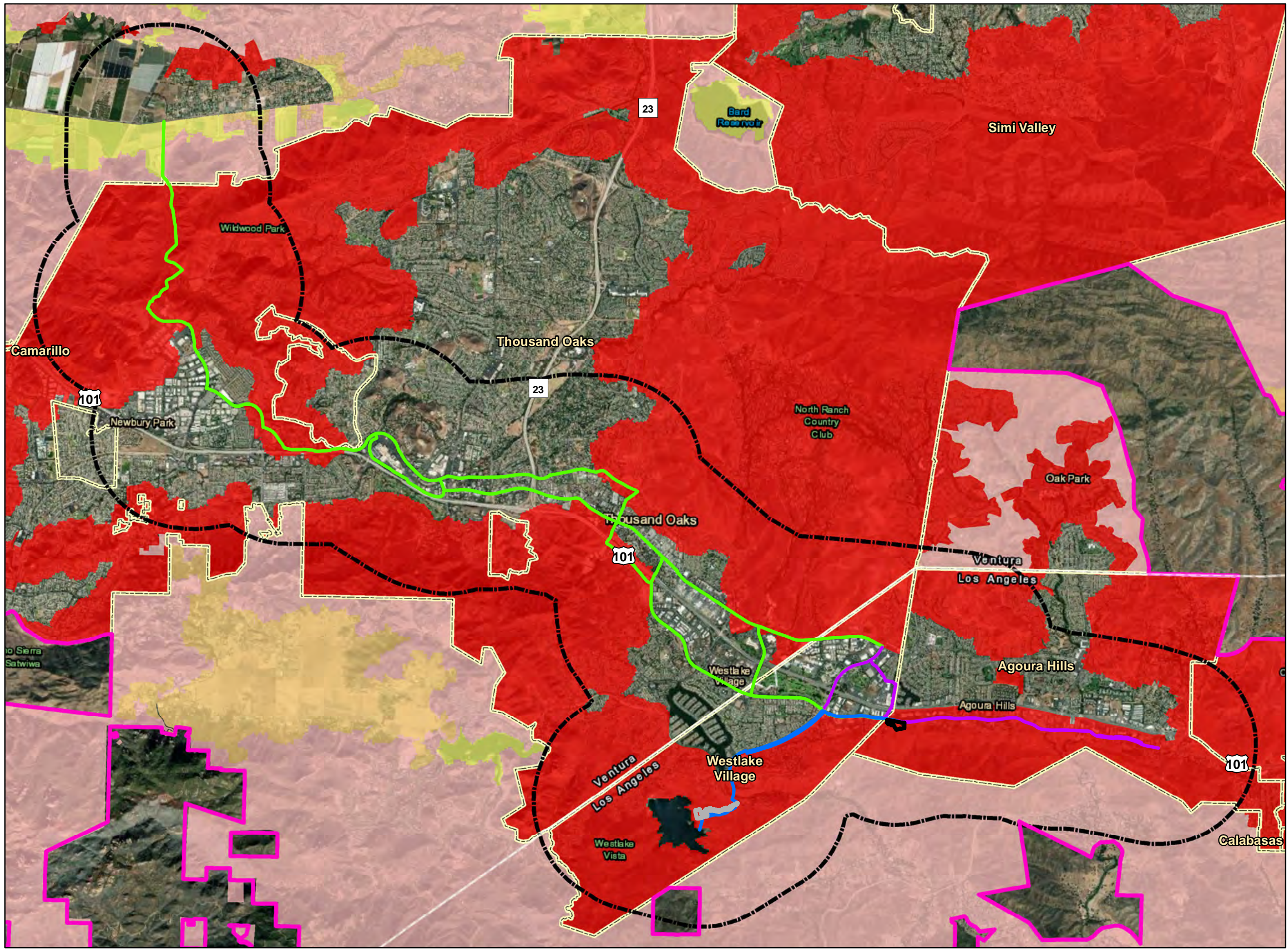
Pipelines associated with the project would be located underground within existing roadways. No site characteristics related to the fire setting are applicable. A pump station would be required under Alternative 2 Reservoir AWPf, but neither of the optional sites are within a wildland-urban interface (Esri 2022).

### **17.1.4 Wildfire History**

Fire history information provides for an understanding of fire frequency, fire type, most vulnerable locations, and significant ignition sources. The fire history data for the project area are based on CAL FIRE's California Statewide Fire Map that shows fires through 1950, and Fire Resource Assessment Program database that assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines (CAL FIRE 2022b). These tools show there is significant wildfire potential in the region and the potential for the proposed project site to be subject to occasional wildfire encroachment, most likely originating from the open space areas near the proposed project site.

According to data available from CAL FIRE's California Statewide Fire Map, there have been 21 fires within a half-mile radius of project facilities since 2005, as shown on Figure 17-2. Of these, the largest include the Hill Fire of 2018 and the Woolsey Fire of 2018. The Hill Fire of 2018 burned from November 8, 2018, through January 4, 2019, covered an area of 4,531 acres, and burned through the proposed project site within Thousand Oaks and unincorporated Ventura County. As of February 2022, the cause of the fire was still under investigation.





### Legend

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road AWWP
- Alternative 2 Reservoir AWWP
- 1-Mile Radius

**Fire Hazard Severity Zone in Local Responsibility Areas**

- Very High

**Fire Hazard Severity Zone in State Responsibility Areas**

- Very High
- High
- Moderate
- Federal Responsibility Area
- City Boundary



Sources:  
 Cal Fire, 2022; ESRI World Topo Map;  
 ESRI World Street Map;

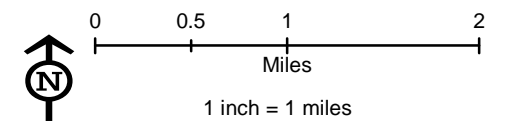
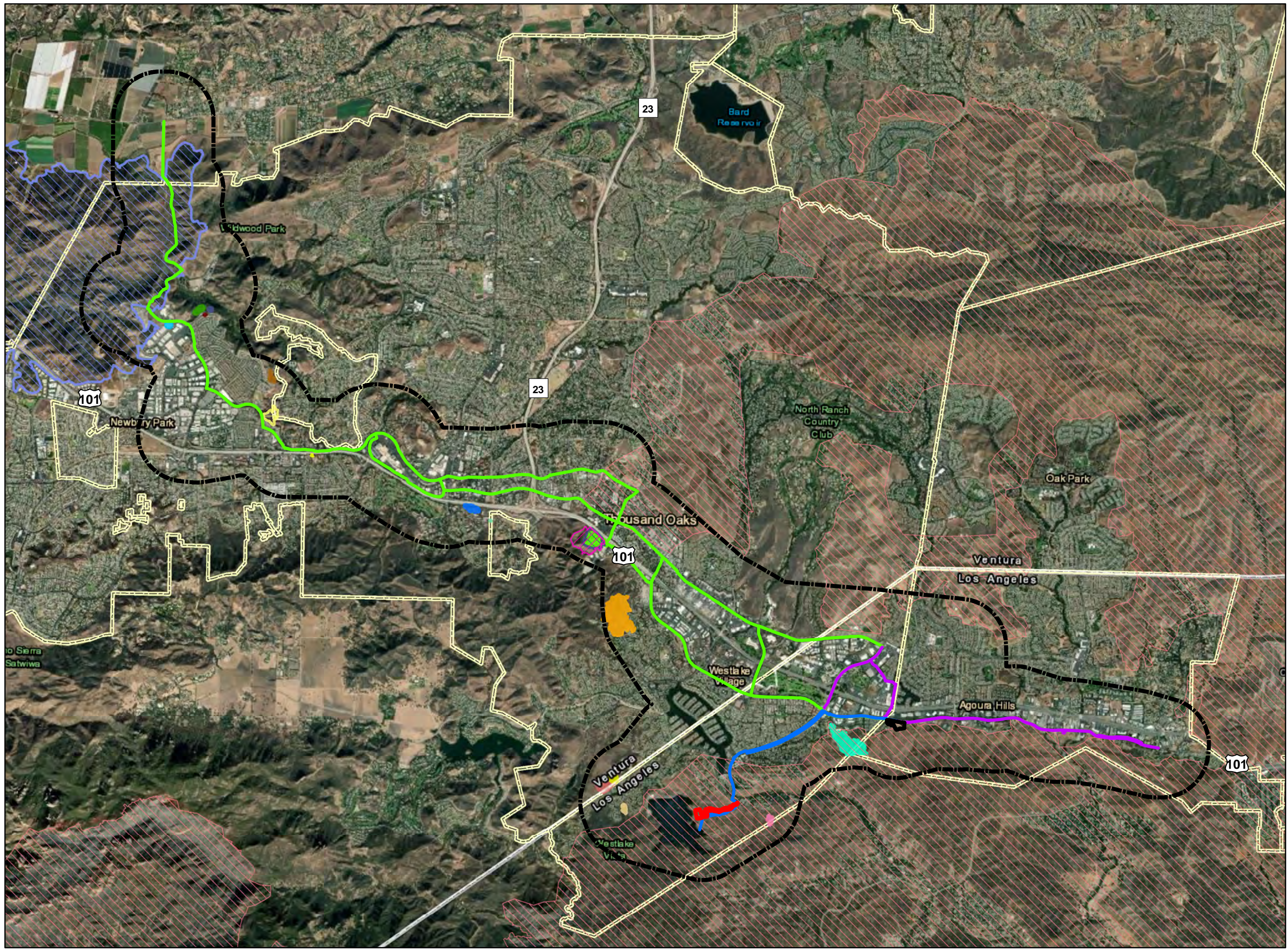


FIGURE 17-1  
**Fire Hazard Severity Zones**  
 Pure Water Project Las Virgenes-Triunfo





**Legend**

- Concentrate Alignment Options
- Purified Water Alignment Options
- Source Water Alignment Options
- Alternative 1 Agoura Road
- Alternative 2 Reservoir AWP
- Half-Mile Radius

**Historic Fires**

**Year, Fire Name**

- 2005, FREEWAY
- 2006, WESTLAKE
- 2007, FOOTHILL
- 2007, SMALL HIGHWAY
- 2010, HAMPSHIRE
- 2011, RANCHO CONEJO
- 2015,
- 2015, ROADRUNNER
- 2016, RANCHO
- 2016, WESTLAKE FIRE
- 2017, BROOK
- 2017, MONTVIEW
- 2017, PACIFICA
- 2017, ROLLING
- 2017, RUNNER
- 2018,
- 2018, HILL
- 2018, LYNN
- 2018, ROADRUNNER
- 2018, ROLLING
- 2018, WOOLSEY
- City Boundary



Sources:  
 Cal Fire, 2022; ESRI World Topo Map;  
 ESRI World Street Map;

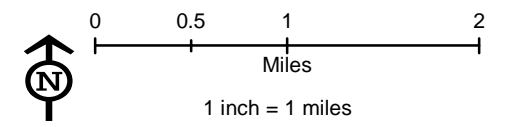


FIGURE 17-2  
**Historic Fires**  
 Pure Water Project Las Virgenes-Triunfo



The Woolsey Fire of 2018 burned simultaneously with the Hill Fire, from November 8, 2018, through January 4, 2019, and covered an area of 96,949 acres, impacting 1,600 structures. The fire was responsible for the deaths of three people. The Woolsey Fire burned within multiple project sites, including the Agoura Road AWPf and Reservoir AWPf. The Woolsey Fire was caused by electrical and communication equipment owned by SoCal Edison (California Department of Justice 2021). The Woolsey Fire is the last wildfire to burn through the project area.

### **17.1.5 Vegetation (Fuels)**

Vegetation communities at the Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf sites are described in Chapter 5, Biological Resources. Vegetation present at the two sites can be summarized as follows:

- Alternative 1 Agoura Road AWPf: The site is dominated by seminatural grassland communities, such as wild oats and annual brome grasslands and upland mustard and star thistle fields (Rincon 2022). Other vegetation communities include valley oak woodland.
- Alternative 2 Reservoir AWPf: The site includes natural communities, such as deerweed scrub shrubland, clustered tarweed fields, and California buckwheat scrub shrubland; and seminatural grassland communities, such as upland mustard and star thistle fields and wild oats and annual brome grasslands. Other vegetation communities include scrub oak chaparral and valley oak woodland (Rincon 2022).

## **17.2 Regulatory Framework**

This section describes the state and local wildfire regulatory framework applicable to the project area. There are no federal regulations related to wildfire applicable to the project.

### **17.2.1 State**

This section describes the state wildfire regulatory framework applicable to the project area.

#### **17.2.1.1 California Fire Code (Title 24 California Code of Regulations Part 9)**

The California Fire Code (CFC) is found in 24 CCR 9, as a subset of the CBC. The CFC combines the International Fire Code with amendments necessary to address California's unique needs. The CFC establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises.

The CFC also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the CFC apply to the following activities for every building or structure throughout California:

- Alteration
- Construction
- Demolition
- Enlargement
- Equipment
- Location
- Maintenance
- Movement
- Removal
- Repair
- Replacement
- Use and occupancy



The CFC includes regulations regarding:

- Fire-resistance-rated construction
- Fire protection systems, such as alarm and sprinkler systems
- Fire service features, such as:
  - Fire apparatus access roads
  - Means of egress
  - Fire safety during construction and demolition
  - Wildland-urban interface areas

Typical fire safety requirements of the CFC include:

- Installation of sprinklers in all high-rise buildings
- Establishment of fire-resistance standards for fire doors, building materials, and particular types of construction
- Clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas

The CFC applies to all occupancies in California, except where more stringent standards have been adopted by local agencies.

### **17.2.1.2 California Department of Industrial Relations, Division of Occupational Safety and Health Administration Regulations (Title 8 California Code of Regulations)**

Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal/OSHA standards are generally more stringent than federal regulations.

The use of hazardous materials in the workplace requires:

- Employee safety training
- Safety equipment
- Accident and illness prevention programs
- Hazardous substance exposure warnings
- Emergency action and fire prevention plan preparation

### **17.2.1.3 California Public Resources Code**

The PRC was established in 1939 by the California Code Commission. The PRC contains law relating to natural resources; the conservation, use, and supervision of those resources; along with law relating to mines and mining, oil and gas, and forestry. The following sections of the PRC are relevant to the Pure Water Project:

#### **PRC 4427**

*During any time of year when burning permits are required in an area pursuant to this article, no person will use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, and that is located on or near any forest-covered, brush-covered, or grass-covered land, without doing both of the following:*

- *First clear away all flammable material, including snags, from the area around such operation for a distance of 10 feet.*

- *Maintain one serviceable round-point shovel with an overall length of not less than 46 inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.*

*This section does not apply to portable power saws and other portable tools powered by a gasoline-fueled internal combustion engine.*

#### **PRC 4428**

*No person, except any member of an emergency crew or the driver or owner of any service vehicle owned or operated by or for, or operated under contract with, a publicly or privately owned utility, that is used in the construction, operation, removal, or repair of the property or facilities of such utility when engaged in emergency operations, will use or operate any vehicle, machine, tool, or equipment powered by an internal combustion engine operated on hydrocarbon fuels, in any industrial operation located on or near any forest-covered, brush-covered, or grass-covered land between April 1 and December 1 of any year, or at any other time when ground litter and vegetation will sustain combustion permitting the spread of fire, without providing and maintaining for firefighting purposes only, suitable and serviceable tools in the amounts, manner, and location prescribed in this section.*

Other requirements include:

- *On any such operation, a sealed box of tools will be located within the operating area, at a point accessible in the event of fire. This fire toolbox will contain:*
  - *One backpack pump-type fire extinguisher filled with water*
  - *Two axes*
  - *Two McLeod fire tools*
  - *Enough shovels so that each employee at the operation can be equipped to fight fire*
- *One or more serviceable chainsaws of 3.5 or more horsepower (hp), with a cutting bar 20 inches in length or longer, will be immediately available within the operating area. Alternatively, a full set of timber-felling tools will be located in the fire toolbox, including:*
  - *One crosscut falling saw 6 feet in length*
  - *One double-bit ax with a 36-inch handle*
  - *One sledge hammer or maul, with a head weight of 6 pounds or more, and handle length of 32 inches or more*
  - *Not less than two falling wedges*
- *Each passenger vehicle used in such operation will be equipped with one shovel and one ax; and any other vehicle used in the operation will be equipped with one shovel. Each tractor used in such an operation will be equipped with one shovel.*

#### **PRC 4431**

*During any time of the year when burning permits are required in an area pursuant to this article, no person will use or operate, or cause to be operated in the area, any portable saw, auger, drill, tamper, or other portable tool powered by a gasoline-fueled internal combustion engine on or near any forest-covered, brush-covered, or grass-covered land, within 25 feet of any flammable material, without providing and maintaining at the immediate locations of use or operation of the saw or tool, for firefighting purposes, one serviceable round-point shovel, with an overall length of not less than 46 inches, or one serviceable fire extinguisher.*



*The required fire tools will at no time be farther from the point of operation of the power saw or tool than 25 feet with unrestricted access for the operator from the point of operation.*

#### **PRC 4442**

Requirements from this PRC section applicable to wildfire in the project area include:

- *Except as otherwise provided in this section, no person will use, operate, or allow to be used or operated, any internal combustion engine that uses hydrocarbon fuels on any forest-covered, brush-covered, or grass-covered land, unless the engine is equipped with a spark arrester, as defined in subdivision (c), maintained in effective working order. Engines constructed, equipped, and maintained for the prevention of fire pursuant to Section 4443 are acceptable.*
- *Spark arresters affixed to the exhaust system of engines or vehicles subject to this section will not be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite any flammable material.*
- *A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles over 0.0232 of an inch in size from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels, or that is qualified and rated by the U.S. Forest Service.*
- *Engines used to provide motive power for trucks, truck tractors, buses, and passenger vehicles, except motorcycles, are not subject to this section if the exhaust system is equipped with a muffler, as defined in the Vehicle Code.*
- *Turbocharged engines are not subject to this section if all exhausted gases pass through the rotating turbine wheel, there is no exhaust bypass to the atmosphere, and the turbocharger is in effective mechanical condition.*
- *Motor vehicles, when being operated in an organized racing or competitive event upon a closed course, are not subject to this section if the event is conducted under the auspices of a recognized sanctioning body and by permit issued by the fire protection authority having jurisdiction.*

#### **17.2.1.4 California Building Code**

The CBC includes regulations that are consistent with nationally recognized standards of good practice, intended to facilitate protection of life and property. Among other things, CBC regulations address:

- Mitigation of the hazards of fire explosion
- Management and control of the storage, handling, and use of hazardous materials and devices
- Mitigation of conditions considered hazardous to life or property in the use or occupancy of buildings
- Provisions to assist emergency response personnel

Chapter 7 of the CBC details the materials, systems, and assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area, as defined in Section 702A. This geographical area is identified by the areas of a Fire Hazard Severity Zones in accordance with PRC Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

Fire Hazard Severity Zones are geographical areas classified as very high, high, or moderate in SRAs or in LRAs as VHFHSZs. Fire Hazard Severity Zones, which are determined based on factors such as fuel, slope, and fire weather, do not predict when or where a wildfire will occur, but they do identify the degree of fire hazard (very high, high, or moderate).

The CBC details the materials, systems, and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

## **17.2.2 Local**

This section describes the local regulations relevant to fire in the project area.

### **17.2.2.1 County of Los Angeles Operational Area Emergency Response Plan**

The *Operational Area Emergency Response Plan* establishes a coordinated emergency management system, which includes prevention, protection, response, recovery, and mitigation within the operational areas, which includes Los Angeles County and all 88 cities within the county (Los Angeles County 2012). The purpose of the plan is to:

- Establish Operational Area emergency organization
- Establish authorities and responsibilities of the Operational Area emergency organization
- Identify mutual aid processes during emergencies to support effective coordination of needed resources

This plan is applicable to most of the project area, including the Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf sites.

### **17.2.2.2 County of Los Angeles All-Hazards Mitigation Plan**

The *2020 County of Los Angeles All-Hazards Mitigation Plan* was developed to assess risks posed by natural hazards and to provide a mitigation action plan for reducing the risks in unincorporated Los Angeles County (Los Angeles County 2020b). The plan's hazard identification and risk assessment include the following subjects:

- Climate change
- Dam failure
- Earthquake
- Flood
- Landslide
- Tsunami
- Wildfire

Wildfire mitigation strategies are identified in Chapter 5, and include:

- Red flag warning public outreach
- A vegetation management program
- Fireproof coating of critical assets
- Auxiliary power for critical facilities
- A brush clearance program
- A wildland-urban interface ordinance
- Community wildfire protection plans

This plan is applicable to most of the project area, including the Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf sites.

### **17.2.2.3 Las Virgenes-Malibu Council of Governments 2018 Multi-Jurisdictional Hazards Mitigation Plan**

The Las Virgenes-Malibu COG comprises the cities of Agoura Hills, Calabasas, Hidden Hills, Malibu, and Westlake Village. The Las Virgenes-Malibu COG was voluntarily established by its members under a Joint Powers Agreement to provide a vehicle for members to engage in regional and cooperative planning and coordination of government services and responsibilities (Las Virgenes-Malibu COG 2018).



The Las Virgenes-Malibu COG also provides a local area organization for the coordination of regional projects and studies funded by federal, state, and local governments. In 2005, the Las Virgenes-Malibu COG chose to develop the *Multi-Jurisdictional Hazard Mitigation Plan* to coordinate efforts and resources (Las Virgenes-Malibu COG 2018). The plan has been updated several times, most recently in 2018. The plan contains four major goals:

1. To protect life, property, and environment
2. Public awareness
3. Partnerships and implementation
4. Emergency management

This plan is applicable to the project components located within the Agoura Hills and Westlake Village, including the Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf sites.

### **17.2.2.4 Ventura County Operational Area Emergency Operations Plan**

The Ventura County Sheriff's Office of Emergency Services is in the process of updating the Ventura County Emergency Operations Plan. This plan addresses the County's planned response to extraordinary emergency situations and natural, human-caused, or technological disasters and requires reviewing and updating every 3 years. Ventura County published a draft of the updated plan for public review and comment in 2021. The plan includes information on emergency management organization and responsibilities, operational areas, and evacuation procedures (Ventura County 2021). The plan includes:

- Purpose, situation, and assumptions
- Concept of operations, including organizational structures, roles and responsibilities, administration and logistics, and policies and protocols for providing emergency support
- Protocols for plan development and maintenance
- Authorities and references
- Response and short-term recovery activities
- Procedures to use in all emergencies and disasters
- Pre-incident and post-incident public awareness, and education and communications plans and protocols

Although wildfire is not expressly identified as a hazard or threat within the document, emergency operations and procedures may still be applicable. This plan is applicable to the portion of the concentrate pipeline within unincorporated Ventura County.

### **17.2.2.5 Ventura County Hazard Mitigation Plan**

The overarching goal of the *2010 Ventura County Hazard Mitigation Plan* is to inventory potential hazards that Ventura County is most vulnerable to; assess risks to the County's community members, resources, buildings, and critical facilities; and develop mitigation strategies to reduce the risk of exposure and allow a swift, equitable, and organized recovery should a disaster occur (Ventura County 2010b). The plan's hazard identification includes the following subjects:

- Agriculture biological hazards
- Earthquake
- Flooding: Dam failure
- Flooding: Levee failure
- Flooding: Riverine and coastal
- Geological
- Post-fire debris flow
- Severe winter storm
- Tsunami
- Wildfire

Wildfire mitigation strategies are identified in Chapter 7, and include a vegetation management program, a fuel modification program, and a hazards fuel treatment program. Additionally, evacuation systems are discussed in Chapter 5. This plan is applicable to the concentrate pipeline within unincorporated Ventura County.

### 17.3 Assessment Methods and Thresholds of Significance

The assessment of potential impacts was based on Appendix G of the CEQA Guidelines. Impacts on wildfire may occur if the project is located in or near SRAs or lands classified as VHFHSZs and would result in the following:

- Substantial impairment of an adopted emergency response plan or emergency evacuation plan
- Exacerbation of wildfire risks, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors
- Requirements for 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
- Exposure to 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

According to Section 15002(g) of the CEQA Guidelines, "...a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on wildfire were evaluated for each of the criteria listed in Table 17-1.

### 17.4 Environmental Impacts

This section describes the project’s environmental impacts related to fires.

#### 17.4.1 Overview

Table 17-1 summarizes the potential impacts from wildfire risks.

**Table 17-1. Summary of Impacts from Wildfire Risks**

Impact	Alternative 1 Agoura Road AWPf	Alternative 1 Reservoir AWPf	Pipelines
Impact 17-1: Emergency Response or Emergency Evacuation Plan	No impact	No impact	Less than significant impact
Impact 17-2: Wildfire Risks	Less than significant impact	Less than significant impact	Less than significant impact
Impact 17-3: Associated Infrastructure	Less than significant impact	Less than significant impact	Less than significant impact
Impact 17-4: Runoff, Slope Instability, or Drainage Changes	Less than significant impact	Less than significant impact	Less than significant impact

#### 17.4.2 Impact 17-1: Emergency Response or Emergency Evacuation Plan

The effects of Pure Water Project infrastructure on wildfire risk would be expected to have no impact as discussed in this section. The project is located in areas identified by CAL FIRE as LRAs and SRAs. Within the LRA, the fire hazard severity is very high (VHFHSZ). Within the SRAs, the fire hazard severity is both very high and moderate. As discussed in Chapter 15, Transportation, project construction involves underground pipelines that would be placed below existing roadways, requiring temporary lane closures.



Traffic would continue to proceed through construction zones because full road closures are not anticipated. Onsite construction personnel, such as traffic flaggers, would prioritize and expedite emergency vehicles through the construction zone. This would be included in standard traffic control plans and in the required *Mitigation Measure 15-1, Transportation Management Plan*.

The project would be subject to encroachment permits and associated emergency vehicle access requirements for work within roadways. In the event of an emergency requiring public evacuation through local roadways under construction, construction personnel would maximize the functioning roadway area for public use. For these reasons, impacts from pipeline construction would be less than significant.

During operation of the project, no roadways would be impacted. Therefore, evacuation procedures identified in adopted emergency response plans and emergency evacuation plans would not be substantially impaired.

Construction of Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf would modify the existing vegetation and fuels within the sites, resulting in less vegetation and fuel, as compared to the existing natural open space. During operation of Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf, landscaping and vegetation clearance would occur, and the project would comply with vegetation and fuel requirements within adopted emergency response plans. Therefore, Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf project would have no impact on adopted emergency response plans and emergency evacuations plans.

### **17.4.3 Impact 17-2: Wildfire Risks**

The effects of Pure Water Project infrastructure on wildfire risk would be expected to be less than significant as discussed in this section.

The slopes surrounding the Alternative 1 Agoura Hills AWPf and Alternative 2 Reservoir AWPf sites and along portions of the pipelines are susceptible to prevailing winds. Brush and grassland habitats within the project site are highly flammable and have burned in recent wildfires. During construction, equipment and onsite diesel fuel could pose a risk to wildfire with possible ignition sources, such as internal combustion engines; gasoline-powered tools; and equipment that could produce a spark, fire, or flame. The use of spark-producing construction machinery within fire risk areas could expose temporary project workers and contractors to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

However, construction personnel on the project site would have to comply with PRC Sections 4427, 4428, 4431, and 4442, which include regulations relating to the handling of combustible fuels and equipment that can exacerbate fire risks. During construction, compliance with these PRC sections would make construction personnel responsible for all monitoring and safety measures, and exacerbated wildfire risk would be reduced. Additionally, all construction personnel must comply with fire protection and prevention requirements specified by the CCR and Cal/OSHA. This includes various measures, such as:

- Easy accessibility of firefighting equipment
- Proper storage of combustible liquids
- No smoking in service and refueling areas
- Worker training for incipient stage fire suppression

Slopes susceptible to prevailing winds coupled with brush and grassland habitats within the project site create a high fire hazard environment. The project would involve development of high fire hazard areas, resulting in a reduction of flammable surface area within the VHFHSZs, which could prevent or reduce uncontrolled spread of wildfire. Cleared brush around the AWPf sites, maintained landscaping, and improved access to previously undeveloped areas would provide for increased firefighting conditions in the event of a wildfire.

Operation-related activities would involve a limited number of maintenance and delivery trucks, operational staff, and visitors. These vehicles would be limited to established access roads and parking areas, which would have a low potential of producing sparks, fire, or flame that could result in

uncontrolled spread of wildfire. Nevertheless, due to the site topography and wildfire risk, operators of the proposed project site would comply with PRC Sections 4427, 4428, 4431, and 4442, which include regulations relating to the handling of combustible fuels and equipment that can exacerbate fire risks.

For these reasons, the project would have a less than significant impact on exacerbating wildfire risks that would expose project occupants to pollutant concentrations from wildfire due to slope, prevailing winds, and other factors.

#### **17.4.4 Impact 17-3: Associated Infrastructure**

The effects of Pure Water Project infrastructure on wildfire risk would be less than significant as discussed in this section.

The project includes construction and operation of new access roads, utility connections, and pipelines to support water treatment and delivery. This new infrastructure does not pose additional risk to exacerbation of wildfires other than what is discussed in Impact 17-2. All utility connections installed as part of the project would be placed underground and would comply with 24 CCR, significantly reducing the possibility of fire risk.

The project would have a less than significant impact on the exacerbation of fire risk due to the installation and maintenance of infrastructure.

#### **17.4.5 Impact 17-4: Runoff, Slope Instability, or Drainage Changes**

The effects of the Pure Water Project on wildfire risk would be less than significant as discussed in this section.

Site alteration through movement of substantial quantities of soil and earth materials during construction has the potential to result in landslides as a result of runoff or drainage changes. As discussed in Chapter 8, Geology and Soils, the project would be required to comply with the CGP and local stormwater ordinances. These state and local requirements were developed to control erosion on construction sites.

The CGP requires preparation and implementation of an SWPPP, which requires applications of BMPs to control runoff and runoff from construction work sites. The BMPs would include:

- Installation of physical barriers to prevent erosion and sedimentation
- Construction of sedimentation basins
- Limitations on work periods during storm events
- Use of infiltration swales
- Protection of stockpiled materials
- A variety of other measures that would substantially reduce or prevent erosion from occurring during construction

If a wildland fire is followed by a rain event and results in downstream flooding or landslides from post-fire runoff, the BMPs required to be implemented under the SWPPP would reduce the risk of runoff, post-fire slope instability, and drainage changes. With compliance with existing regulations, impacts would be less than significant.

Operation of the project would be managed to not result in significant runoff, post-fire slope instability, or drainage changes from potential wildland fire. As a result, impacts would be less than significant.

### **17.5 Mitigation Measures**

Based on the analysis provided in this chapter, impacts would be less than significant with the implementation of state and local regulations. Therefore, no additional mitigation is required.



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## 18. Other Required CEQA Considerations

This chapter describes other CEQA considerations for the Pure Water Project.

### 18.1 Cumulative Impacts

This section describes the Pure Water Project's cumulative impacts.

#### 18.1.1 Introduction

Cumulative impacts could occur when the effects of the Pure Water Project are combined with other planned and foreseeable projects such that environmental impacts are more intense or longer in duration.

According to CEQA Guidelines Section 15130(a), "...an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed with the effects of past projects, other current projects, and possible future projects. As stated in CEQA Guidelines Section 15355, cumulative impacts can result from individually minor but collectively significant projects taking place over time.

In addition, Section 15130(b) identifies that the following elements are necessary for an adequate cumulative analysis:

- Either:
  - *A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency*or
  - *A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact; any such planning document will be referenced and made available to the public at a location specified by the lead agency*
- Plus:
  - *A definition of the geographic scope of the area effected by the cumulative effect, and a reasonable explanation for the geographic limitation used*
  - *A summary of the expected environmental effects to be produced by those projects, with specific reference to additional information stating where that information is available*
  - *A reasonable analysis of the cumulative impacts of the relevant projects; an EIR will examine reasonable, feasible options for mitigating or avoiding the project's contribution to significant cumulative impacts*

When a lead agency is examining a project with an incremental effect that is not cumulatively considerable, the lead agency need not consider that effect significant but will briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

#### 18.1.2 Cumulative Setting

The geographic scope of the broadly affected area includes the Las Virgenes MWD and JPA service areas, as well as Thousand Oaks and unincorporated Ventura County along the concentrate disposal pipeline alignment. However, all impacts of the Pure Water Project would occur at specific sites and are mostly construction impacts that would occur at or near each individual project site. This analysis focuses



on construction of Pure Water Project features because construction impacts are the most common and widespread impacts expected to occur over the long project implementation period.

The cumulative impacts analysis focuses on the environmental resources analyzed in Chapters 3 through 17. Additional information about the setting for each of these resources can be found in each of the individual resource chapters.

The cumulative setting conditions are based on the existing land uses within the service areas, which exist because of past and present development activity. In addition, consideration was given to new development projects that may occur during the Pure Water Project implementation period. Although the exact nature and extent of these future projects is not known, the general character of foreseeable future development is expected to be consistent with approved land use plans that apply to the service areas and are similar in nature to current development projects. In general, foreseeable future projects are expected to include the following:

- Continued buildout of the *Ladyface Mountain Specific Plan* (City of Agoura Hills 1991), which encompasses 747.3 acres, but with a developable pad area limited to 30.18 acres, including the Alternative 1 Agoura Road AWP site. At buildout, the specific plan area is expected to consist of mostly business park development, with limited retail and residential uses.
- Redevelopment and general intensification of land uses along older streets on the concentrate pipeline alignment options, especially implementation of development projects and public improvement envisioned in *Thousand Oaks Boulevard Specific Plan* (City of Thousand Oaks 2016).
- Small suburban development projects that are likely to occur throughout the service areas, such as new residential units and small neighborhoods, and new office and light industrial buildings in existing office parks.
- City of Thousand Oaks public improvements between the Hill Canyon Wastewater Treatment Plant (WWTP) and the Municipal Service Center on Rancho Conejo Boulevard, including:
  - Conejo Canyons Bridge at Hill Canyon WWTP: The City of Thousand Oaks and the COSCA propose to install a new bridge across Arroyo Conejo and a small access road connecting the bridge to Hill Canyon Road. The Pure Water Project concentrate pipeline is proposed to be installed within a utility sleeve on the new bridge.
  - Municipal Service Center Access Road: The City of Thousand Oaks may pursue additional improvements to connect the new Conejo Canyons Bridge to the Municipal Service Center by improving an existing fire road to accommodate city vehicles. The City of Thousand Oaks and the JPA would continue to coordinate, with the goal of constructing the new access road and concentrate pipeline on the same alignment and at the same time.
- The Calleguas SMP has been partially installed and would continue to be expanded, including a new pipeline along Santa Rosa Road.

No other major, citywide utility repair or capital projects have been identified that compare in scale to the Pure Water Project. Consistent with typical utility operations, routine maintenance work and minor capital improvement projects are expected to occur throughout the project area, such as small water pipeline installations, storm drain repairs, and road resurfacing. Some of these activities may occur at the same time as construction of the Pure Water Project; however, the scale of these individual projects would be small.

In addition to these development activities within the project area, the Malibu Creek Ecosystem Restoration Project may contribute to cumulative effects within the Malibu Creek watershed. The project is centered on Rindge Dam, a legacy structure on Malibu Creek downstream of the Tapia WRF, and consists of sediment removal and transport, dam removal, and onsite restoration (USACE and C DPR 2017). The project is expected to improve Malibu Creek aquatic habitat along the 8.5-mile reach from an area upstream of Rindge Dam to Malibu Lagoon.

### 18.1.3 Cumulative Analysis

The cumulative impacts analysis is based on the analysis of environmental resources in Chapters 3 through 17, together with the potential effects from the projects discussed in this chapter.

#### 18.1.3.1 Aesthetics

Aesthetic impacts are focused on the visual changes associated with the AWPf alternatives. Alternative 1 Agoura Road AWPf would be constructed in a manner consistent with the *Ladyface Mountain Specific Plan*, which also applies to other future development along Agoura Road in this area. The specific plan provides a framework that addresses the potential for cumulative aesthetic impacts so that impacts would be less than significant. Therefore, development consistent with the specific plan also would be less than significant.

Alternative 2 Reservoir AWPf would be built in an undeveloped area next to Las Virgenes Reservoir, in an area where no additional, future development is expected. Because there would be no additional development, cumulative aesthetic impacts of this alternative would be less than significant.

#### 18.1.3.2 Air Quality

Air quality impacts are primarily from construction of the AWPf alternatives, the pipelines, and other project features. Land development and other construction activities may occur in some parts of the project area at the same time, such as along Agoura Road and Thousand Oaks Boulevard. Depending on timing, other construction may be occurring during installation of the concentrate pipeline in the Conejo Canyon area, primarily from City of Thousand Oaks projects, such as the Conejo Canyons Bridge. Construction work from other projects is not expected in other areas, such as within Triunfo Creek Park.

Other construction activities may contribute to significant cumulative impacts, such as construction vehicle emissions and dust generation. To minimize these typical construction impacts from all project types, both the South Coast AQMD and the Ventura County APCD have developed standard construction measures that apply to the Pure Water Project as well as other projects occurring at the same time or in the same location as Pure Water Project features. Because the Pure Water Project would follow regional measures for air pollution control during construction, the project would have a less than significant contribution to this significant cumulative impact.

#### 18.1.3.3 Biological Resources

The Pure Water Project would affect biological resources, such as special-status plants, oak trees, and wetlands. These impacts would also occur as a result of other development activities under the *Ladyface Mountain Specific Plan*, which would occur on similar land covers and habitat types. Also, the Municipal Service Center Access Road project would affect special-status plants and wetlands along the Conejo Open Space Trail, with more impact expected because of the wider construction footprint in comparison to the concentrate pipeline project. Most other development, such as the intensification of land uses associated with redevelopment, is expected to occur within urban areas, and most other utility work along public roads is not expected to significantly affect biological resources.

Overall, there would be a significant cumulative effect because of the local and statewide importance of the affected resource. Preconstruction surveys, avoidance and minimization measures, habitat restoration, and offsite compensatory mitigation are typically prescribed for these types of effects consistent with local policies and state and federal requirements. Other projects with discretionary approvals are likely to follow mitigation requirements similar to Mitigation Measures 5-1 through 5-4 in this document. With implementation of these measures, the Pure Water Project's cumulative contribution to biological resources impacts would be reduced to a less than cumulatively considerable level.

The Malibu Creek Ecosystem Restoration Project – primarily the removal of Rindge Dam – is expected to improve habitat conditions along Malibu Creek and within Malibu Lagoon. These benefits would be



different than the expected Pure Water Project water quality benefits, but the Pure Water Project would contribute to cumulative benefits along with removal of Rindge Dam.

### **18.1.3.4 Cultural Resources**

Development of most Pure Water Project facilities would occur in urbanized areas that have been previously disturbed; however, the previous cultural surveys described in Chapter 6, Cultural Resources, indicate the potential presence of undisturbed subsurface archaeological and paleontological resources in some portions of the project area. Construction of the Pure Water Project, in combination with cumulative development, would increase the potential to disturb these undiscovered resources. This is a potentially significant cumulative impact.

Preconstruction surveys with avoidance and minimization measures are typically prescribed in these cases consistent with local policies, code provisions, and standard conditions of project approval. With implementation of these measures, the Pure Water Project's cumulative contribution to cultural resources impacts would be reduced to a less than cumulatively considerable level.

### **18.1.3.5 Energy**

Pure Water Project energy impacts are primarily associated with the design of the AWPf for energy efficiency. Facility design would be consistent with California standards for energy efficiency and low-impact design, including local implementation of these statewide regulations (for example, the *Climate Action and Adaptation Plan* [City of Agoura Hills 2022a]).

To achieve these statewide goals from all project types, the regulations apply to the Pure Water Project as well as other projects occurring at the same time or in the same location as Pure Water Project features. Because the Pure Water Project would follow statewide measures for energy efficiency, the project would have a less than significant contribution to this significant cumulative impact.

### **18.1.3.6 Geology and Soils**

Geotechnical impacts related to seismic hazards and similar physical features are site specific rather than cumulative in nature. Like the Pure Water Project, all development would be subject to uniform site development and construction standards appropriate for regional geology and soil conditions. Therefore, there would be no cumulative impact. For an additional discussion of erosion and sediment control, Section 18.1.3.9 provides details.

### **18.1.3.7 Greenhouse Gas Emissions**

In general, operation of the Pure Water Project as well as other potential development would be consistent with regional growth projections and would use electricity from the SoCal Edison power grid. In this manner, all projects are expected to comply with the Renewable Portfolio Standards and AB 32 scoping plan requirements. There would be no cumulative impacts.

For other projects occurring throughout the project area, construction equipment would be required to follow standard BMPs pursuant to the air district regulations, including minimizing idling times and maintaining equipment in good condition. Therefore, the Pure Water Project cumulative contribution to GHG impacts during construction would be reduced to a less than cumulatively considerable level.

### **18.1.3.8 Hazards and Hazardous Materials**

Impacts from hazards and hazardous materials are site specific rather than cumulative in nature. Like the Pure Water Project, all other projects that include the routine use, storage, transport, and disposal of hazardous construction materials would follow DTSC, EPA, OSHA, and local Fire Department requirements, including preparation of a hazardous communication program, hazardous materials

business plan, and spill prevention and countermeasures plan. Therefore, there would be no cumulative impact.

#### **18.1.3.9 Hydrology and Water Quality**

Development of Alternative 1 Agoura Road AWPf would result in changes in surface runoff patterns. The extent of other potential development in this area is not expected to worsen runoff conditions, as development would be limited to the *Ladyface Mountain Specific Plan* area with a developed storm drain system. Therefore, there would be no cumulative impact. Furthermore, all projects that increase impervious surfaces would follow the Regional MS4 Permit (Order R4-2021-0105) standards for stormwater management and discharges.

Alternative 2 Reservoir AWPf would be built in an undeveloped area next to Las Virgenes Reservoir, where no additional, future development is expected. Because there would be no additional development, drainage impacts of this alternative would be less than significant.

Construction of all Pure Water Project features could result in erosion and siltation, with subsequent water quality impacts. This is expected to occur primarily during construction, as almost all operations activities would be contained within the AWPf site where runoff is treated. For all projects occurring throughout the project area, similar water quality effects could occur during construction, and additional effects could occur from rainfall onto developed sites after construction is finished. This is a potentially significant cumulative impact.

All projects would prepare an SWPPP to address specific, onsite pollutant sources and controls during and after construction. Therefore, the Pure Water Project's cumulative contribution to water quality impacts during and after construction would be reduced to a less than cumulatively considerable level.

#### **18.1.3.10 Land Use and Planning**

Land use impacts may occur for new Pure Water Project development, primarily the two AWPf alternatives. Alternative 1 Agoura Road AWPf would be constructed in a manner consistent with the *Ladyface Mountain Specific Plan*, which also applies to future development along Agoura Road in this area. The specific plan provides a framework that addresses the potential for cumulative land use impacts such that impacts would be less than significant. Therefore, development consistent with the specific plan also would be less than significant.

Alternative 2 Reservoir AWPf would be built in an undeveloped area next to Las Virgenes Reservoir where no additional, future development is expected. Because there would be no additional development, land use impacts of this alternative would be less than significant.

#### **18.1.3.11 Noise**

Potential noise impacts during operations would be concentrated in the vicinity of the new AWPf. The extent of other potential development in this area is not expected to result in noise impacts, as the area is designated primarily for office and light industrial business parks, which are not sensitive land uses.

The Pure Water Project pipeline construction projects would occur throughout the project area, with potentially significant noise impacts. Other potential development projects occurring in nearby areas also could result in significant noise impacts. The additional contribution of these other projects occurring at the same time as Pure Water Project construction activities could further worsen noise levels and result in a significant cumulative impact.

All projects would follow the local construction noise restrictions, including weekday and weekend construction hour limits, which is expected to help reduce cumulative noise impacts to a less than significant level. Because the Pure Water Project would follow local measures for noise control during construction, the project would have a less than significant contribution to local noise impacts.



### **18.1.3.12 Recreation**

The Pure Water Project does not contain features that would increase demand for recreation facilities during operations due to the small number of additional staff required to operate the AWPf. During construction, some recreation facilities could be disrupted from pipeline construction. For the most part, these types of temporary impacts would be site specific rather than cumulative in nature; and, in most areas, disruptions associated with other projects in addition to the Pure Water Project are not anticipated. This applies to the significant recreation effect from temporary closure of the Westlake Vista Trail within Triunfo Creek Park, where no other trail closures or similar recreation effects are expected.

Along the Conejo Open Space Trail, two other projects are expected to contribute to cumulative effects in addition to the concentrate pipeline: the Conejo Canyons Bridge and the Municipal Service Center Access Road. The bridge project is expected to be fully installed and operational when the concentrate pipeline is built, thereby allowing the pipeline to be installed within the bridge itself. The access road has not been approved, and construction work is not scheduled. However, construction may occur at the same time or immediately following pipeline installation. These three projects have both positive and negative recreation impacts.

For example, although there would be temporary impacts, the bridge project is expected to improve access to trails by providing a dedicated crossing of Arroyo Conejo. Overall, there would be a significant cumulative effect. The concentrate pipeline would have temporary impacts. Although the temporary impact would be significant, the trail would return to recreation use at the end of construction and, for that reason, would not result in a significant contribution to a significant cumulative effect.

### **18.1.3.13 Transportation and Traffic**

The Pure Water Project does not contain features that would substantially increase long-term demand for transportation services and facilities due to the small number of additional staff required to operate the AWPf. However, the project would increase vehicle use during construction activities, and also would require street and lane closures that would hinder full use of the local transportation system. For all construction activities occurring throughout the project area, similar types of temporary transportation impacts could occur. This is a potentially significant cumulative impact.

All projects would include general safety standards for traffic control, including measures to protect traffic safety, bicycle and pedestrian access, and coordination with transit and emergency service providers. The Pure Water Project would implement these standard measures, and in addition, would implement a TMP that would further coordinate traffic impacts and lane closures with the local communities. Therefore, the Pure Water Project's cumulative contribution to transportation impacts during construction would be reduced to a less than cumulatively considerable level.

### **18.1.3.14 Tribal Cultural Resources**

Development of most Pure Water Project facilities would occur in urbanized areas that have been previously disturbed; however, previous cultural surveys (described in Chapter 6, Cultural Resources) and Tribal consultation activities (described in Chapter 16, Tribal Cultural Resources) indicate the potential presence of undisturbed subsurface Tribal cultural resources in some portions of the project area. Construction of the Pure Water Project, in combination with cumulative development, would increase the potential to disturb these resources. This is a potentially significant cumulative impact.

Based on Tribal engagement activities and the inclusion of requested measures, such as preconstruction surveys, the Pure Water Project's cumulative contribution to Tribal cultural resources impacts would be reduced to a less than cumulatively considerable level.

### 18.1.3.15 Wildfire

Pure Water Project construction is within Fire Hazard Severity Zones. In addition, other development activity and similar projects also are expected to be under construction at the same time as the Pure Water Project. Given the presence of VHFHSZ in some portions of the project area, construction-related wildfires are a potentially significant cumulative effect.

To address wildlife concerns associated with construction activity, state and local regulations have been adopted to require BMPs that minimize fire risk. These regulations apply to the Pure Water Project as well as other projects occurring at the same time or in the same location as Pure Water Project features. Because the Pure Water Project would follow statewide and local measures to minimize fire risk, the project would have a less than significant contribution to this significant cumulative impact.

## 18.2 Growth-inducing Impacts

CEQA Guidelines Section 15126.2(d) requires that an EIR identify the likelihood that a proposed project could “foster” or stimulate “...economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.”

Urban growth within the Las Virgenes MWD service area is regulated by four incorporated cities – Calabasas, Hidden Hills, Agoura Hills, and Westlake Village – and by unincorporated Los Angeles County. The *Urban Water Management Plan* studied growth projections within these areas and estimated that 5,485 new dwelling units may be constructed by 2040, corresponding to an approximately 18% population increase (Las Virgenes MWD 2021). Future water demands would be met by available supplies during normal, single dry, and multiple dry years, including the contribution of the Pure Water Project (approximately 12% of total supplies).

The Pure Water Project is being developed, in part, to supplement imported water supplies with a local source. As described in Chapter 1, approximately 96% of Las Virgenes MWD drinking water is directly provided by Metropolitan from its SWP supply. Metropolitan considers its imported water supply system to be reliable but is working to increase local supplies within its large Southern California service area (Metropolitan 2021).

Similarly, Las Virgenes MWD assumes more uncertainty in SWP deliveries (Las Virgenes MWD 2021). Although the Pure Water Project’s contribution to meet total water demands may contribute to future growth in the area, its intent is to soften the impact of severe curtailments in imported water deliveries while also ensuring continued (and more balanced) use of the existing recycled water system.

## 18.3 Significant Irreversible Environmental Changes

CEQA Guidelines Section 15126.2(c) requires agencies to consider to the fullest extent possible irreversible and irretrievable commitments of resources that would be involved in the proposed action should it be implemented. Nonrenewable resources committed during Pure Water Project implementation might be irreversible because commitments of such resources might permanently remove the resources from further use. CEQA requires an evaluation of irretrievable resources to assure that consumption is justified. For example, cultural resources are nonrenewable; therefore, any destruction or loss of those resources means they are irreplaceable.

Both of the AWP alternatives and all conveyance projects would result in use of construction materials that could not be restored (for example, metal materials; excavating and importing soils and rocks; and energy used to manufacture, transport, or install the new pipelines) and the use of nonrenewable resources (for example, fuel) to operate construction equipment. In addition, operation of the AWP would result in use of energy resources (for example, fossil fuels and electricity) and chemicals. Consumption of these nonrenewable energy resources would be minimal and would not represent a significant impact on irreversible and irretrievable environmental commitments.



## **18.4 Significant and Unavoidable Environmental Impacts**

CEQA Guidelines Section 15126.2(b) requires agencies to describe the significant environmental effects that cannot be avoided if the proposed project is implemented. Based on the analysis in Chapters 3 through 17, two environmental effects were identified as significant and unavoidable:

- Impact 5-1 Special-Status Species
- Impact 14-1 Recreation Access and Opportunities

All other environmental effects would be mitigated to a less than significant level.

## 19. Alternatives

This chapter discusses a reasonable range of alternatives to the Pure Water Project.

### 19.1 Introduction

CEQA requires that a lead agency evaluate the comparative effects of a range of reasonable alternatives to the project that would feasibly attain most of the project's primary objectives but would avoid or substantially lessen the project's significant effects (CEQA Guidelines, Section 15126.6(a)).

Section 15126.6 also states that an EIR is required to present only those alternatives necessary to permit a reasoned choice. Significant effects of the alternatives should be discussed – but in less detail – than those of the project.

An EIR is required to assess the identified alternatives and determine which of the alternatives is environmentally superior. One of the alternatives assessed must be the No Project alternative. If the No Project alternative is identified as the environmentally superior alternative, then another of the remaining alternatives must be identified as the next environmentally superior alternative.

This Program EIR evaluates two alternatives at an equal level of detail: Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf. This chapter contains the No Project alternative as required by CEQA, as well as three other alternatives appropriate for the program-level decisions under consideration: upgrade of the Tapia WRF, the Encino Reservoir Project, and other routes for the conveyance pipelines.

### 19.2 No Project Alternative

The No Project alternative does not include any new facilities or operational changes to the existing JPA system. Water demands would continue to be met primarily from the SWP, and Tapia WRF effluent would continue to be used for landscape irrigation when needed (primarily during summer months). Tapia WRF discharges into Malibu Creek would still be needed most of the time to meet the minimum instream flow requirement or because there is no demand for recycled water.

None of the project objectives would be met by the No Project alternative. In addition, the No Project alternative does not include any features needed to comply with the Malibu Creek water quality requirements for nitrogen and phosphorus removal and may still require some discharges into the creek when otherwise prohibited by the discharge permit. For this reason, the No Project alternative is not feasible.

### 19.3 Tapia Water Reclamation Facility Upgrade Project

In the absence of the Pure Water Project, the Las Virgenes MWD would still be required to meet Malibu Creek discharge requirements, including strict new limits on nitrogen and phosphorus concentrations. Additional treatment facilities would be required at the Tapia WRF to meet these requirements. A Tapia WRF expansion project would include a new treatment process for nitrogen and phosphorus removal using RO – like the proposed AWPf processes at the Alternative 1 Agoura Road and Alternative 2 reservoir sites. The existing Tapia WRF property does not contain sufficient room for such a facility; therefore, new site development would be required nearby. Information about a potential Tapia WRF expansion project is based on *Pure Water Project Las Virgenes-Triunfo Joint Powers Authority Title XVI Feasibility Study* (Las Virgenes MWD 2018).

The new RO facility would generate a reject stream that requires disposal; therefore, the Tapia WRF Upgrade Project also includes a concentrate pipeline. The new pipeline would follow Las Virgenes Road to Agoura Road (approximately 9 miles) and then follow one of the Pure Water Project concentrate pipeline alignments to connect to the SMP on Santa Rosa Road in unincorporated Ventura County.



The Tapia WRF Upgrade Project would not meet the objective of increasing water supply reliability. In terms of Malibu Creek discharges and balancing recycled water system demands, the objectives would partially be met. Nitrogen and phosphorus concentrations would meet the discharge permit standards, and the minimum instream flow requirements could be met from Tapia WRF discharges.

### **19.4 Encino Reservoir Project**

The Pure Water Project was defined in a 2018 feasibility study that helped define the project objectives and explore opportunities for additional recycled water use, and developed two primary alternatives: the Pure Water Project and the Encino Reservoir Project (Las Virgenes MWD 2018). At the conclusion of that study, the JPA decided to advance the Pure Water Project for detailed consideration as the proposed project.

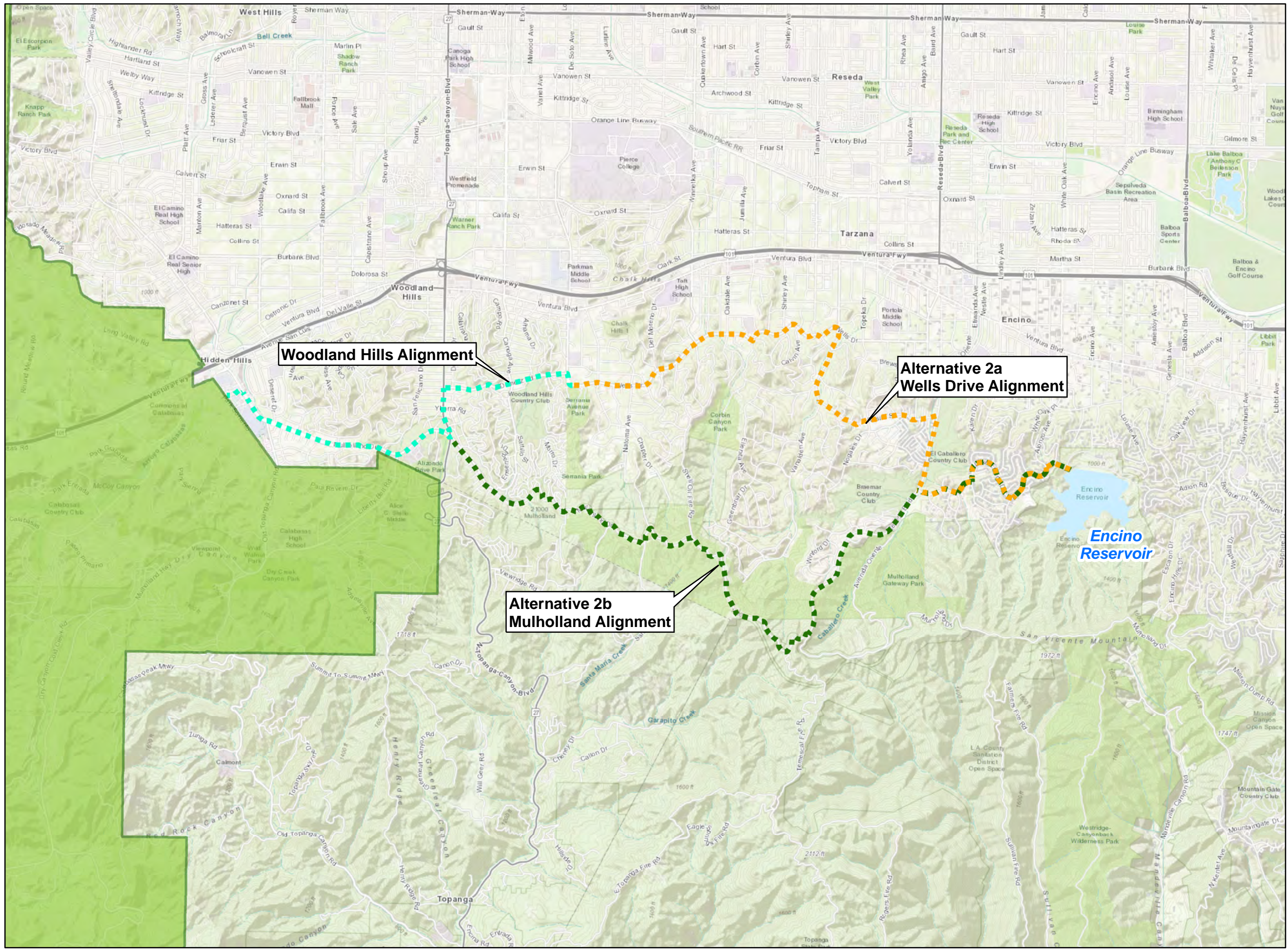
The Encino Reservoir Project is a seasonal storage project to convey surplus recycled water to the currently dormant Encino Reservoir during the low-demand winter season for use during the high-demand summer season. Figure 19-1 shows the reservoir location and the two pipeline alignments that were considered.

The project would require minimal additional treatment beyond the existing recycled water treatment process, as the stored water would only be available for nonpotable use. Encino Reservoir is owned by Los Angeles Department of Water and Power; thus, this project would be developed in cooperation with the City of Los Angeles, including seismic upgrades and other improvements to the reservoir.

The Encino Reservoir Project would receive Title 22 recycled water from the Tapia WRF that already meets standards for unrestricted nonpotable reuse. However, small treatment facilities would be constructed at Encino Reservoir to remove algae or debris from the open-air reservoir. Although treatment facilities would be small relative to the Pure Water Project, more conveyance improvements (pipelines and pump stations) would be needed. Approximately 80,000 feet of new pipelines would be installed to connect the existing recycled water system to Encino Reservoir for storage and from the reservoir back into the recycled water system, along one of two optional alignments (Wells Drive and Mulholland Drive).

The project would meet the objectives of eliminating Tapia WRF discharges into Malibu Creek and helping balance recycled water system demands; however, it would not meet the objective of increasing water supply reliability. In comparison to the Pure Water Project, the Encino Reservoir Project would have fewer capital costs, but in the long run, would be less cost-efficient primarily because this alternative would not produce a new source of potable water; therefore, it would not reduce the cost or impact of importing potable water (Las Virgenes MWD 2018).



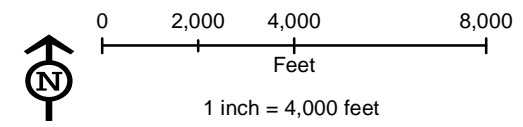


**Legend**

- LVMWD Sewer Service
- Woodland Hills Alignment
- Mulholland Alignment
- Wells Drive Alignment



Sources:  
ESRI World Topographic Map; LVMWD, 2022



**Figure 19-1**  
**Encino Reservoir Project Alternatives**  
Pure Water Project Las Virgenes – Triunfo



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As part of the feasibility study, the qualitative benefits of the Encino Reservoir Project were presented in comparison to the Pure Water Project. Table 19-1 shows those comparative benefits as reported in the feasibility study (Las Virgenes MWD 2018).

**Table 19-1. Qualitative Benefits of Alternatives**

Benefit	Pure Water Project	Encino Reservoir Project
Reduce Reliance on Imported Water	Significantly reduces dependence	Somewhat reduces dependence
Increase Use of Local Water Source	Maximizes use of local supply	Increases use of local supply
Reduce Discharge to Malibu Creek	Eliminates discharges	Eliminates discharges
Provide Increased Seasonal Flexibility	Provides year-round flexibility for indirect potable reuse	Provides seasonal flexibility for nonpotable reuse
Maximize Beneficial Reuse	Retains full benefit for JPA customers	Retains some benefit for new recycled water customers
Save Energy	Significantly offsets demand for energy-intensive imported water	Somewhat offsets demand for energy-intensive imported water
Reuse Existing Infrastructure	Efficiently uses existing assets in combination with new infrastructure	Somewhat uses existing assets in combination with new infrastructure
Implement Forward Thinking	Is visionary and consistent with JPA Board's adopted Guiding Principles	Expands current use only
Offer Regional Benefits	Reduces regional demands on imported water supplies	Offers unallocated surplus for regional use
Remove Salt from Basin	Removes salt via new brine line	Does not remove salt

Source: Las Virgenes MWD 2018

## 19.5 Alternative Conveyance Routes

The Program EIR evaluates various conveyance route options for the source water, purified water, and concentrate pipelines. Other routes are available. Early work for the Pure Water Project identified a wider range of alignments for all three pipeline types, which are shown on Figure 19-2 and summarized in this section.

These other alignments would meet all of the project objectives; but, for various reasons, they were considered to be less desirable than the options evaluated in this Program EIR and were not carried forward for detailed study:

- Source Water Pipeline along Reyes Adobe Road – This option would connect the existing recycled water system on Thousand Oaks Boulevard to one of the AWPf alternatives with an alignment along Reyes Adobe Road, crossing U.S. 101 within the existing bridge structure.
- Source Water Pipeline along Russell Ranch Road – This option would connect the existing recycled water system at the intersection of Thousand Oaks Boulevard and Lindero Canyon Road to one of the AWPf alternatives following the southern portion of Russell Ranch Road, crossing U.S. 101 near In-N-Out Burger restaurant using trenchless construction.
- Purified Water Pipeline Greenfields and Ridgeford Drive Alignment – This option would connect the Agoura Road AWPf to Las Virgenes Reservoir through the Lexington Apartments and along Ridgeford Drive, after following a greenfield alignment behind residential areas in Westlake Village.
- Purified Water Pipeline Residential Alignment – This option would connect the Agoura Road AWPf to Las Virgenes Reservoir along Lindero Canyon Road but would reach the reservoir along residential streets rather than through Triunfo Creek Park. The alignment would follow Triunfo Canyon Road and



Three Springs Drive, reaching the reservoir along the existing Westlake Filtration Plant access road off Torchwood Place. From the Westlake Filtration Plant, the pipeline would be installed across the dam and along the reservoir shoreline to the discharge point.

- Concentrate Pipeline Erbes, Pederson, and Moorpark Alignment – This option would connect one of the AWPf alternatives to the SMPs following one of the proposed alignments to Erbes Road. From that point, the alignment would follow Erbes Road, Pederson Road, and Moorpark Road, with a connection point at Santa Rosa Road at Moorpark Road.
- Concentrate Pipeline Moorpark Alignment – This option would connect one of the AWPf alternatives to the SMP following one of the proposed alignments to Moorpark Road. From that point, the alignment would follow Moorpark Road to a connection point at Santa Rosa Road at Moorpark Road.
- Concentrate Pipeline Lynn Road and North Fork Arroyo Conejo Alignment – This option would connect one of the alternatives to the SMP following one of the proposed alignments to Lynn Road. From that point, the alignment would follow Lynn Road to Avenida De Las Flores and Flaming Star Avenue, and then along the North Fork Arroyo Conejo to the Hill Canyon WWTP, with a connection point at Santa Rosa Road at Hill Canyon Road.
- Concentrate Pipeline Conejo Canyon Alignment – This option would connect one of the alternatives to the SMP following one of the proposed alignments to just past Lynn Road. From that point, the alignment would follow Arroyo Conejo through Conejo Canyon to the Hill Canyon WWTP, with a connection point at Santa Rosa Road at Hill Canyon Road.
- Concentrate Pipeline Lawrence and Roadrunner Alignment – This option would connect one of the alternatives to the SMP following one of the proposed alignments to Ventu Park Road. From Ventu Park Road, the alignment would then follow Lawrence Drive and Roadrunner Avenue, crossing through a greenfield alignment to the Hill Canyon WWTP, with a connection point at Santa Rosa Road at Hill Canyon Road.
- Concentrate Pipeline U.S. 101 Alignment – This option would connect one of the alternatives to the SMP following one of the proposed alignments to Ventu Park Road. Rather than turning onto Ventu Park Road, the alignment would continue along Hillcrest Drive, Camino Dos Rios, and Grande Vista Drive, paralleling U.S. 101. From that point, the alignment would follow the U.S. 101 westbound shoulder to Camarillo Springs Road. From that point, the alignment would follow Ridge View Street, Adohr Lane, and Pleasant Valley Road, with a connection point at Pleasant Valley Road at Lewis Road.

### 19.6 Comparison of Alternative and Environmentally Superior Alternative

Table 19-2 provides a comparison of the alternatives.

The No Project Alternative is the only alternative that would avoid or substantially lessen the significant and unavoidable impacts of the Pure Water Project. Therefore, the No Project alternative would be considered the environmentally superior alternative. However, it would not meet any Pure Water Project objectives and would conflict with regulatory requirements associated with Malibu Creek discharges.

As shown in Table 19-2, of the remaining alternatives, only Alternative 1 Agoura Road AWPf and Alternative 2 Reservoir AWPf would meet all Pure Water Project objectives. In addition, other alternatives could result in the same or greater impacts. As described in Chapters 3 through 17, the two AWPf alternatives would have similar impacts in type, scale, and location; but the overall scale of the anticipated environmental impacts under Alternative 2 Reservoir AWPf would be greater for the following reasons:

- The need to construct an access road between Triunfo Canyon Road and the AWPf site, considering:
  - The access road would have construction impacts that would not occur under Alternative 1 Agoura Road AWPf, including new disruptions (for example, noise impacts) to Westlake Village residents, such as along Saddle Mountain Drive.
  - Operation of the AWPf would involve new vehicle trips in the area by plant operators and for materials delivery (for example, to replenish chemical supplies).

- More construction improvements required for pipelines and electrical supplies along the Westlake Vista Trail within Triunfo Creek Park. Alternative 1 Agoura Road AWPf requires installation of a purified water pipeline within this area. Alternative 2 Reservoir AWPf requires installation of a source water pipeline, concentrate disposal pipeline, sewer pipeline, and electrical conduits. The larger footprint associated with these additional facilities would worsen the impacts in this area, including impacts to special-status plants, oak trees, and recreation use.
- The need to construct a pump station at one of two optional sites along Lindero Canyon Road, which would not be needed under Alternative 2 Agoura Road AWPf.
- Overall longer length of pipeline construction – approximately 23 miles compared to 20 miles under Alternative 1 Agoura Road AWPf. This includes a larger construction footprint along Lindero Canyon Road to accommodate two pipelines (source water and concentrate disposal) rather than one pipeline (purified water) under Alternative 1 Agoura Road AWPf.



**Table 19-2. Comparison of the Alternatives**

Alternative	Major Characteristics	Environmental Impacts	Meets Objectives?
Alternative 1 Agoura Road AWPf	<ul style="list-style-type: none"> <li>▪ Treatment facility on 2.8 acres</li> <li>▪ ~20 miles of new pipelines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Loss of recreation access during construction</li> <li>▪ Removal of oak trees at AWPf and in Triunfo Creek Park</li> <li>▪ Disruption of native plant occurrences</li> <li>▪ Potential to disrupt buried resources, including Tribal cultural resources</li> <li>▪ Construction disruptions (traffic, noise) along city streets</li> </ul>	Yes.
Alternative 2 Reservoir AWPf	<ul style="list-style-type: none"> <li>▪ Treatment facility on 2.8 acres</li> <li>▪ Pump station on Lindero Canyon Road</li> <li>▪ ~23 miles of new pipelines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Loss of recreation access during construction</li> <li>▪ Removal of oak trees in Triunfo Creek Park</li> <li>▪ Disruption of native plant occurrences in Triunfo Creek Park</li> <li>▪ Potential to disrupt buried resources, including Tribal cultural resources</li> <li>▪ Construction disruptions (traffic, noise) along city streets</li> </ul>	Yes.
No Project Alternative	<ul style="list-style-type: none"> <li>▪ None</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>	No.
Tapia WRF Upgrade Project	<ul style="list-style-type: none"> <li>▪ New treatment process at Tapia WRF</li> <li>▪ Concentrate pipeline (~24 miles)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Disruption of recreation uses near Tapia WRF</li> <li>▪ Removal of oak trees and other native vegetation</li> <li>▪ Potential to disrupt buried resources</li> </ul>	Partially meets Malibu Creek and recycled water objectives. Does not meet water supply objective.
Encino Reservoir Project	<ul style="list-style-type: none"> <li>▪ Pipelines to and from Encino Reservoir (~15 miles)</li> <li>▪ Improvements at dam and reservoir area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential to disrupt buried resources, including Tribal cultural resources</li> <li>▪ Construction disruptions (traffic, noise) along city streets</li> </ul>	Meets Malibu Creek and recycled water objectives. Does not meet water supply objective.
Alternative Conveyance Routes	<ul style="list-style-type: none"> <li>▪ Optional pipeline routes of various lengths</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential to disrupt buried resources, including Tribal cultural resources</li> <li>▪ Construction disruptions (traffic, noise) along city streets</li> </ul>	Yes.

~ = approximately

## 20. Report Preparation

This EIR was prepared by Jacobs, at the request of the JPA. Lead Agency, Jacobs EIR authors and report contributors, and associated support involved in the preparation and distribution of the EIR are listed in this chapter.

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# **Appendix A**

## **Emissions Calculations**

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**Construction Emissions Summary**

**Maximum Daily Emissions within SCAQMD (onsite and offsite)**

	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
AWPF 2025	1.3055	12.6925	12.9445	0.0438	1.2502	0.5905	4,485.47
AWPF 2026	2.6102	20.891	25.1006	0.0803	3.5904	1.443	8,098.19
AWPF 2027	1.4282	10.5277	11.9179	0.0354	2.1005	0.8131	3,506.93
Pipeline (per crew)	1.675	19.370	18.399	0.082	2.721	0.983	8732.822
Pipeline (3 crews)	5.025	58.110	55.196	0.247	8.162	2.949	26198.467
<b>Maximum Daily Emissions</b>	<b>7.64</b>	<b>79.00</b>	<b>80.30</b>	<b>0.33</b>	<b>11.75</b>	<b>4.39</b>	NA
<b>SCAQMD thresholds</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>	NA

Note

Maximum daily emissions are calculated by combining the highest daily emissions of AWPf construction and the emissions from 3 pipeline segments construction.

**Maximum Daily Emissions within VCAPCD (onsite and offsite)**

	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Pipeline (one crew)	1.681	19.118	18.516	0.082	2.727	0.982	8692.574

Note

Maximum daily emissions are calculated based on the emissions from one pipeline segments construction.

**Maximum Daily Emissions within SCAQMD (onsite only)**

	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
AWPF 2025	1.1851	10.328	11.4686	0.0292	0.4091	0.3498
AWPF 2026	2.1542	16.7629	20.2632	0.0425	0.651	0.6163
AWPF 2027	1.1459	8.8312	8.9589	0.0165	0.345	0.3272
Pipeline (one crew)	1.479	11.160	15.552	0.041	0.969	0.461
<b>SCAQMD LST thresholds</b>	<b>NA</b>	<b>147</b>	<b>644</b>	<b>NA</b>	<b>6</b>	<b>4</b>

**AWPF Operational Emissions (all in SCAQMD)**

**Vehicle Emission Factors (EMFAC2017)**

	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e
	g/mile	g/mile	g/mile	g/mile	g/mile	g/mile	g/mile
Worker Commute	0.007	0.029	0.555	0.002	0.046	0.019	238.711
Heavy duty truck	0.019	2.375	0.200	0.011	0.117	0.055	1255.779

Note:

Vehicle emission factors were obtained from EMFAC2017:

Region: South Coast AQMD, 2028

Speed and model year: aggregated

Worker commute vehicles include auto and light duty trucks.

Haul trucks are assumed to be heavy duty truck

**Vehicle Emissions**

Vehicle Types	Round Trips/day	miles/round trip	Number of Days per Year	Daily Emissions							Annual Emissions						
				ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e
				lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	ton/year	ton/year	ton/year	ton/year	ton/year	ton/year	metric ton/year
worker Commute	6	40	365	0.004	0.015	0.294	0.001	0.024	0.010	126.302	0.001	0.003	0.054	0.000	0.004	0.002	20.911
Haul Truck	1	100	365	0.004	0.524	0.044	0.003	0.026	0.012	276.847	0.001	0.096	0.008	0.000	0.005	0.002	50.525
<b>Total</b>				<b>0.008</b>	<b>0.539</b>	<b>0.338</b>	<b>0.004</b>	<b>0.050</b>	<b>0.022</b>	<b>403.150</b>	<b>0.001</b>	<b>0.098</b>	<b>0.062</b>	<b>0.001</b>	<b>0.009</b>	<b>0.004</b>	<b>71.436</b>

Note: AWPF operation would not be year round. Operation days of 365 days/year were used in the emission calculation to be conservative.

**Emergency generator emission factors**

Emergency Generator HP rating:	155
Number of generators	2
hours/day	1
hours/year	50
Emission factors	g/hp-hr
	0.19
	4.17
	3.7
	0.006
	0.128
	0.128
	568.30
Maximum Daily Emissions	lb/day
	0.130
	2.850
	2.529
	0.004
	0.087
	0.087
	388.39
Annual GHG Emissions (metric tons/year)	
<b>8.81</b>	

Note:

Emission factors are obtained from CalEEMod User's Guide Table 3.4 and 3.5. Engine is assumed to be a Tier 2.

**Maximum Daily Operation Emissions**

	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e	
Daily Emissions	lb/day	0.138	3.389	2.867	0.008	0.138	0.110	791.538
SCAQMD CEQA Thresholds	lb/day	55	55	550	150	150	55	NA

Maximum daily emissions were estimated based on emissions from vehicle trips and the emergency engine testing/maintenance.

**GHG Emissions Summary**

**AWPF Construction GHG Emissions(CalEEMod)**

	MT CO2/year
AWPF 2025	<b>217.96</b>
AWPF 2026	<b>923.30</b>
AWPF 2027	<b>370.66</b>

**Pipeline Construction GHG Emissions In Los Angeles County**

	Pipeline Length ft	Construction Days	lb CO2e/day	MT CO2e/year
Source Water Alignment - 2.88 Miles	15,206.40	76	8732.82	<b>301.18</b>
Purified Water Alignment - 3.07 Miles	16,209.60	81	8732.82	<b>321.05</b>
Concentrate Alignment - 1.74 Miles	9,187.20	46	8732.82	<b>181.96</b>

Note: Construction days of each alignment were estimated based on the assumption that each 1000 ft of pipeline segment will take 5 days to complete.

**Pipeline Construction GHG Emissions in Ventura county**

	Pipeline Length ft	Construction Days	lb CO2e/day	MT CO2e/year
Concentrate Alignment - 11.45 Miles	60,456.00	302	8692.57	<b>1191.88</b>

**Operation GHG Emissions (Direct Emissions)**

	MT CO2e/Year
<b>AWPF Vehicle Trips</b>	<b>71.44</b>
<b>AWPF Emergency Engines</b>	<b>8.81</b>

**GHG Emissions from Electricity Use (Indirect Emissions)**

	MWh/year	MT CO2e/Year
Power demand		
<b>CO2e Emissions</b>	10753.07	<b>1916.88</b>

Note:

GHG emission factors:

	lb/MWh	GWP
CO2	390.98	1
CH4	0.033	25
N2O	0.004	298
CO2e	392.997	NA

Note:

Emission factors are CalEEMod default for SCE.

CO2e were calculated using the global warming potential (GWP): 100-year GWP from 40 CFR Appendix Table A-1 to Subpart A of Part 98 - Global Warming Potentials

**Total Construction GHG Emissions**

Construction GHG Emissions (MT CO2e)	3507.98
Amortized GHG Emissions (MT CO2e/year)	116.93
AWPF Operation Emissions (MT CO2e/year)	80.24
Electricity Use (MT CO2e/year)	1916.88
Total GHG Emissions (MT CO2e/year)	2114.06
<b>SCAQMD GHG Emission thresholds</b>	<b>10,000</b>



Pure Water\_AWPF Construction - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Pure Water\_AWPF Construction**  
**South Coast AQMD Air District, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	130.50	1000sqft	3.00	130,500.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2028	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	390.98	<b>CH4 Intensity (lb/MW hr)</b>	0.033	<b>N2O Intensity (lb/MW hr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

- Project Characteristics -
- Land Use - project specific
- Construction Phase - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Trips and VMT - project specific
- Grading - project specific
- Vehicle Trips - not calculating operational emissions with CalEEMod
- Consumer Products - project specific
- Area Coating -
- Landscape Equipment - project specific
- Water And Wastewater - not calculating operational emissions with CalEEMod
- Solid Waste - Not calculating operational emissions with CalEEMod

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	220.00	240.00

tblConstructionPhase	NumDays	220.00	240.00
tblConstructionPhase	NumDays	3.00	120.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblGrading	AcresOfGrading	60.00	3.00
tblGrading	MaterialExported	0.00	7,000.00
tblLandscapeEquipment	NumberSummerDays	250	0
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	161.82	0.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripNumber	875.00	500.00
tblTripsAndVMT	VendorTripLength	6.90	0.00
tblTripsAndVMT	VendorTripLength	6.90	100.00
tblTripsAndVMT	VendorTripLength	6.90	100.00
tblTripsAndVMT	VendorTripNumber	21.00	10.00
tblTripsAndVMT	VendorTripNumber	21.00	4.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripNumber	13.00	15.00
tblTripsAndVMT	WorkerTripNumber	55.00	65.00
tblTripsAndVMT	WorkerTripNumber	55.00	45.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	6.42	0.00

tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	30,178,125.00	0.00
tblWater	SepticTankPercent	10.33	100.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	1.3055	12.6925	12.9445	0.0438	0.8531	0.3971	1.2502	0.2245	0.3660	0.5905	0.0000	4,400.6374	4,400.6374	0.9916	0.2015	4,485.4673
2026	2.6102	20.8910	25.1006	0.0803	2.9003	0.6901	3.5904	0.7897	0.6534	1.4430	0.0000	7,955.5460	7,955.5460	1.0776	0.3883	8,098.1933
2027	1.4282	10.5277	11.9179	0.0354	1.7377	0.3628	2.1005	0.4690	0.3441	0.8131	0.0000	3,449.6437	3,449.6437	0.3843	0.1600	3,506.9329
Maximum	2.6102	20.8910	25.1006	0.0803	2.9003	0.6901	3.5904	0.7897	0.6534	1.4430	0.0000	7,955.5460	7,955.5460	1.0776	0.3883	8,098.1933

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	1.3055	12.6925	12.9445	0.0438	0.8531	0.3971	1.2502	0.2245	0.3660	0.5905	0.0000	4,400.6374	4,400.6374	0.9916	0.2015	4,485.4673
2026	2.6102	20.8910	25.1006	0.0803	2.9003	0.6901	3.5904	0.7897	0.6534	1.4430	0.0000	7,955.5460	7,955.5460	1.0776	0.3883	8,098.1933
2027	1.4282	10.5277	11.9179	0.0354	1.7377	0.3628	2.1005	0.4690	0.3441	0.8131	0.0000	3,449.6437	3,449.6437	0.3843	0.1600	3,506.9329



Maximum	2.6102	20.8910	25.1006	0.0803	2.9003	0.6901	3.5904	0.7897	0.6534	1.4430	0.0000	7,955.5460	7,955.5460	1.0776	0.3883	8,098.1933
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/5/2025	1/19/2026	5	120	
2	Building Construction	Building Construction	1/20/2026	12/21/2026	5	240	
3	MEP	Building Construction	12/22/2026	11/22/2027	5	240	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Off-Highway Trucks	1	8.00	402	0.38
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
MEP	Cranes	1	8.00	231	0.29
MEP	Forklifts	2	8.00	89	0.20
MEP	Welders	3	8.00	46	0.45

#### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	
Site Preparation		5	15.00	0.00	500.00	40.00	0.00	100.00	LD_Mix	HDT_Mix	HHTD
Building Construction		10	65.00	10.00	0.00	40.00	100.00	100.00	LD_Mix	HDT_Mix	HHTD
MEP		6	45.00	4.00	0.00	40.00	100.00	100.00	LD_Mix	HDT_Mix	HHTD

### 3.1 Mitigation Measures Construction

### 3.2 Site Preparation - 2025

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0331	0.0000	0.0331	3.8600e-003	0.0000	3.8600e-003			0.0000			0.0000
Off-Road	1.1851	10.3280	11.4686	0.0292		0.3760	0.3760		0.3459	0.3459		2,826.0826	2,826.0826	0.9140		2,848.9329
Total	1.1851	10.3280	11.4686	0.0292	0.0331	0.3760	0.4091	3.8600e-003	0.3459	0.3498		2,826.0826	2,826.0826	0.9140		2,848.9329

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0253	2.2982	0.4734	0.0111	0.3641	0.0189	0.3829	0.0998	0.0181	0.1178		1,222.3272	1,222.3272	0.0722	0.1944	1,282.0521
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0951	0.0662	1.0026	3.4800e-003	0.4560	2.2200e-003	0.4582	0.1209	2.0500e-003	0.1229		352.2277	352.2277	5.4300e-003	7.1100e-003	354.4823
Total	0.1204	2.3644	1.4760	0.0146	0.8200	0.0211	0.8411	0.2207	0.0201	0.2408		1,574.5548	1,574.5548	0.0776	0.2015	1,636.5344

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0331	0.0000	0.0331	3.8600e-003	0.0000	3.8600e-003			0.0000			0.0000
Off-Road	1.1851	10.3280	11.4686	0.0292		0.3760	0.3760		0.3459	0.3459	0.0000	2,826.0826	2,826.0826	0.9140		2,848.9329
<b>Total</b>	<b>1.1851</b>	<b>10.3280</b>	<b>11.4686</b>	<b>0.0292</b>	<b>0.0331</b>	<b>0.3760</b>	<b>0.4091</b>	<b>3.8600e-003</b>	<b>0.3459</b>	<b>0.3498</b>	<b>0.0000</b>	<b>2,826.0826</b>	<b>2,826.0826</b>	<b>0.9140</b>		<b>2,848.9329</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0253	2.2982	0.4734	0.0111	0.3641	0.0189	0.3829	0.0998	0.0181	0.1178		1,222.3272	1,222.3272	0.0722	0.1944	1,282.0521
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0951	0.0662	1.0026	3.4800e-003	0.4560	2.2200e-003	0.4582	0.1209	2.0500e-003	0.1229		352.2277	352.2277	5.4300e-003	7.1100e-003	354.4823
<b>Total</b>	<b>0.1204</b>	<b>2.3644</b>	<b>1.4760</b>	<b>0.0146</b>	<b>0.8200</b>	<b>0.0211</b>	<b>0.8411</b>	<b>0.2207</b>	<b>0.0201</b>	<b>0.2408</b>		<b>1,574.5548</b>	<b>1,574.5548</b>	<b>0.0776</b>	<b>0.2015</b>	<b>1,636.5344</b>

**3.2 Site Preparation - 2026**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0331	0.0000	0.0331	3.8600e-003	0.0000	3.8600e-003			0.0000			0.0000
Off-Road	1.1851	10.3280	11.4686	0.0292		0.3760	0.3760		0.3459	0.3459		2,826.0826	2,826.0826	0.9140		2,848.9329
<b>Total</b>	<b>1.1851</b>	<b>10.3280</b>	<b>11.4686</b>	<b>0.0292</b>	<b>0.0331</b>	<b>0.3760</b>	<b>0.4091</b>	<b>3.8600e-003</b>	<b>0.3459</b>	<b>0.3498</b>		<b>2,826.0826</b>	<b>2,826.0826</b>	<b>0.9140</b>		<b>2,848.9329</b>



**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	2.2712	0.4805	0.0109	0.3641	0.0188	0.3829	0.0998	0.0180	0.1177		1,198.6167	1,198.6167	0.0725	0.1907	1,257.2450
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0902	0.0598	0.9393	3.3800e-003	0.4560	2.1100e-003	0.4581	0.1209	1.9400e-003	0.1228		341.4336	341.4336	4.9000e-003	6.6900e-003	343.5486
<b>Total</b>	<b>0.1152</b>	<b>2.3310</b>	<b>1.4198</b>	<b>0.0142</b>	<b>0.8200</b>	<b>0.0209</b>	<b>0.8409</b>	<b>0.2207</b>	<b>0.0199</b>	<b>0.2406</b>		<b>1,540.0503</b>	<b>1,540.0503</b>	<b>0.0774</b>	<b>0.1973</b>	<b>1,600.7936</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0331	0.0000	0.0331	3.8600e-003	0.0000	3.8600e-003			0.0000			0.0000
Off-Road	1.1851	10.3280	11.4686	0.0292		0.3760	0.3760		0.3459	0.3459	0.0000	2,826.0826	2,826.0826	0.9140		2,848.9329
<b>Total</b>	<b>1.1851</b>	<b>10.3280</b>	<b>11.4686</b>	<b>0.0292</b>	<b>0.0331</b>	<b>0.3760</b>	<b>0.4091</b>	<b>3.8600e-003</b>	<b>0.3459</b>	<b>0.3498</b>	<b>0.0000</b>	<b>2,826.0826</b>	<b>2,826.0826</b>	<b>0.9140</b>		<b>2,848.9329</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	2.2712	0.4805	0.0109	0.3641	0.0188	0.3829	0.0998	0.0180	0.1177		1,198.6167	1,198.6167	0.0725	0.1907	1,257.2450
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0902	0.0598	0.9393	3.3800e-003	0.4560	2.1100e-003	0.4581	0.1209	1.9400e-003	0.1228		341.4336	341.4336	4.9000e-003	6.6900e-003	343.5486

<b>Total</b>	<b>0.1152</b>	<b>2.3310</b>	<b>1.4198</b>	<b>0.0142</b>	<b>0.8200</b>	<b>0.0209</b>	<b>0.8409</b>	<b>0.2207</b>	<b>0.0199</b>	<b>0.2406</b>		<b>1,540.0503</b>	<b>1,540.0503</b>	<b>0.0774</b>	<b>0.1973</b>	<b>1,600.7936</b>
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### 3.3 Building Construction - 2026

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1542	16.7629	20.2632	0.0425		0.6510	0.6510		0.6163	0.6163		3,984.1428	3,984.1428	0.9679		4,008.3405
<b>Total</b>	<b>2.1542</b>	<b>16.7629</b>	<b>20.2632</b>	<b>0.0425</b>		<b>0.6510</b>	<b>0.6510</b>		<b>0.6163</b>	<b>0.6163</b>		<b>3,984.1428</b>	<b>3,984.1428</b>	<b>0.9679</b>		<b>4,008.3405</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0650	3.8690	0.7672	0.0231	0.9244	0.0300	0.9544	0.2658	0.0287	0.2944		2,491.8575	2,491.8575	0.0885	0.3593	2,601.1422
Worker	0.3910	0.2592	4.0702	0.0146	1.9759	9.1300e-003	1.9850	0.5239	8.4000e-003	0.5323		1,479.5457	1,479.5457	0.0212	0.0290	1,488.7106
<b>Total</b>	<b>0.4560</b>	<b>4.1282</b>	<b>4.8374</b>	<b>0.0377</b>	<b>2.9003</b>	<b>0.0391</b>	<b>2.9394</b>	<b>0.7897</b>	<b>0.0371</b>	<b>0.8267</b>		<b>3,971.4032</b>	<b>3,971.4032</b>	<b>0.1097</b>	<b>0.3883</b>	<b>4,089.8528</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1542	16.7629	20.2632	0.0425		0.6510	0.6510		0.6163	0.6163	0.0000	3,984.1428	3,984.1428	0.9679		4,008.3405

Total	2.1542	16.7629	20.2632	0.0425		0.6510	0.6510		0.6163	0.6163	0.0000	3,984.1428	3,984.1428	0.9679		4,008.3405
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**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0650	3.8690	0.7672	0.0231	0.9244	0.0300	0.9544	0.2658	0.0287	0.2944		2,491.8575	2,491.8575	0.0885	0.3593	2,601.1422
Worker	0.3910	0.2592	4.0702	0.0146	1.9759	9.1300e-003	1.9850	0.5239	8.4000e-003	0.5323		1,479.5457	1,479.5457	0.0212	0.0290	1,488.7106
Total	0.4560	4.1282	4.8374	0.0377	2.9003	0.0391	2.9394	0.7897	0.0371	0.8267		3,971.4032	3,971.4032	0.1097	0.3883	4,089.8528

**3.4 MEP - 2026**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1459	8.8312	8.9589	0.0165		0.3450	0.3450		0.3272	0.3272		1,477.3211	1,477.3211	0.3356		1,485.7119
Total	1.1459	8.8312	8.9589	0.0165		0.3450	0.3450		0.3272	0.3272		1,477.3211	1,477.3211	0.3356		1,485.7119

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000



Vendor	0.0260	1.5476	0.3069	9.2300e-003	0.3698	0.0120	0.3818	0.1063	0.0115	0.1178		996.7430	996.7430	0.0354	0.1437	1,040.4569
Worker	0.2707	0.1794	2.8179	0.0101	1.3679	6.3200e-003	1.3743	0.3627	5.8200e-003	0.3685		1,024.3009	1,024.3009	0.0147	0.0201	1,030.6458
<b>Total</b>	<b>0.2967</b>	<b>1.7270</b>	<b>3.1247</b>	<b>0.0194</b>	<b>1.7377</b>	<b>0.0183</b>	<b>1.7560</b>	<b>0.4690</b>	<b>0.0173</b>	<b>0.4863</b>		<b>2,021.0439</b>	<b>2,021.0439</b>	<b>0.0501</b>	<b>0.1638</b>	<b>2,071.1027</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1459	8.8312	8.9589	0.0165		0.3450	0.3450		0.3272	0.3272	0.0000	1,477.3211	1,477.3211	0.3356		1,485.7119
<b>Total</b>	<b>1.1459</b>	<b>8.8312</b>	<b>8.9589</b>	<b>0.0165</b>		<b>0.3450</b>	<b>0.3450</b>		<b>0.3272</b>	<b>0.3272</b>	<b>0.0000</b>	<b>1,477.3211</b>	<b>1,477.3211</b>	<b>0.3356</b>		<b>1,485.7119</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0260	1.5476	0.3069	9.2300e-003	0.3698	0.0120	0.3818	0.1063	0.0115	0.1178		996.7430	996.7430	0.0354	0.1437	1,040.4569
Worker	0.2707	0.1794	2.8179	0.0101	1.3679	6.3200e-003	1.3743	0.3627	5.8200e-003	0.3685		1,024.3009	1,024.3009	0.0147	0.0201	1,030.6458
<b>Total</b>	<b>0.2967</b>	<b>1.7270</b>	<b>3.1247</b>	<b>0.0194</b>	<b>1.7377</b>	<b>0.0183</b>	<b>1.7560</b>	<b>0.4690</b>	<b>0.0173</b>	<b>0.4863</b>		<b>2,021.0439</b>	<b>2,021.0439</b>	<b>0.0501</b>	<b>0.1638</b>	<b>2,071.1027</b>

**3.4 MEP - 2027**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0252	1.5333	0.3025	9.0400e-003	0.3698	0.0119	0.3817	0.1063	0.0114	0.1177	976.7979	976.7979	0.0354	0.1410	1,019.7025	
Worker	0.2571	0.1633	2.6564	9.8500e-003	1.3679	5.9300e-003	1.3739	0.3627	5.4500e-003	0.3681	995.5247	995.5247	0.0133	0.0190	1,001.5185	
<b>Total</b>	<b>0.2823</b>	<b>1.6966</b>	<b>2.9590</b>	<b>0.0189</b>	<b>1.7377</b>	<b>0.0179</b>	<b>1.7556</b>	<b>0.4690</b>	<b>0.0169</b>	<b>0.4859</b>	<b>1,972.3226</b>	<b>1,972.3226</b>	<b>0.0487</b>	<b>0.1600</b>	<b>2,021.2210</b>	



Pure Water\_AWPF Construction - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Pure Water\_AWPF Construction**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	130.50	1000sqft	3.00	130,500.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2028	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	390.98	<b>CH4 Intensity (lb/MW hr)</b>	0.033	<b>N2O Intensity (lb/MW hr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

- Project Characteristics -
- Land Use - project specific
- Construction Phase - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Trips and VMT - project specific
- Grading - project specific
- Vehicle Trips - not calculating operational emissions with CalEEMod
- Consumer Products - project specific
- Area Coating -
- Landscape Equipment - project specific
- Water And Wastewater - not calculating operational emissions with CalEEMod
- Solid Waste - Not calculating operational emissions with CalEEMod

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	220.00	240.00

tblConstructionPhase	NumDays	220.00	240.00
tblConstructionPhase	NumDays	3.00	120.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblGrading	AcresOfGrading	60.00	3.00
tblGrading	MaterialExported	0.00	7,000.00
tblLandscapeEquipment	NumberSummerDays	250	0
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	161.82	0.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripNumber	875.00	500.00
tblTripsAndVMT	VendorTripLength	6.90	0.00
tblTripsAndVMT	VendorTripLength	6.90	100.00
tblTripsAndVMT	VendorTripLength	6.90	100.00
tblTripsAndVMT	VendorTripNumber	21.00	10.00
tblTripsAndVMT	VendorTripNumber	21.00	4.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripNumber	13.00	15.00
tblTripsAndVMT	WorkerTripNumber	55.00	65.00
tblTripsAndVMT	WorkerTripNumber	55.00	45.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	6.42	0.00

tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	30,178,125.00	0.00
tblWater	SepticTankPercent	10.33	100.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0694	0.6807	0.6943	2.3400e-003	0.0451	0.0212	0.0663	0.0119	0.0196	0.0314	0.0000	213.8374	213.8374	0.0481	9.7800e-003	217.9565
2026	0.3225	2.6391	3.1613	0.0101	0.3560	0.0868	0.4429	0.0968	0.0822	0.1789	0.0000	907.0411	907.0411	0.1246	0.0441	923.2969
2027	0.1626	1.2242	1.3930	4.1200e-003	0.1980	0.0421	0.2401	0.0535	0.0399	0.0934	0.0000	364.6195	364.6195	0.0405	0.0169	370.6615
Maximum	0.3225	2.6391	3.1613	0.0101	0.3560	0.0868	0.4429	0.0968	0.0822	0.1789	0.0000	907.0411	907.0411	0.1246	0.0441	923.2969

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0694	0.6807	0.6943	2.3400e-003	0.0451	0.0212	0.0663	0.0119	0.0196	0.0314	0.0000	213.8373	213.8373	0.0481	9.7800e-003	217.9564
2026	0.3225	2.6391	3.1613	0.0101	0.3560	0.0868	0.4429	0.0968	0.0822	0.1789	0.0000	907.0406	907.0406	0.1246	0.0441	923.2963
2027	0.1626	1.2242	1.3930	4.1200e-003	0.1980	0.0421	0.2401	0.0535	0.0399	0.0934	0.0000	364.6193	364.6193	0.0405	0.0169	370.6613



Maximum	0.3225	2.6391	3.1613	0.0101	0.3560	0.0868	0.4429	0.0968	0.0822	0.1789	0.0000	907.0406	907.0406	0.1246	0.0441	923.2963
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-5-2025	11-4-2025	0.4577	0.4577
2	11-5-2025	2-4-2026	0.5140	0.5140
3	2-5-2026	5-4-2026	0.7443	0.7443
4	5-5-2026	8-4-2026	0.7648	0.7648
5	8-5-2026	11-4-2026	0.7676	0.7676
6	11-5-2026	2-4-2027	0.5868	0.5868
7	2-5-2027	5-4-2027	0.3787	0.3787
8	5-5-2027	8-4-2027	0.3894	0.3894
9	8-5-2027	9-30-2027	0.2412	0.2412
		Highest	0.7676	0.7676

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/5/2025	1/19/2026	5	120	
2	Building Construction	Building Construction	1/20/2026	12/21/2026	5	240	
3	MEP	Building Construction	12/22/2026	11/22/2027	5	240	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Off-Highway Trucks	1	8.00	402	0.38
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
MEP	Cranes	1	8.00	231	0.29
MEP	Forklifts	2	8.00	89	0.20
MEP	Welders	3	8.00	46	0.45

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	5	15.00	0.00	500.00	40.00	0.00	100.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	65.00	10.00	0.00	40.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
MEP	6	45.00	4.00	0.00	40.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9900e-003	0.0000	1.9900e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0634	0.5526	0.6136	1.5600e-003		0.0201	0.0201		0.0185	0.0185	0.0000	137.1622	137.1622	0.0444	0.0000	138.2712
<b>Total</b>	<b>0.0634</b>	<b>0.5526</b>	<b>0.6136</b>	<b>1.5600e-003</b>	<b>1.9900e-003</b>	<b>0.0201</b>	<b>0.0221</b>	<b>2.3000e-004</b>	<b>0.0185</b>	<b>0.0187</b>	<b>0.0000</b>	<b>137.1622</b>	<b>137.1622</b>	<b>0.0444</b>	<b>0.0000</b>	<b>138.2712</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	1.3700e-003	0.1245	0.0253	5.9000e-004	0.0192	1.0100e-003	0.0202	5.2600e-003	9.7000e-004	6.2300e-003	0.0000	59.3167	59.3167	3.5000e-003	9.4300e-003	62.2151
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-003	3.6400e-003	0.0555	1.9000e-004	0.0239	1.2000e-004	0.0241	6.3600e-003	1.1000e-004	6.4700e-003	0.0000	17.3585	17.3585	2.7000e-004	3.5000e-004	17.4703
<b>Total</b>	<b>5.9700e-003</b>	<b>0.1281</b>	<b>0.0807</b>	<b>7.8000e-004</b>	<b>0.0431</b>	<b>1.1300e-003</b>	<b>0.0442</b>	<b>0.0116</b>	<b>1.0800e-003</b>	<b>0.0127</b>	<b>0.0000</b>	<b>76.6752</b>	<b>76.6752</b>	<b>3.7700e-003</b>	<b>9.7800e-003</b>	<b>79.6853</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9900e-003	0.0000	1.9900e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0634	0.5526	0.6136	1.5600e-003		0.0201	0.0201		0.0185	0.0185	0.0000	137.1620	137.1620	0.0444	0.0000	138.2710
<b>Total</b>	<b>0.0634</b>	<b>0.5526</b>	<b>0.6136</b>	<b>1.5600e-003</b>	<b>1.9900e-003</b>	<b>0.0201</b>	<b>0.0221</b>	<b>2.3000e-004</b>	<b>0.0185</b>	<b>0.0187</b>	<b>0.0000</b>	<b>137.1620</b>	<b>137.1620</b>	<b>0.0444</b>	<b>0.0000</b>	<b>138.2710</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3700e-003	0.1245	0.0253	5.9000e-004	0.0192	1.0100e-003	0.0202	5.2600e-003	9.7000e-004	6.2300e-003	0.0000	59.3167	59.3167	3.5000e-003	9.4300e-003	62.2151
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-003	3.6400e-003	0.0555	1.9000e-004	0.0239	1.2000e-004	0.0241	6.3600e-003	1.1000e-004	6.4700e-003	0.0000	17.3585	17.3585	2.7000e-004	3.5000e-004	17.4703
<b>Total</b>	<b>5.9700e-003</b>	<b>0.1281</b>	<b>0.0807</b>	<b>7.8000e-004</b>	<b>0.0431</b>	<b>1.1300e-003</b>	<b>0.0442</b>	<b>0.0116</b>	<b>1.0800e-003</b>	<b>0.0127</b>	<b>0.0000</b>	<b>76.6752</b>	<b>76.6752</b>	<b>3.7700e-003</b>	<b>9.7800e-003</b>	<b>79.6853</b>

**3.2 Site Preparation - 2026**

**Unmitigated Construction On-Site**



	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					1.9900e-003	0.0000	1.9900e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7000e-003	0.0671	0.0746	1.9000e-004		2.4400e-003	2.4400e-003		2.2500e-003	2.2500e-003	0.0000	16.6646	16.6646	5.3900e-003	0.0000	16.7993
<b>Total</b>	<b>7.7000e-003</b>	<b>0.0671</b>	<b>0.0746</b>	<b>1.9000e-004</b>	<b>1.9900e-003</b>	<b>2.4400e-003</b>	<b>4.4300e-003</b>	<b>2.3000e-004</b>	<b>2.2500e-003</b>	<b>2.4800e-003</b>	<b>0.0000</b>	<b>16.6646</b>	<b>16.6646</b>	<b>5.3900e-003</b>	<b>0.0000</b>	<b>16.7993</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling	1.6000e-004	0.0150	3.1200e-003	7.0000e-005	2.3300e-003	1.2000e-004	2.4500e-003	6.4000e-004	1.2000e-004	7.6000e-004	0.0000	7.0669	7.0669	4.3000e-004	1.1200e-003	7.4126
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.0000e-004	6.3100e-003	2.0000e-005	2.9100e-003	1.0000e-005	2.9200e-003	7.7000e-004	1.0000e-005	7.8000e-004	0.0000	2.0443	2.0443	3.0000e-005	4.0000e-005	2.0570
<b>Total</b>	<b>6.9000e-004</b>	<b>0.0154</b>	<b>9.4300e-003</b>	<b>9.0000e-005</b>	<b>5.2400e-003</b>	<b>1.3000e-004</b>	<b>5.3700e-003</b>	<b>1.4100e-003</b>	<b>1.3000e-004</b>	<b>1.5400e-003</b>	<b>0.0000</b>	<b>9.1112</b>	<b>9.1112</b>	<b>4.6000e-004</b>	<b>1.1600e-003</b>	<b>9.4696</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					1.9900e-003	0.0000	1.9900e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7000e-003	0.0671	0.0746	1.9000e-004		2.4400e-003	2.4400e-003		2.2500e-003	2.2500e-003	0.0000	16.6645	16.6645	5.3900e-003	0.0000	16.7993
<b>Total</b>	<b>7.7000e-003</b>	<b>0.0671</b>	<b>0.0746</b>	<b>1.9000e-004</b>	<b>1.9900e-003</b>	<b>2.4400e-003</b>	<b>4.4300e-003</b>	<b>2.3000e-004</b>	<b>2.2500e-003</b>	<b>2.4800e-003</b>	<b>0.0000</b>	<b>16.6645</b>	<b>16.6645</b>	<b>5.3900e-003</b>	<b>0.0000</b>	<b>16.7993</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	0.0150	3.1200e-003	7.0000e-005	2.3300e-003	1.2000e-004	2.4500e-003	6.4000e-004	1.2000e-004	7.6000e-004	0.0000	7.0669	7.0669	4.3000e-004	1.1200e-003	7.4126
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.0000e-004	6.3100e-003	2.0000e-005	2.9100e-003	1.0000e-005	2.9200e-003	7.7000e-004	1.0000e-005	7.8000e-004	0.0000	2.0443	2.0443	3.0000e-005	4.0000e-005	2.0570
<b>Total</b>	<b>6.9000e-004</b>	<b>0.0154</b>	<b>9.4300e-003</b>	<b>9.0000e-005</b>	<b>5.2400e-003</b>	<b>1.3000e-004</b>	<b>5.3700e-003</b>	<b>1.4100e-003</b>	<b>1.3000e-004</b>	<b>1.5400e-003</b>	<b>0.0000</b>	<b>9.1112</b>	<b>9.1112</b>	<b>4.6000e-004</b>	<b>1.1600e-003</b>	<b>9.4696</b>

**3.3 Building Construction - 2026**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2585	2.0116	2.4316	5.1000e-003		0.0781	0.0781		0.0740	0.0740	0.0000	433.7224	433.7224	0.1054	0.0000	436.3566
<b>Total</b>	<b>0.2585</b>	<b>2.0116</b>	<b>2.4316</b>	<b>5.1000e-003</b>		<b>0.0781</b>	<b>0.0781</b>		<b>0.0740</b>	<b>0.0740</b>	<b>0.0000</b>	<b>433.7224</b>	<b>433.7224</b>	<b>0.1054</b>	<b>0.0000</b>	<b>436.3566</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.6100e-003	0.4708	0.0919	2.7700e-003	0.1093	3.5900e-003	0.1128	0.0315	3.4400e-003	0.0349	0.0000	271.2470	271.2470	9.6300e-003	0.0391	283.1442
Worker	0.0423	0.0320	0.5052	1.7800e-003	0.2327	1.1000e-003	0.2338	0.0616	1.0100e-003	0.0628	0.0000	163.5444	163.5444	2.3300e-003	3.2200e-003	164.5630
<b>Total</b>	<b>0.0499</b>	<b>0.5027</b>	<b>0.5971</b>	<b>4.5500e-003</b>	<b>0.3420</b>	<b>4.6900e-003</b>	<b>0.3467</b>	<b>0.0933</b>	<b>4.4500e-003</b>	<b>0.0977</b>	<b>0.0000</b>	<b>434.7914</b>	<b>434.7914</b>	<b>0.0120</b>	<b>0.0423</b>	<b>447.7072</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2585	2.0115	2.4316	5.1000e-003		0.0781	0.0781		0.0740	0.0740	0.0000	433.7219	433.7219	0.1054	0.0000	436.3561
<b>Total</b>	<b>0.2585</b>	<b>2.0115</b>	<b>2.4316</b>	<b>5.1000e-003</b>		<b>0.0781</b>	<b>0.0781</b>		<b>0.0740</b>	<b>0.0740</b>	<b>0.0000</b>	<b>433.7219</b>	<b>433.7219</b>	<b>0.1054</b>	<b>0.0000</b>	<b>436.3561</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.6100e-003	0.4708	0.0919	2.7700e-003	0.1093	3.5900e-003	0.1128	0.0315	3.4400e-003	0.0349	0.0000	271.2470	271.2470	9.6300e-003	0.0391	283.1442
Worker	0.0423	0.0320	0.5052	1.7800e-003	0.2327	1.1000e-003	0.2338	0.0618	1.0100e-003	0.0628	0.0000	163.5444	163.5444	2.3300e-003	3.2200e-003	164.5630
<b>Total</b>	<b>0.0499</b>	<b>0.5027</b>	<b>0.5971</b>	<b>4.5500e-003</b>	<b>0.3420</b>	<b>4.6900e-003</b>	<b>0.3467</b>	<b>0.0933</b>	<b>4.4500e-003</b>	<b>0.0977</b>	<b>0.0000</b>	<b>434.7914</b>	<b>434.7914</b>	<b>0.0120</b>	<b>0.0423</b>	<b>447.7072</b>

**3.4 MEP - 2026**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5800e-003	0.0353	0.0358	7.0000e-005		1.3800e-003	1.3800e-003		1.3100e-003	1.3100e-003	0.0000	5.3608	5.3608	1.2200e-003	0.0000	5.3913
<b>Total</b>	<b>4.5800e-003</b>	<b>0.0353</b>	<b>0.0358</b>	<b>7.0000e-005</b>		<b>1.3800e-003</b>	<b>1.3800e-003</b>		<b>1.3100e-003</b>	<b>1.3100e-003</b>	<b>0.0000</b>	<b>5.3608</b>	<b>5.3608</b>	<b>1.2200e-003</b>	<b>0.0000</b>	<b>5.3913</b>



**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	6.2800e-003	1.2200e-003	4.0000e-005	1.4600e-003	5.0000e-005	1.5000e-003	4.2000e-004	5.0000e-005	4.7000e-004	0.0000	3.6166	3.6166	1.3000e-004	5.2000e-004	3.7753
Worker	9.8000e-004	7.4000e-004	0.0117	4.0000e-005	5.3700e-003	3.0000e-005	5.4000e-003	1.4300e-003	2.0000e-005	1.4500e-003	0.0000	3.7741	3.7741	5.0000e-005	7.0000e-005	3.7976
<b>Total</b>	<b>1.0800e-003</b>	<b>7.0200e-003</b>	<b>0.0129</b>	<b>8.0000e-005</b>	<b>6.8300e-003</b>	<b>8.0000e-005</b>	<b>6.9000e-003</b>	<b>1.8500e-003</b>	<b>7.0000e-005</b>	<b>1.9200e-003</b>	<b>0.0000</b>	<b>7.3907</b>	<b>7.3907</b>	<b>1.8000e-004</b>	<b>5.9000e-004</b>	<b>7.5729</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road	4.5800e-003	0.0353	0.0358	7.0000e-005		1.3800e-003	1.3800e-003		1.3100e-003	1.3100e-003	0.0000	5.3608	5.3608	1.2200e-003	0.0000	5.3913
<b>Total</b>	<b>4.5800e-003</b>	<b>0.0353</b>	<b>0.0358</b>	<b>7.0000e-005</b>		<b>1.3800e-003</b>	<b>1.3800e-003</b>		<b>1.3100e-003</b>	<b>1.3100e-003</b>	<b>0.0000</b>	<b>5.3608</b>	<b>5.3608</b>	<b>1.2200e-003</b>	<b>0.0000</b>	<b>5.3913</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	6.2800e-003	1.2200e-003	4.0000e-005	1.4600e-003	5.0000e-005	1.5000e-003	4.2000e-004	5.0000e-005	4.7000e-004	0.0000	3.6166	3.6166	1.3000e-004	5.2000e-004	3.7753

Worker	9.8000e-004	7.4000e-004	0.0117	4.0000e-005	5.3700e-003	3.0000e-005	5.4000e-003	1.4300e-003	2.0000e-005	1.4500e-003	0.0000	3.7741	3.7741	5.0000e-005	7.0000e-005	3.7976
<b>Total</b>	<b>1.0800e-003</b>	<b>7.0200e-003</b>	<b>0.0129</b>	<b>8.0000e-005</b>	<b>6.8300e-003</b>	<b>8.0000e-005</b>	<b>6.9000e-003</b>	<b>1.8500e-003</b>	<b>7.0000e-005</b>	<b>1.9200e-003</b>	<b>0.0000</b>	<b>7.3907</b>	<b>7.3907</b>	<b>1.8000e-004</b>	<b>5.9000e-004</b>	<b>7.5729</b>

### 3.4 MEP - 2027

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.0244	1.0392	1.9100e-003		0.0400	0.0400		0.0380	0.0380	0.0000	155.4636	155.4636	0.0353	0.0000	156.3466
<b>Total</b>	<b>0.1329</b>	<b>1.0244</b>	<b>1.0392</b>	<b>1.9100e-003</b>		<b>0.0400</b>	<b>0.0400</b>		<b>0.0380</b>	<b>0.0380</b>	<b>0.0000</b>	<b>155.4636</b>	<b>155.4636</b>	<b>0.0353</b>	<b>0.0000</b>	<b>156.3466</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8500e-003	0.1804	0.0350	1.0500e-003	0.0422	1.3800e-003	0.0436	0.0122	1.3200e-003	0.0135	0.0000	102.7833	102.7833	3.7200e-003	0.0148	107.2984
Worker	0.0268	0.0195	0.3187	1.1600e-003	0.1558	6.9000e-004	0.1564	0.0414	6.3000e-004	0.0420	0.0000	106.3726	106.3726	1.4200e-003	2.0400e-003	107.0165
<b>Total</b>	<b>0.0297</b>	<b>0.1998</b>	<b>0.3538</b>	<b>2.2100e-003</b>	<b>0.1980</b>	<b>2.0700e-003</b>	<b>0.2001</b>	<b>0.0535</b>	<b>1.9500e-003</b>	<b>0.0555</b>	<b>0.0000</b>	<b>209.1559</b>	<b>209.1559</b>	<b>5.1400e-003</b>	<b>0.0169</b>	<b>214.3149</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1329	1.0244	1.0392	1.9100e-003		0.0400	0.0400		0.0380	0.0380	0.0000	155.4634	155.4634	0.0353	0.0000	156.3464
<b>Total</b>	<b>0.1329</b>	<b>1.0244</b>	<b>1.0392</b>	<b>1.9100e-003</b>		<b>0.0400</b>	<b>0.0400</b>		<b>0.0380</b>	<b>0.0380</b>	<b>0.0000</b>	<b>155.4634</b>	<b>155.4634</b>	<b>0.0353</b>	<b>0.0000</b>	<b>156.3464</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										Mt/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8500e-003	0.1804	0.0350	1.0500e-003	0.0422	1.3800e-003	0.0436	0.0122	1.3200e-003	0.0135	0.0000	102.7833	102.7833	3.7200e-003	0.0148	107.2984
Worker	0.0268	0.0195	0.3187	1.1600e-003	0.1558	6.9000e-004	0.1564	0.0414	6.3000e-004	0.0420	0.0000	106.3726	106.3726	1.4200e-003	2.0400e-003	107.0165
<b>Total</b>	<b>0.0297</b>	<b>0.1998</b>	<b>0.3538</b>	<b>2.2100e-003</b>	<b>0.1980</b>	<b>2.0700e-003</b>	<b>0.2001</b>	<b>0.0535</b>	<b>1.9500e-003</b>	<b>0.0555</b>	<b>0.0000</b>	<b>209.1559</b>	<b>209.1559</b>	<b>5.1400e-003</b>	<b>0.0169</b>	<b>214.3149</b>



Pure Water\_pipeline Construction 1000 ft\_SCAQMD - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Pure Water\_pipeline Construction 1000 ft\_SCAQMD  
South Coast AQMD Air District, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	100.00	1000sqft	2.30	100,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2028
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	390.98	<b>CH4 Intensity (lb/MW hr)</b>	0.033	<b>N2O Intensity (lb/MW hr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

- Project Characteristics -
- Land Use - project specific
- Construction Phase - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Trips and VMT - project specific
- Grading - project specific
- Vehicle Trips - not calculating operational emissions with CalEEMod
- Consumer Products - not calculating operation emissions with CalEEMod
- Area Coating - Not Calculating operational emissions with CalEEMod
- Landscape Equipment - Not calculating operational emissions with CalEEMod
- Energy Use - Not calculating operational emissions with CalEEMod
- Water And Wastewater - not calculating operational emissions with CalEEMod
- Solid Waste - Not calculating operational emissions with CalEEMod

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	50	0
tblAreaCoating	Area_EF_Residential_Interior	50	0

tblAreaCoating	Area_Nonresidential_Exterior	50000	0
tblAreaCoating	Area_Nonresidential_Interior	150000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	3.00	5.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.99	0.00
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24E	1.45	0.00
tblEnergyUse	T24NG	13.90	0.00
tblGrading	AcresOfGrading	0.31	2.30
tblGrading	MaterialExported	0.00	1,486.00
tblGrading	MaterialImported	0.00	522.00
tblLandscapeEquipment	NumberSummerDays	250	0
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	124.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	251.00	167.00
tblTripsAndVMT	VendorTripLength	6.90	100.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripLength	14.70	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	14.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblWater	IndoorWaterUseRate	23,125,000.00	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					

2025	1.6751	19.3701	18.3987	0.0823	2.2190	0.5017	2.7207	0.5190	0.4639	0.9829	0.0000	8,493.5828	8,493.5828	1.5196	0.6753	8,732.8222
Maximum	1.6751	19.3701	18.3987	0.0823	2.2190	0.5017	2.7207	0.5190	0.4639	0.9829	0.0000	8,493.5828	8,493.5828	1.5196	0.6753	8,732.8222

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	1.6751	19.3701	18.3987	0.0823	2.2190	0.5017	2.7207	0.5190	0.4639	0.9829	0.0000	8,493.5828	8,493.5828	1.5196	0.6753	8,732.8222
Maximum	1.6751	19.3701	18.3987	0.0823	2.2190	0.5017	2.7207	0.5190	0.4639	0.9829	0.0000	8,493.5828	8,493.5828	1.5196	0.6753	8,732.8222

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Pipeline 1000 ft	Site Preparation	1/1/2025	1/7/2025	5	5	

Acres of Grading (Site Preparation Phase): 2.3

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pipeline 1000 ft	Excavators	2	8.00	158	0.38
Pipeline 1000 ft	Graders	1	1.00	187	0.41
Pipeline 1000 ft	Off-Highway Trucks	1	8.00	402	0.38



Pipeline 1000 ft	Rubber Tired Loaders	2	8.00	203	0.36
Pipeline 1000 ft	Sweepers/Scrubbers	1	2.00	64	0.46
Pipeline 1000 ft	Tractors/Loaders/Backhoes	1	8.00	97	0.37

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pipeline 1000 ft	8	14.00	1.00	167.00	40.00	100.00	40.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Pipeline 1000 ft - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5333	0.0000	0.5333	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.4794	11.1597	15.5519	0.0407		0.4358	0.4358		0.4010	0.4010		3,935.2248	3,935.2248	1.2727		3,967.0431
<b>Total</b>	<b>1.4794</b>	<b>11.1597</b>	<b>15.5519</b>	<b>0.0407</b>	<b>0.5333</b>	<b>0.4358</b>	<b>0.9691</b>	<b>0.0596</b>	<b>0.4010</b>	<b>0.4605</b>		<b>3,935.2248</b>	<b>3,935.2248</b>	<b>1.2727</b>		<b>3,967.0431</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1003	7.7584	1.8331	0.0360	1.1677	0.0608	1.2285	0.3200	0.0582	0.3782		3,975.6684	3,975.6684	0.2330	0.6321	4,169.8639
Vendor	6.7300e-003	0.3903	0.0780	2.3500e-003	0.0924	3.0000e-003	0.0954	0.0266	2.8700e-003	0.0295		253.9438	253.9438	8.8200e-003	0.0366	265.0651
Worker	0.0888	0.0618	0.9358	3.2500e-003	0.4256	2.0700e-003	0.4277	0.1128	1.9100e-003	0.1147		328.7458	328.7458	5.0700e-003	6.6400e-003	330.8501
<b>Total</b>	<b>0.1958</b>	<b>8.2104</b>	<b>2.8469</b>	<b>0.0416</b>	<b>1.6857</b>	<b>0.0659</b>	<b>1.7516</b>	<b>0.4594</b>	<b>0.0630</b>	<b>0.5224</b>		<b>4,558.3580</b>	<b>4,558.3580</b>	<b>0.2469</b>	<b>0.6753</b>	<b>4,765.7791</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5333	0.0000	0.5333	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.4794	11.1597	15.5519	0.0407		0.4358	0.4358		0.4010	0.4010	0.0000	3,935.2248	3,935.2248	1.2727		3,967.0431
<b>Total</b>	<b>1.4794</b>	<b>11.1597</b>	<b>15.5519</b>	<b>0.0407</b>	<b>0.5333</b>	<b>0.4358</b>	<b>0.9691</b>	<b>0.0596</b>	<b>0.4010</b>	<b>0.4605</b>	<b>0.0000</b>	<b>3,935.2248</b>	<b>3,935.2248</b>	<b>1.2727</b>		<b>3,967.0431</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1003	7.7584	1.8331	0.0360	1.1677	0.0608	1.2285	0.3200	0.0582	0.3782		3,975.6684	3,975.6684	0.2330	0.6321	4,169.8639
Vendor	6.7300e-003	0.3903	0.0780	2.3500e-003	0.0924	3.0000e-003	0.0954	0.0266	2.8700e-003	0.0295		253.9438	253.9438	8.8200e-003	0.0366	265.0651
Worker	0.0888	0.0618	0.9358	3.2500e-003	0.4256	2.0700e-003	0.4277	0.1128	1.9100e-003	0.1147		328.7458	328.7458	5.0700e-003	6.6400e-003	330.8501
<b>Total</b>	<b>0.1958</b>	<b>8.2104</b>	<b>2.8469</b>	<b>0.0416</b>	<b>1.6857</b>	<b>0.0659</b>	<b>1.7516</b>	<b>0.4594</b>	<b>0.0630</b>	<b>0.5224</b>		<b>4,558.3580</b>	<b>4,558.3580</b>	<b>0.2469</b>	<b>0.6753</b>	<b>4,765.7791</b>

Pure Water\_Pipeline Construction\_VCAPCD - Ventura County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Pure Water\_Pipeline Construction\_VCAPCD**  
**Ventura County APCD Air District, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	100.00	1000sqft	2.30	100,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>	2028		
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	390.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

- Project Characteristics -
- Land Use - project specific
- Construction Phase - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Trips and VMT - project specific
- Grading - project specific
- Vehicle Trips - not calculating operational emissions with CalEEMod
- Consumer Products - not calculating operation emissions with CalEEMod
- Area Coating - Not Calculating operational emissions with CalEEMod
- Landscape Equipment - Not calculating operational emissions with CalEEMod
- Energy Use - Not calculating operational emissions with CalEEMod
- Water And Wastewater - not calculating operational emissions with CalEEMod
- Solid Waste - Not calculating operational emissions with CalEEMod

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	50000	0
tblAreaCoating	Area_Nonresidential_Interior	150000	0



tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	3.00	5.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.99	0.00
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24E	1.45	0.00
tblEnergyUse	T24NG	13.90	0.00
tblGrading	AcresOfGrading	0.31	2.30
tblGrading	MaterialExported	0.00	1,486.00
tblGrading	MaterialImported	0.00	522.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	124.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	251.00	167.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	14.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
--	-----	-----	----	-----	---------------	--------------	------------	----------------	---------------	-------------	----------	-----------	-----------	-----	-----	------

Year	lb/day										lb/day					
2025	1.6811	19.1181	18.5160	0.0815	2.2280	0.4995	2.7274	0.5199	0.4618	0.9817	0.0000	8,452.0764	8,452.0764	1.5882	0.6738	8,692.5739
Maximum	1.6811	19.1181	18.5160	0.0815	2.2280	0.4995	2.7274	0.5199	0.4618	0.9817	0.0000	8,452.0764	8,452.0764	1.5882	0.6738	8,692.5739

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	1.6811	19.1181	18.5160	0.0815	2.2280	0.4995	2.7274	0.5199	0.4618	0.9817	0.0000	8,452.0764	8,452.0764	1.5882	0.6738	8,692.5739
Maximum	1.6811	19.1181	18.5160	0.0815	2.2280	0.4995	2.7274	0.5199	0.4618	0.9817	0.0000	8,452.0764	8,452.0764	1.5882	0.6738	8,692.5739

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.4000e-004	9.0000e-005	0.0102	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0219	0.0219	6.0000e-005		0.0233
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>9.4000e-004</b>	<b>9.0000e-005</b>	<b>0.0102</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0219</b>	<b>0.0219</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.0233</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.4000e-004	9.0000e-005	0.0102	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0219	0.0219	6.0000e-005		0.0233
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>9.4000e-004</b>	<b>9.0000e-005</b>	<b>0.0102</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0219</b>	<b>0.0219</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.0233</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Pipeline 1000 ft	Site Preparation	1/1/2025	1/7/2025	5	5	

Acres of Grading (Site Preparation Phase): 2.3

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pipeline 1000 ft	Excavators	2	8.00	158	0.38
Pipeline 1000 ft	Graders	1	1.00	187	0.41
Pipeline 1000 ft	Off-Highway Trucks	1	8.00	402	0.38
Pipeline 1000 ft	Rubber Tired Loaders	2	8.00	203	0.36
Pipeline 1000 ft	Sweepers/Scrubbers	1	2.00	64	0.46
Pipeline 1000 ft	Tractors/Loaders/Backhoes	1	8.00	97	0.37

#### Trips and VMT





Category	lb/day										lb/day					
Fugitive Dust					0.5443	0.0000	0.5443	0.0612	0.0000	0.0612			0.0000			0.0000
Off-Road	1.4794	11.1597	15.5519	0.0407		0.4358	0.4358		0.4010	0.4010	0.0000	3,935.2248	3,935.2248	1.2727		3,967.0431
<b>Total</b>	<b>1.4794</b>	<b>11.1597</b>	<b>15.5519</b>	<b>0.0407</b>	<b>0.5443</b>	<b>0.4358</b>	<b>0.9801</b>	<b>0.0612</b>	<b>0.4010</b>	<b>0.4622</b>	<b>0.0000</b>	<b>3,935.2248</b>	<b>3,935.2248</b>	<b>1.2727</b>		<b>3,967.0431</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0951	7.5085	1.9585	0.0353	1.1657	0.0587	1.2245	0.3193	0.0562	0.3755		3,946.9916	3,946.9916	0.2990	0.6298	4,142.1391
Vendor	5.8800e-003	0.3808	0.0799	2.2700e-003	0.0924	3.0100e-003	0.0954	0.0266	2.8800e-003	0.0294		247.6871	247.6871	0.0113	0.0369	258.9570
Worker	0.1008	0.0691	0.9257	3.1900e-003	0.4256	1.9300e-003	0.4275	0.1128	1.7700e-003	0.1146		322.1729	322.1729	5.1400e-003	7.1600e-003	324.4348
<b>Total</b>	<b>0.2017</b>	<b>7.9585</b>	<b>2.9642</b>	<b>0.0408</b>	<b>1.6837</b>	<b>0.0636</b>	<b>1.7473</b>	<b>0.4587</b>	<b>0.0608</b>	<b>0.5195</b>		<b>4,516.8517</b>	<b>4,516.8517</b>	<b>0.3154</b>	<b>0.6738</b>	<b>4,725.5308</b>

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**4.2 Trip Summary Information**

Average Daily Trip Rate	Unmitigated	Mitigated
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Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.564931	0.058891	0.167885	0.120679	0.025398	0.007381	0.013024	0.006272	0.000657	0.000386	0.028170	0.000621	0.005705

#### 5.0 Energy Detail

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

#### 5.2 Energy by Land Use - NaturalGas

##### Unmitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000



**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.4000e-004	9.0000e-005	0.0102	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0219	0.0219	6.0000e-005		0.0233
Unmitigated	9.4000e-004	9.0000e-005	0.0102	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0219	0.0219	6.0000e-005		0.0233

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	9.4000e-004	9.0000e-005	0.0102	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0219	0.0219	6.0000e-005		0.0233
<b>Total</b>	<b>9.4000e-004</b>	<b>9.0000e-005</b>	<b>0.0102</b>	<b>0.0000</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0219</b>	<b>0.0219</b>	<b>6.0000e-005</b>		<b>0.0233</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4000e-004	9.0000e-005	0.0102	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0219	0.0219	6.0000e-005		0.0233
<b>Total</b>	<b>9.4000e-004</b>	<b>9.0000e-005</b>	<b>0.0102</b>	<b>0.0000</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0219</b>	<b>0.0219</b>	<b>6.0000e-005</b>		<b>0.0233</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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## 11.0 Vegetation

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**Appendix B**  
**Site Photographs**

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**Photograph 1: View of the Agoura Road AWPf site facing northeast.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*



**Photograph 2: View of the Agoura Road AWPf site facing northeast of water flowing through the site.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*





**Photograph 3: View of the Agoura Road AWP site facing northeast towards Agoura Road.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*



**Photograph 4: View of the Agoura Road AWP site facing northwest towards Agoura Road.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*



**Photograph 5: View of the northeastern portion of the Agoura Road AWPf site facing east.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*



**Photograph 6: View of the Agoura Road AWPf site facing northwest, showing water ponding adjacent to Agoura Road.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*





**Photograph 7: View of the Agoura Road AWPf site facing southwest.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*



**Photograph 8: View of the Agoura Road AWPf site facing southeast from Agoura Road.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*





**Photograph 9: View of the Agoura Road AWPf site facing southwest from Agoura Road.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*



**Photograph 10: View of the purified water pipeline corridor and Reservoir AWPf access road facing southwest from Triunfo Canyon Road.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*





**Photograph 11: View facing northeast of the trail along purified water pipeline corridor and the Reservoir AWP access road. Branches show evidence of fire damage from the Woolsey Fire in 2018.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*



**Photograph 12: View facing northeast of the Westlake Vista Trail to the Reservoir AWP Site.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*





**Photograph 13: View facing north of the creek near Triunfo Canyon Road, which originates near the Reservoir AWPf Site.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 13, 2022*



**Photograph 14: View of the Reservoir AWPf site facing southeast.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*





**Photograph 15: View of the Reservoir AWPf site facing northwest. Water shown ponding with algal growth.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*



**Photograph 16: View of the Reservoir AWPf site facing northwest. Water shown ponding.**

*Taken by: Ava Edens (Jacobs)*

*Date taken: January 14, 2022*

**Appendix C**  
**Fossil Records**

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Appendix C

University of California Museum of Paleontology Fossil Locality Records  
 Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
IP10460	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene		I
IP10461	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene		I
IP10511	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10512	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10513	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10514	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10517	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10518	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10519	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10520	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10521	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10522	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10523	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene	Terrace Deposit	I
IP10815	San Nicolas Island	Ventura County	California	United States	North America	Quaternary	Pleistocene		I
V4107	San Nicolas Island General	Ventura County	California	United States	North America	Quaternary	Pleistocene		V
V5756	San Nicolas Island 1	Ventura County	California	United States	North America	Quaternary	Pleistocene		V
V5809	Pierpont Bay	Ventura County	California	United States	North America	Quaternary	Pleistocene		V
V65287	Ventura	Ventura County	California	United States	North America	Quaternary	Pleistocene		V
V78030	San Nicolas Island Kitchen Middens	Ventura County	California	United States	North America	Quaternary	Pleistocene		V
V92019	Simi Mammoth	Ventura County	California	United States	North America	Quaternary	Pleistocene		V
7071-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7072-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7078-		Ventura County	California	United States	North America	Tertiary,Quaternary	Pliocene,Pleistocene	Saugus	I
7079-		Ventura County	California	United States	North America	Quaternary	Pleistocene	Saugus	I
7080-	Wheeler Canyon	Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7082-	Fagan Canyon	Ventura County	California	United States	North America	Quaternary	Pleistocene	Saugus	I
7083-	Fagan Canyon	Ventura County	California	United States	North America	Quaternary	Pleistocene	Saugus	I
7084-	Las Posas Hill	Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7085-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7086-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7087-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7088-	Hall Canyon	Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7090-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7092-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus?	I
7095-	Santa Paula Canyon	Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus	I
7098-		Ventura County	California	United States	North America	Quaternary,Tertiary	Pleistocene,Pliocene	Saugus?	I
12108	Happy Camp Canyon	Ventura County	California	United States	North America	Tertiary,Quaternary	Pliocene,Pleistocene	Saugus	M
A107	Springville	Ventura County	California	United States	North America	Neogene	Pliocene	Saugus	I
A305		Ventura County	California	United States	North America	Tertiary,Quaternary	Pliocene,Pleistocene	Saugus	I
IP12071		Ventura County	California	United States	North America	Tertiary	Pliocene	Fernando/Saugus?	I
D3990	KA 2158: Dirt road cut in Arroyo Santa Rosa, SE of Moorpark	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	M
IP7417	Simi quad.	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8164	West Flank of hill 1372	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8165	West side of hill #1271	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8166	Ventura County	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8207	Ventura County	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga ?	I
IP8453	Trancos Drive	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8454	Arroyo Conejo	Ventura County	California	United States	North America	Neogene	Miocene	Topanga?	I
IP8455	Arroyo Conejo	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8457	Rancho Conejo airport	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8912	Moorpark Freeway	Ventura County	California	United States	North America	Tertiary	Miocene	Topanga	I
A608	Ventura River	Ventura County	California	United States	North America	Tertiary	Miocene	Modelo	I
A4259	Plum Canyon Road	Ventura County	California	United States	North America	Tertiary	Miocene	Modelo	I
B6380		Ventura County	California	United States	North America	Tertiary	Miocene	Modelo	I
D435	Point Mugu	Ventura County	California	United States	North America	Tertiary	Miocene	Modelo	I
D2333	Point Mugu	Ventura County	California	United States	North America	Tertiary	Miocene	Modelo	I
MF8630	Modelo Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Modelo	M
12007	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
12008	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
12017	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
12372	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
12373	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
12374	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
12857	Los Sauces Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
A249	Wiley Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	I

Appendix C

University of California Museum of Paleontology Fossil Locality Records  
 Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
D4175	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4176	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4177	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4178	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4179	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4180	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4181	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4182	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4183	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4184	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4185	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4186	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4187	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4188	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4189	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4190	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4191	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4192	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4193	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4194	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4195	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4196	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4197	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4198	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4199	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4200	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4201	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4202	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4203	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4204	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4205	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4206	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4207	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4208	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4209	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4210	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4211	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4212	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4213	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4214	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D4215	Grimes Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
D5431	Mt. Pinos	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	I
IP8433	Munson Creek	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	I
IP8437	Godwin Canyon	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	I
MF7479	Canyon Segundo	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	M
V4846	Ojai brain cast	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	V
V79041	Balcom Canyon N	Ventura County	California	United States	North America	Tertiary	Miocene	Monterey	V
12667	Santa Monica Bay, cultures	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
12676	Malibu cultures, Santa Monica Bay	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
12677	Malaga Cove, Santa Monica Bay	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
A3277	Near Avalon Bay, San Pedro Channel	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
A3278	Off Santa Catalina Island, San Pedro Channel	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
A3279	Off Santa Catalina Island, San Pedro Channel	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
A3396	San Pedro Channel	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
A3397	Avalon Bay, Off Santa Catalina Island	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
A3439	San Pedro Channel	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
IP9930	Terminal Island Coal Hopp	Los Angeles County	California	United States	North America	Quaternary	Holocene		I
IP9931	Terminal Island Coal Hopp	Los Angeles County	California	United States	North America	Quaternary	Holocene		I
IP9932	Terminal Island Coal Hopp	Los Angeles County	California	United States	North America	Quaternary	Holocene		I
IP9933	Terminal Island Coal Hopp	Los Angeles County	California	United States	North America	Quaternary	Holocene		I
MF3599	Cabrillo Beach	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
MF3626	Santa Monica	Los Angeles County	California	United States	North America	Quaternary	Holocene		M
PA1274.01	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.02	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.03	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP



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 Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
PA1274.04	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.05	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.06	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.07	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.08	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.09	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.10	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.11	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.12	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.13	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.14	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.15	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.16	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.17	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.18	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.19	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.20	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.21	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.22	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.23	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.24	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.25	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.26	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PA1274.27	RB-Cleveland Pond	Los Angeles County	California	United States	North America	Quaternary	Holocene		MP
PB98002	Metrorail Universal City Station	Los Angeles County	California	United States	North America	Quaternary	Holocene		P
PB98033	Metropolitan Water District Headquarters	Los Angeles County	California	United States	North America	Quaternary	Holocene	Younger alluvium	P
56	Rancho La Brea I	Los Angeles County	California	United States	North America	Quaternary	Pleistocene	Asphalt Pit	P
57	Rancho La Brea II	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
58	Rancho La Brea III	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
282	Bixby Slough I	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
2511-	Deadman Island	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
3660-		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
4029-		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
4032-	Dominguez Hill	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
4102-		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
4103-	Signal Hill	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
12038	Palos Verdes	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		M
12213	San Clemente Island	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		M
12698	Horse Creek terrace, San Clemente Island	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		M
-1058	Rancho La Brea 1	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-1059	Rancho La Brea 2	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-1060	Rancho La Brea 3	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-1061	Rancho La Brea 4	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-1377	Brick Yard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-2050	Rancho La Brea 5	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-2051	Rancho La Brea 6	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-2052	Rancho La Brea 7	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		IV
-2053	Rancho La Brea 8	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
-3874	Rancho La Brea General	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
A210		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A211		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A212		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A213		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A214		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A215		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A216		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A218		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A219		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A221		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A222		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A223		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A226	Graham Bros. Quarry 1	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		IM
A227		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A228		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A229		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I

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Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
A1483	Signal Hill	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A1484	San Pedro Bluffs	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A1489	Deadman's Island	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A1493	Crawfish Georges	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A1507		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A2542	Deadman's Island	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A3421	Signal Hill	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		IV
A8470	Hilltop Quarry	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
A8481	Hilltop Quarry	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
B375		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
B1755		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
D1627	San Pedro Bluffs	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
D1628		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
D1630	Los Angeles County	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
D2079		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		M
D2894	San Clemente Island	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
D5425	Del Rey Hills	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
D9858	Rosemary	Los Angeles County	California	United States	North America	Quaternary	Pleistocene	Rancho La Brea	I
E6751	Gaffy St. Bridge	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E6752	San Pedro	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E6932	Harbor lot	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E6976	Harbor lot	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E6980	Harbor lot	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7042	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7082	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7103	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7147	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7183	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7229	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7280		Los Angeles County	California	United States	North America	Quaternary	Pleistocene	undifferentiated	I
E7284	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7291	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7293		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7301	Lunada Bay	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7302		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7303	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7315	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7318	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7319	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7320	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7321	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7333		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7385	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7412	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7438	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7458	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7459	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7460	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7476	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7477	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7478	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7481	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7482	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7483	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7485	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7486	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7487	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7489	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7490	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7491	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7492	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7493	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7494	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7495	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E7496	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I





Appendix C

University of California Museum of Paleontology Fossil Locality Records  
 Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
E8849	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8851	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8859	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8872	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8873	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8874		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8875		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8876	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8881	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8882	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8883	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8886	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8890	San Pedro	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8897	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8908	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8909	Timm's Point	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8910		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8929	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8951	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8957	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E8976	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9001	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9002	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9003	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9023	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene	undifferentiated	I
E9036	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9049	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9057	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9067	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9069	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9071	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9217	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9223	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9224	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9225	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9226	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9233	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9301	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9311	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9317	Timm's Point	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9330	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9336	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9345	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9368	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9449	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9539	San Pedro	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9572	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9653	San Pedro	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9657	San Pedro	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9678	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9716	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9731		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9732	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9798	Harbor Lot/ Shipyard	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9801	Cabrillo Beach	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
E9830	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP2259	Palissades Recreation Center	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		IV
IP2343		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP5021	Potrero Canyon	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP6864	Hwy 101 Roadcut	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		IV
IP7008	Venice map	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP7009	Baldwin Hills	Los Angeles County	California	United States	North America	Quaternary	Pleistocene	Baldwin Hills	I
IP7010	La Cienega Blvd.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP7011	Baldwin Hills	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP7012	Baldwin Hills	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I

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University of California Museum of Paleontology Fossil Locality Records  
 Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
IP7357	Santa Monica Mountains	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8069	Point Dume quad.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8070	Point Dume quad.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8071	Triunfo Pass quad.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8072	Triunfo Pass quad.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8073	Point Dume quad.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8074	Point Dume quad.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8075	Triunfo Pass	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8458	Sequit Point	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8963	Los Angeles County	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8964	Los Angeles County	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8965	Los Angeles County	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8966	Los Angeles County	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP8969	Los Angeles County	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP10760	Point Fermin	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP10761	3rd and Mesa Street	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP10762	1st and Mesa St.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP10763	Wilmington-San Pedro Rd.	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		IV
IP10764	Gaffey Street	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP10765	Walteria	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12026		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12044		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12155		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12596		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12633	Rancho La Brea	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12813		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12835		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12983		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP12992		Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
IP16006	North Basin	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		I
MF3627	Timms Point	Los Angeles County	California	United States	North America	Tertiary	Pleistocene		M
PA606	Bixby Slough II	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
PA613	Century City	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
PB98003	Metrorail North Hollywood Station	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
PB98004	Metrorail North Hollywood Tunnel	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		P
PB99055	Van Nuys Reservoir	Los Angeles County	California	United States	North America	Quaternary	Pleistocene	Unnamed	P
V65109	Signal Hill	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
V69207	Signal Hill N	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
V69208	Athens On The Hill	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
V72102	San Jose Hills	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
V92101	Timm's Point Bleifus Collection	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
V92105	Harding and Maple Avenues	Los Angeles County	California	United States	North America	Quaternary	Pleistocene		V
A1166	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
B7853		Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
D437	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
D5395	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP1451		Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP1452		Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP1453	Santa Monica Mountains	Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP1454		Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP1455	Santa Monica Mountains	Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP1456		Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP1458	Los Angeles County	Los Angeles County	California	United States	North America	Tertiary	Miocene	Lower Topanga	I
IP2411	San Joaquin Hills	Los Angeles County	California	United States	North America	Neogene	Miocene?	Topanga	I
IP6700	Maria Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6701	Maria Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6709	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6720	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga?	I
IP6721	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6722	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6723	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6725	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6726	Malibu Beach Quad.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6728	Piedro Gorda Canyon area	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP6729	Piedro Gorda Canyon area	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I





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University of California Museum of Paleontology Fossil Locality Records  
 Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
IP8500	Cold Canyon Road	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8501	Topanga Canyon	Los Angeles County	California	United States	North America	Neogene	Miocene	Topanga?	I
IP8637	Old Topanga Canyon Road	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8869	Lindero Canyon	Los Angeles County	California	United States	North America	Neogene	Miocene	Topanga	I
IP8871	Coldwater Canyon Road	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
IP8877	Trifuno Pass quad	Los Angeles County	California	United States	North America	Neogene	Miocene	Topanga	I
IP8891	Malibu Beach quad	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	I
PB99030	LA Metrorail Red Line Aqua Vista/Chiquita	Los Angeles County	California	United States	North America	Tertiary	Middle Miocene	Topanga	P
V4909	Ione Drive	Los Angeles County	California	United States	North America	Tertiary	Miocene	Topanga	V
292	Point Fermin	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
12875	Wilson Cove, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12876	Wilson Cove, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12877	Wilson Cove, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12878	Wilson Cove, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12879	Wilson Cove, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12880	San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12881	San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12882	San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12883	San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12884	San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12885	Rose Tracking Station, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12886	Rose Tracking Station, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
12902	NOTS Pier, San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3457	Timms Point, San Pedro	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3458	Timms Point, San Pedro	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3459	Under W end of Timms Pt Causeway, San Pedro	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3460	San Pedro Hills	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3461	Point Fermin	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3462	Malaga Cove	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3463	Peck Park Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3464	Peck Park Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3465	Peck Park Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
A3466	W tributary of Peck Park Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
B4001	San Pedro	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
D3996	San Clemente Island	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF1477		Los Angeles County	California	United States	North America	Neogene	Miocene	Monterey	M
MF1509		Los Angeles County	California	United States	North America	Neogene	Miocene	Monterey	M
MF3597	Cabrillo Beach	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF3598	Cabrillo Beach	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF3600	Cabrillo Beach	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF6743	Lower Reservation	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF7474	Peck Park	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF7710	San Pedro	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
MF7794	Peck Park	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	M
PA1223	COI Water Recycling Project (Phase IIB) - III	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1224	COI Water Recycling Project (Phase IIB) - IV	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1225	COI Water Recycling Project (Phase IIB) - V	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1234	COI Water Recycling Project (Package 1B) - I	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1235	COI Water Recycling Project (Package 1B) - II	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1320	LACM Site 1267	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1331	Buckley School III	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1332	Buckley School IV	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
PA1333	Buckley School V	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	P
V3413	Lomita	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	V
V3525	Bairdstown	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	V
V6848	Palos Verdes Hills	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	V
V36118	Dacelite Quarry	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	V
V69176	Malaga Cove N	Los Angeles County	California	United States	North America	Tertiary	Miocene	Monterey	V
3570-	Dry Canyon	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo?	I
3894-	Dry Canyon Dam	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	I
4036-		Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	I
4044-	Cahuenga Pass	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	I
4049-	Nichols Canyon	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	I
4050-	Sepulveda Canyon	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	I
12044	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M

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Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
12045	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12046	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12047	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12708	Dixie Canyon, Santa Monica Mtns	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12887	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12888	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12889	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12890	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12891	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12892	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12893	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12894	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12895	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12896	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12897	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12898	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12899	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12900	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
12901	Topanga Canyon Section	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
A4328		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
A4330		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
A4480	Humphreys Station	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
A4481		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D1656		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D1657		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D1658		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D1659	Topanga Canyon Road	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D3985		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
D3986		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
D3987		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
D3988		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
D3989		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
D7262		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7263		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7264		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7265		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7266		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7267		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7268		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7269		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D7270		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
D8261		Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo?	I
D9561	Woodland Hills	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
IP8260	Los Angeles County	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
IP8261	Los Angeles County	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
IP12982		Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	I
MF1283		Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	M
MF3593	Beverly Glen Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF3594	Beverly Glen Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF3595	Beverly Glen Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF3596	Big Mountain	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF3628	Topanga Canyon Area	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF3629	Topanga Canyon Area	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF3630	Topanga Canyon Area	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF4105		Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	M
MF4128		Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	M
MF4496		Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	M
MF6738	Topanga Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF6739	Topanga Canyon 9.1	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF6773	Downtown L.A.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF7689x	Santa Monica Mtns	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	
MF8629	Girard	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF8631	Type Mohnian	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF8632	Type Mohnian	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF8633	Type Mohnian	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M

**Appendix C**

University of California Museum of Paleontology Fossil Locality Records

Paleontological Resources Assessment for the Las Virgenes-Triunfo Pure Water Project

Location ID	Location Name	County	State	Country	Continent	Period	Epoch	Formation	Collection
MF8634	Type Mohnian	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
MF8635	Dry Canyon Road	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	M
P3650	Modelo I:Mulholland Drive	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	P
PA231	Sepulveda Canyon Quarry	Los Angeles County	California	United States	North America	Tertiary	Late Miocene	Modelo Shale	P
PA1128	Modelo II:Ventura Blvd.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	P
PA1129	Modelo III:Beverly Glen Blvd.	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	P
PA1130	Modelo IV:Mulholland Drive Summit	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	P
PA1347	Buckley School VI	Los Angeles County	California	United States	North America	Neogene	Miocene	Modelo	P
V3110	Featherstone Quarry	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V3430	Calabasas	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V3601	Sepulveda Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V3636	Santa Monica	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V4814	Reynier Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V65441	Browns Canyon	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V65449	Soledad Canyon General	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V65450	Sepulveda Canyon General	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V82048	Del Moreno Drive	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V82049	Knoll Drive	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
V95102	Studio City	Los Angeles County	California	United States	North America	Tertiary	Miocene	Modelo	V
IP8874	Lauren Canyon Blvd	Los Angeles County	California	United States	North America	Neogene	Miocene	Conejo Volcanics	I

I = Invertebrate

M = Microfossil

P = Plant

V = Vertebrate



**Appendix D**  
**Paleontological Locality Report**

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Natural History Museum  
of Los Angeles County  
900 Exposition Boulevard  
Los Angeles, CA 90007

tel 213.763.DINO  
www.nhm.org

Research & Collections

e-mail: [paleorecords@nhm.org](mailto:paleorecords@nhm.org)

February 26, 2022

Jacobs  
Attn: Levi Pratt

re: Paleontological resources for the Pure Water Project

Dear Levi:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Pure Water project area as outlined on the portion of the Newbury Park, Thousand Oaks, and Calabasas USGS topographic quadrangles map that you sent via e-mail on February 15, 2022. We do not appear to have any fossil localities that lie directly within the proposed project area. We do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM VP 1680	Conejo Valley; 1 mi NW of Newbury Park	Unknown formation (Pleistocene, silty clay member)	Mammoth ( <i>Mammuthus</i> ); horse family (Equidae)	14-15 feet bgs
LACM VP 7660	The Lakes at Thousand Oaks; SW corner of E. Thousand Oaks Blvd & S. Conejo School Rd.	Unknown Formation (surface float)	Mastodon ( <i>Mammot americanum</i> )	Surface (stream bed)
LACM VP 3213	S of Ventura Freeway along S Westlake Blvd	Unknown formation (Pleistocene alluvial sediments)	Ground sloth ( <i>Paramylodon</i> ) and other vertebrates	Unknown
LACM VP 1142	Sherwood Lake cave, S of Sherwood Lake	Unknown formation (late Pleistocene)	Unidentified vertebrates	At surface, embedded in cave sediments
LACM VP 6949	Northbound side of Hwy. 23 approximately 1 mile south of Tierra Rejada Road offramp	Topanga Formation (coarse-grained sandstone with numerous fragments of underlying Conejo volcanics)	Shark ( <i>Isurus planus</i> ); Invertebrates (bivalves; echinoids; bryozoans; barnacles)	Unknown
LACM VP 7265	North of Madera Road, south of the Ronald	Topanga Formation (Grey orange fine	toothed whale (Odontoceti); Requiem shark ( <i>Carcharhinus</i> ,	Unknown



	Reagan Library, Simi Valley	grained well sorted sandstone)	Galeocerdo), weasel shark ( <i>Hemipristis</i> ), eagle ray ( <i>Myliobatidae</i> ), barracuda ( <i>Sphyraenidae</i> )	
LACM VP 5883	northwest flank of the Los Posas Hills, just west of the Los Posas Country Club	Saugus Formation (marine facies)	Perissodactyla; bivalves	Unknown, collected during grading
LACM VP 6236-6240	Near intersection of Mine Rd and Tapo Canyon Rd, Santa Susana Mtns	Saugus Formation (coarse light yellow sand channel interbedded with light gray bioturbated siltstones)	Scoter ( <i>Melanitta</i> ), albatross ( <i>Diomedea</i> ), shearwater ( <i>Puffinus</i> ), auk ( <i>Mancalla</i> ), cormorant ( <i>Phalacrocorax</i> ); baleen whale ( <i>Balaenidae</i> ), rorquals ( <i>Otariidae</i> ); eared seal ( <i>Hydrophiidae</i> ), rock bass ( <i>Paralabax</i> ), sturgeon ( <i>Acipenser</i> )	Unknown (collected during grading)
LACM IP 16927	On hill above Renee Dr. north of water tank; Agoura	Conejo Volcanics	Invertebrates (unspecified)	Unknown
LACM IP 17148	Western Simi Hills on top of a steep paved road above Summertime Lane, east of Stargaze Avenue, south of Tierra Rejada Road; Ventura County	Conejo Volcanics (sandy matrix surrounded by lava flows)	Oyster beds	Unknown
LACM VP 7987	The New Home Company Twenty Oaks development, NW of the intersection of W Wilbur Rd & N Moorpark Rd	Modelo Formation (silty mudstone; claystone & siltstone)	Shark ( <i>Isurus</i> , <i>Carcharhinus</i> ), ray-finned fish ( <i>Clupeidae</i> , porgies ( <i>Plectrutes</i> ), herring ( <i>Xyne</i> ), bony fish ( <i>Eclipes</i> , <i>Ganolytes</i> )	Unknown
LACM VP 6034	Ridge south of Thousand Oaks & west of Triunfo Corner (more specific information not available)	Modelo Formation	mackerel/tuna family ( <i>Scombridae</i> )	Unknown
LACM VP 4965-4966	Just north of Thousand Oaks Blvd. at intersection with La Baya Drive on ridge just west of Windmill Canyon	Modelo Formation (punkly diatomaceous shale)	Baleen whales ( <i>Cetotheriidae</i> )	Surface
LACM VP 7924	Oak Park; in the elevated terrain just east of Lindero Canyon	Monterey Formation (yellow shale sandstone)	Fish ( <i>Eclipes</i> , <i>Clupeidae</i> ); unspecified plants	Unknown

*VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface*

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

*Alyssa Bell*

Alyssa Bell, Ph.D.  
Natural History Museum of Los Angeles County

enclosure: invoice





**Appendix E**  
**CONFIDENTIAL Tribal Outreach Records**

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**Appendix F**  
**Draft EIR Comments and Responses**



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## Appendix F. Draft EIR Comments and Responses

The Las Virgenes-Triunfo Joint Powers Authority (JPA) received 112 comments on the draft Program Environmental Impact Report (EIR) via 12 sets of comments, most of which were received via e-mailed letters. The JPA reviewed and responded to each of the comments. Individual comment submittals are presented in order received.

Letter 1



**State Water Resources Control Board**

Oliver Slosser, P.E.  
Las Virgenes-Triunfo Joint Powers Authority  
4232 Las Virgenes Road  
Calabasas, CA 91392

Dear Mr. Slosser:

Re: ENVIRONMENTAL IMPACT REPORT (EIR) FOR LAS VIRGENES-TRIUNFO JOINT POWERS AUTHORITY; PURE WATER PROJECT LAS VIRGENES-TRIUNFO (PROJECT); STATE CLEARINGHOUSE NO. 2021090157

We understand that the Las Virgenes-Triunfo Joint Powers Authority (Authority) is pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project (CWSRF No. C-06- 8542-110). As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing the following information on the CWSRF and comments for the Project.

The State Water Board, Division of Financial Assistance, is responsible for administering the CWSRF Program (Program). The primary purpose for the Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, and facilities improvements to provide clean potable water, and thereby protect and promote health, safety and welfare of the inhabitants of the state.

The Program is partially funded by the United States Environmental Protection Agency (USEPA) and requires additional "California Environmental Quality Act (CEQA)-Plus" environmental documentation and review. Two enclosures are included that illustrate the Program environmental review process including the additional CEQA-Plus federal requirements. For the complete environmental application package and instructions please visit:

[http://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/srf/srf\\_forms.shtml](http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/srf_forms.shtml)

. The State Water Board is required to consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to the State Water Board's approval of a CWSRF financing commitment for your proposed Project. For further information on the Program, please contact Mr. Brian Cary, at (916) 449-5624 or Mrs. Bridget Binning at (916) 449-5641.

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

1001 | Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | [www.waterboards.ca.gov](http://www.waterboards.ca.gov)





## Letter 1 continued

Oliver Slosser, P.E.

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August 2022

It is important to note that prior to a CWSRF financing commitment, projects subject to provisions of the Federal Endangered Species Act (ESA), must obtain ESA, Section 7 clearance from the United States Department of the Interior, Fish and Wildlife Service (USFWS), and/or the United States Department of Commerce National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) specific to any potential effects to special-status species.

Please be advised that the State Water Board will coordinate with the USEPA to consult with the USFWS, and/or the NMFS regarding all federal special-status species that the Project has the potential to affect if the Project is to be financed by the Program. The lead agency (Authority) will need to identify whether the Project will involve any direct effects from construction activities or indirect effects such as growth inducement, that may affect federally listed threatened, endangered, or candidate species that are known, or have a potential to occur in the Project site, in the surrounding areas, or in the service area, and to identify applicable conservation measures to reduce such effects.

In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act (Section 106). The State Water Board is responsible for ensuring compliance with Section 106 and is required to consult directly with the California State Historic Preservation Officer (SHPO). The SHPO consultation is initiated once sufficient information is provided by the CWSRF applicant. If the Authority decides to pursue CWSRF financing, please retain a consultant that meets the Secretary of the Interior's Professional Qualifications Standards ([http://www.nps.gov/history/local-law/arch\\_stnds\\_9.htm](http://www.nps.gov/history/local-law/arch_stnds_9.htm)) to prepare a Section 106 compliance report.

Note that the Authority will need to identify the Area of Potential Effects (APE), including construction and staging areas, and the depth of any excavation. The APE is three-dimensional and includes all areas that may be affected by the Project. The APE includes the surface area and extends below ground to the depth of any Project excavations. The records search request should extend to a ½-mile beyond project APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity.

Other federal environmental requirements pertinent to the Project under the Program include the following (for a complete list of all federal requirements and instructions please visit [http://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/srf/srf\\_forms.shtml](http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/srf_forms.shtml)):

- A. An alternative analysis discussing environmental impacts of the Project in either the CEQA document (i.e. Environmental Impact Report) or in a separate report (i.e. for projects utilizing a Negative Declaration or Mitigated Negative Declaration).

Letter 1 continued

Oliver Slosser, P.E.

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August 2022

- B. A public hearing or meeting for adoption/certification of all CEQA documents except for those with little or no environmental impacts.
- C. Compliance with the Federal Clean Air Act: (a) Provide air quality studies that may have been done for the Project; and (b) if the Project is in a nonattainment area or attainment area subject to a maintenance plan; (i) provide a summary of the estimated emissions (in tons per year) that are expected from both the construction and operation of the Project for each federal criteria pollutant in a nonattainment or maintenance area, and indicate if the nonattainment designation is moderate, serious, or severe (if applicable); (ii) if emissions are above the federal de minimis levels, but the Project is sized to meet only the needs of current population projections that are used in the approved State Implementation Plan for air quality, quantitatively indicate how the proposed capacity increase was calculated using population projections.
- D. Compliance with the Coastal Zone Management Act: Identify whether or not the Project is within a coastal zone and the status of any coordination with the California Coastal Commission.
- E. Protection of Wetlands: Identify any portion of the proposed Project area that should be evaluated for wetlands or United States waters delineation by the United States Army Corps of Engineers (USACE), or requires a permit from the USACE, and identify the status of coordination with the USACE.
- F. Compliance with the Farmland Protection Policy Act: Identify whether or not the Project will result in the conversion of farmland. Identify the status of farmland (prime, unique, local or statewide Importance) in the Project area and determine if this area is under a Williamson Act Contract.
- G. Compliance with the Migratory Bird Treaty Act: List any birds protected under this act that may be impacted by the Project and identify conservation measures to minimize impacts.
- H. Compliance with the Flood Plain Management Act: Identify whether or not the Project is in a Flood Management Zone and include a copy of the Federal Emergency Management Agency flood zone maps for the area.
- I. Compliance with the Wild and Scenic Rivers Act: Identify whether or not any Wild and Scenic Rivers would be potentially impacted by the Project and include conservation measures to minimize such impacts.



Following are specific comments on the Authority's draft EIR:

- 1. Page 2-22 of the EIR (Section 2.2.2) discusses the pipeline construction:
  - a. What is the maximum width and depth for the open trench construction?
  - b. Other than the 101-freeway, what are the other potential areas where trenchless installation methods would be preferable?





Letter 1 continued

Oliver Slosser, P.E.

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- i. Is the entire alignment within Triunfo Creek Park expected to be installed with trenchless methods?
  - c. What is the ground disturbance profile for the alternative excavation methods (i.e., rockwheel trencher, jackhammering, blasting)?
- 2. Page 5-8 of the EIR (Section 5.1.4) the biological resources section indicates the length of pipeline between various components. Please also include the pipeline lengths in the Project Description in Section 2.0.
- 3. Please summarize the expected Project disturbance under the California Department of Fish and Wildlife (CDFW) jurisdiction for streambed alteration permitting. Provide a copy of the permit and/or decision from the CDFW for the Project.
- 4. Please summarize any changes to the waste discharge requirements for the updated NPDES permit from the Regional Water Board issued for the Project.
- 5. Page 5-9 (Section 5.1.5) of the EIR indicates Aquatic Bioassay and Consulting Laboratories, Inc. has conducted Bioassessment Monitoring for the Las Virgenes MWD, producing survey results from 2018-2020 and forming the basis of the Project description of the existing setting for aquatic resources in Malibu Creek.
  - a. Have the project information and potential impacts (Southern California steelhead and Tidewater goby) including these survey results been shared with the National Marines Fisheries Service for comments? If yes, please provide this correspondence.
- 6. Page 6-37 (Section 6.4) indicates archaeological *surveys* would be conducted to mitigate the Project impacts on cultural resources. What remaining areas are left for a survey? Has the Authority considered including archaeological and/or Native American monitoring for the Project?

Please upload to [Financial Assistance Application Submittal Tool \(FAAST\)](#) the following documents applicable to the proposed Project following the Authority's CEQA process: (1) one copy of the draft and final EIR, (2) the resolution certifying the EIR and making CEQA findings, (3) all comments received during the review period and the District's response to those comments, (4) the adopted Mitigation Monitoring and Reporting Program and (5) the Notice of Determination filed with the Los Angeles and the Ventura County Clerk and the Governor's Office of Planning and Research, State Clearinghouse. In addition, we would appreciate notices of any hearings or meetings held regarding environmental review of any projects to be funded by the State Water Board.

Thank you for the opportunity to review the Authority's draft EIR. If you have any questions or concerns, please feel free to contact me at (916) 341-6983, or by email at [Cedric.Irving@waterboards.ca.gov](mailto:Cedric.Irving@waterboards.ca.gov) or contact Brian Cary at (916) 449-5624, or by email at [Brian.Cary@waterboards.ca.gov](mailto:Brian.Cary@waterboards.ca.gov).





**Letter 1 continued**

Oliver Slosser, P.E.

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August 2022

Sincerely,

**Cedric S. Irving**

Digitally signed by Cedric S. Irving  
Date: 2022.08.30 11:50:22  
-07'00'

Cedric Irving  
Environmental Scientist

Enclosures (3):

1. Clean Water State Revolving Fund Environmental Review Requirements
2. DFA CEQA Requirements
3. Cultural Resources Report Preparation

cc: State Clearinghouse  
(Re: SCH# 2021090157)  
P.O. Box 3044  
Sacramento, CA 95812-3044

bcc: Brian Cary, Division of Financial Assistance  
Cedric Irving, Division of Financial Assistance  
Jody Hack, Division of Financial Assistance

**Response to Letter 1**

1-1 The commenter describes the procedures required for a Clean Water State Revolving Fund (SRF) application, including the required materials. The commenter also references an existing application (C-06-8542-110), which may now be out of date. The Las Virgenes - Triunfo Joint Powers Authority (JPA) expects to pursue SRF funding and may wish to reinstate this effort using a new application rather than continuing under C-06-8542-110; however, those process questions will be discussed with SRF staff prior to any decision to apply.

1-2 The replies to the commenter’s specific questions are as follows:

- The maximum trench width is expected to be approximately 4 feet wide. This would be the largest pipeline diameter (up to 24 inches), plus an additional 24 inches for the trench. The maximum pipeline depth will be determined during the detailed design phase of work; but for planning, all pipelines are assumed to be approximately 6 to 7 feet below the ground surface, which indicates a maximum depth of excavation of approximately 8 feet.
- Potential areas for trenchless construction are described in Section 2.2.2, Pipeline Construction. In addition to U.S. Highway 101 and State Route 23, the text states that trenchless construction “may also include other areas where open-trench construction is infeasible, such as crossings of major drainage features.” Additional information will be developed over time as part of the detailed design phase of work.
  - Only a portion of the pipeline alignment within Triunfo Creek Park *may* be installed with trenchless construction. The decision about the preferred option shown on Figure 2-9 will be made during detailed design.
- The ground-disturbance profile for the alternative excavation methods described in Section 2.2.2, Pipeline Construction are like a typical open trench. Each of these potential construction options, including the very targeted, precise blasting methods being considered, might somewhat exceed the typical trench width (up to 4 feet) but not by a substantial amount.

With these responses, no text changes to the Program Environmental Impact Report (EIR) are required.

1-3 A discussion of pipeline lengths is already included in Section 2.1.6. The lengths of the pipeline components included in Section 5.1.4 are relevant specifically to the discussion of biologically sensitive areas and do not also need to be included in Section 2.1.6.

1-4 California Department of Fish and Wildlife (CDFW) has been identified as a California Environmental Quality Act Responsible Agency for construction activities affecting streams and other natural areas. Once a pipeline alignment is selected, a Section 1600 Lake or Streambed Agreement will be acquired. As the final pipeline alignment has not yet been selected, expected project disturbance cannot be summarized, and no permit or decision from CDFW can be provided. All appropriate permitting will be complete prior to construction.

1-5 The Pure Water Project is being implemented to comply with the current Los Angeles Regional Water Quality Control Board (Regional Board) National Pollutant Discharge Elimination System (NPDES) permit for discharges to Malibu Creek. No near-term changes to the adopted NPDES permit are expected. As the permit is renewed in the future, the JPA and the Regional Board will work together to determine the necessary changes, but those changes are not known at this time.

1-6 Bioassessment monitoring is being performed in compliance with the NPDES permit, and results are shared with the Regional Board. Results are not required to be shared with the National Marine Fisheries Service. The JPA is not aware whether the Regional Board has shared the monitoring results with any external parties.

1-7 Archaeological surveys were completed for Alternative 1 Agoura Road Advanced Water Purification Facility (AWPF) site, Alternative 2 Reservoir AWPF site, and pipeline option locations in undisturbed areas. Figures 6-2 and 6-3 show the portions of the survey area where intensive surveys occurred and areas that were not accessible. In areas along the pipeline options that were paved or heavily disturbed, archaeologists completed a reconnaissance or windshield survey, where accessible. Section 6.1.7 of the Program EIR describes the survey methods.

In addition, a records search was received from the California Historical Resources Information System South Central Coastal Information Center at California State University, Fullerton on February 18, 2022 (Record Search File 23394.9454). The records search indicated that the following portions of the project have been previously investigated for the presence of cultural resources:

- 70% of the pipeline alignment in studies completed between 1975 and 2016
- 80% of the Alternative 1 Agoura Road AWPF site in studies completed between 1966 and 2001
- 95% of the Alternative 2 Reservoir AWPF site in studies completed between 1982 and 1990

Mitigation measure 6-1a requires the JPA to determine whether proposed construction will occur in a high or medium archaeological sensitivity zone. If the project site is determined to be in a high or medium archaeological sensitivity zone, a qualified Archaeologist will perform an archaeological investigation at the site, if it has not been surveyed. Subsurface testing, including hand-augured borings and excavated test pits, may be recommended by the Archaeologist. Recommendations made as part of this study may include monitoring to mitigate potential impacts.

Mitigation measure 6-1b describes the process in the event archaeological resources are discovered during construction, which includes retaining a qualified Archaeologist and coordinating with Native American groups and individuals to assess any finds.

1-8 See response to Comment 1-1. When the JPA decides to pursue SRF funding, all required information will be shared with the SRF staff using the appropriate tools, such as the online Financial Assistance Application Submittal Tool website.



Letter 2

**From:** [Franck, Matthew](#)  
**To:** [Franck, Matthew](#)  
**Subject:** RE: Wastewater to drinking water comment  
**Date:** Monday, September 12, 2022 2:28:48 PM

---

**From:** Susan Stewart <[suznSTE@roadrunner.com](mailto:suznSTE@roadrunner.com)>  
**Sent:** Friday, September 9, 2022 10:55 AM  
**To:** Slosser, Oliver <[OSlosser@lvmwd.com](mailto:OSlosser@lvmwd.com)>  
**Subject:** Wastewater to drinking water comment

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe. Remember, links in emails will never prompt you for your credentials, so never provide them.

My **BIG** concern is that the current technology cannot adequately filter out pharmaceuticals (chemo, legal and illegal drugs, hormones, nanoparticles from drugs, cosmetics, supplements, vaccines, etc.).

Until and unless this becomes feasible we should not go this route!

Feedback would be appreciated.

Susan  
Westlake Village

1

**Response to Letter 2**

- 2-1 The Pure Water Project would address new stringent water quality standards for discharge to Malibu Creek through construction of a new Advanced Water Purification Facility (AWPF), which would treat recycled water for indirect potable reuse through surface water augmentation, one of multiple water recycling strategies accepted and regulated by the California State Water Resources Control Board. The statewide Water Recycling Criteria are contained in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 3. Regulations for Surface Water Source Augmentation Projects, such as the Pure Water Project, are included in CCR Article 5.3 of the Water Recycling Criteria, Title 22, Division 4, Chapter 3.

Letter 3

STEVE BLOIS, PRESIDENT  
DIVISION 5

RAUL AVILA, SECRETARY  
DIVISION 1

ANDY WATERS, DIRECTOR  
DIVISION 3



ANDRES SANTAMARIA, VICE PRESIDENT  
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September 15, 2022

Mr. Oliver Slosser, P.E.  
Pure Water Project Las Virgenes-Triunfo  
Las Virgenes-Triunfo Joint Powers Authority  
4232 Las Virgenes Road Calabasas, CA 91302  
[oslosser@lvmwd.com](mailto:oslosser@lvmwd.com)

Via email

**RE: Comments on the Draft Programmatic Environmental Impact Report for the Pure Water Project – Las Virgenes-Triunfo**

Dear Mr. Slosser,

Calleguas Municipal Water District (Calleguas) appreciates the opportunity to comment on the Draft Programmatic Environmental Impact Report (Draft PEIR; SCH No. 2021090157) for the Pure Water Project Las Virgenes-Triunfo (proposed Project), released for public review on August 22, 2022.

Calleguas is one of twenty-six member agencies of the Metropolitan Water District of Southern California (Metropolitan) and the primary urban wholesale water supplier in Ventura County, providing potable water service to three quarters of the County's population. Through 19 retail water agencies and companies, Calleguas provides water to the cities of Oxnard, Camarillo, Moorpark, Simi Valley, Thousand Oaks, and Port Hueneme as well as surrounding areas of unincorporated Ventura County. Calleguas also owns and operates the Salinity Management Pipeline (SMP), which the proposed Project would utilize to discharge concentrate from the Pure Water facility.

We offer the following minor recommended revisions to the Draft PEIR to clarify certain details about Calleguas, its facilities, and its role in the proposed Project. Additions are shown in underline and deletions in ~~strikethrough~~.

1. *Section 1.1.2, Page 1-1:* "The recycled water distribution system includes three open reservoirs, three storage tanks, four pump stations, and 62 miles of pipelines, serving 661 individual connections. In 2020, the JPA provided 5,892 acre-feet (AF) of recycled water within ~~it's~~ the Las Virgenes MWD service area (Las Virgenes MWD 2021). ~~Some~~ Recycled water is also provided to the Triunfo Water and Sanitation District outside of the service area, to within the Calleguas Municipal Water District (Calleguas MWD) service area." 1
2. *Section 1.3.2, Pages 1-5 to 1-6:* Please identify Calleguas MWD as a Responsible Agency. Calleguas MWD would have discretionary approval authority over the concentrate disposal pipeline connection to the SMP. 2



Letter 3 continued

3. *Section 2.1.6.3, Page 2-17:* “The longest pipeline project is the concentrate disposal pipeline, which would be a 10-inch-diameter pipeline connecting the AWPf to the Calleguas Salinity Management Pipeline (SMP). The SMP is an existing pipeline that discharges through an existing ocean outfall and being constructed is owned and operated by the Calleguas MWD. Calleguas MWD is planning to extend the SMP from its current terminus just east of Camarillo northeast through the Santa Rosa Valley to the western Simi Valley area. The concentrate disposal pipeline would connect to the SMP along the planned extension.”

3

We appreciate the opportunity to comment on the Draft PEIR for the Pure Water Project Las Virgenes-Triunfo. Should you have any questions regarding these comments, please do not hesitate to contact me at (805) 579-7194 or by email at [jlancaster@calleguas.com](mailto:jlancaster@calleguas.com). We look forward to reviewing the Final PEIR.

Sincerely,



Jennifer Lancaster  
Principal Resource Specialist

cc: Anthony Goff, Calleguas MWD General Manager  
Kristine McCaffrey, Calleguas MWD Manager of Engineering  
Dan Drugan, Calleguas MWD Manager of Resources

**Response to Letter 3**

- 3-1 Specific text revisions have been added to clarify information in the indicated paragraph in Section 1.1.2, page 1-1. The revisions are slightly different than requested to simplify the statement and avoid unnecessary confusion about service areas.
- 3-2 Calleguas Municipal Water District has been added as a Responsible Agency in Section 1.3.2.
- 3-3 Specific text revisions have been added to clarify information in the indicated paragraph in Section 2.1.6.3, page 2-17.

# Programmatic Environmental Impact Report

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## Letter 4

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State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
South Coast Region  
3883 Ruffin Road  
San Diego, CA 92123  
(858) 467-4201  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



October 3, 2022

Oliver Slosser  
Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, CA 91302  
[oslosser@lvwmwd.com](mailto:oslosser@lvwmwd.com)

**Subject: Pure Water Project Las Virgenes–Triunfo, Draft Programmatic Environmental Impact Report, SCH #2021090157, Las Virgenes - Triunfo Joint Powers Authority, Los Angeles County and Ventura County**

Dear Mr. Slosser,

The California Department of Fish and Wildlife (CDFW) has reviewed the Draft Programmatic Environmental Impact Report (PEIR) from the Las Virgenes–Triunfo Joint Powers Authority (JPA) for the Pure Water Project Las Virgenes–Triunfo (Project). CDFW appreciates the opportunity to provide comments regarding aspects of the Project that could affect fish and wildlife resources and be subject to CDFW's regulatory authority under the Fish and Game Code.

### CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect State fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq.*). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project Applicant obtain appropriate authorization under the Fish and Game Code.

### Project Description and Summary



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**Objective:** The Project would address new stringent nitrogen and phosphorus total maximum daily loads discharge to Malibu Creek through installation of a new Advanced Water Purification Facility (AWPF) and a series of interrelated pipelines. The Project would consist of treating effluent from the existing Tapia Wastewater Reclamation Facility (Tapia WRF) at an AWPF, discharging the purified water to the Las Virgenes Reservoir for storage, and sending the filtered reject through a concentrate disposal pipeline for ocean disposal.

**Tapia Wastewater Reclamation Facility**

The Project does not propose substantial changes at the Tapia WRF. The capacity of the Tapia WRF is not expected to increase. Some minor upgrades to existing facilities would be required within the existing plant footprint in order to operate the project efficiently. The primary change at the Tapia WRF is operational. All treated effluent would be sent to the recycled water system and the new AWPF; all discharges to Malibu Creek would be eliminated.

**Advanced Water Purification Facility**

The Project has two alternative locations for new AWPF.

- **Agoura Road AWPF, Alternative 1.** Tapia WRF effluent would be conveyed to an 47,750 square feet AWPF at Agoura Road in the City of Agoura Hills. In addition to the AWPF, the facility would contain the following: pumps to operate the filtration systems; chemical facilities (e.g., storage, pumps, and pipes); large pumps to help convey purified water to Las Virgenes Reservoir and effluent (i.e., concentrate) to the ocean; electrical facilities, including emergency generators; extensive piping to convey water from one process to the next; maintenance and laboratory facilities; access driveways from Agoura Road; operations and maintenance facilities; paved areas for internal circulation, including materials deliveries; and parking spaces. The new facility would occupy a total of 2.8 acres of a 7.1-acre undeveloped site.
- **Reservoir AWPF, Alternative 2.** Tapia WRF effluent would be conveyed to an AWPF located next to the Las Virgenes Reservoir in the City of Westlake Village. The Alternative 2 AWPF site, unlike Alternative 1, is not adjacent to an existing road. Therefore, a new access road would need to be built. The new, paved access road would connect to the eastern end of Triunfo Canyon Road. The road would be approximately 3,200 feet and sized to accommodate construction vehicles and materials delivery trucks during facility operation.

**Pipelines**

The Project would require a series of interrelated pipelines. The following would be proposed pipeline configurations and locations under Alternative 1 Agoura Road AWPF.

- **Source-Water Pipeline.** A source-water pipeline no larger than 24 inches in diameter would connect existing recycled water distribution pipelines to the new AWPF. Two points of connection are being evaluated: Agoura Road at Lewis Road and Lindero Canyon Road at Thousand Oaks Boulevard.
  - **Source-Water Pipeline Alignment Option 1.** The alignment would follow Agoura Road and Lewis Road to Agoura Road AWPF and continue along Agoura Road all the way to the AWPF (total distance of 15,210 feet). This option has one sub option.

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- **Flood Control Channel Alignment Option 1A.** The pipeline would be constructed along the side of a flood control channel parallel to Agoura Road (total distance 2,641 feet).
- **Source-Water Pipeline Alignment Option 2.** This alignment would follow Lindero Canyon Road and Thousand Oaks Boulevard to Agoura Road AWWPF. The alignment would continue along Lindero Canyon Road and Agoura Road (total distance of 9,590 feet).
- **Source-Water Pipeline Alignment Option 3.** This alignment would follow Lindero Canyon Road and Thousand Oaks Boulevard to Agoura Road AWWPF and continue along Russell Ranch Road, through an office complex parking lot, along a flood control channel, under Highway 101, and through a small commercial development to connect to Agoura Road and the Agoura Road AWWPF (total distance of 6,070 feet long).
- **Purified Water Pipeline - a 20-inch-diameter purified water pipeline would connect the new AWWPF to Las Virgenes Reservoir.**
  - **Purified-Water Pipeline Alignment Option 1.** The alignment would be installed along Agoura Road, Lindero Canyon Road, and Triunfo Canyon Road. A segment of the pipeline would be installed in Triunfo Creek Park within an easement generally following the Westlake Vista Trail (totaling 16,190 feet long). Because of the potential for purified water from the AWWPF to not meet quality specifications, a bypass valve would be installed along Triunfo Canyon Road to direct flows, if needed, to the storm drain and to Potrero Creek. This option has two sub options.
    - **Flood-Control-Channel Alignment Option 1A.** Installation would occur along Lindero Canyon Road between Agoura Road and Foxfield Drive. This alignment would be constructed along the side of the flood control channel parallel to Lindero Canyon Road, rather than along the road itself.
    - **Trenchless Alignment in Triunfo Creek Park Option 1B.** Installation of the 1,250-foot segment of the alignment within Triunfo Creek Park would be built with trenchless methods such as horizontal direction drilling.
- **Concentrate Disposal Pipeline -** The longest segment of the Project is the concentrate disposal pipeline, which would be a 10-inch-diameter pipeline connecting the AWWPF to the Calleguas Salinity Management Pipeline (SMP), an ocean discharge pipeline being constructed and operated by the Calleguas Municipal Water District. Depending on the alignment option, the concentrate-disposal pipeline would range from 13.2 to 14.1 miles long, most of which would be in the City of Thousand Oaks. The alignment follows Agoura Road and Hampshire Road to Thousand Oaks Boulevard, along Thousand Oaks Boulevard to just past Moorpark Road, then continues along Hillcrest Road, Ventu Park Road, and Rancho Conejo Boulevard to the City of Thousand Oaks Municipal Service Center. From this location, the pipeline would follow an existing Conejo Canyons Open



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Space recreation trail and fire road, cross Arroyo Conejo, and then follow the Hill Canyon Fire Road to the SMP on Santa Rosa Road.

- **Sewer Pipeline** - The Agoura Road AWWP would require a sewer pipeline for on-site wastewater and waste processing. The sewer pipeline would connect with an existing sewer pipeline on Agoura Road.

Under Alternative 2 Reservoir AWWP, the general pipeline corridors would be the same as described for Alternative 1 Agoura Road AWWP. However, the specific pipeline alignments would be as follows:

- **Source-Water Pipeline.** the source-water pipeline would connect one of the two recycled water system connection points to the Reservoir AWWP, following the Lindero Canyon Road and Triunfo Creek Park Alignment.
  - The source-water pipeline would require a pump station to meet hydraulic requirements. The pump station would be an aboveground structure with a masonry block control building, surge tank, pumps, and ancillary facilities on a small footprint of approximately 40 feet wide by 90 feet long. The pump station would be located within Westlake Village at one of two optional sites along Lindero Canyon Road: 1) within the Westlake Village Marketplace shopping center, near the corner of Lindero Canyon Road and Russell Ranch Road or 2) within the Westlake Golf Course between Agoura Road and Highway 101.
- **Purified Water Pipeline.** Alternative 2 Reservoir AWWP would require a short, purified water pipeline discharge into Las Virgenes Reservoir.
- **Concentrate Disposal Pipeline.** the concentrate disposal pipeline would be longer and would follow the same route options through Thousand Oaks, but also would run through Triunfo Creek Park and along Lindero Canyon Road.
- **Sewer Pipeline.** the sewer pipeline would follow the source water and concentrate disposal pipelines to connect to an existing sewer pipeline on Triunfo Canyon Road.

**Location:** The Tapia WRF is an existing WRF located on Malibu Canyon Road in the Santa Monica Mountains. The Tapia WRF treats wastewater for use primarily for nonresidential landscape irrigation, such as roadway medians, school yards, and golf courses within Calabasas, Agoura Hills, and Westlake Village. Excess recycled water is either discharged to Malibu Creek, used in nearby sprayfields, or sent to the Los Angeles River.

Under Alternative 1, the AWWP would occupy a vacant parcel (Assessor's Parcel Number, 2061-1-25) owned by the Las Virgenes Municipal Water District along Agoura Road in the City of Agoura Hills. Under Alternative 2, the AWWP would be located next to Las Virgenes Reservoir in the City of Westlake Village. The Alternative 2 Reservoir AWWP site is currently a vacant, undeveloped property. The series of interrelated pipelines would occur within the City of Agoura Hills, City of Westlake Village, City of Thousand Oaks, and unincorporated Ventura County.

**Comments and Recommendations**



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JPA prepared maps showing natural communities, oaks, and rare plants at the Alternative 1 Agoura Road AWWP site, Alternative 2 Reservoir AWWP sites, the alignment of the Purified Water Pipeline from Triunfo Canyon Road to the Las Virgenes Reservoir, and the alignment along the Concentrate Disposal Pipeline from Rancho Conejo Boulevard to the City of Thousand Oaks Municipal Service Center. JPA provided these maps for CDFW's review upon our request on September 8, 2022. Based on our review of the Project's CEQA document and vegetation maps, CDFW offers the comments and recommendations below to assist JPA in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources.

CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring, and reporting program (Pub. Resources Code, § 21081.6; CEQA Guidelines, § 15097).

**Specific Comments**

**Comment #1: Impacts on Least Bell's Vireo (*Vireo bellii pusillus*)**

**Issue:** The Project may impact least Bell's vireo (*Vireo bellii pusillus*), an Endangered Species Act (ESA) and CESA-listed species.

**Specific impacts:** The Project occurring during the least Bell's vireo nesting season could adversely affect breeding behavior of least Bell's vireo. Elevated noise and ground-disturbance could result in least Bell's vireo abandoning nesting territory. In addition, elevated noise could result in the incidental loss of nests, fertile eggs, or nestlings.

**Why impacts would occur:** A review of the California Natural Diversity Database (CNDDDB) (CDFW 2022a), Information for Planning and Consultation (IPaC) (IPac 2022), and E-bird (E-bird 2022) revealed that least Bell's vireo has potential to occur in and around the Project site. According to Figure 5-1 of the DPEIR, least Bell's vireo occurrences have been documented near the northern most point of the concentrate disposal pipeline, exiting the Conejo Canyons Open Space area. However, the DPEIR did not offer any specific mitigation measures for least Bell's vireo or protocol surveys for the species.

The DPEIR did not discuss potential impacts related to noise to least Bell's vireo. As an ESA-listed species, "take" includes activities that may disrupt or alter behaviors necessary for species survival. Project activities include excavation with heavy machinery such as rockwheel trenchers, jackhammers, and excavators. Localized blasting may also be necessary in some areas, including the Conejo Canyons Open Space area. These activities could result in elevated levels of noise. Substantial noise may adversely affect wildlife species in several ways as wildlife responses to noise can occur at exposure levels of only 55-60 dB (Barber 2009). The Project could adversely affect least Bell's vireos by disrupting foraging or breeding behavior, or by causing adults to abandon nests. Disruptions to breeding behavior could include a temporary reduction breeding activity if least Bell's vireos avoid noisy areas. Noise has also been shown to reduce the density of nesting birds (Francis 2009) and cause increased stress that results in decreased immune responses (Kight and Swaddle 2011). Project activities occurring during the breeding season of least Bell's vireo could result in the incidental loss of fertile eggs, nestlings,

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or nest abandonment. Least Bell's vireo could be forced from their territory into adjacent habitat that may be less suitable where they would be at risk of predation, starvation, or other injury.

**Evidence impact would be significant:** Take of any endangered, threatened, candidate species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code, §§ 86, 2062, 2067, 2068, 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). In addition, take under the ESA is more broadly defined than take under CESA. Take under ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Impacts on least Bell's vireo requires a mandatory finding of significance under CEQA (CEQA Guidelines, § 15065). CDFW considers impacts to CESA-listed species a significant direct and cumulative adverse effect without implementing appropriate avoidance and/or mitigation measures. The DPEIR has yet to provide mitigation for the Project's potential impact on least Bell's vireo. Accordingly, the Project continues to 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 CDFW or U.S. Fish and Wildlife Service (USFWS).

**Recommended Potentially Feasible Mitigation Measure(s):**

**Recommendation #1:** Appropriate authorization from CDFW under CESA may include an Incidental Take Permit (ITP) or a Consistency Determination in certain circumstances, among other options [Fish & Game Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to the project and mitigation measures may be required to obtain an ITP. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project's CEQA document addresses all the Project's impact on CESA endangered, threatened, and/or candidate species. The Project's CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. It is important that the take proposed to be authorized by CDFW's ITP be described in detail in the Project's CEQA document. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project's impact on a CESA endangered, threatened, and/or candidate species proposed in the Project's CEQA document may not necessarily satisfy mitigation required to obtain an ITP.

**Mitigation Measure #1:** JPA should perform protocol surveys for least Bell's vireo within the Conejo Canyons Open Space and where there is habitat for least Bell's vireo in the Project area. Least Bell's vireo is commonly found in dense scrubby vegetation within riparian scrub, upland scrub, riparian woodlands dominated by willow, and at the edge of agricultural fields (Cornell 2022, USGS 2018). Surveys should adhere to the USFWS 2001 [Least Bell's Vireo Survey Guidelines](#) (USFWS 2001). Per protocol guidelines, a final survey report (including negative findings) should be provided to USFWS and CDFW within 45 calendar days following the completion of the survey effort. A final survey report should be submitted to USFWS and CDFW prior to any Project-related ground disturbing activities and vegetation removal.

**Mitigation Measure #2:** If least Bell's vireo is present in the Project area, JPA should fully avoid impacts to least Bell's vireo. An Avoidance Plan should be developed prior to implementing



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Project-related ground-disturbing activities and vegetation removal. Occupied habitat should be avoided and delineated by high visibility flagging.

**Mitigation Measure #3:** To fully avoid impacts to least Bell's vireo, no ground-disturbing activities, including staging, as well as disturbances to native and nonnative vegetation should occur during the least Bell's vireo breeding season from March 15 through September 15 to avoid take of least Bell's vireo birds, nestlings, or their eggs. If construction activities occur within this time, nesting bird surveys should be conducted. Active least Bell's vireo nests should be avoided with a 500-foot buffer delineated by high visibility flagging. Construction activities should not continue within the buffer until the young have fledged or the nest is no longer active.

**Mitigation Measure #4:** If impacts to least Bell's vireo cannot be avoided, JPA should consult CDFW and USFWS to obtain take authorization. Appropriate take authorization should be obtained from CDFW and USFWS prior to any ground-disturbing activities and vegetation removal.

**Comment #2: Impacts on Coastal California Gnatcatcher (*Poliioptila californica californica*)**

**Issue:** The Project may impact coastal California gnatcatcher (*Poliioptila californica californica*), an ESA-listed species and a California Species of Special Concern (SSC).

**Specific impacts:** The Project could result in temporary or permanent impacts to coastal California gnatcatcher through alteration or loss of suitable nesting and foraging habitat. Project activities occurring during the breeding and nesting season could also result in the incidental loss of fertile eggs or nestlings.

**Why impacts would occur:** Coastal California gnatcatcher have potential to occur at Project sites within the Conejo Canyon Opens Space. The DPEIR offered protocol presence/absence surveys and avoidance buffers for coastal California gnatcatcher. However, the document did not offer mitigation for habitat that may be lost or altered due to the placement of the concentrate disposal pipeline within the Conejo Canyons Open Space. Habitat loss and fragmentation are key factors in population loss and species extinction in a multitude of species (Vandergast 2019).

Populations of coastal California gnatcatcher in the Ventura County area have been found to be genetically isolated from other populations within their range (Vandergast 2019). Lack of genetic mixing between other geographical populations is likely due to heightened fragmentation and loss of suitable habitat between Ventura County and the remainder of their range across southern California (Vandergast 2019). Nesting sites for coastal California gnatcatcher are often found within sagebrush, buckwheat, or other scrub species located on gentle slopes or drainages (USFWS 1997). The Conejo Canyons Open Space supports large sections of appropriate coastal sage scrub vegetation which could be impacted by Project activities. Direct and indirect impacts may occur as a result of ground disturbance; vegetation clearing; use of construction equipment and vehicles; increased foot traffic; and localized blasting. Species within the potentially impacted natural community include black sage (*Salvia mellifera*), white sage (*Salvia apiana*), California buckwheat (*Eriogonum fasciculatum*), ashy-leaved buckwheat (*Eriogonum cinereum*), and lemonadeberry (*Rhus integrifolia*) (COSCA 2022). These plant species and natural communities are vital for the persistence of coastal California gnatcatcher



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within the Conejo Canyons Open Space and Ventura County. Genetic isolation paired with continuous removal and alteration of suitable habitat makes coastal California gnatcatchers in Ventura County more susceptible to local extirpation (Vandergast 2019). Moreover, the risk of local extirpation is heightened following major habitat disturbances such as fires and drought. Both disturbance events have increased in frequency and severity in southern California.

**Evidence impact would be significant:** The Project could result in impacts on coastal California gnatcatcher. As an ESA-listed species, gnatcatcher is considered an endangered, rare, or threatened species under CEQA (CEQA Guidelines, § 15380). An SSC is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State or, in the case of birds, is extirpated in its primary season or breeding role;
- is listed as ESA-, but not CESA-, threatened, or endangered; meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; and/or,
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for CESA threatened or endangered status (CDFW 2022b).

CEQA provides protection not only for ESA and CESA-listed species, but for any species including but not limited to SSC which can be shown to meet the criteria for State listing. These SSC meet the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Take of coastal California gnatcatcher could require a mandatory finding of significance (CEQA Guidelines, § 15065). Take under the ESA is more broadly defined than CESA. Take under ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting.

Thus, the Project may still have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and USFWS.

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #5:** CDFW recommends JPA revise Mitigation Measure 5-2 for coastal California gnatcatcher in order to mitigate the Project's impact to below a level of significance or, the Project may continue to have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species by CDFW. CDFW recommends JPA incorporate the following underlined language:

"Coastal California Gnatcatcher: Protocol presence or absence surveys for coastal California gnatcatcher will be performed by a qualified biologist with a USFWS Section 10(a)(1)(A) permit. If coastal California gnatcatcher are present, the Pure Water Project and its contractors will



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avoid impacting occupied habitat by maintaining a 500-foot buffer. In addition, no construction activities will occur within 500 feet of an active nest. Buffers will be maintained until young have fledged (left the nest on their own), as determined by a qualified biologist, or the nest is no longer active. Buffers will be delineated by high visibility flagging. If these avoidance techniques are not feasible, USFWS and CDFW will be contacted regarding alternative avoidance measures for the species.”

**Mitigation Measure #6:** If coastal California gnatcatcher is present, JPA should consult with the USFWS to determine if the Project would result in take of coastal California gnatcatcher. Consultation with the USFWS, in order to comply with the ESA, is advised well in advance of any ground-disturbing activities and/or vegetation removal that may impact gnatcatcher.

If a take permit from the USFWS is needed, JPA should comply with the mitigation measures detailed in a take permit issued from USFWS.

**Mitigation Measure #7:** If the Project would result in permanent loss of habitat, JPA should provide replacement habitat at no less than 2:1 for the total acreage of habitat that is impacted. Replacement habitat should be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands. An appropriate non-wasting endowment should be provided for the long-term management of mitigation lands. A conservation easement and endowment funds should be fully acquired, established, transferred, or otherwise executed by JPA prior to any ground-disturbing activities or vegetation removal.

**Comment #3: Impacts on Rare, Threatened, and Endangered Plants & Sensitive Natural Communities<sup>1</sup>**

**Issue:** The Project continues to have a significant impact on rare, threatened, and endangered plants as well as Sensitive Natural Communities.

**Specific impacts:** The Project could result in the loss of individuals and populations of rare, threatened, and endangered plants including, but not limited to, the following species (Table 1):

**Table 1.** Rare plants that may be impacted by the Project.

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<sup>1</sup> Oak woodlands and walnut woodlands are addressed under Comment #4.



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Species Name	CESA status	ESA status	California Rare Plant Rank
Agoura Hills dudleya ( <i>Dudleya cymosa</i> ssp. <i>agourensis</i> )			1B.2
Blochman's dudleya ( <i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> )			1B.1
Braunton's milk-vetch ( <i>Astragalus brauntonii</i> )		Endangered	1B.1
California Orcutt grass ( <i>Orcuttia californica</i> )	Endangered	Endangered	1B.1
Catalina mariposa lily ( <i>Calochortus catalinae</i> )			4.2
Chaparral ragwort ( <i>Senecio aphanactis</i> )			2B.2
Lyon's pentachaeta ( <i>Pentachaeta lyonii</i> )	Endangered	Endangered	1B.1
slender mariposa lily ( <i>Calochortus clavatus</i> var. <i>gracilis</i> )			1B.2
southern tarplant ( <i>Centromadia parryi</i> ssp. <i>australis</i> )			1B.1

The Project's impact on these and potentially additional species of rare plants not previously identified could substantially reduce the number of endangered, rare, or threatened species; reduce the habitat for endangered rare, or threatened species; and result in local population declines or local extirpation of endangered rare, or threatened species.

In addition, the Project could result in the loss of Sensitive Natural Communities. According to the DPEIR, the Project could impact the following (Table 2):

Table 2. Sensitive Natural Communities that may be impacted by the Project.

Sensitive Natural Community	Alliance or Association	State Rarity Rank
Arroyo willow – Mulefat thickets ( <i>Salix lasiolepis</i> - <i>Baccharis salicifolia</i> )	Association	S4
Ashy buckwheat scrub ( <i>Eriogonum cinereum</i> )	Alliance	S3
California rose briar patches ( <i>Rosa californica</i> )	Alliance	S3
California bulrush marshes [ <i>Schoenoplectus (acutus, californicus)</i> ]	Alliance	S3/S4
Clustered tarweed – Annual grass fields ( <i>Deinandra fasciculata</i> – annual grass-herb)	Association	S2
Longstem buckwheat fields ( <i>Eriogonum elongatum</i> )	Alliance	S4
Mulefat thickets ( <i>Baccharis salicifolia</i> )	Alliance	S4
Needle grass – Melic grass grassland ( <i>Nassella pulchra</i> – <i>Melica californica</i> – annual grass)	Association	S4
Poison oak – Sticky monkeyflower scrub ( <i>Toxicodendron diversilobum</i> – <i>Diplacus aurantiacus</i> )	Association	S3

**Why impacts would occur:** The Project would result in direct physical changes to the environment (e.g., mass grading, excavating, laying concrete foundation, paving, trenching, drilling, jackhammering, and blasting). The Project could remove rare plants and habitat supporting rare plants. In addition, the Project could remove Sensitive Natural Communities. The Project could impact habitat supporting rare plants and Sensitive Natural Communities by introducing edge effects. Edge effects that could impact rare, special status, and sensitive biological resources include encroachment, introduction of non-native plants and pests (e.g., Argentine ants), increasing fire risk (e.g., at the Agoura Road AWPF site), and fuel modification.

According to Table 5-8 in the DPEIR, the Project would have significant and unavoidable impacts on rare, threatened, and endangered plants as well as Sensitive Natural Communities

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under both AWPf alternatives. Installation of the pipeline network would also result in significant and unavoidable impacts. According to pages 5-25 through 5-27 in the DPEIR, the Project would have the following impacts:

- Agoura Road AWPf, Alternative 1
  - **Plants:** Loss of 11 subpopulations of Ojai navarretia containing approximately 500 individual plants.
  - **Sensitive Natural Communities:** 0.11 acre of sensitive natural communities.
- Reservoir AWPf, Alternative 2
  - **Plants and Sensitive Natural Communities:** An undetermined number of special-status plant subpopulations and native plant communities along the access road and at the AWPf site.
- Pipelines
  - **Plants and Sensitive Natural Communities:** Pipeline installation may result in the loss of special-status species plant species and natural communities and would remove an unknown number of individuals. Species and natural communities impacted include Lyon's pentachaeta, Catalina mariposa lily, slender mariposa lily, and Agoura Hills dudleya.

The DPEIR provides Mitigation Measure 5-1 that would require JPA to develop a mitigation plan for impacts on special-status plants. However, the Project's impact on rare, threatened, and endangered species has yet to be mitigated below a level of significance. First, Mitigation Measure 5-1 relies on top soil salvage and relocation of individual plants to mitigate for the Project's impact. Compensatory mitigation has yet to be provided. Translocation, topsoil salvage, and plant salvage should be considered experimental in nature and not be considered as a measure to mitigate for rare, endangered, and threatened plants below a significant level under CEQA (Fiedler 1991; Fahselt 2007; Godefroid 2010). CDFW generally does not support the use of translocation, transplantation, or salvaging plants as the primary mitigation strategy for unavoidable impacts to rare, endangered, and threatened plants. Studies have shown that these efforts are experimental and the outcome unreliable (CNPS 1998). CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving sensitive plants and their habitats. Additionally, rare, endangered, and threatened plants are habitat specialists that require specific habitat conditions to exist and persist. Moving rare plants to an area that does not support habitat for rare plants could result in loss of those salvaged plants.

Second, compliance with regulatory permits has yet to be provided even though take of CESA and/or ESA-listed species would require take authorization from CDFW and/or USFWS, respectively. Lastly, success criteria and performance standards have yet to be provided.

**Evidence impact would be significant:** Take of any endangered, threatened, candidate species that results from the Project is prohibited, except as authorized by State law under CESA (Fish & G. Code, §§ 86, 2062, 2067, 2068, 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). In addition, take under the ESA is more broadly defined than take under CESA. Take under ESA also includes significant habitat modification or degradation that could result in death or

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injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Plants with a CRPR of 1B and 2B meets the definition of endangered, rare, or threatened species under CEQA (CEQA Guidelines, § 15380; CNPS 2022). Plants with a CRPR of 4 may meet the definition of endangered, rare, or threatened species. Impacts on rare plants could require a mandatory finding of significance.

Sensitive Natural Communities are communities that are of limited distribution State-wide or within a county or region and are often vulnerable to environmental effects of projects. CDFW considers plant communities, alliances, and associations with a State ranking of S1, S2, and S3 as sensitive and declining at the local and regional level. An S3 ranking indicates there are 21 to 100 viable occurrences of this community in existence in California, S2 has six to 20 occurrences, and S1 has fewer than six viable occurrences (Sawyer et al. 2009). Impacts to sensitive natural communities should be considered significant under CEQA unless they are clearly mitigated below a level of significance.

For reasons discussed above, the Project continues to 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 CDFW or USFWS. Moreover, Mitigation Measure 5-1 may not meet the standards required for deferred mitigation. Mitigation Measure 5-1 has yet to 1) commit JPA to mitigation, 2) adopt specific performance standards the mitigation will achieve, and 3) identify the types of potential actions that can feasibly achieve that performance standard (CEQA Guidelines, § 15126.4).

**Recommended Potentially Feasible Mitigation Measure(s):**

**Recommendation #2:** CDFW recommends JPA provide the following clarification to Mitigation Measure 5-1:

- 1) How would JPA mitigate for the Project's temporary/temporal impacts on rare, threatened, and endangered plants habitat as well as Sensitive Natural Communities;
- 2) What specific and measurable goals, success criteria, and performance standards would mitigation achieve;
- 3) What types of potential actions would be implemented to achieve those performance standards;
- 4) How would JPA commit the Project to mitigation;
- 5) Where would JPA potentially acquire land for off-site compensatory mitigation;
- 6) How and when potential off-site compensatory mitigation lands would be protected and conserved in perpetuity;
- 7) What criteria JPA would look for to determine suitable receiver sites for each plant species that would be impacted by the Project;
- 8) Where would JPA potentially transplant/relocate topsoil or plants in order to minimize the Project's impact;
- 9) How those receiver site(s) would be protected and conserved in perpetuity;
- 10) What types of mitigation credits would JPA purchase and when credits would be purchased; and
- 11) Why those credits would be appropriate for mitigating the Project's impacts on rare, threatened, and endangered plants as well as Sensitive Natural Communities.





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**Recommendation #3:** Mitigation Measure 5-1 currently proposes a minimum of five years for monitoring mitigation sites. CDFW recommends a minimum of 10 years of monitoring with at least seven years without supplemental irrigation. Under prolonged drought conditions, habitat restoration, creation, or enhancement efforts could take longer than five years to achieve desired performance standards. In addition, certain natural communities such as oak woodlands could take between 20 to 40 years in order for replacement oak trees to reach maturity and restore the habitat, structure, foliage, and canopy lost by removing woodlands. Assuming risk of failure, drought, stochastic events, and the time it may take for new plantings to mature and produce seeds (i.e., self-sustaining population), five years is insufficient for monitoring whether mitigation is successful.

**CDFW recommends JPA incorporate the following recommended mitigation measures into Mitigation Measure 5-1:**

**Mitigation Measure #8:** The Project should fully avoid impacts on rare, endangered, and threatened plants and habitat as well as Sensitive Natural Communities to the maximum extent possible. JPA, in consultation with a qualified biologist, should prepare an Avoidance and Relocation Plan. JPA should submit the Avoidance and Relocation Plan to CDFW for review. JPA should resolve all CDFW concerns and comments prior to finalizing the Avoidance and Relocation Plan. No ground-disturbing activities or vegetation removal should occur until after the Avoidance and Relocation Plan is implemented.

**Mitigation Measure #9:** For impacts on CESA-listed and/or ESA-listed species, JPA should consult with CDFW and/or USFWS and obtain appropriate take authorization<sup>2</sup>. JPA should obtain appropriate take authorization from CDFW and/or USFWS prior to any ground-disturbing activities and vegetation removal.

**Mitigation Measure #10:** For impacts on CESA-listed species, JPA should provide compensatory mitigation at no less than 5:1, or as required in an Incidental Take Permit issued by CDFW.

**Mitigation Measure #11:** For impacts on CRPR 1 or 2 species, JPA should provide compensatory mitigation at no less than 3:1. For impacts on CRPR 4 species, JPA should provide compensatory mitigation at no less than 2:1. Compensatory mitigation should be provided for the total number of plants and total acreage of habitat supporting those plants impacted.

**Mitigation Measure #12:** For impacts on S2 ranked natural community alliance or association, JPA should provide compensatory mitigation at no less than 3:1. For impacts on S3 ranked community alliance or association, JPA should provide compensatory mitigation at no less than 2:1. Mitigation should replace the natural community association or alliance that was impacted. Areas that may be impacted by permanent fuel modification should be included as part of the total acreage that would need to be compensated.

<sup>2</sup> Consultation with the USFWS, in order to comply with ESA, is advised well in advance of any activities that may impact ESA-listed species.



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**Mitigation Measure #13:** Mitigation lands should be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands<sup>3</sup>. An appropriate endowment should be provided for the long-term management of mitigation lands. A mitigation plan should include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that should be addressed include but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds should be fully acquired, established, transferred, recorded, or otherwise executed prior to any ground-disturbing activities and vegetation removal.

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**Mitigation Measure #14:** For compensatory mitigation at a mitigation bank, JPA should purchase credits prior to any ground-disturbing activities and vegetation removal.

**Comment #4: Impacts on Streams and Associated Natural Communities**

**Issue:** The Project continues to have a significant impact on streams and associated natural communities.

**Specific impacts:** The Project would result in permanent and/or temporal loss of streams and associated natural communities. Ground-disturbing activities resulting in erosion and earth movement that could impair streams, whether ephemeral, intermittent, or perennial. The Project may require streams to be channelized or diverted from their natural course of flow. The Project may require vegetation along streams to be removed or may degrade vegetation along streams through habitat modification (e.g., loss of water source, encroachment, and edge effects leading to introduction of non-native plants).

**Why impacts would occur:** According to page 5-28 through 5-29 in the DPEIR, the Project would impact the following stream features:

- Agoura Road AWWP, Alternative 1
  - "A 0.177-acre wetland at the Alternative 1 Agoura Road AWWP site, located along the southern side of Agoura Road and within the AWWP construction footprint. This wetland area also contains 0.04 acres of mulefat thicket, a sensitive natural community."
- Reservoir AWWP, Alternative 2
  - "Seasonally flooded aquatic resource complexes at the Alternative 2 Reservoir AWWP site."
- Pipelines
  - "Along the margins of Las Virgenes Reservoir, where the purified water pipeline

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<sup>3</sup> Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

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- enters the reservoir at an area containing California bullrush marsh."
- "A 140-foot linear wetland along the edge of the Conejo Canyons Open Space Trail on the concentrate pipeline alignment."

The DPEIR also states "In addition to these wetland areas, other waters of the United States were identified in several areas, including on the Alternative 1 Agoura Road AWPf site, along the access road to the Alternative 2 Reservoir AWPf site, and along the Westlake Vista Trail pipeline corridor. These features are likely to be considered jurisdictional features subject to regulatory review if they cannot be avoided by project construction."

The DPEIR provides Mitigation Measure 5-3 that would require JPA to first avoid impacts on streams. If impacts cannot be avoided, "permits must be obtained" and 1:1 compensatory mitigation will be provided through credits at a mitigation bank or through payment of in-lieu fees. However, the Project's impact on streams and associated natural communities has yet to be mitigated below a level of significance. First, Mitigation Measure 5-3 proposes a buffer of 10 feet from streams during construction and 50 feet from streams for construction staging areas. The proposed avoidance only pertains to construction. It is unclear if and how the site plans for the AWPf and pipeline would be configured to avoid streams and associated natural communities. In addition, it is unclear how a 10-foot or 50-foot buffer provides sufficient setback to avoid substantial impacts on streams and associated natural communities as well as preserve the function of the stream. Second, Mitigation Measure 5-3 proposes compensatory mitigation at 1:1 which may be insufficient for significant impacts on a regionally diminishing resource that provides significant and essential habitat for resident and migratory fish and wildlife. In addition, 1:1 may be insufficient for impacts on a Sensitive Natural Community adjacent to a stream considering the rarity of the vegetation community, local significance of wetland features, and uncertainties and often failures when creating or restoring vegetation communities dependent on complex and specific interactions between hydrologic processes and soils. Lastly, Mitigation Measure 5-3 proposes payment of in-lieu fees. It is unclear how, to whom, or when in-lieu fees would be applied to appropriately mitigate for impacts to streams and associated natural communities such that there is no net loss. In addition, in-lieu fees may result in prolonged temporal loss of resources until the fees are paid and use of those fees is identified.

**Evidence impacts would be significant:** The Project may impact streams and associated natural communities. CDFW exercises its regulatory authority as provided by Fish and Game Code section 1600 *et seq.* to conserve fish and wildlife resources which includes rivers, streams, or lakes and associated natural communities. Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake<sup>4</sup>;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or
- Deposit or dispose of material into any river, stream, or lake.

<sup>4</sup> "Any river, stream, or lake" includes those that are dry for periods of time (ephemeral/episodic) as well as those that flow year-round (perennial). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a water body.



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CDFW requires a LSA Agreement when a project activity may substantially adversely affect fish and wildlife resources.

For reasons discussed above, the Project continues to have a substantial adverse effect on state or federally protected wetland (e.g., marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means.

**Recommended Potentially Feasible Mitigation Measure(s):**

**Recommendation #4:** CDFW's issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project's CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of an LSA Agreement. To compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.

CDFW recommends JPA incorporate the following recommended mitigation measures into Mitigation Measure 5-3:

**Mitigation Measure #15:** JPA should notify CDFW pursuant to Fish and Game Code section 1602 for construction and activities occurring near or impacting streams and associated natural communities. JPA should notify CDFW prior to any ground-disturbing activities and vegetation removal, including staging, near streams. The notification to CDFW should provide the following information:

- 1) A stream delineation in accordance with the U.S. Fish and Wildlife Service wetland definition adopted by CDFW<sup>5</sup> (Cowardin et al. 1979);
- 2) Linear feet and/or acreage of streams and associated natural communities that would be permanently and/or temporarily impacted by the Project. This includes impacts as a result of routine maintenance and fuel modification. Plant community names should be provided based on vegetation association and/or alliance per the [Manual of California Vegetation](#);
- 3) A discussion as to whether impacts on streams within the Project site would impact those streams immediately outside of the Project site where there is hydrologic connectivity. Potential impacts such as changes to drainage pattern, runoff, and sedimentation should be discussed; and,
- 4) A hydrological evaluation of the 100-year storm event to provide information on how water and sediment is conveyed through the Project site. Additionally, the hydrological evaluation should assess a sufficient range of storm events (e.g., 100, 50, 25, 10, 5, and

<sup>5</sup> Be advised that some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers' Section 404 permit and Regional Water Quality Control Board Section 401 Certification.

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2-year frequency storm events) to evaluate water and sediment transport under pre-Project and post-Project conditions.

**Mitigation Measure #16:** If the Project would impact streams and associated natural communities, JPA should obtain an LSA Agreement prior to any ground-disturbing activities and vegetation removal, including staging, near streams.

**Mitigation Measure #17:** JPA should provide compensatory mitigation at no less than 3:1 for impacts to streams and associated natural communities, or at a ratio acceptable to CDFW per a LSA Agreement.

**Comment #5: Impacts on Oak Woodlands & Southern California Black Walnut Woodlands**

**Issue:** The Project continues to have a significant impact on valley oak – coast live oak woodland (*Quercus lobata* – *Quercus agrifolia*) Woodland Association and California walnut – toyon groves (*Juglans californica* – *Heteromeles arbutifolia*) Woodland Association.

**Specific impact:** The Project could result in the loss of individual valley oak and coast live oak trees (oak trees) and southern California black walnut trees (walnut trees), as well as acres of valley oak – coast live oak woodland and California walnut – toyon groves.

**Why impacts would occur:** The Project would result in direct physical changes to the environment (e.g., mass grading, excavating, laying concrete foundation, paving, trenching, drilling, jackhammering, and blasting). The Project could remove woodlands which are considered to be Sensitive Natural Communities. In addition, the Project could impact woodlands by introducing edge effects. Edge effects that could impact rare, special status, and sensitive biological resources include encroachment, introduction of non-native plants and pests (e.g., Argentine ants), increasing fire risk (e.g., at the Agoura Road AWPF site), and fuel modification.

According to pages 5-25 through 5-27 and 5-30 through 5-31 in the DPEIR, the Project would have the following impacts:

- Agoura Road AWPF, Alternative 1
  - 0.11 acre of sensitive natural communities.
  - Oak tree impacts would occur within the AWPF site development footprint.
- Reservoir AWPF, Alternative 2
  - An undetermined number of oak trees and oak tree natural community areas along the access road that would need to be removed during grading and road construction.
- Pipelines
  - Southern-California-black walnut occurs along the Conejo Canyons Open Space Trail. In this area, sensitive natural communities may be affected by project construction.
  - Construction within Triunfo Creek Park may impact oak trees.

The DPEIR provides Mitigation Measure 5-1 for mitigating impacts on Sensitive Natural

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Communities and Mitigation Measure 5-4 for mitigation impacts on oak tree natural communities. Neither mitigation measure provides compensatory mitigation for impacts to the habitat or natural communities as a whole. Instead, mitigation primarily focuses on replacing individual trees. Loss of woodlands supporting foraging, nesting, and dispersing wildlife may not be completely mitigated by planting individual trees. Individual trees may not completely replace the loss of viable habitat, understory vegetation, mycorrhizal fungi, and biological functions.

In addition, Mitigation Measure 5-1 and Mitigation Measure 5-4 prescribes a minimum monitoring period of five years. There is a long establishment period for oak trees and walnut trees before replacement trees reach maturity and produce seeds (i.e., self-sustaining population). It may take 20 to 40 years for oaks and five to eight years for walnut trees, potentially longer under drought conditions, for replacement trees to reach maturity, produce seeds, and restore the habitat, structure, foliage, and canopy lost. Even if replacement oak trees survive, oak tree saplings could remain small and shrubby for many years. As such, wildlife such as birds may be unable to nest in planted oak trees and shrubs until they mature. This could result in local extirpation of wildlife. Assuming risk of failure, drought, stochastic events, and the time it may take for new plantings to mature and produce seeds, five years is insufficient for monitoring whether mitigation is successful.

**Evidence impacts would be significant:** Oak woodlands have higher levels of biodiversity than any other terrestrial ecosystem in California. Over 330 species of birds, mammals, reptiles, and amphibians depend on oak woodlands in California at some stage in their life cycle (CalPIF 2002). Oak trees provide nesting and perching habitat for approximately 170 species of birds. Large oak trees in oak woodland habitats are important for cover, nesting sites for cup nesting species and cavity nesting species, as well as caching sites for birds storing acorns (CalPIF 2002). Oak woodlands also serve several important ecological functions important within an ecosystem such as protecting soils from erosion and land sliding, regulating water flow in watersheds, and maintaining water quality in streams and rivers.

CDFW considers oak woodlands to be a sensitive plant community. Oak trees and woodlands are protected by the Oak Woodlands Conservation Act (pursuant under Fish and Game Code sections 1360-1372) and Public Resources Code section 21083.4 due to the historic and ongoing loss of these resources. Moreover, [CDFW's Areas of Conservation Emphasis - Significant Habitats](#) dataset includes oak woodlands as a Terrestrial Significant Habitat based on its priority for conservation and acquisition planning for some counties, local jurisdictions, and the Wildlife Conservation Board (CDFW 2019c).

Valley oak – coast live oak woodland and California walnut – toyon groves are Sensitive Natural Communities with a State rarity rank of S3. Sensitive Natural Communities are communities that are of limited distribution State-wide or within a county or region and are often vulnerable to environmental effects of projects. CDFW considers plant communities, alliances, and associations with a State ranking of S1, S2, and S3 as sensitive and declining at the local and regional level. An S3 ranking indicates there are 21 to 100 viable occurrences of this community in existence in California, S2 has six to 20 occurrences, and S1 has fewer than six viable occurrences (Sawyer et al. 2009). Impacts to sensitive natural communities should be considered significant under CEQA unless they are clearly mitigated below a level of significance.

For reasons discussed above, the Project continues to have a substantial adverse effect, either





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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 CDFW or USFWS.

**Recommended Potentially Feasible Mitigation Measure(s):**

**CDFW recommends JPA incorporate the following recommended mitigation measures into Mitigation Measure 5-1 and/or Mitigation Measure 5-4:**

**Recommendation #5:** The DPEIR should include information posed under Recommendation #3 but for impacts and mitigation to woodlands.

**Mitigation Measure #18:** For impacts on oak woodlands or walnut woodlands, JPA should offset the loss by no less than 3:1 of the total acreage of woodlands lost. This should include woodlands that would be subject to permanent fuel modification requirements. JPA should restore functioning and self-sustaining woodlands of similar composition, structure, and function to woodlands impacted. Mitigation should include restoration of structurally diverse understory vegetation species (i.e., grass, forb, shrub, subshrub, vine) occurring in the impacted natural communities. Acorns and/or seedlings should originate from plants/trees of the same species (i.e., genus, species, subspecies, and variety) as the species impacted.

**Mitigation Measure #19:** Prior to removing any oak or walnut trees or the understory vegetation, JPA should prepare a Woodland Restoration Plan. The Woodland Restoration Plan should prescribe the following:

- 1) Species-specific planting methods;
- 2) Planting schedule;
- 3) Measures to control exotic vegetation and protection from herbivory;
- 4) Measurable goals and success criteria for establishing self-sustaining populations (e.g., percent survival rate, absolute cover). Measurable success criteria should be based on site/habitat conditions prior to impact and/or functional local native oak shrublands/woodlands as reference sites;
- 5) Contingency measures if the success criteria is not met;
- 6) Long-term monitoring for at least 10 years, with a minimum of seven years without supplemental irrigation;
- 7) Adaptive management techniques, including replacement plants if necessary; and
- 8) Annual reporting criteria and requirements.

**Mitigation Measure #20:** For off-site mitigation, JPA should protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands. An appropriate non-wasting endowment should be provided for the long-term management of mitigation lands. A conservation easement and endowment funds should be fully acquired, established, transferred, or otherwise executed prior to any ground-disturbing activities and vegetation removal.

**Comment #6: Impacts on California Species of Special Concern**

**Issue:** The Project may impact SSC.





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**Specific impacts:** Project construction and activities, directly or through habitat modification, may result in direct injury or mortality (trampling, crushing), reduced reproductive capacity, population declines, or local extirpation of an SSC. Loss of foraging, breeding, or nursery habitat for an SSC may also occur as a result of the Project. Moreover, excavation and blasting may diminish on-site and downstream water quality within Arroyo Conejo. Increased sediment loads due to these activities may alter hydrologic and geomorphic processes.

**Why impacts would occur:** According to page 5-2 of the DPEIR, the Project area has the potential to support SSC, which includes the following species: coastal California gnatcatcher; coastal whiptail (*Aspidoscelis tigris stejnegeri*); southern California legless lizard (*Anniella stebbinsi*); and western pond turtle (*Emys marmorata*).

The Project would require ground disturbance and vegetation removal, using heavy equipment. These activities create elevated levels of noise, human activity, dust, ground vibrations, and vegetation disturbance. Preconstruction clearance surveys were proposed within the DPEIR. However, this measure only minimizes impacts from crushing and burial to species directly within the work area. Likewise, preconstruction clearance surveys may not be done to a level of detail necessary to locate SSC. SSC could be injured or killed due to lack of focus surveys. Impacts on reptiles of SSC are more likely to occur because these are cryptic species that are less mobile during certain times of the day and seek refuge and hide under structures. Western pond turtles are also at heightened risk to burial or crushing as they aestivate underground and are only reliably detected above ground from May to July (USGS 2006). Further, the DPEIR did not provide any mitigation measures to reduce levels of noise, human activity, dust, or ground vibrations to less than significant for SSC in the surrounding area.

CDFW is also concerned for SSC arroyo chub (*Gila orcuttii*). Potential impacts for arroyo chub were not addressed within the DPEIR nor was the species identified as likely to occur. The Project may introduce debris, soil, silt, sawdust, rubbish, raw cement/concrete, or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous or deleterious to aquatic life. Arroyo Conejo is adjacent to portions of the Project within the Conejo Canyons Open Space. Although a variety of invasive fish species inhabit Arroyo Conejo, arroyo chub has potential to be present (UCANR 2022). Arroyo chub within portions of the creek directly adjacent to the Project sites, as well as downstream populations could be impacted by Project construction and activities. Additional sediment entering the system due to excavation and blasting could alter flow regimes and potentially alter habitat for arroyo chub.

**Evidence impacts would be significant:** A [California SSC](#) is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State or, in the case of birds, is extirpated in its primary season or breeding role;
- is ESA-listed, but not CESA-listed; meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; and/or,

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- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for CESA threatened or endangered status (CDFW 2022b).

CEQA provides protection not only for CESA-listed species, but for any species including but not limited to SSC which can be shown to meet the criteria for State listing. These SSC meet the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Therefore, take of SSC could require a mandatory finding of significance (CEQA Guidelines, § 15065). Impacts to any sensitive or special status species should be considered significant under CEQA unless they are clearly mitigated, through appropriate disclosure of the proposed mitigation measures, below a level of significance.

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #21:** JPA should avoid all impacts to arroyo chub and western pond turtle. Some portions of the Project are within 100 feet of Arroyo Conejo. For this segment, no work should occur on the stream banks adjacent to Arroyo Conejo during the winter rainy season, typically between December 1 through March 31 (NMFS 2011). Additionally, no work should occur during the combined rainy season and breeding season for:

- Arroyo chub: February 1 through August 31 (Tres 1992).
- Western pond turtle: March 1 through July 15 (Morey 2000)

**Mitigation Measure #22: Species Surveys** – JPA should retain a qualified biologist(s) with experience surveying for each of the following species: coastal California gnatcatcher, arroyo chub, coastal whiptail, southern California legless lizard, and western pond turtle. The qualified biologist(s) should conduct species-specific and season appropriate surveys where suitable habitat occurs in the Project site. Positive detections of SSC and suitable habitat at the detection location should be mapped. These locations would help to develop more species-specific and location-specific mitigation measures. If SSC are detected, the qualified biologist should use visible flagging to mark the location where SSC was detected.

Coastal California gnatcatcher. Surveys for coastal California gnatcatcher should follow the USFWS 1997 [Coastal California Gnatcatcher Presence/Absence Survey Guidelines](#) (USFWS 1997).

Arroyo chub. JPA should perform focus surveys for arroyo chub in Arroyo Conejo. If Arroyo Conejo transitions to subsurface flow, the remainder of the stream should be surveyed to determine if there are isolated pools potentially supporting fish. Surveys should be conducted in areas adjacent to the pipeline alignment in the Conejo Canyons Open Space. Surveys should also be conducted along downstream sections, including segments that are hydrologically connected to Arroyo Conejo such as North Fork Arroyo Conejo.

California legless lizard and coastal whiptail. In addition to the mitigation measures already offered within the DPEIR, CDFW recommends JPA conduct focus surveys for California legless lizard and coastal whiptail. Surveys should typically be scheduled during the summer months (June and July) when these animals are most likely to be encountered. To achieve 100 percent visual coverage, CDFW recommends surveys be conducted with parallel transects at approximately 20 feet apart and walked on site in appropriate habitat suitable for each species.

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Suitable habitat consists of areas of sandy, loose, and moist soils, typically under the sparse vegetation of scrub, chaparral, and within the duff of oak woodlands.

**Western Pond Turtle.** In addition to the mitigation measures already offered within the DPEIR, CDFW recommends JPA conduct focus surveys for western pond turtle. Surveys should be conducted during the time of greatest pond turtle activity, typically during the breeding season (May to July), and when pond turtles have not left the water to aestivate or overwinter in the uplands. Surveys for southern western pond turtles and potential habitat should follow the United States Geological Survey's 2006 [Western Pond Turtle Visual Survey Protocol for the Southcoast Ecoregion](#) (USGS 2006).

**Mitigation Measure #23: Relocation and Avoidance Plan** – JPA should retain a qualified biologist to prepare a Wildlife Relocation and Avoidance Plan. The Wildlife Relocation and Avoidance Plan should describe all SSC that could occur within the Project site and proper avoidance, handling, and relocation protocols. The Wildlife Relocation Plan should include species-specific avoidance buffers and suitable relocation areas at least 200 feet outside of the Project site. The qualified biologist should submit a copy of a Wildlife Relocation and Avoidance Plan to CDFW for approval prior to any clearing, grading, or excavation work on the Project site.

**Mitigation Measure #24: Worker Awareness Training** – JPA, in consultation with a qualified biologist, should prepare a worker environmental awareness training. The qualified biologist should communicate to workers that upon encounter with an SSC (e.g., during construction or equipment inspections), work must stop, a qualified biologist must be notified, and work may only resume once a qualified biologist has determined that it is safe to do so.

**Mitigation Measure #25: Biological Monitor** – To avoid direct injury and mortality of SSC, JPA should have a qualified biologist on site to move out of harm's way wildlife of low mobility that would be injured or killed. Wildlife should be protected, allowed to move away on its own (non-invasive, passive relocation), or relocated to suitable habitat adjacent to the Project site. In areas where an SSC is found, work may only occur in these areas after a qualified biologist has determined it is safe to do so. Even so, the qualified biologist should advise workers to proceed with caution. A qualified biologist should be on site daily during initial ground and habitat disturbing activities as well as vegetation removal. Then, the qualified biologist should be on site weekly or bi-weekly (once every two weeks) for the remainder of the Project phase until the cessation of all ground and habitat disturbing activities, as well as vegetation removal, to ensure that no wildlife is harmed.

**Mitigation Measure #26: Scientific Collecting Permit** – JPA should retain a qualified biologist with appropriate handling permits, or should obtain appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities. CDFW has the authority to issue permits for the take or possession of wildlife, including mammals; birds, nests, and eggs; reptiles, amphibians, fish, plants; and invertebrates (Fish & G. Code, §§ 1002, 1002.5, 1003).

Effective October 1, 2018, a Scientific Collecting Permit is required to monitor project impacts on wildlife resources, as required by environmental documents, permits, or other legal authorizations; and, to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with otherwise lawful activities (Cal. Code Regs., tit. 14, § 650). Please visit CDFW's [Scientific Collection Permits](#) webpage for information (CDFW 2022d). Pursuant to

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the [California Code of Regulations, title 14, section 650](#), the qualified biologist must obtain or have appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities. An LSA Agreement may provide similar take or possession of species as described in the conditions of the agreement (see Comment #4: Impacts on Streams and Associated Natural Communities).

**Mitigation Measure #27: Injured or Dead Wildlife** – If any SSC are harmed during relocation or a dead or injured animal is found, work in the immediate area should stop immediately, the qualified biologist should be notified, and dead or injured wildlife documented immediately. A formal report should be sent to CDFW within three calendar days of the incident or finding. The report should include the date, time of the finding or incident (if known), and location of the carcass or injured animal and circumstances of its death or injury (if known). Work in the immediate area may only resume once the proper notifications have been made and additional mitigation measures have been identified to prevent additional injury or death.

**Additional Recommendations**

**Recommendation #6:** CDFW recommends JPA revise Mitigation Measure 5-2 for nesting birds in order to mitigate the Project's impact on nesting birds and raptors below a level of significance or, the Project may continue to have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species by CDFW. CDFW recommends JPA incorporate the following underlined language:

"Nesting Birds: Preconstruction nesting bird surveys will be performed by a qualified biologist within 500 feet of the construction area no more than seven 44 days prior to construction when work activities in that area begin (or resume after 2 or more weeks of inactivity) between February 1 and August 31. If the construction area and 500 feet of the construction area has nesting habitat for raptors, surveys for nesting raptors will begin January 1 in order to avoid take of birds, raptors, or their eggs.

Should an active nest be observed, a qualified biologist ~~will determine proper buffers for construction as needed~~ will implement a minimum buffer of 300 feet around migratory bird species nests and 500 feet around active raptor nests. The qualified biologist will notify CDFW of buffers established around any active nests of protected species. Buffers will be maintained until young have fledged (left the nest on their own), as determined by a qualified biologist, or the nest is no longer active.

The biologist will monitor active nests daily when construction is occurring and assess the effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist ~~will~~ ~~may~~ increase the minimum buffer and recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by a monitor, work ~~will~~ ~~may~~ be stopped or redirected to other areas until the nesting and fledging is completed or the nest has otherwise become inactive."

**Recommendation #7:** To place the concentrate disposal pipeline, the Project may require localized blasting along existing paved and unpaved roads through Conejo Canyons Open Space. The existing paved Hill Canyon Fire Road is adjacent to Arroyo Conejo. Prior to finalizing the Project's CEQA document, CDFW recommends JPA provide additional information

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on where blasting may occur, magnitude of the blasting (e.g., peak sound pressure), and the potential effects of the blasting (e.g., noise, ground vibrations, dust, debris flow). The CEQA document should discuss the potential impacts of the blasting on wildlife species that may be in the area, with a special emphasis on aquatic species that occur or may occur in Arroyo Conejo. CDFW recommends the CEQA document discuss potential effects such as temporary impacts on habitat from sedimentation or debris entering Arroyo Conejo and potential for altered fish behavior, fish injury, or fish mortality caused by unattenuated sound pressure. The CEQA document should provide measures to mitigate for adverse impacts on biological resources. Mitigation may include noise attenuation and temporary barriers to prevent sediment or debris resulting from blasting from entering Arroyo Conejo.

8

CDFW recommends JPA recirculate the Project's CEQA document for public review and commenting if 1) a new significant environmental impact would result from the Project or 2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance (CEQA Guidelines, § 15088.5).

**Recommendation #8:** CDFW recommends monitoring noise generated by the Project operations during construction to ensure noise from the Project does not affect wildlife in the adjacent river habitat. The DPEIR should set acceptable noise thresholds that would be part of a daily monitoring and reporting program to ensure impact to adjacent habitat is below a threshold that would have an adverse effect on surrounding wildlife. Sounds generated from any means should be below the 55 to 60 dB range within 50 feet from the source.

9

Construction equipment should use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. Stationary noise sources (e.g., generators, pumps) at staging areas within 1,400 feet of sensitive receptors should be shielded at the source by an enclosure, temporary sound walls, or acoustic blankets. Where feasible, sound walls or acoustic blankets should have a height of no less than 8 feet, a Sound Transmission Class of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts. Unnecessary construction vehicle use and idling time should be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.

**Recommendation #9:** CDFW recommends JPA include maps showing natural communities, oaks, rare plants, and streams prior to finalizing the Project's environmental document. CDFW also recommends JPA include tables listing the approximate acreage and/or linear feet of impacts to each resource based on each alternative. Tables and maps would assist reviewing agencies and members of the public to review the Project's potential impacts on biological resources. "The information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public" (CEQA Guidelines, § 15147).

10

**Recommendation #10:** CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database (e.g., CNDDDB) which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Information on special status species should be submitted to the CNDDDB by completing and submitting [CNDDDB Field Survey Forms](#) (CDFW 2022e). Information

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on special status native plant populations and sensitive natural communities, the [Combined Rapid Assessment and Relevé Form](#) should be completed and submitted to CDFW's Vegetation Classification and Mapping Program (CDFW 2022f).

↑ 11

**Recommendation #11:** CDFW recommends JPA revise update the Project's proposed Biological Resources Mitigation Measures and condition the environmental document to include mitigation measures recommended in this letter. CDFW provides comments to assist JPA in developing mitigation measures that are specific, detailed (i.e., responsible party, timing, specific actions, location), enforceable through permit conditions, agreements, or other legally-binding instruments [CEQA Guidelines, § 15126.4(a)(2)], and clear for a measure to be fully enforceable and implemented successfully via a mitigation monitoring and/or reporting program (CEQA Guidelines, § 15097; Pub. Resources Code, § 21081.6). JPA is welcome to coordinate with CDFW to further review and refine the Project's mitigation measures. Per Public Resources Code section 21081.6(a)(1), CDFW has provided JPA with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A).

12

**Filing Fees**

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs., tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

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**Conclusion**

We appreciate the opportunity to comment on the Project to assist the JPA in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the JPA has to our comments and to receive notification of any forthcoming hearing date(s) for the Project [CEQA Guidelines, § 15073(e)]. If you have any questions or comments regarding this letter, please contact Ruby Kwan-Davis, Senior Environmental Scientist, at (562) 619-2230 or by email at [Ruby.Kwan-Davis@wildlife.ca.gov](mailto:Ruby.Kwan-Davis@wildlife.ca.gov).

Sincerely,

DocuSigned by:  


Erinn Wilson-Olgin  
Environmental Program Manager I

ec: CDFW

- Victoria Tang – Los Alamitos – [Victoria.Tang@wildlife.ca.gov](mailto:Victoria.Tang@wildlife.ca.gov)
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State Clearinghouse - [state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)

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**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



**Attachment A: Draft Mitigation and Monitoring Reporting Plan**

CDFW recommends the following language to be incorporated into a future environmental document for the Project.

Biological Resources (BIO)			
	Mitigation Measure (MM) or Recommendation (REC)	Timing	Responsible Party
REC-1-CEQA document and CDFW's issuance of an Incidental Take Permit	The Project's CEQA document shall address all the Project's impact on CESA endangered, threatened, and/or candidate species. The Project's CEQA document shall also specify a mitigation monitoring and reporting program that will meet the requirements of an Incidental Take Permit (ITP). The take proposed to be authorized by CDFW's ITP be described in detail in the Project's CEQA document. Biological mitigation monitoring and reporting proposals shall be of sufficient detail and resolution to satisfy the requirements for an ITP.	Prior to finalizing CEQA document	Las Virgenes – Triunfo Joint Powers Authority (JPA)
REC-2-Mitigation Measure 5-1 in the Project's CEQA document	JPA should provide the following clarification to Mitigation Measure 5-1: 1) How would JPA mitigate for the Project's temporary/temporal impacts on rare, threatened, and endangered plants habitat as well as Sensitive Natural Communities; 2) What specific and measurable goals, success criteria, and performance standards would mitigation achieve; 3) What types of potential actions would be implemented to achieve those performance standards; 4) How would JPA commit the Project to mitigation; 5) Where would JPA potentially acquire land for off-site compensatory mitigation; 6) How and when potential off-site compensatory mitigation lands would be protected and conserved in perpetuity;	Prior to finalizing CEQA document	JPA



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	<p>7) What criteria JPA would look for to determine suitable receiver sites for each plant species that would be impacted by the Project;</p> <p>8) Where would JPA potentially transplant/relocate topsoil or plants in order to minimize the Project's impact;</p> <p>9) How those receiver site(s) would be protected and conserved in perpetuity;</p> <p>10) What types of mitigation credits would JPA purchase and when credits would be purchased; and,</p> <p>11) Why those credits would be appropriate for mitigating the Project's impacts on rare, threatened, and endangered plants as well as Sensitive Natural Communities.</p>		
REC-3- Mitigation Measure 5-1 in the Project's CEQA document	JPA should revise Mitigation Measure 5-1 to provide a minimum of 10 years of monitoring with at least seven years without supplemental irrigation.	Prior to finalizing CEQA document	JPA
REC-4-CEQA document and CDFW's issuance of an Incidental Take Permit	To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, the Project's CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of an LSA Agreement.	Prior to finalizing CEQA document	JPA
REC-5-Impacts on Oak Woodlands & Southern California Black Walnut Woodlands	The DPEIR should include information posed under Recommendation #3 but for impacts and mitigation to woodlands.	Prior to finalizing CEQA document	JPA
REC-6- Impacts to Nesting Birds	JPA should revise Mitigation Measure 5-2 for nesting birds per CDFW's recommendation in the comment letter.	Prior to finalizing	JPA

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		CEQA document	
<b>REC-7-Impacts on Aquatic Species</b>	<p>JPA should provide additional information on where blasting may occur, magnitude of the blasting (e.g., peak sound pressure), and the potential effects of the blasting (e.g., noise, ground vibrations, dust, debris flow). The CEQA document should discuss the potential impacts of the blasting on wildlife species that may be in the area, with a special emphasis on aquatic species that occur or may occur in Arroyo Conejo. The CEQA document should discuss potential effects such as temporary impacts on habitat from sedimentation or debris entering Arroyo Conejo and potential for altered fish behavior, fish injury, or fish mortality caused by unattenuated sound pressure. The CEQA document should provide measures to mitigate for adverse impacts on biological resources. Mitigation may include noise attenuation and temporary barriers to prevent sediment or debris resulting from blasting from entering Arroyo Conejo.</p> <p>JPA should recirculate the Project's CEQA document for public review and commenting if 1) a new significant environmental impact would result from the Project or 2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance (CEQA Guidelines, § 15088.5).</p>	Prior to finalizing CEQA document	JPA
<b>REC-8-Impacts due to Noise</b>	<p>CDFW recommends monitoring noise generated by the Project operations during construction to ensure noise from the Project does not affect wildlife in the adjacent river habitat. The DPEIR should set acceptable noise thresholds that would be part of a daily monitoring and reporting program to ensure impact to adjacent habitat is below a threshold that would have an adverse effect on surrounding wildlife. Sounds generated from any means should be below the 55-60 dB range within 50 feet from the source.</p>	Prior to finalizing CEQA document	JPA

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	Construction equipment should use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. Stationary noise sources (e.g., generators, pumps) at staging areas within 1,400 feet of sensitive receptors should be shielded at the source by an enclosure, temporary sound walls, or acoustic blankets. Where feasible, sound walls or acoustic blankets should have a height of no less than 8 feet, a Sound Transmission Class of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts. Unnecessary construction vehicle use and idling time should be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.		
<b>REC-9-Provide maps and tables in the CEQA document</b>	JPA should include maps showing natural communities, oaks, rare plants, and streams prior to finalizing the Project's environmental document. JPA should also include tables listing the approximate acreage and/or linear feet of impacts to each resource based on each alternative.	Prior to finalizing CEQA document	JPA
<b>REC-10- Submitting Data for Sensitive and Special Status Species and Natural Communities</b>	Information on special status species should be submitted to the CNDDDB by completing and submitting <a href="#">CNDDDB Field Survey Forms</a> . Information on special status native plant populations and sensitive natural communities, the <a href="#">Combined Rapid Assessment and Relevé Form</a> should be completed and submitted to CDFW's Vegetation Classification and Mapping Program.	Prior to finalizing CEQA document	JPA
<b>REC-11- Mitigation and Monitoring Reporting Plan</b>	JPA should condition the environmental document to include mitigation measures recommended in CDFW's comment letter.	Prior to finalizing CEQA document	JPA
<b>MM-BIO-1- Impacts on Least Bell's Vireo – Protocol Surveys</b>	JPA shall perform protocol surveys for least Bell's vireo within the Conejo Canyons Open Space and where there is habitat for least Bell's vireo in the Project area. Surveys shall adhere to the U.S. Fish and Wildlife's 2001 <a href="#">Least Bell's Vireo Survey Guidelines</a> . A final survey report (including negative findings) shall be provided to	Prior to any Project-related ground disturbing activities and	JPA



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	USFWS and CDFW within 45 calendar days following the completion of the survey effort. A final survey report shall be submitted to USFWS and CDFW prior to any Project-related ground disturbing activities and vegetation removal.	vegetation removal	
<b>MM-BIO-2- Impacts on Least Bell's Vireo – Avoid Impacts – Avoidance Plan</b>	If least bell's vireo is present in the Project area, JPA shall fully avoid impacts to least Bell's vireo. A final Least Bell's Vireo Avoidance Plan shall be developed prior to implementing Project-related ground-disturbing activities and vegetation removal.	Prior to any Project-related ground disturbing activities and vegetation removal	JPA
<b>MM-BIO-3- Impacts on Least Bell's Vireo – Avoid Impacts</b>	To fully avoid impacts to least Bell's vireo, no ground-disturbing activities, including staging, as well as disturbances to native and nonnative vegetation shall occur during the least Bell's vireo breeding season from March 15 through September 15 to avoid take of least Bell's vireo birds, nestlings, or their eggs. If construction activities occur within this time, nesting bird surveys shall be conducted. Active least Bell's vireo nests shall be avoided with a 500-foot buffer delineated by high visibility flagging. Construction activities shall not continue within the buffer until the young have fledged or the nest is no longer active.	Prior to/during any Project-related ground disturbing activities and vegetation removal	JPA
<b>MM-BIO-4- Impacts on Least Bell's Vireo – Take Authorization</b>	If impacts to least Bell's vireo cannot be avoided, JPA shall consult CDFW and USFWS to obtain take authorization. Appropriate take authorization shall be obtained from CDFW and USFWS prior to any ground-disturbing activities and vegetation removal.	Prior to any Project-related ground disturbing activities and vegetation removal	JPA
<b>MM-BIO-5- Impacts on Coastal California Gnatcatcher –</b>	Protocol presence or absence surveys for coastal California gnatcatcher will be performed by a qualified biologist with a USFWS Section 10(a)(1)(A) permit. If coastal California gnatcatcher are present, the Pure Water Project and its contractors will avoid impacting occupied habitat by maintaining a 500-foot buffer. In addition, no construction activities will occur within 500	Prior to any Project-related ground disturbing activities and	JPA

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<b>Protocol Surveys</b>	feet of an active nest. Buffers will be maintained until young have fledged (left the nest on their own), as determined by a qualified biologist, or the nest is no longer active. Buffers will be delineated by high visibility flagging. If these avoidance techniques are not feasible, USFWS and CDFW will be contacted regarding alternative avoidance measures for the species.	vegetation removal	
<b>MM-BIO-6- Impacts on Coastal California Gnatcatcher – Take Permit</b>	If coastal California gnatcatcher is present, JPA shall consult with the USFWS to determine if the Project would result in take of coastal California gnatcatcher. Consultation with the USFWS, in order to comply with the ESA, is advised well in advance of any ground-disturbing activities and/or vegetation removal that may impact gnatcatcher.  If a take permit from the USFWS is needed, JPA shall comply with the mitigation measures detailed in a take permit issued from USFWS.	Prior to any Project-related ground disturbing activities and vegetation removal	JPA
<b>MM-BIO-7- Impacts on Coastal California Gnatcatcher – Replacement Habitat</b>	If the Project would result in permanent loss of habitat, JPA shall provide replacement habitat at no less than 2:1 for the total acreage of habitat that is impacted. Replacement habitat shall be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands. An appropriate non-wasting endowment shall be provided for the long-term management of mitigation lands. A conservation easement and endowment funds shall be fully acquired, established, transferred, or otherwise executed by JPA prior to any ground-disturbing activities and/or vegetation removal that may impact gnatcatcher.	Prior to any Project-related ground disturbing activities and vegetation removal	JPA
<b>MM-BIO-8- Impacts on Rare, Threatened, and Endangered Plants &amp;</b>	The Project shall fully avoid impacts on rare, endangered, and threatened plants and habitat as well as Sensitive Natural Communities to the maximum extent possible. JPA, in consultation with a qualified biologist, shall prepare an Avoidance and Relocation Plan. JPA shall submit the Avoidance and Relocation Plan to CDFW for review. JPA shall resolve all CDFW concerns.	Prior to any ground-disturbing activities and vegetation removal	JPA

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<b>Sensitive Natural Communities – Avoid Impacts</b>	and comments prior to finalizing the Avoidance and Relocation Plan. No ground-disturbing activities or vegetation removal shall occur until the Avoidance and Relocation Plan is implemented.		
<b>MM-BIO-9- Impacts on Rare, Threatened, and Endangered Plants &amp; Sensitive Natural Communities – Take Authorization</b>	For impacts on CESA-listed and/or ESA-listed species, JPA shall consult with CDFW and/or USFWS and obtain appropriate take authorization. JPA shall obtain appropriate take authorization from CDFW and/or USFWS prior to any ground-disturbing activities and vegetation removal.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-10- Impacts on Rare, Threatened, and Endangered Plants &amp; Sensitive Natural Communities – Compensatory Mitigation</b>	For impacts on CESA-listed species, JPA shall provide compensatory mitigation at no less than 5:1, or as required in an Incidental Take Permit issued by CDFW.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-11- Impacts on Rare, Threatened, and Endangered Plants &amp; Sensitive Natural</b>	For impacts on CRPR 1 or 2 species, JPA shall provide compensatory mitigation at no less than 3:1. For impacts on CRPR 4 species, JPA shall provide compensatory mitigation at no less than 2:1. Compensatory mitigation shall be provided for the total number of plants and total acreage of habitat supporting those plants impacted.	Prior to any ground-disturbing activities and vegetation removal	JPA



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<b>Communities – Compensatory Mitigation</b>			
<b>MM-BIO-12- Impacts on Rare, Threatened, and Endangered Plants &amp; Sensitive Natural Communities – Compensatory Mitigation</b>	For impacts on S2 ranked natural community alliance or association, JPA shall provide compensatory mitigation at no less than 3:1. For impacts on S3 ranked community alliance or association, JPA shall provide compensatory mitigation at no less than 2:1. Mitigation shall replace the natural community association or alliance that was impacted. Areas that may be impacted by permanent fuel modification shall be included as part of the total acreage that would need to be compensated.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-13- Impacts on Rare, Threatened, and Endangered Plants &amp; Sensitive Natural Communities – Compensatory Mitigation</b>	Mitigation lands shall be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands. An appropriate endowment shall be provided for the long-term management of mitigation lands. A mitigation plan shall include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that shall be addressed include but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds shall be fully acquired, established, transferred, recorded, or otherwise executed prior to any ground-disturbing activities and vegetation removal.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-14- Impacts on Rare, Threatened, and Endangered</b>	For compensatory mitigation at a mitigation bank, JPA shall purchase credits prior to any ground-disturbing activities and vegetation removal.	Prior to any ground-disturbing activities and	JPA

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Plants & Sensitive Natural Communities – Compensatory Mitigation		vegetation removal	
<p><b>MM-BIO-15- Impacts on Streams and Associated Natural Communities- Lake and Streambed Alteration Notification</b></p>	<p>JPA shall notify CDFW pursuant to Fish and Game Code section 1602 for construction and activities occurring near or impacting streams and associated natural communities. JPA shall notify CDFW prior to any ground-disturbing activities and vegetation removal, including staging, near streams. The notification to CDFW shall provide the following information:</p> <ol style="list-style-type: none"> <li>1) A stream delineation in accordance with the U.S. Fish and Wildlife Service wetland definition adopted by CDFW;</li> <li>2) Linear feet and/or acreage of streams and associated natural communities that would be permanently and/or temporarily impacted by the Project. This includes impacts as a result of routine maintenance and fuel modification. Plant community names shall be provided based on vegetation association and/or alliance per the <a href="#">Manual of California Vegetation</a>;</li> <li>3) A discussion as to whether impacts on streams within the Project site would impact those streams immediately outside of the Project site where there is hydrologic connectivity. Potential impacts such as changes to drainage pattern, runoff, and sedimentation shall be discussed; and,</li> <li>4) A hydrological evaluation of the 100-year storm event to provide information on how water and sediment is conveyed through the Project site. Additionally, the hydrological evaluation shall assess a sufficient range of storm events (e.g., 100, 50, 25, 10, 5, and 2-year frequency storm events) to evaluate water and sediment transport under pre-Project and post-Project conditions.</li> </ol>	<p>Prior to any ground-disturbing activities and vegetation removal</p>	<p>JPA</p>

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<b>MM-BIO-16- Impacts on Streams and Associated Natural Communities- Lake and Streambed Alteration Agreement</b>	If the Project would impact streams and associated natural communities, JPA shall obtain an LSA Agreement prior to any ground-disturbing activities and vegetation removal, including staging, near streams.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-17- Impacts on Streams and Associated Natural Communities- Compensatory Mitigation</b>	JPA shall provide compensatory mitigation at no less than 3:1 for impacts to streams and associated natural communities, or at a ratio acceptable to CDFW per a LSA Agreement.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-18- Impacts on Oak Woodlands &amp; Southern California Black Walnut Woodlands – Compensatory Mitigation</b>	For impacts on oak woodlands or walnut woodlands, JPA shall offset the loss by no less than 3:1 of the total acreage of woodlands lost. This shall include woodlands that would be subject to permanent fuel modification requirements. JPA shall restore functioning and self-sustaining woodlands of similar composition, structure, and function to woodlands impacted. Mitigation shall include restoration of structurally diverse understory vegetation species (i.e., grass, forb, shrub, subshrub, vine) occurring in the impacted natural communities. Acorns and/or seedlings shall originate from plants/trees of the same species (i.e., genus, species, subspecies, and variety) as the species impacted.	Prior to removing any oak or walnut trees or the understory vegetation	JPA
<b>MM-BIO-19- Impacts on Oak Woodlands &amp; Southern California Black</b>	Prior to removing any oak or walnut trees or the understory vegetation, JPA shall prepare a Woodland Restoration Plan. The Woodland Restoration Plan shall prescribe the following: <ol style="list-style-type: none"> <li>1) Species-specific planting methods;</li> <li>2) Planting schedule;</li> </ol>	Prior to removing any oak or walnut trees or the	JPA



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<p><b>Walnut Woodlands - Woodland Restoration Plan</b></p>	<p>3) Measures to control exotic vegetation and protection from herbivory;                  4) Measurable goals and success criteria for establishing self-sustaining populations. Measurable success criteria shall be based on site/habitat conditions prior to impact and/or functional local native oak shrublands/woodlands as reference sites;                  5) Contingency measures if the success criteria is not met;                  6) Long-term monitoring for at least 10 years, with a minimum of seven years without supplemental irrigation;                  7) Adaptive management techniques, including replacement plants if necessary; and                  8) Annual reporting criteria and requirements.</p>	<p>understory vegetation</p>	
<p><b>MM-BIO-20- Impacts on Oak Woodlands &amp; Southern California Black Walnut Woodlands</b></p>	<p>For off-site mitigation, JPA shall protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands. An appropriate non-wasting endowment shall be provided for the long-term management of mitigation lands. A conservation easement and endowment funds shall be fully acquired, established, transferred, or otherwise executed prior to any ground-disturbing activities and vegetation removal.</p>	<p>Prior to any ground-disturbing activities and vegetation removal</p>	<p>JPA</p>
<p><b>MM-BIO-21- Impacts to Arroyo Chub and Western Pond Turtle</b></p>	<p>JPA shall fully avoid all impacts to arroyo chub and western pond turtle. For this segment, no work shall occur on the stream banks adjacent to Arroyo Conejo during the winter rainy season, typically between December 1 through March 31. Additionally, no work shall occur during the combined rainy season and breeding season for:</p> <ul style="list-style-type: none"> <li>• Arroyo chub: February 1 through August 31</li> <li>• Western pond turtle: March 1 through July 15</li> </ul>	<p>Prior to any ground-disturbing activities and vegetation removal</p>	<p>JPA</p>
<p><b>MM-BIO-22- Species Surveys</b></p>	<p>JPA shall retain a qualified biologist(s) with experience surveying for each of the following species: coastal California gnatcatcher, arroyo chub, coastal whiptail, southern California legless lizard, and western pond turtle. The qualified biologist(s) shall conduct species-specific and season appropriate surveys where suitable</p>	<p>Prior to any ground-disturbing activities and</p>	<p>JPA</p>

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	<p>habitat occurs in the Project site. Positive detections of SSC and suitable habitat at the detection location shall be mapped. If SSC are detected, the qualified biologist shall use visible flagging to mark the location where SSC was detected.</p> <p><u>Coastal California gnatcatcher</u>. Surveys for coastal California gnatcatcher shall follow the USFWS 1997 <a href="#">Coastal California Gnatcatcher Presence/Absence Survey Guidelines</a>.</p> <p><u>Arroyo chub</u>. JPA shall perform focus surveys for arroyo chub in Arroyo Conejo. If Arroyo Conejo transitions to subsurface flow, the remainder of the stream shall be surveyed to determine if there are isolated pools potentially supporting fish. Surveys shall be conducted in areas adjacent to the pipeline alignment in the Conejo Canyons Open Space. Surveys shall also be conducted along downstream sections, including segments that are hydrologically connected to Arroyo Conejo such as North Fork Arroyo Conejo.</p> <p><u>California legless lizard and coastal whiptail</u>. JPA shall conduct focus surveys for California legless lizard and coastal whiptail. Surveys shall typically be scheduled during the summer months (June and July) when these animals are most likely to be encountered. To achieve 100 percent visual coverage, surveys shall be conducted with parallel transects at approximately 20 feet apart and walked on-site in appropriate habitat suitable for each species. Suitable habitat consists of areas of sandy, loose, and moist soils, typically under the sparse vegetation of scrub, chaparral, and within the duff of oak woodlands.</p> <p><u>Western Pond Turtle</u>. JPA shall conduct focus surveys for western pond turtle. Surveys shall be conducted during the time of greatest pond turtle activity, typically during the breeding season (May - July), and when pond turtles have not left the water to aestivate or</p>	<p>vegetation removal</p>	
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	overwinter in the uplands. Surveys for southern western pond turtles and potential habitat shall follow the United States Geological Survey's 2006 <a href="#">Western Pond Turtle Visual Survey Protocol for the Southcoast Ecoregion</a> .		
<b>MM-BIO-23-Relocation and Avoidance Plan</b>	JPA shall retain a qualified biologist to prepare a Wildlife Relocation and Avoidance Plan. The Wildlife Relocation and Avoidance Plan shall describe all SSC that could occur within the Project site and proper avoidance, handling, and relocation protocols. The Wildlife Relocation Plan shall include species-specific avoidance buffers and suitable relocation areas at least 200 feet outside of the Project site. The qualified biologist shall submit a copy of a Wildlife Relocation and Avoidance Plan to CDFW for approval prior to any clearing, grading, or excavation work on the Project site.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-24-Worker Awareness Training</b>	JPA, in consultation with a qualified biologist, shall prepare a worker environmental awareness training. The qualified biologist shall communicate to workers that upon encounter with an SSC (e.g., during construction or equipment inspections), work must stop, a qualified biologist must be notified, and work may only resume once a qualified biologist has determined that it is safe to do so.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-25-Biological Monitor</b>	To avoid direct injury and mortality of SSC, JPA shall have a qualified biologist on site to move out of harm's way wildlife of low mobility that would be injured or killed. Wildlife shall be protected, allowed to move away on its own (non-invasive, passive relocation), or relocated to suitable habitat adjacent to the Project site. In areas where a SSC is found, work may only occur in these areas after a qualified biologist has determined it is safe to do so. Even so, the qualified biologist shall advise workers to proceed with caution. A qualified biologist shall be on site daily during initial ground and habitat disturbing activities as well as vegetation removal. Then, the qualified biologist shall be on site weekly or bi-weekly (once every two weeks) for the remainder of the Project phase until the cessation of all ground and habitat disturbing	During ground-disturbing activities and vegetation removal	JPA



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	activities, as well as vegetation removal, to ensure that no wildlife is harmed.		
<b>MM-BIO-26- Scientific Collecting Permit</b>	JPA shall retain a qualified biologist with appropriate handling permits, or shall obtain appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities.	Prior to any ground-disturbing activities and vegetation removal	JPA
<b>MM-BIO-27- Injured or Dead Wildlife</b>	If any SSC are harmed during relocation or a dead or injured animal is found, work in the immediate area shall stop immediately, the qualified biologist shall be notified, and dead or injured wildlife documented immediately. A formal report shall be sent to CDFW within three calendar days of the incident or finding. The report shall include the date, time of the finding or incident (if known), and location of the carcass or injured animal and circumstances of its death or injury (if known). Work in the immediate area may only resume once the proper notifications have been made and additional mitigation measures have been identified to prevent additional injury or death.	During ground-disturbing activities and vegetation removal	JPA

## Response to Letter 4

4-1 The commenter discusses the potential for the Pure Water Project to impact least Bell's vireo. The Draft Program Environmental Impact Report (EIR) did not contain much information about least Bell's vireo for the following reasons:

- Important habitat along Arroyo Conejo would not be affected by the project because the concentrate disposal pipeline would be attached to a new bridge across Arroyo Conejo planned for construction by the City of Thousand Oaks (see discussion in Section 18.1 Cumulative Impacts). Simply attaching the pipeline to the bridge would not be disruptive.
- Construction of the concentrate disposal pipeline would not be near suitable habitat and is not expected to require highly disruptive construction methods, such as blasting.

Although these reasons are still valid, the Las Virgenes-Triunfo Joint Powers Authority (JPA) agrees that additional consideration of potential impacts to least Bell's vireo is warranted. Exact contractor means and methods cannot be guaranteed at this conceptual design stage; and, given the presence of hard rock in the area, disruptive construction activity cannot be ruled out. Therefore, the commenter's recommended measures have been added to Mitigation Measure 5-2, Perform Construction Surveys and Construction Monitoring for Special-Status Wildlife Species.

4-2 The commenter discusses the potential for the Pure Water Project to have greater impacts to coastal California gnatcatcher than described in the Draft Program EIR. The JPA disagrees that any gnatcatcher habitat loss would occur, primarily for the reasons discussed in the response to Comment 4-1. However, as discussed under 4-1, the JPA recognizes some potential for additional impacts to occur and also agrees that the suggested changes to Mitigation Measure 5-2 would help address additional effects so that impacts remain less than significant. Therefore, the commenter's recommended measures have been added to Mitigation Measure 5-2.

4-3 The commenter states that the Pure Water Project would have significant and unavoidable impacts on rare, threatened, or endangered plants and sensitive natural communities under both Advanced Water Purification Facility (AWPF) alternatives, and Mitigation Measure 5-1 would not mitigate these impacts to less than a significant level. The commenter also asks for clarification on the JPA's intended approach for compensatory mitigation and provides recommendations for clarifying Mitigation Measure 5-1.

Regarding the level of significance, the JPA agrees with the commenter – the Draft Program EIR identified impacts to sensitive plants and plant communities as significant and unavoidable, and that conclusion is unchanged in the Final Program EIR.

The commenter requests clarification on how the JPA intends to pursue compensatory mitigation for impacts on sensitive plants and plant communities. The JPA will follow a process to fulfill the obligations required by Mitigation Measure 5-1, Prepare and Implement a Mitigation Plan for Special-Status Plants and Plant Communities. In response to the request for clarification, the JPA's intended process is as follows:

- Collect data on sensitive plants and plant communities at the affected project sites. This process has already begun, with the protocol surveys conducted in 2022 and reported in the Program EIR. The JPA will continue to monitor existing conditions at the affected sites in advance of construction (expected to start in 2025).
- Collect seeds in affected areas. The JPA will begin collecting seeds of sensitive plants at the affected sites well in advance of construction. With construction in 2025, the JPA will collect seeds starting in 2023.

- Identify and study suitable mitigation sites. Seeds of sensitive plant species require appropriate growing conditions. The JPA intends to study the site conditions in the following areas to confirm suitability:
  - Eastern portion of the Agoura Road AWPf site. Approximately 0.8 acre of the Agoura Road AWPf site east of the project footprint would remain untouched by construction. Because this area is very similar to where *Ojai navarretia* are growing within the construction footprint, it is likely to be a suitable receiver site.
  - East of the Agoura Road AWPf site. *Ojai navarretia* mitigation has occurred at the Hilton Foundation facility, approximately 0.2 mile east of the Agoura Road AWPf site, indicating the potential for suitable receiver sites in the area. The JPA will work with the neighboring landowners to determine suitability for planting and ability to negotiate suitable easements for preservation.
  - South of the Agoura Road AWPf site. The area south of the JPA's property is protected from development under the Ladyface Mountain Specific Plan. Site conditions are likely to be suitable for oak woodland and other natural communities, and potentially for *Ojai navarretia*. The JPA will work with the neighboring landowners to determine suitability for planting and ability to negotiate suitable easements for preservation.
  - Within Triunfo Creek Park. Construction of the purified water pipeline will affect lands within Triunfo Creek Park. As part of site restoration, the JPA will work with the Mountains Restoration and Conservation Authority to identify suitable mitigation areas for both site-specific impacts and the remaining mitigation obligations from the Agoura Road AWPf. Depending on site conditions at the time of construction, mitigation may also be required for impacts to Lyon's pentachaeta.
  - Other Las Virgenes Municipal Water District (Las Virgenes MWD) properties. The Las Virgenes MWD owns other lands within the region that could be suitable for the remaining mitigation obligations.
  - Purchasing credits. Based on current information, the ability to purchase credits (for example, pay in-lieu fees) may be limited. If an appropriate mitigation bank or similar preservation area becomes available by the time of construction, the remaining mitigation obligations could be met if deemed appropriate.
- Determine long-term preservation. The JPA commits to implementing Mitigation Measure 5-1, including working to verify long-term preservation options. Ideally, an organization committed to land management and ecological restoration would assume the long-term monitoring and site preservation obligations with funding from the JPA.

The JPA will complete these activities in consultation with the California Department of Fish and Wildlife (CDFW) and, if needed, with the U.S. Fish and Wildlife Service (USFWS) (for impacts to Lyon's pentachaeta). In addition, the JPA will also collaborate with the City of Agoura Hills and other local jurisdictions because of the importance of oak trees to the community. These activities to confirm the mitigation plan will also be conducted along with the detailed engineering design, including writing the construction specifications. The specification will include appropriate requirements for avoidance and minimization measures, including topsoil collection to preserve the native seed bank for use in mitigation areas.

Within the context of this response, the JPA agrees that the suggested changes to Mitigation Measure 5-1 would help avoid, minimize, and mitigate impacts to these resources. Therefore, most of the commenter's recommendations have been added to Mitigation Measure 5-1, Prepare and Implement a Restoration Plan for Special-Status Plants and Plant Communities. Some of the specific recommendations will be addressed in the mitigation plan following additional study of onsite and mitigation site conditions and following additional design to confirm the final AWPf footprint.



4-4 The commenter discusses impacts on streams and associated natural communities. In this case, it is difficult to provide much additional information because so much depends on the detailed design, primarily associated with the pipelines. The Program EIR provides a reasonable assessment of the potential impacts to streams associated with the pipelines by providing the following data:

- Locations of “blue line” streams from the National Hydrography Dataset
- Locations of small, intermittent watercourses and larger wetland features from field review by a qualified wetland scientist

The data available provide enough information for a programmatic analysis that supports the selection of a preferred alternative and of the preferred pipeline alignment options and construction methods. For example, some water features will be avoided if a trenchless construction method is used. With the selection of the preferred alternative and pipeline routes, and with the start of detailed design work, the JPA will be ready to take the next steps – implementation of the permit process and mitigation program as prescribed in Mitigation Measure 5-3, Avoid and Minimize Impacts to Jurisdictional Waters, including Wetlands. At that time, the specific impacts can be determined with more certainty, including habitat quality, natural buffers, and similar site-specific features.

Although written broadly, Mitigation Measure 5-3 is intended to cover the regulatory requirement and permit programs of the U.S. Army Corps of Engineers (USACE) (federal Clean Water Act Section 404), the Regional Water Quality Control Board (Regional Board) (also protecting waters of the State), and CDFW. The JPA recognizes that Mitigation Measure 5-3 may not cover all the specific permit needs of CDFW’s Streambed Alteration Agreement Program. Similarly, it does not specify all USACE and Regional Board permit needs. In response to this comment, the JPA has updated Mitigation Measure 5-3 as follows:

- Clarification on “appropriate state and federal agencies” to specifically identify CDFW’s Lake and Streambed Alteration Agreement program.
- Specific need for permitting to occur “prior to any ground-disturbing activities and vegetation removal,” as suggested by the contractor.
- Addition of the word “minimum” prior to the 1:1 ratio; although the JPA agrees that 1:1 mitigation is low, some stream and wetland features may have very low habitat quality; therefore, would not require much compensatory mitigation if a low ratio is determined to be acceptable to the three regulatory agencies (including the commenter). The JPA agrees that typical mitigation is likely to be closer to 3:1 but subject to detailed analysis and permitting on a case-by-case basis.

In this case, the exact wording changes suggested by the commenter have not been incorporated. It is the JPA’s opinion that the general language in Mitigation Measure 5-3 is appropriate for the reasons discussed.

4-5 The commenter states that the Pure Water Project would have a significant impact on valley oak-coast live oak woodland and California walnut-toyon groves, which are sensitive natural communities, and that Mitigation Measure 5-4 would not mitigate these impacts to less than a significant level by simply replacing oak trees lost at a 4:1 ratio. The commenter also provides recommendations for clarifying Mitigation Measure 5-4.

As mitigation for oak tree impacts, JPA intends to plant oak trees at a 4:1 ratio and establish native oak woodland understory vegetation within the planted corridor to restore an oak woodland that is similar in composition, structure, and function to woodlands impacted. For that reason, oak tree mitigation is not simply planting new trees. JPA agrees that the suggested changes to Mitigation Measure 5-4 would help avoid, minimize, and mitigate impacts to these resources. Therefore, most of the commenter’s recommendations have been added to Mitigation Measure 5-4, Prepare and Implement a Mitigation Plan for Oak Trees and Oak Tree

Natural Communities. Some of the specific recommendations will be addressed in the mitigation plan following additional study of onsite and mitigation site conditions and following additional design to confirm the final AWPf footprint.

Also see the response to Comment 4-3 regarding the JPA's overall approach to mitigating for the loss of sensitive plants and plant communities, including oak woodlands.

4-6 The commenter recommends many additions to the mitigation requirements for special-status species. In general, the JPA agrees that the recommendations are good and help provide important clarifications to how special-status species impacts can be avoided, minimized, and mitigated prior to and during construction. Specifically, the following additions have been made to Mitigation Measure 5-2, Perform Preconstruction Surveys and Construction Monitoring for Special-Status Wildlife Species:

- Seasonal restrictions for ground-disturbing construction activities within 100 feet of Arroyo Conejo
- Additional description of the focused surveys for coastal California gnatcatcher, California legless lizard, coastal whiptail, and western pond turtle
- Requirement to prepare a Wildlife Relocation and Avoidance Plan
- Requirement to conduct Worker Awareness Trainings
- Additional clarification on biological monitoring activities
- Additional text regarding the qualifications of the biological monitors, including recommendations about scientific collection permits
- Requirement for notification to CDFW of any dead or injured wildlife

The JPA is not adding the commenter's recommendation to conduct focused surveys for arroyo chub within Arroyo Conejo. There will be no instream disturbance because the concentrate disposal pipeline will be attached to the new bridge to be installed by the City of Thousand Oaks. With the addition of the seasonal restrictions (first bullet), as well as the standard construction best management practices for erosion control (see Mitigation Measure 8-2, Comply with Regulations and Policies for Erosion Control), it is hard to envision the potential for impacts to arroyo chub that might be present within Arroyo Conejo. Therefore, there does not appear to be a need to conduct fish surveys within Arroyo Conejo or hydrologically connected segments as recommended by the commenter.

4-7 The commenter recommends specific text changes to the nesting bird protection measures included in Mitigation Measure 5-2, Perform Preconstruction Surveys and Construction Monitoring for Special-Status Wildlife Species. The JPA agrees with these changes, and Mitigation Measure 5-3 has been updated.

4-8 As described in response to Comment 4-1, construction of the concentrate disposal pipeline is not expected to require highly disruptive construction methods, such as blasting. To some degree, this potential concern is addressed in the prior responses; for example, the addition of preconstruction survey requirements for least Bell's vireo and seasonal restrictions for arroyo chub and western pond turtle.

Exact contractor means and methods cannot be guaranteed at this conceptual design stage; therefore, disruptive construction activity cannot be ruled out. Although there is some potential for blasting given hard rock in the project area, any attempt to determine actual construction methods at the conceptual design level would be speculative. If a constructability review during the detailed design phase determined that standard trench excavation may not be possible, methods other than blasting (for example, rockwheel trencher) can be used.

The JPA agrees that a new significant impact or a substantial increase in the severity of an environmental impact requires recirculation of an environmental document. That applies, in general, to all aspects of the Pure Water Project. An identified need for large-scale blasting near Arroyo Conejo could meet these standards for recirculation; but it would be speculative to make that determination now, so for the reasons described, there is only a low probability for large-scale blasting to occur.

- 4-9 The commenter recommends new measures for noise control during construction near “adjacent river habitat” (assumed to be referring to Arroyo Conejo). The JPA agrees and has added the commenter’s recommended noise control standard to Mitigation Measure 5-2, Perform Preconstruction Surveys and Construction Monitoring for Special-Status Wildlife Species.
- 4-10 The JPA had the opportunity to discuss mapping and other data presentation with the commenter. After explaining its reasons for relying on the Program EIR text description of environmental resources and impacts, the JPA agrees that some additional data presentation would be helpful. Because the Alternative 1 Agoura Road AWPf is being recommended as the preferred alternative, new maps have been added to the Final Program EIR showing natural communities, oak trees, rare plants, and streams present at the Agoura Road AWPf site. Note that some plant species that are subject to poaching have been removed, but those species do not occur within the AWPf footprint.
- 4-11 The commenter states the requirements for reporting observations of special-status species and sensitive natural communities, and requests submittal of observation data to the California Natural Diversity Database (CNDDDB) should any special-status species be detected and provides guidance for submittal. The CNDDDB Field Survey Forms for all special-status native plant populations and Combined Rapid Assessment and Relevé Forms for sensitive natural communities have been submitted to the CNDDDB and CDFW’s Vegetation Classification and Mapping Program.
- 4-12 The Program EIR has been updated in response to most of the commenter’s recommendations consistent with the detailed discussion in this letter. In some cases, the text in the Final Program EIR does not include the commenter’s specific recommendations; the explanations are provided here. In addition, the JPA recognizes the ongoing need to coordinate with CDFW for various reasons, including Streambed Alteration Agreement permitting, coordinating preconstruction and construction surveys to address state-listed and sensitive plant and wildlife species, and to review and finalize mitigation plans.
- 4-13 Filing fees will be paid at the time the Notice of Determination is filed, immediately after certification of the Program EIR and approval of the Pure Water Project by the JPA Board of Directors.



Letter 5

City of Thousand Oaks PWP Las Virgenes-Triunfo PEIR Comments

Number	Location	Comment
1	Figure 2-8 Source Water Pipeline	Show the location of the AWPF on the map.
2	Figure 2-9 Purified Water Pipeline	Call out the AWPF and the Reservoir on the map.
3	Page 2-13, Section 2.1.5, First Paragraph	Regarding the sentence: "At this time, the well is not in use for golf course irrigation because of poor quality." More accurate to say: "The well has mostly not been utilized for golf course irrigation over the past several years due to high minerals content in the water."
4	Page 2-14, Section 2.1.5	Mention the HCTP Effluent as a potential source of source water augmentation
5	Page 2-14, Section 2.1.6	Add a pipeline from HCTP effluent to AWPD
6	Page 2-17, Section 2.1.6.3, Conejo Canyons Bridge Project Text Box	Replace "Conejo Recreation and Park District" with "Conejo Open Space Conservation Agency"
7	Page 2-17, Section 2.1.6.3, Conejo Canyons Bridge Project Text Box	Hyperlink not active
8	Page 2-17, Section 2.1.6.3, Third Paragraph	Add "The final alignment selected will be the one that has the best possible combination of high technical feasibility and lowest public impact to roadways, adjacent properties and homes as well as schools and other sensitive uses."
9	Page 2-17, Section 2.1.6.3, Fourth Bullet	Replace "Lyon Road" with "Lynn Road"
10	Page 2-18, Section 2.1.6.6, First List Item	This is not correctly stated (the sewer system near Los Robles is the City's, not LVMWD). Please clarify.
11	Figure 2-8 Source Water Pipeline	Shouldn't the source water from LRGC and HCTP also be shown on this exhibit?

Letter 5 continued

Number	Location	Comment
12	Figure 2-10 Concentrate Water Pipeline	Make a small remark that the same alignment may be used to convey HCTP effluent to the AWPF
13	Figure 2-10 Concentrate Water Pipeline	Callout Option 1C as the currently preferred alternative (this comment applies to the narrative portion of Chapter 2 as well)
14	Figure 2-10 Concentrate Water Pipeline	Callout the future Access Road down the canyon between MSC and HCTP, and also the Conejo Canyons Bridge.
15	Page 2-22, Section 2.2.2, Pipeline Construction Schedule Bullet List	Add "Source water from Los Robles well to AWPF"
16	Table 5-5. City of Thousand Oaks Biological Resources Goals and Policies	Shouldn't "City of Westlake Village" be "City of Thousand Oaks"?
17	Page 5-31, Section 5.4.5.3, Last Paragraph	Add "at a 3:1 Replacement Ration per the City of Thousand Oaks Oak Tree Ordinance" to the end of the last sentence.

**Responses to Letter 5**

- 5-1 The location of the Agoura Road Advanced Water Purification Facility (AWPF) has been added to Figure 2-8 as requested.
- 5-2 Callouts for the Agoura Road AWPF site and the Reservoir AWPF site have been added to Figure 2-9 as requested.
- 5-3 Specific text revisions have been added to clarify well usage information in the indicated paragraph in Section 2.1.5, page 2-13.
- 5-4 At this time, the Program Environmental Impact Report (EIR) only describes one likely source water augmentation project – the Los Robles Well. The Las Virgenes-Triunfo Joint Powers Authority (JPA) will continue to explore other options for source water augmentation; but at this time, it would be speculative to describe those options – and analyze their environmental impacts – in the Program EIR.
- 5-5 See response to Comment 5-4.
- 5-6 “Conejo Recreation and Park District” has been replaced with “Conejo Open Space Conservation Agency” in Section 2.1.6.3, Conejo Canyons Bridge Project text box.
- 5-7 Hyperlink has been updated in Section 2.1.6.3, Conejo Canyons Bridge Project text box.
- 5-8 Specific text revisions have been added to clarify final alignment selection information in the indicated paragraph in Section 2.1.6.3, page 2-17.
- 5-9 “Lyon Road” has been replaced with “Lynn Road” in Section 2.1.6.3, page 2-17.
- 5-10 This sentence describing conveyance to the Tapia Water Reclamation Facility (Tapia WRF) through “an existing sewer pipeline” near the Los Robles Greens golf course has been deleted.
- 5-11 The specific alignment of a new pipeline from the Los Robles Well to the AWPF has not been determined. However, the text correctly states that the new pipeline “would follow the selected concentrate pipeline alignment.” Therefore, the information on potential routes can be determined from Figure 2-10, Concentrate Water Pipeline.
- Regarding the Hill Canyon Treatment Plant, see the response to Comment 5-4.
- 5-12 See response to Comment 5-4.
- 5-13 The commenter states that Option 1C, as shown on Figure 2-10, Concentrate Water Pipeline, should be identified as the preferred option. Overall, the JPA agrees that Option 1C appears to be the most preferred route based on conceptual design. However, a final decision on pipeline routing will be made as part of the detailed design phase of work.
- 5-14 The potential for a future access road between the Municipal Service Center and the Hill Canyon Treatment Plant is discussed in Section 18.1.3, Cumulative Setting. The JPA understands that the commenter intends to pursue this project; but at this time, the access road does not have an approved environmental document. Although reasonable to include the access road in the discussion of potential cumulative impacts, it would be premature to add the access road to Figure 2-10, Concentrate Water Pipeline.
- 5-15 At this time, the timing of the source water augmentation project using the Los Robles Well has not been determined. The goal is to install conveyance features (for example, pipelines within city streets) all at once, so that a street does not require lane closures and new trenches and



repaving more than once. Given that important objective, it is most likely that the pipeline from the Los Robles Well will be installed at the same time as the concentrate pipeline. However, details are still to be determined.

- 5-16 "City of Westlake Village" has been replaced with "City of Thousand Oaks" in Table 5-5.
- 5-17 Mitigation Measure 5-4 has been prepared to apply to multiple jurisdictions, including Thousand Oaks, because of some potential to affect oak trees within Los Robles Greens golf course (actual impacts may be less than anticipated). The current mitigation requirement for 4:1 replacement exceeds the City of Thousand Oaks' standards.

Letter 6



**COUNTY OF VENTURA**  
**BOARD OF SUPERVISORS**

SUPERVISOR  
**LINDA PARKS**  
Second District

MEMBERS OF THE BOARD  
CARMEN RAMÍREZ  
IN MEMORIAM

MATT LAVERE, CHAIR  
LINDA PARKS  
KELLY LONG  
ROBERT O. HUBER  
VIANEY LOPEZ

October 5, 2022

Mr. Oliver Slosser  
Engineering Program Manager  
Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, CA 91302

RE: Extension of Comment Period for the Pure Water Project

Dear Mr. Slosser,

I respectfully request an extension of the comment period for the draft Environmental Impact Report (EIR) for the Pure Water Project. I have heard from residents in Oak Park that they need more time to assess the complexities of the project and the information in the EIR. We appreciate the presentation recently given at the September 29<sup>th</sup> Oak Park Municipal Advisory Council meeting and hope you will take this additional opportunity to allow for greater public input by extending the EIR comment period.

Thank you for considering this request to allow more residents the opportunity to learn about the Pure Water Project and provide input.

Sincerely,

Linda Parks  
County Supervisor, District 2

## Responses to Letter 6

- 6-1 Las Virgenes-Triunfo Joint Powers Authority (JPA) staff addressed the request for comment period extension directly to the commentor, and stated that the comment period was not extended for the following reasons:
- The JPA is committed to having a robust public outreach program. This program includes, but is not limited to, a Demonstration Facility that has been in service and available for public tours for more than 1.5 years; a project-specific website containing technical information, studies, reports, and project updates (located at [www.ourpureh2o.com](http://www.ourpureh2o.com)); as well as tours, events, public hearings, JPA Board updates, scoping meetings, and stakeholder engagement meetings spanning the last 6 years.
  - To ultimately meet the compliance deadline for discharging to Malibu Creek, the JPA must maintain the schedule set forth for Program Environmental Impact Report review and adoption.



Letter 7



BRAD HALPERN  
Mayor

RAY PEARL  
Mayor Pro Tem

NED E DAVIS  
Councilmember

KELLY HONIG  
Councilmember

SUSAN McSWEENEY  
Councilmember

October 7, 2022

Pure Water Project Las Virgenes-Triunfo  
Las Virgenes-Triunfo Joint Powers Authority  
4232 Las Virgenes Road  
Calabasas, CA 91302  
Attention: Oliver Slosser, P.E.

[via email to oslosser@lvmwd.com](mailto:oslosser@lvmwd.com)

**Re: Comments on Draft Programmatic Environmental Impact Report  
Pure Water Project Las Virgenes-Triunfo**

Dear Oliver Slosser:

The City of Westlake Village (City) has reviewed the Draft Programmatic Environmental Impact Report (PEIR) for the Pure Water Project Las Virgenes-Triunfo. As you know, the proposed project will have significant impacts on the Westlake Village community, to varying degrees depending upon which project alternative is selected. With this in mind, the City respectfully submits this comment letter.

**Traffic**

The proposed project includes installation of several miles of pipelines along two major arterial streets in Westlake Village. Mitigation Measure 15-1 requires the preparation of a Transportation Management Plan, and the City appreciates that the plan will be developed in coordination with the affected local jurisdictions and other parties. Nonetheless, the City requests that pipeline construction be planned and scheduled to minimize traffic impacts to the extent feasible, and that contractors be responsive to complaints and concerns from the City and the public during construction.

Mitigation Measure 15-1 states that the Transportation Management Plan will include contact information in case of emergency or complaint, but it is not clear where this number would be

Letter 7 continued

Pure Water PEIR Comment Letter  
October 7, 2022

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made available. The City requests that the mitigation measure clarify that a general complaint number will be made available to the public for complaints related to traffic, noise, dust, or other project-related issues. The number should be publicized and displayed on signs in proximity to the work areas.



The City has some technical notes and comments on the content of the PEIR. Attached to this letter, please find the PEIR Transportation and Traffic section with redlined edits and comments provided by the City's Traffic Engineer. Those comments are incorporated into this letter by reference.

**Noise**

As noted in the PEIR, the City of Westlake Village limits construction to 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. Saturday, with no construction allowed on Sundays or holidays. The City requests that the Noise Control Plan required by Mitigation Measure 13-1 take this into account and limit construction activities to those hours to the extent feasible.



The City is especially concerned about noise that may result from construction of the pipeline(s) from Triunfo Canyon Road to the Las Virgenes Reservoir. The PEIR states that pipeline construction in this area may require the use of a rockwheel trencher, jackhammering, and/or blasting, which could potentially cause noise impacts throughout the area. In addition to limiting construction hours as noted above, the City requests that the Noise Control Plan also include a requirement to provide notice to nearby properties, homeowners associations, and the City in advance of any blasting or other such activity that may cause a significant disturbance to nearby residents and businesses and cause alarm.

**Biological Resources**

The proposed project will result in the removal of an undetermined number of oaks and other trees, which will vary depending on which project alternative is selected. Mitigation Measure 5-4 requires an oak tree mitigation plan, to be developed and implemented in conjunction with affected local agencies. The City appreciates this mitigation measure and emphasizes the biological and aesthetic value of oak trees to the Westlake Village community. The City expects the project to be designed and constructed in a way that minimizes the removal of oak trees, and that the oak tree mitigation plan will restore all trees that are removed or damaged as a result of the project.



**Recreation**

The proposed project involves the construction of one or more pipelines, and potentially a vehicle access road, through Triunfo Creek Park. This would affect the recreational use of the park and specifically the Westlake Vista Trail and Pentachaeta Trail within the park, which would be closed for four to six months during construction. Mitigation Measure 14-1 requires preparation and implementation of a trail closure and restoration plan. While the City is not





Letter 7 continued

Pure Water PEIR Comment Letter  
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responsible for maintaining or operating the park or trails, it remains concerned about this disruption to recreational facilities and any potential effects on the surrounding area, including the trailhead and parking area, which abut a public street maintained by the City. The City requests to be included in preparation and implementation of the trail closure and restoration plan to the extent that the plan will affect the location or operation of the trailhead and parking area.

4

**Environmentally Superior Alternative**

After reviewing the PEIR and the impacts associated with the two project alternatives, the City concurs with and supports the PEIR's conclusion that Alternative 1, locating the Advanced Water Purification Facility (AWPF) on Agoura Road in the City of Agoura Hills, is the environmentally superior alternative. Alternative 2, locating the AWPF at the Las Virgenes Reservoir, would result in additional and more severe environmental impacts, generally and specifically on the Westlake Village community. The following additional impacts are of particular concern to the City and can be reduced or avoided by pursuing Alternative 1.

- **Vehicle access road:** Alternative 2 requires the construction of a vehicle access road through Triunfo Canyon Park from Triunfo Canyon Road to the AWPF. No such road is required under Alternative 1. Construction of the road would result in additional environmental impacts related to construction noise, traffic, and air quality. These impacts would be experienced most directly by Westlake Village residents living near the construction site. Construction of the road would also result in greater biological and aesthetic impacts through the removal of an "undetermined number" of oaks and other trees and greater disruption to the existing natural open space area. The road will also have an ongoing aesthetic impact as it will be highly visible on an otherwise natural hillside. Finally, the road would result in temporary and ongoing recreation impacts as a result of the "substantial change to the existing recreation use of the [Westlake Vista] trail and its shared trailhead with the Pentachaeta Trail."
- **Additional pipelines and electrical lines:** Alternative 2 requires the construction of three water pipelines and electrical lines through Triunfo Canyon Park. In contrast, Alternative 1 requires the construction of only one water pipeline through this area. The additional pipelines and electrical lines will require substantially more construction activity and a larger footprint, resulting in greater impacts for noise, traffic, air quality, biological resources, and recreation, and greater impacts specifically on nearby residential neighborhoods.
- **Additional pipelines and off-site facilities:** Alternative 2 requires the construction of two water pipelines in Lindero Canyon Road, while Alternative 1 requires only one pipeline. The additional pipeline results in three additional linear miles of pipeline compared to Alternative 1. This will require a larger construction footprint and more construction activity resulting in greater impacts for noise, traffic, and air quality. The City is most concerned about the potential additional traffic impacts on Lindero Canyon Road, a major north-south arterial roadway. Alternative 2 also requires the construction of an off-site pumping station, to be located at either the Westlake Village Marketplace shopping center, or the Westlake Golf

5



Letter 7 continued

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Course. Aside from the additional construction impacts over a broader geographic area, an additional facility has the potential to create aesthetic impacts that would not occur under Alternative 1.

5

**Other Issues**

The City has plans to install fiber optic cable in various streets for the purpose of developing an Intelligent Transportation System and potentially for other communications needs. As such, the City seeks to capitalize on opportunities to install new conduits for future fiber optic installation. Since this project would involve the installation of new pipes on major arterial streets, the City would like to discuss the possibility of installing conduits in conjunction with the new pipes. We recognize this is not an environmental impact issue, but we are taking this opportunity to make this request and look forward to discussing it with you in more detail at the appropriate time.

6

Thank you in advance for your attention to these comments. Should you have any questions or concerns, please do not hesitate to contact me at [michael@wlv.org](mailto:michael@wlv.org) or (818) 706-1613.

Sincerely,



Michael Forbes  
Planning Director

Attachment: Transportation and Traffic section comments

Letter 7 continued

City of Westlake Village Draft PEIR Comments #7-24

Number	Location	Comment
7	Page 15-1, Section 15.1.1.2, Agoura Road Section	Replace first "Lindero" with "a point 500 feet west of Lakeview"
8	Page 15-2, Section 15.1.1.2, Agoura Road Section	Agoura Road does not intersect Thousand Oaks Blvd. Please clarify the segment of Agoura Road you're talking about.
9	Page 15-2, Section 15.1.1.2, Agoura and Hampshire Road Sections	Regarding "18,725 vpd": These volumes are the same. Is this a coincidence or a typo?
10	Page 15-2, Section 15.1.1.2, Agoura Road Section	Regarding "18,725 vpd": The 2015 volume for Agoura Road in the City of Westlake Village was 10,000-13,000. If more recent counts indicate a different volume, please provide the data or include it in an appendix.
11	Page 15-2, Section 15.1.1.2, Thousand Oaks Blvd Section	Additional 2015 TOB volumes: 14,817 vpd west of Corsa 16,540 vpd east of Lindero
12	Page 15-2, Section 15.1.1.2, Lakeview Canyon Road Section	Delete "most of" in sentence "The speed limit along most of Lakeview Canyon Road is 40 mph."
13	Page 15-2, Section 15.1.1.2, Lakeview Canyon Road Section	Add "north of Watergate Road and 45 mph south of Watergate Road." to sentence in Comment 12.
14	Page 15-2, Section 15.1.1.2, Lakeview Canyon Road Section	The City limit is approximately 100 feet south of Townsgate. South of that point, Lakeview is maintained by the City of Westlake Village.
15	Page 15-3, Section 15.1.1.2, Lindero Canyon Road and Triunfo Canyon Road Sections	The City of Westlake Village considers these streets to be arterials, not minor arterials. Delete "minor" from both sections.

Letter 7 continued

Number	Location	Comment
16	Page 15-3, Section 15.1.1.2, Lindero Canyon Road Section	2015 Lindero volumes: 32,484 vpd north of Via Colinas 11,251 vpd north of Rustic Oak 7,818 vpd at Westlake dam
17	Page 15-3, Section 15.1.1.2, Triunfo Canyon Road Section	Replace "two-lane" with "four-lane"
18	Page 15-3, Section 15.1.1.2, Triunfo Canyon Road Section	Regarding sentence: "Recent traffic volume data are not available for Triunfo Canyon Road." 6,476 VPD in 2015
19	Page 15-3, Section 15.1.1.2, Russell Ranch Road Section	Regarding sentence: "Recent traffic volume data are not available for Russell Ranch Road." 5,445 VPD on the northern portion of Russell Ranch in 2015
20	Page 15-5, Section 15.1.4	Add "Westlake Village" to LA Metro Line 161 bullet, Los Angeles DOT Commuter Express 422 bullet, and Los Angeles DOT Commuter Express 423 bullet.
21	Page 15-7, Section 15.2.3.2	Regarding first sentence and three bullet points: This is no longer relevant because Metro opted out of the CMP in 2018.
22	Page 15-9, Section 15.4.1.2, Second Paragraph	Regarding reference to identical construction trips: Alternative 2 would entail grading and construction of an access road. This would be expected to result in more worker trips, longer construction period, or both. That should be acknowledged, even if it's not quantified.
23	Page 15-10, Section 15.4.2, Third Paragraph	Regarding: "the other affected jurisdiction do not have specific guidelines..." This is incorrect. The City of Westlake Village approved an SB 743 implementation program on June 9, 2020.
24	Page 15-112, Section 15.5	For bullet point "Provide construction notification procedures for:" Add "and homeowner associations" to list



**Responses to Letter 7**

- 7-1 In Section 15.5, Mitigation Measure 15-1 has been revised to reflect the City of Westlake Village's request.
- 7-2 The Las Virgenes-Triunfo Joint Powers Authority (JPA) agrees that construction activities should be limited to daytime hours to the extent feasible, as described in the comment, which is consistent with the noise requirements of other jurisdictions as well. Additional text has been added to Mitigation Measure 13-1, Noise Control Plan, to recognize the importance of adhering to the local standards. The added language includes "to the extent feasible" to recognize that, in some cases, there might be a trade-off between the need for daytime construction and the need to schedule work outside of peak vehicle use along some local roads. Based on the JPA's engagement with local agencies, this may be more likely in some places in Thousand Oaks and less likely in Westlake Village. However, Mitigation Measure 13-1 preserves some flexibility to make the most appropriate decision during construction in consultation with each local agency.
- Regarding the commenter's request for public outreach as part of Mitigation Measure 13-1, Noise Control Plan, the JPA agrees that this is a reasonable addition, and new text has been added to the measure. The specific types of alternative construction methods have not been determined, but excessive noise (such as blasting) can be preceded with local outreach. Note that the outreach should be sensitive to context – for example, notification may not be needed in rural areas without nearby residences. The updated language reflects the discretion to be used during implementation.
- 7-3 The JPA agrees that the primary objective is to avoid oak tree removal as much as possible and otherwise minimize impacts (for example, staying outside of driplines). At this time, no oak trees within Westlake Village are expected to be removed; however, some oaks occur within Triunfo Creek Park along the purified water pipeline alignment. Avoidance is likely but cannot be confirmed until detailed pipeline design. Nevertheless, the intent of Mitigation Measure 5-4 is to restore all trees that are removed.
- 7-4 Additional text has been added to Mitigation Measure 14-1, Prepare Trail Closure and Restoration Plan. The required plans to temporarily close and subsequently restore affected trails, including the Westlake Vista Trail in Triunfo Creek Park, will be prepared in collaboration with local jurisdictions.
- 7-5 The JPA agrees with the commenter's additional points regarding the determination of Alternative 1 Agoura Road Advanced Water Purification Facility (AWPF) as environmentally superior. The JPA staff intends to recommend that the JPA Board of Directors adopt Alternative 1 Agoura Road AWPF as the preferred alternative.
- 7-6 Comment noted. The JPA agrees that there are many details to be determined as the pipeline advances during design, including the opportunities to share trenches with other uses, such as fiber-optic cables. JPA staff will continue to collaborate with the local jurisdictions regarding these pipeline design details.
- 7-7 Replaced first "Lindero" with "Approximately 500 feet west of Lakeview Canyon Road."
- 7-8 Updated "Thousand Oaks Boulevard " to "Westlake Boulevard."
- 7-9 Average daily traffic was given along Hampshire Road and Agoura Road from the eastern city limit to Thousand Oaks Boulevard within Thousand Oaks.
- 7-10 Added given 2015 Thousand Oaks Boulevard volumes in text.
- 7-11 Added given 2015 Thousand Oaks Boulevard volumes in text.

- 7-12 Removed "most of" in the sentence: "The speed limit along most of Lakeview Canyon Road is 40 mph."
- 7-13 Added "north of Watergate Road and 45 mph south of Watergate Road" to the sentence indicated in Comment 12.
- 7-14 Updated to reflect change in jurisdiction. Changed sentence to "Lakeview Canyon Road is maintained by the City of Thousand Oaks north of the city limit, approximately 100 feet south of Townsgate Road. South of the city limit, Lakeview Canyon Road is maintained by the City of Westlake Village."
- 7-15 Removed "minor" from both roadways.
- 7-16 Added given 2015 Thousand Oaks Boulevard volumes in text.
- 7-17 Replaced "two-lane" with "four-lane."
- 7-18 Added given 2015 Thousand Oaks Boulevard volumes in text.
- 7-19 Added given 2015 Thousand Oaks Boulevard volumes in text.
- 7-20 Added "Westlake Village."
- 7-21 Removed text from the Program Environmental Impact Report, as it is no longer valid because the Los Angeles County Metropolitan Transportation Authority opted out of the Congestion Management Program in 2018.
- 7-22 Added language to reflect the additional worker trips and longer construction period: "Grading and construction of an access road would be expected to result in more worker trips, a longer construction period, or both."
- 7-23 Included "Senate Bill 743 Implementation" in Section 15.2.3.2 as a source outlining California Environmental Quality Act vehicle-miles traveled (VMT) requirements, along with information that VMT analysis is not required for a project that generates less than 110 trips per day. Added City of Westlake Village as a jurisdiction having guidelines for VMT under Section 15.4.2.
- 7-24 Added "and homeowner associations" to list for construction notification procedures.

Letter 8



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## Los Angeles Regional Water Quality Control Board

October 7, 2022

Mr. Oliver Slosser, P.E.  
Pure Water Project Las Virgenes-Triunfo  
Las Virgenes-Triunfo Joint Powers Authority  
4232 Las Virgenes Road  
Calabasas, CA 91302

### **COMMENTS ON DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR LAS VIRGENES-TRIUNFO JOINT POWERS AUTHORITY - PURE WATER PROJECT**

Dear Mr. Slosser:

On August 22, 2022, the Las Virgenes-Triunfo Joint Powers Authority (JPA) distributed the *Programmatic Environmental Impact Report* (PEIR) for the Las Virgenes-Triunfo Pure Water Project (Project). The objectives of the Project are to balance seasonal variation of recycled water demand, to develop a drought-resistant water supply to supplement the region's water supplies, and to meet regulatory requirements for discharge into Malibu Creek. The PEIR analyzed the potential environmental impacts of constructing and operating the Project. The PEIR identified the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) as a Responsible Agency pursuant to California Code of Regulations (CCR), Title 14, § 15381.

The Las Virgenes Municipal Water District (LVMWD) operates the Tapia Water Reclamation Facility (TWRF), a publicly-owned treatment works with a design flow capacity of 12 million gallons per day (mgd). TWRF discharges tertiary-treated water to Malibu Creek and the Los Angeles River, waters of the United States, under Order Number R4-2017-0124 (Order), which serves as Waste Discharge Requirements (WDRs) and a National Pollutant Discharge Elimination System (NPDES) permit. The Order was adopted on June 1, 2017.

#### **PEIR Summary**

The proposal under the Pure Water Project (Project) will divert supplemental treated effluent from TWRF to an Advanced Water Purification Facility (AWPF), hence reducing flow of treated effluent into Malibu Creek in the winter season (November 16 through April 14). The AWPF has a design capacity of 7.5 mgd and is expected to produce 2,100 acre-feet per year (AFY) at startup, and potentially supply up to 5,000 AFY if operated year-round. Currently, the volume of treated effluent flow from the TWRF is generally less than 25 cubic feet per second (cfs), which is less than 10 percent of the high flow in Malibu Creek during storm events. Pursuant to the Order requirements, TWRF will continue to

JAMES STAHL, ACTING CHAIR | RENEE PURDY, EXECUTIVE OFFICER

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## Letter 8 continued

Las Virgenes-Triunfo JPA

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October 7, 2022

provide the minimum instream flow requirement of 2.5 cfs to Malibu Creek to sustain the steelhead trout habitat.

From the AWPf, the advanced-treated water will be discharged into the Las Virgenes Reservoir for indirect potable reuse (IPR) through surface water augmentation and will be allowed to mix with the existing drinking water supply. After a 6-month minimum detention time, the water will be sourced to the Westlake Filtration Plant, treated and conveyed to the drinking water system.

The Project will also include a source water augmentation program, which would potentially include supplying groundwater from an existing well at Los Robles Greens golf course in Thousand Oaks. The AWPf's reverse osmosis (RO) reject stream (brine concentrate) will be conveyed to the Calleguas Salinity Management Pipeline for ocean disposal.

The PEIR evaluated the potential environmental effects of the construction and operation of two AWPf alternatives. Under Agoura Road AWPf Alternative (Alternative 1), TWRf effluent would be conveyed by recycled water pipeline to a new AWPf located along Agoura Road in Agoura Hills. Under the Las Virgenes Reservoir Alternative (Alternative 2), TWRf effluent would be conveyed by recycled water pipeline to a new AWPf located next to Las Virgenes Reservoir in Westlake Village. Both alternatives will require consideration of constructing and operating a new source water pipeline connecting the existing recycled water pipeline system to the AWPf, a purified water pipeline connecting the AWPf to the Las Virgenes Reservoir, a pipeline connecting to the Calleguas Salinity Management Pipeline, new sewer laterals for disposing residuals and domestic waste streams, and pipeline for connecting to the Los Robles groundwater well.

#### Los Angeles Water Board Comments

In addition to evaluating potential environmental impacts under the California Environmental Quality Act (CEQA), the PEIR is intended to support the Los Angeles Water Board's determinations for the Project's waste discharge/water recycling permit requirements and compliance with the *Water Quality Control Plan - Los Angeles Region* (Basin Plan), the *Water Quality Control Policy for Recycled Water* (Recycled Water Policy), and Title 22 of the California Code of Regulations. The PEIR states that the JPA will pursue regulatory permits after the completion of the CEQA environmental document and submittal. As such, the JPA has yet to submit a permit application package(s) for the Project to the Los Angeles Water Board. The Los Angeles Water Board offers the following comments on the PEIR:

1. Comments for Section 11.2 – Regulatory Framework
  - a. In section 11.2.2 (pg. 218), please include an additional subsection to explain how the Project will satisfy the requirements of 22 CCR § 60320.300 to 60320.330 for Indirect Potable Reuse – Surface Water Augmentation.

Letter 8 continued

Las Virgenes-Triunfo JPA

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October 7, 2022

- b. In section 11.2.2. (pg. 218), please include an additional subsection to explain how the Project will meet the requirements of *Water Quality Control Policy for Recycled Policy* (Recycled Water Policy). 2
  - c. In section 11.2.2. (pg. 218), please include an additional subsection to explain how the Project will help achieve compliance with the Malibu Creek Watershed Nutrients Total Maximum Daily Load (TMDL), Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments, and its implementation plan (Resolution R16-009, adopted December 8, 2016). 3
  - d. In section 11.2.2. (pg. 218), please include an additional subsection to explain how the Project will meet the requirements of California Water Code § 1211. 4
  - e. In section 11.2.2. (pg. 218), please document whether the AWPf will require coverage under the *General Permit for Storm Water Discharges Associated with Industrial Activities* (NPDES No. CAS000001), adopted through Order 2014-0057-DWQ (IGP). Based upon information presented in the PEIR, the AWPf will operate as a recycled water/wastewater treatment facility under the Standard Industrial Classification (SIC) codes 4953 (wastewater treatment) and 4941 (water supply). Per Attachment A of the IGP, sewage or wastewater treatment works, including facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program under Title 40, Code of Federal Regulations, part 403 are among the facilities required to have coverage under the IGP. The JPA must ensure that stormwater runoff from the AWPf is properly managed and protective of water quality. 5
2. Calleguas Salinity Management Plan and Brine Disposal Contingency Plan
- In section 11.4.2.2. (pg. 227), please include an additional subsection to describe the Calleguas Salinity Management Plan and Brine Disposal Contingency Plan. Since the construction of the Calleguas Salinity Management Pipeline (SMP) is not yet complete and its completion is dependent on the coordination of multiple agencies, the PEIR should describe a contingency plan for brine disposal. Also, since the AWPf discharge may change the character and volume of the discharge from the SMP, the Calleguas Municipal Water District may need to file a Report of Waste Discharge with the Los Angeles Water Board within 120 days of the operation of the AWPf. 6
3. In the Figure Legends (pg. 213), please define the difference between HUC10 and HUC12. Also, please provide the entire 10- and 12-digit codes for HUC10 and HUC12, respectively. 7

Thank you for the opportunity to comment on the PEIR. If you have any questions or would like to discuss our comments further, please contact Adam Taing, Sr. Water

**Letter 8 continued**

Las Virgenes-Triunfo JPA

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October 7, 2022

Resource Control Engineer in the Watershed Regulatory Section, or at [adam.taing@waterboards.ca.gov](mailto:adam.taing@waterboards.ca.gov) or (213) 576-6752.

Sincerely,

 Digitally signed by R Purdy  
Date: 2022.10.07 09:33:34 -0700

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Renee Purdy  
Executive Officer

cc: (Via Email Only)

Randy Barnard, Ginachi Amah, SWRCB, Division of Drinking Water  
Sam Boland-Brien, Patricia Fernandez, SWRCB, Division of Water Rights



## Responses to Letter 8

- 8-1 The commenter asks for additional text to explain how the Pure Water Project complies with state law for indirect potable reuse through surface water augmentation. The Draft Program Environmental Impact Report (EIR) includes discussion about the reservoir augmentation regulations, primarily in Chapter 2, Project Description. The reason for describing regulatory compliance early in the document is because most of the primary Advanced Water Purification Facility (AWPF) project features have been developed to meet these strict standards. Features such as microfiltration or ultrafiltration, reverse osmosis, and ultraviolet disinfection with advanced oxidation provide the advanced treatment necessary to operate a reservoir augmentation project consistent with the California Water Code and California Code of Regulations (CCR). Similarly, the discharge pipeline will be designed and operated to meet reservoir discharge retention time and dilution requirements.

Although the applicable laws are already described in Chapter 2, Project Description, the Final Program EIR has been updated to include additional discussion in Chapter 11, Hydrology and Water Quality in response to this comment. Specifically, additional discussion about the CCR has been added to Section 11.2.2, State Regulations. Pure Water Project features designed for consistency with state regulations (as just described) are already discussed in Section 11.4.2, Impact 11-1b: Water Quality Standards and [Waste Discharge Requirements] WDRs during Operation.

Also note that Draft Program EIR Section 1.3.2 recognizes the Regional Water Quality Control Board's (Regional Board's) role as a California Environmental Quality Act (CEQA) Responsible Agency. As described, the Regional Board will review the Pure Water Project for discharge of AWPF purified water into Las Virgenes Reservoir for consistency with reservoir augmentation standards. This future discretionary action will take place as the AWPF is advanced to detailed design following completion of the Program EIR process, including selection of a preferred AWPF site.

- 8-2 The commenter asks for additional text to explain how the Pure Water Project will meet the requirements of the Water Quality Control Policy for Recycled Water. The Final Program EIR has been updated to include discussion of the Recycled Water Policy in Chapter 11, Hydrology and Water Quality. For context, the Recycled Water Policy documents the state's commitment to safe use of recycled water while using appropriate criteria in permitting new recycled water projects. As described in response to Comment 8-1, the Pure Water Project has been designed using advanced treatment processes to comply with strict requirements for water reuse through reservoir augmentation.

- 8-3 The commenter asks for additional text to explain how the Pure Water Project will comply with total maximum daily load (TMDL) requirements for Malibu Creek – specifically the Watershed Nutrients TMDL and the Sediment and Nutrients TMDL. Both TMDLs are introduced early in the Program EIR (see Section 1.1.2, Tapia Water Reclamation Facility Operations). The reason for describing them early is because the strict regulatory standards governing Tapia Water Reclamation Facility (Tapia WRF) discharges to Malibu Creek are critical to understanding the need for the Pure Water Project. The Pure Water Project has been developed to meet the Malibu Creek discharge requirements, including the TMDL standards. Any nutrient contributions from the Tapia WRF would be eliminated under the Pure Water Project except in an emergency or qualifying storm event pursuant to the National Pollutant Discharge Elimination System (NPDES) permit.

Although TMDLs are water quality standards, these TMDLs are closely related to biological resource conditions in Malibu Creek (such as health of the benthic community). For that reason, the Las Virgenes-Triunfo Joint Powers Authority (JPA) directs the commenter to the discussion of Malibu Creek in Chapter 5, Biological Resources. Specifically, see the discussion about the biological setting in Section 5.1.5, Malibu Creek, including the discussion about the benthic

macroinvertebrate community and ongoing bioassessment monitoring work, as well as the impact analysis in Section 5.4.1.4, Malibu Creek. In response to this comment, however, additional text has been added to further describe the two TMDLs (see Final Program EIR Section 5.2.2, State Regulations).

8-4 Additional text has been added to the Final Program EIR describing compliance with California Water Code Section 1211. In short, there are no downstream water rights holders; therefore, there would be no impact. Environmental impacts from changes in discharges are discussed in the Program EIR – for example, see Section 5.4.1.4 in the Biological Resources chapter. Also see the responses to Letter 10 from the State Water Resources Control Board, Division of Water Rights. As described in that response, the JPA will be filing a Wastewater Change Petition pursuant to Section 1211.

8-5 The commenter asks about the applicability of the statewide permit General Permit for Storm Water Discharges from Industrial Activities (NPDES CAS000001) (general permit). As part of state and federal Clean Water Act stormwater discharge regulations, the commenter is correct that water treatment plants and wastewater treatment plants are classified as facilities subject to this statewide permit. This makes sense because the large, industrial character of treatment plants warrants careful management of site drainage for water quality control (for example, the permit’s “good housekeeping” standards).

Although it is true that the AWPf is a treatment facility, it is different than a typical water or wastewater treatment plant. All treatment facilities will be located within a building or under a canopy, making the facility look more like a large office building or light industrial facility. For this reason, development consistent with the Regional Municipal Separate Storm Sewer System (MS4) Permit (as described in Section 11.2.2, State Regulations) appears to be much more applicable than the industrial general permit and much more likely to be protective of water quality associated with stormwater discharges. However, this nuance does not appear to be recognized in the regulations; therefore, the JPA assumes that the general permit may apply to the AWPf just like any other water or wastewater treatment facility.

Additional text has been added to Chapter 11, Hydrology and Water Quality, to document this potential permit requirement.

8-6 The Pure Water Project depends on brine disposal through the Calleguas Salinity Management Pipeline (SMP). A critical project feature is the approximately 14-mile-long concentrate disposal pipeline that connects to the SMP. The Pure Water Project depends on the concentrate disposal pipeline and SMP connection. If connection to the SMP is impossible, then a range of options for concentrate disposal will need to be evaluated, and subsequent environmental review will be needed.

The JPA and Calleguas Municipal Water District (MWD) have been carefully planning this new connection to the SMP, and the Pure Water Project is envisioned as one of the future facilities served by the SMP. Although the SMP is not yet in place at the connection point (Santa Rosa Road at Hill Canyon Road), Calleguas MWD has made substantial progress in building other phases of the SMP in the area and fully expects the SMP to be operational at the connection point by late 2027 to accommodate the AWPf commissioning process and subsequent operation.

The JPA and Calleguas MWD will continue to coordinate and begin the process of obtaining a Discharge Agreement. The JPA is aware of the discharge limits and other requirements of the SMP NPDES permit and that it must comply with Calleguas MWD Ordinance 19 – An Ordinance of Calleguas Municipal Water District Covering the Rules and Regulations for Use of the Salinity Management Pipeline. By meeting the strict NPDES permit discharge limits, the JPA does not anticipate that the Pure Water Project will trigger the need for a new Report of

Waste Discharge; however, such a report will be prepared, in collaboration with Calleguas MWD, if needed.

Also see response to Comment 3-2, which adds Calleguas MWD as a Responsible Agency for any CEQA action on their part that might be required to secure a Discharge Agreement. For the reasons described in these responses, no other changes to the Draft Program EIR are necessary.

8-7 Figure 11-1 has been updated in response to this comment.



Letter 9

**From:** [Steve Bilson](#)  
**To:** [Janice Smets](#)  
**Cc:** [Slosser, Oliver](#); [Linda.Parks@ventura.org](mailto:Linda.Parks@ventura.org); [Terry Vanise](#)  
**Subject:** Re: Invitation for Pure Water Demonstration Facility Tour  
**Date:** Thursday, October 6, 2022 11:07:25 PM

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Mr. Slosser -

Thank you for the invitation to your demonstration project but after over three decades in the water reuse industry, and having lived in San Diego from 1996-2009 and having closely watched the City of San Diego water and wastewater staffers deceive the public there for 13 years then ultimately stick them with a bill for approximately 14 times city staff's original estimated cost for a project that still relies on waivers, I'm much more concerned about the science, costs, use of waivers, and public safety consequences from the full-scale project.

This is a formal request under the California Public Records Act, Government Code 6250 et seq. Please provide me with the completed USEPA worksheet titled Work Breakdown Structure-Based Cost Model for Reverse Osmosis/Nanofiltration Drinking Water Treatment and all related documentation and any other records used to seek and/or obtain public grant monies.

I moved my family here in 2009 to get away from the insane notion that safely drinking treated municipal sewage can be done anywhere near cost effectively and we now live in the area that the product water would be delivered to if the full-scale project is built. I consider the veracity of all that's being claimed by the proponents of this project a matter of life and death, as would any well informed citizen.

The fact that an employee of this project specifically tasked with interacting with the news media has already misled a newspaper reporter about a critical element of this project has raised serious questions.

Stephen Wm. Bilson

On Oct 6, 2022, at 5:21 PM, Janice Smets <[jrsnets@earthlink.net](mailto:jrsnets@earthlink.net)> wrote:

Dear Mr. Slosser,

Thank you very much for the invite. I think my concerns are more extensive than what will be discussed during the tour. I have learned much about this project through research and discussion with Steve Bilson. Steve was involved for 13 years in San Diego trying to bring the warnings of health and the extensive growing costs involved in sewage recycling to the tap. I consider him an expert in this field due

1

**Letter 9 continued**

to his specialized company and he has a plethora of science information that he has shared with me in a format for a layman's understanding. My health concerns are personal and for other women in my circumstance addressing a specific type of cancer and high probability to sewage recycled water. It was asked of me to see if City of Hope would assist in surveys/statistics which is an option but this should be accomplished BEFORE the system is in place in our community.

I do take exception that when I asked verbally to you for an extension to respond, your response was the presentation to MAC was not to discuss anything but the logistics such as traffic and you refused my request. Subsequently, I looked up San Diego's EIR for their system and it is a very large document with a section addressing water quality. I explained to you 2 weeks wasn't long enough to thoroughly understand all the factors beyond the tour. I have worked in research and development for the Department of Defense for 26 years and I am fully aware how there are cost caps placed on systems with an end period of performance to ensure there is no cost creep and devising an end in sight....there is 'no' end in sight on the sewage recycled water system being proposed in the EIR...no cost cap. There may be a basic template for sewage recycling and pilots, but (1) pilots are small...the final system is large with no guarantee the workings will present the same result and (2) there are unproven deviations from the template used for developing sewage recycling plants (which I consider research and development). There is not a 'one size fits all' in the design due to different landscapes, approval authorities, and the number of residents involved.

The costs are extreme and I am very concerned of our communities being included in this project. Residents will not be able to bear the costs and I do see waivers from the Las Virgenes-Triunfo Board to the Health Department in order to not let the costs grow when spikes come our way (some spikes probably not even thought of



**Letter 9 continued**

today). I wanted to get information more from the scientific perspective versus an engineer as yourself but I needed a response time extension. But, as it turned out, San Diego's problems (with a system similar to what is being proposed to our communities) have started surfacing and our Ventura County and Los Angeles County supervisors and representative must take heed to the 'red flags' coming from San Diego. Personally, I am pleased the San Diego information has surfaced but with much compassion for SD's residents and, in hopes, it is not too late for our communities to avoid this rapidly-pushed project.

I am attaching the information of what is happening with San Diego (but not surprising to someone who understands the issues such as Steve). The article reflects what it takes to get the water as pure as possible with the costs involved – impossible to alleviate the contaminants completely, just minimize the risk. The long-term will speak for itself but there is no historical long-term data to look at regarding any increase clusters of cancer or other diseases; this is a rather new technology with different modifications depending on the individual or uniqueness of each community's landscape that will be receiving the tap water.

IMO, this project is way too expensive and there is no budget being presented today that will actually be expensed...a much higher expense will grow exponentially and, unfortunately, for many following generations in our community. We have retired people, young families trying to stay afloat financially raising their children, young couples just starting out trying to afford their first home, etc. Property taxes are important and correct verifiable data/statistics is important. San Diego uses the GAAP financial system which I am fully aware of....taught the subject matter to the Coast Guard. Very difficult to decipher if placing income/expenses in the general fund with other income/expenses within the special district. Obtaining singled-out data needs to be set up before this system is put into place in our community which gives the community the opportunity





Letter 9 continued

to see what it takes in costs to get the purest of water (if possible) but keep adding on costs, inflation, or other unexpected turns that can affect their property taxes.

I am adding Steve Bilson on this email thread for him to add or clarify anything about what I wrote. A tour of the facility will not change my concerns so I must decline your invite. Steve is fully aware what the design is for our community and provides the science behind this. I would like to see alternatives to what we can do regarding our water problem...maybe start with how Israel is accomplishing this problem since they refuse to use recycled sewage water. One thing that I am most certain – once this system is put in place there is no turning back and I have a lot of sympathy for San Diego at this time.

I will be sending my concerns and copies of my documents to Mr. Pederson but there is much more to do...can't do all the research in 2 weeks so I will ask for an extension. I am also going to post as much information into Nextdoor as possible. I am not a political person and remove myself from any elections that are coming up that may address this problem. A Ventura County's Supervisor (incoming or outgoing) will recognize the criticality of this situation, I am providing the candidates competing for Supervisor Park's position the information I have thus far.

v/r,

Janice R. Smets, PhD  
OP MAC Member

---

**From:** Slosser, Oliver <[OSlosser@lvnwd.com](mailto:OSlosser@lvnwd.com)>  
**Sent:** Thursday, October 6, 2022 2:36 PM  
**To:** [Linda.Parks@ventura.org](mailto:Linda.Parks@ventura.org); [jrsmets@earthlink.net](mailto:jrsmets@earthlink.net)  
**Cc:** Terry, Vanise <[Vanise.Terry@ventura.org](mailto:Vanise.Terry@ventura.org)>  
**Subject:** Invitation for Pure Water Demonstration Facility Tour

Dear Supervisor Parks and Dr. Smets,



**Letter 9 continued**

I am writing to extend a personal invitation to tour our Pure Water Demonstration Facility at your earliest convenience. We have heard your concerns about the Pure Water Project, and I would love the opportunity to show you what we are doing to ensure the safety of our customers and provide a new source of water for our region. The tour will include a brief video that goes over the drivers of the project, followed by a walkthrough of our demonstration facility which uses the exact same processes and many of the same safety features that will be found in the full-scale facility. You will also get a chance to ask questions from myself, our public outreach team, and the operators who run this facility on a daily basis and ensure the quality of the water we produce. Dr. Smets, as you had indicated you were in touch with Mr. Steve Bilson, please extend the invitation to him as well, and anyone else from the community that would benefit from learning more about the Pure Water program. Thank you for your time and I am looking forward to speaking with you more about this important project and the future of our water.

Sincerely,

Oliver Slosser, PE  
Engineering Program Manager  
Las Virgenes Municipal Water District  
[oslosser@lvmwd.com](mailto:oslosser@lvmwd.com)  
(office) (818) 251-2143  
(cell) (818) 585-7123  
(fax) (818) 251-2159

<East County's \$950M water recycling project could be in jeopardy as San Diego mixes pipeline deal - The San Diego Union-Tribune.pdf>

Letter 9 continued

**From:** [Janice Smets](#)  
**To:** [Slosser, Oliver](#); [Linda.Parks@ventura.org](#); "Steve Bilson"  
**Cc:** "Terry Vanise"  
**Subject:** RE: Invitation for Pure Water Demonstration Facility Tour  
**Date:** Thursday, October 6, 2022 5:22:16 PM  
**Attachments:** [East County's \\$950M water recycling project could be in jeopardy as San Diego nixes pipeline deal - The San Diego Union-Tribune.pdf](#)

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[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe. Remember, links in emails will never prompt you for your credentials, so never provide them.

Dear Mr. Slosser,

Thank you very much for the invite. I think my concerns are more extensive than what will be discussed during the tour. I have learned much about this project through research and discussion with Steve Bilson. Steve was involved for 13 years in San Diego trying to bring the warnings of health and the extensive growing costs involved in sewage recycling to the tap. I consider him an expert in this field due to his specialized company and he has a plethora of science information that he has shared with me in a format for a layman's understanding. My health concerns are personal and for other women in my circumstance addressing a specific type of cancer and high probability to sewage recycled water. It was asked of me to see if City of Hope would assist in surveys/statistics which is an option but this should be accomplished BEFORE the system is in place in our community.

I do take exception that when I asked verbally to you for an extension to respond, your response was the presentation to MAC was not to discuss anything but the logistics such as traffic and you refused my request. Subsequently, I looked up San Diego's EIR for their system and it is a very large document with a section addressing water quality. I explained to you 2 weeks wasn't long enough to thoroughly understand all the factors beyond the tour. I have worked in research and development for the Department of Defense for 26 years and I am fully aware how there are cost caps placed on systems with an end period of performance to ensure there is no cost creep and devising an end in sight....there is 'no' end in sight on the sewage recycled water system being proposed in the EIR...no cost cap. There may be a basic template for sewage recycling and pilots, but (1) pilots are small...the final system is large



**Letter 9 continued**

with no guarantee the workings will present the same result and (2) there are unproven deviations from the template used for developing sewage recycling plants (which I consider research and development). There is not a 'one size fits all' in the design due to different landscapes, approval authorities, and the number of residents involved.

The costs are extreme and I am very concerned of our communities being included in this project. Residents will not be able to bear the costs and I do see waivers from the Las Virgenes-Triunfo Board to the Health Department in order to not let the costs grow when spikes come our way (some spikes probably not even thought of today). I wanted to get information more from the scientific perspective versus an engineer as yourself but I needed a response time extension. But, as it turned out, San Diego's problems (with a system similar to what is being proposed to our communities) have started surfacing and our Ventura County and Los Angeles County supervisors and representative must take heed to the 'red flags' coming from San Diego. Personally, I am pleased the San Diego information has surfaced but with much compassion for SD's residents and, in hopes, it is not too late for our communities to avoid this rapidly-pushed project.

I am attaching the information of what is happening with San Diego (but not surprising to someone who understands the issues such as Steve). The article reflects what it takes to get the water as pure as possible with the costs involved – impossible to alleviate the contaminants completely, just minimize the risk. The long-term will speak for itself but there is no historical long-term data to look at regarding any increase clusters of cancer or other diseases; this is a rather new technology with different modifications depending on the individual or uniqueness of each community's landscape that will be receiving the tap water.

IMO, this project is way too expensive and there is no budget being presented today that will actually be expensed...a much higher expense will grow exponentially and, unfortunately, for many following generations in our community. We have retired people, young families trying to stay afloat financially raising their children, young couples just starting out trying to afford

**Letter 9 continued**

their first home, etc. Property taxes are important and correct verifiable data/statistics is important. San Diego uses the GAAP financial system which I am fully aware of....taught the subject matter to the Coast Guard. Very difficult to decipher if placing income/expenses in the general fund with other income/expenses within the special district. Obtaining singled-out data needs to be set up before this system is put into place in our community which gives the community the opportunity to see what it takes in costs to get the purest of water (if possible) but keep adding on costs, inflation, or other unexpected turns that can affect their property taxes.

I am adding Steve Bilson on this email thread for him to add or clarify anything about what I wrote. A tour of the facility will not change my concerns so I must decline your invite. Steve is fully aware what the design is for our community and provides the science behind this. I would like to see alternatives to what we can do regarding our water problem...maybe start with how Israel is accomplishing this problem since they refuse to use recycled sewage water. One thing that I am most certain – once this system is put in place there is no turning back and I have a lot of sympathy for San Diego at this time.

I will be sending my concerns and copies of my documents to Mr. Pederson but there is much more to do...can't do all the research in 2 weeks so I will ask for an extension. I am also going to post as much information into Nextdoor as possible. I am not a political person and remove myself from any elections that are coming up that may address this problem. A Ventura County's Supervisor (incoming or outgoing) will recognize the criticality of this situation. I am providing the candidates competing for Supervisor Park's position the information I have thus far,

v/r,

Janice R. Smets, PhD  
OP MAC Member

---

**From:** Slosser, Oliver <OSlosser@lvmwd.com>  
**Sent:** Thursday, October 6, 2022 2:36 PM

**Letter 9 continued**

**To:** Linda.Parks@ventura.org; jrsmets@earthlink.net  
**Cc:** Terry, Vanise <Vanise.Terry@ventura.org>  
**Subject:** Invitation for Pure Water Demonstration Facility Tour

Dear Supervisor Parks and Dr. Smets,

I am writing to extend a personal invitation to tour our Pure Water Demonstration Facility at your earliest convenience. We have heard your concerns about the Pure Water Project, and I would love the opportunity to show you what we are doing to ensure the safety of our customers and provide a new source of water for our region. The tour will include a brief video that goes over the drivers of the project, followed by a walkthrough of our demonstration facility which uses the exact same processes and many of the same safety features that will be found in the full-scale facility. You will also get a chance to ask questions from myself, our public outreach team, and the operators who run this facility on a daily basis and ensure the quality of the water we produce. Dr. Smets, as you had indicated you were in touch with Mr. Steve Bilson, please extend the invitation to him as well, and anyone else from the community that would benefit from learning more about the Pure Water program. Thank you for your time and I am looking forward to speaking with you more about this important project and the future of our water.

Sincerely,

Oliver Slosser, PE  
Engineering Program Manager  
Las Virgenes Municipal Water District  
[oslosser@lvmwd.com](mailto:oslosser@lvmwd.com)  
(office) (818) 251-2143  
(cell) (818) 585-7123  
(fax) (818) 251-2159



## Responses to Letter 9

9-1 The Las Virgenes-Triunfo Joint Powers Authority (JPA) acknowledges the expressed opposition to the Pure Water Project. The Pure Water Project would treat recycled water for indirect potable reuse through surface water augmentation, one of multiple water recycling strategies accepted and regulated by the California State Water Resources Control Board. Regulations for Surface Water Source Augmentation Projects, such as the Pure Water Project, are included in Article 5.3 of the Water Recycling Criteria, Title 22, Division 4, Chapter 3 of the California Code of Regulations.

The JPA will not be extending the public comment period beyond the schedule set forth for Final Program Environmental Impact Report (EIR) review and adoption. The JPA has implemented a robust public outreach program spanning the last 6 years, including:

- A Demonstration Facility that has been available for public tours for more than 1.5 years
- A project-specific website containing technical information, studies, reports, and project updates (located at [www.ourpureh2o.com](http://www.ourpureh2o.com))
- Tours, events, public hearings, JPA Board updates, scoping meetings, and stakeholder engagement meetings

JPA staff replied directly to the commenter with information related to a recent application for federal funding. The U.S. Environmental Protection Agency worksheet requested by the commenter was not referenced in the Draft Program EIR; therefore, it cannot be provided through the response to public comment process.

Letter 10



State Water Resources Control Board

October 7, 2022

Oliver Slosser, P.E.  
Engineering Program Manager  
Las Virgenes Municipal Water District  
[OSlosser@lvmwd.com](mailto:OSlosser@lvmwd.com)

**LAS VIRGENES – TRIUNFO JOINT POWERS AUTHORITY PURE WATER PROJECT DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT**

Dear Mr. Slosser:

The State Water Resources Control Board Division of Water Rights (Division) appreciates the opportunity to review the Draft Programmatic Environmental Impact Report (PEIR) – Las Virgenes Municipal Water District (Las Virgenes) - Triunfo Joint Powers Authority (JPA) Pure Water Project.

We note that during the period of April 15 to November 15, treated effluent flow from the Tapia Water Reclamation Facility (Tapia WRF) to Malibu Creek is prohibited per Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) Order R4-2017-124. The PEIR indicates that the Las Virgenes – Triunfo Pure Water Project (Pure Water Project or Project) will use a supplemental amount of treated wastewater from the Tapia WRF in the JPA's service area, from November 16 through April 14, thus reducing flow of treated effluent to Malibu Creek during that time. The volume of treated effluent flow from the Tapia WRF is approximately 10 percent of the high flow in Malibu Creek during winter months.

Pursuant to the Los Angeles Water Board National Pollutant Discharge Elimination System (NPDES) permit CA0056014 (Order R4-2017-124), adopted June 1, 2017, the JPA will continue to maintain the minimum instream flow requirement of 2.5 cubic feet per second in Malibu Creek downstream of the Tapia WRF discharge point through the addition of dechlorinated potable water.

Since the Pure Water Project will require a change in the place of use, or purpose of use of treated wastewater that will result in reduced flow discharges to Malibu Creek, it appears that a wastewater change petition is required to be submitted to the Division

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBEC, EXECUTIVE DIRECTOR

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**Letter 10 continued**

Oliver Slosser

- 2 -

October 7, 2022

and approved pursuant to Water Code section 1211, prior to reducing discharges associated with the Pure Water Project.

Water Code section 1211, subdivision (a) states that the owner of a wastewater treatment plant must receive approval from the State Water Board prior to making changes to the point of discharge, place of use, or purpose of use of treated wastewater. That approval is requested through submittal of a wastewater change petition to the Division. Subdivision (b) of Water Code section 1211 states that approval from the State Water Board is not required if the changes in discharge or use of the treated wastewater do not result in decreasing flow in any portion of a watercourse. The Project as described above will involve a reduction in discharge that will decrease flow in Malibu Creek and a change in use of the water. Water Code section 1211, subdivisions (a) and (b) apply to the Project and a wastewater change petition is required. See the link below for information regarding wastewater change petitions and online submittal.

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/petitions/wastewater.html](https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/wastewater.html)

The Division previously indicated that a wastewater change petition is required to be submitted and requested additional information needed for the wastewater change petition review process in its September 21, 2022 letter to Las Virgenes, copy attached.

Some additional comments from the Division are indicated below.

Section

Acronyms and Abbreviations, page xv

State Board - California Water Quality Control Board

Comment

The State Water Resources Control Board (State Water Board) has nine regional Water Quality Control Boards throughout the state. The regional board that has regulatory authority over the Project is the Los Angeles Regional Water Quality Control Board. If the abbreviation "State Board - California Water Quality Control Board" is meant to refer to the Los Angeles Regional Water Quality Control Board, please revise accordingly.

Section

1. Introduction

1.3.2 Responsible Agencies, page 1-5





Letter 10 continued

Oliver Slosser

- 3 -

October 7, 2022

Comment

Please revise Section 1.3.2, Responsible Agencies, item 1) on page 1-5 to include the underlined text as follows: "In addition, the Division of Water Rights considers a Wastewater Change Petition that will be submitted for a proposed change in Tapia WRF's treated point of discharge, place of use, or purpose of use of the treated effluent."

3

Section

5. Biological Resources

5.4.1.4 Malibu Creek, page 5-27

Comment

The Division notes that you conclude, with implementation of the Project, the reductions in flow to Malibu Creek would not substantially affect the magnitude or timing of flows that facilitate adult steelhead migration, spawning, incubation, and juvenile outmigration in Malibu Creek. Please provide discussion of consultation with the California Department of Fish and Wildlife and any feedback regarding this conclusion.

4

Section

11. Hydrology and Water Quality

11.4.2.3 Malibu Creek, page 11-17

Comment

The Division notes that you conclude, through your hydrologic analysis, that the impact of the Pure Water Project on Malibu Creek would be less than significant. Figure 11-3, Tapia Discharge Contributions to Peak Flows (Water Years 2017 – 2020) relates to this conclusion. We note that the volume of treated effluent flow from the Tapia WRF is approximately 10 percent of the high flow in Malibu Creek during winter months.

5

As part of the California Environmental Quality Act (CEQA) process, please continue to coordinate your review with the Division, the Los Angeles Water Board, and the California Department of Fish and Wildlife. The PEIR should include an evaluation of the impacts of reduced discharges to other beneficial uses of the water, including fish and wildlife resources and the environment.

**Letter 10 continued**

Oliver Slosser

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October 7, 2022

If you require any further information regarding this matter, please contact Patricia Fernandez at: [Patricia.Fernandez@waterboards.ca.gov](mailto:Patricia.Fernandez@waterboards.ca.gov).

Sincerely,

ORIGINAL SIGNED BY

Sam Boland-Brien, Manager  
Petitions, Licensing, and Registrations Section  
Division of Water Rights

Enclosure

ec: **Los Angeles Regional Water Quality Control Board**

Jeong-Hee Lim

[Jeong-Hee.Lim@waterboards.ca.gov](mailto:Jeong-Hee.Lim@waterboards.ca.gov)

Steven Webb

[Steven.Webb@waterboards.ca.gov](mailto:Steven.Webb@waterboards.ca.gov)

Adam Taing

[Adam.Taing@waterboards.ca.gov](mailto:Adam.Taing@waterboards.ca.gov)

**California Department of Fish and Wildlife**

Mary Ngo

[Mary.Ngo@wildlife.ca.gov](mailto:Mary.Ngo@wildlife.ca.gov)

Letter 10 continued



## State Water Resources Control Board

SEP 21 2022

Oliver Slosser, P.E.  
Engineering Program Manager  
Las Virgenes Municipal Water District  
[oslosser@lvmwd.com](mailto:oslosser@lvmwd.com)

### **APPLICABILITY OF WATER CODE SECTION 1211 TO THE LAS VIRGENES – TRIUNFO JOINT POWERS AUTHORITY PURE WATER PROJECT**

Dear Mr. Slosser:

The State Water Resources Control Board's Division of Water Rights (Division) received your June 27, 2022 letter and has reviewed the project description for the Las Virgenes Municipal Water District (LVMWD) – Triunfo Joint Powers Authority (JPA) Pure Water Project to determine if a wastewater change petition (WWCP) is needed pursuant to Water Code section 1211. The Division appreciates your use of the WWCP review checklist provided by the Division.

#### Project Summary

The LVMWD Tapia Water Reclamation Facility (TWRf) discharges treated effluent to Malibu Creek from November 16 through April 14. LVMWD is prohibited from discharging treated effluent to Malibu Creek from April 15 to November 15. The proposed Pure Water Project will use a supplemental amount of treated wastewater from the TWRf in the JPA's service area, from November 16 through April 14, thus reducing flow of treated effluent to Malibu Creek during that time. The volume of treated effluent flow from the TWRf is approximately 10 percent of the high flow in Malibu Creek during winter months.

Pursuant to the Los Angeles Regional Water Quality Control Board's (Los Angeles Water Board) National Pollutant Discharge Elimination System (NPDES) permit CA0056014 (Order R4-2017-124), adopted June 1, 2017, the JPA will continue to maintain the minimum instream flow requirement of 2.5 cubic feet per second in Malibu Creek downstream of the TWRf discharge point through the addition of dechlorinated potable water.

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

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**Letter 10 continued**

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SEP 21 2022

As indicated in the checklist attachment to your June 27, 2022 letter, the Los Angeles Water Board has already included the Pure Water Project concept as a future use in the 2017 NPDES permit, but a revised NPDES permit will also be issued to include additional water quality requirements for this discharge.

Wastewater Change Petition Determination

Water Code section 1211, subdivision (a) states that the owner of a wastewater treatment plant must receive approval from the State Water Board prior to making changes to the point of discharge, place of use, or purpose of use of treated wastewater. That approval is requested through submittal of a wastewater change petition to the Division. Subdivision (b) of Water Code section 1211 states that approval from the State Water Board is not required if the changes in discharge or use of the treated wastewater do not result in decreasing flow in any portion of a watercourse. The Project as described above will involve a reduction in discharge that will decrease flow in Malibu Creek and a change in use of the water. Water Code section 1211, subdivisions (a) and (b) apply to the Project and a wastewater change petition is required. See the link below for information regarding wastewater change petitions and online submittal.

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/petitions/wastewater.html](https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/wastewater.html)

Please provide five years of historical flow data from the TWRP to Malibu Creek (monthly and annual average) with your wastewater change petition submittal. Also include the proposed reduced flow data from the TWRP to Malibu Creek with the Pure Water Project (monthly and annual average).

Please include any pertinent information regarding the wastewater change petition and any potential environmental impacts due to reduced flow in Malibu Creek in any proposed environmental document for the Pure Water Project in accordance with the California Environmental Quality Act and provide a copy of or access to any such document to the Division. This will make the wastewater change petition review process more efficient.

We received notice that the Draft Programmatic Environmental Impact Report (Draft PEIR) for the Pure Water Project was released for a 45-day comment period on August 22, 2022. The Division will provide comments on this Draft PEIR prior to the comment deadline of October 7, 2022 in a separate letter.

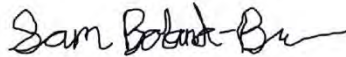
If you require any further information regarding this matter, please contact Patricia Fernandez at: [Patricia.Fernandez@waterboards.ca.gov](mailto:Patricia.Fernandez@waterboards.ca.gov).

Letter 10 continued

- 3 -

SEP 21 2022

Sincerely,



Sam Boland-Brien, Manager  
Petitions, Licensing, and Registrations Section  
Division of Water Rights

ec: Las Virgenes Municipal Water District

David Pederson  
General Manager  
[Dpederson@lvmwd.com](mailto:dpederson@lvmwd.com)

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Los Angeles Regional Water Quality Control Board

Jeong-Hee Lim  
[Jeong-hee.lim@waterboards.ca.gov](mailto:Jeong-hee.lim@waterboards.ca.gov)

## Responses to Letter 10

- 10-1 The commenter describes the need for a Wastewater Change Petition pursuant to California Water Code Section 1211. In parallel with the Program Environmental Impact Report (EIR) process, the Las Virgenes-Triunfo Joint Powers Authority (JPA) has been working with the Division of Water Rights to understand the specific need for a Wastewater Change Petition and submitted a Wastewater Change Petition Checklist and Request for Clarification on June 27, 2022. In response, the Division of Water Rights confirmed the applicability of Section 1211 in a letter dated September 21, 2022 (that letter is attached to this comment letter). The JPA is now in the process of preparing a Wastewater Change Petition and will continue to work with the Division of Water Rights to comply with Section 1211.
- 10-2 The abbreviations have been updated in response to this comment. The three abbreviations relevant to this comment, and their meaning, are:
- 1) Regional Board. This is defined as Regional Water Quality Control Board. The document uses this abbreviation, in almost all cases, to refer to the Los Angeles Regional Water Quality Control Board. In some cases, the abbreviation is used generally, for example to describe how certain regulations are implemented by Regional Boards across the state.
  - 2) State Board. This is defined as California Water Quality Control Board, and is the specific abbreviation questioned by the commenter. It has been deleted (see next bullet).
  - 3) State Water Board. This is defined as the State Water Resources Control Board and is the correct abbreviation for this agency. "State Board" has been deleted.
- Note that all these abbreviations are in attempt to use plain language, thereby reducing the number of confusing acronyms in the Program EIR.
- 10-3 Specified text has been added in Section 1.3.2, Responsible Agencies, to indicate the State Water Board Division of Water Rights consideration of the Wastewater Change Petition that is to be submitted for the proposed change in Tapia Water Reclamation Facility's (Tapia WRF's) treated point of discharge, place of use, or purpose of use of the treated effluent.
- 10-4 The JPA has been discussing the Pure Water Project with California Department of Fish and Wildlife (CDFW). CDFW provided a comment letter during the scoping process and talked about the project with JPA staff. In response to the Draft Program EIR, CDFW sent a comment letter (see Letter 4) and talked again with JPA staff to discuss the project and to confirm that the minimum instream flow requirement would be met. For additional information, see the responses to the Letter 4 comments.
- 10-5 The Draft Program EIR includes an evaluation of reduced discharges to fish and wildlife resources in Section 5.4.1.4, Malibu Creek. The JPA will continue to work with Division of Water Rights to implement the Pure Water Project, as well as the Los Angeles Regional Board (see responses to Letter 8) and CDFW (see responses to Letter 4).



Letter 11



*"Gateway to the Santa Monica Mountains National Recreation Area"*

October 7, 2022

City of Agoura Hills  
Community Development Department  
30001 Ladyface Court  
Agoura Hills, CA 91301  
Attn: Denice Thomas

RE: Pure Water Project Programmatic Environmental Impact Report Response to Comments

To Whom It May Concern:

The City of Agoura Hills thanks you for the opportunity to review and comment on the Pure Water Project Programmatic Environmental Impact Report (PEIR). Below you should find our comprehensive comments.

I. General Comments

The project proposes to impact numerous Oak trees. The City of Agoura Hills values and protects Oak trees throughout the City. Additionally, the biological review indicates certain protected species will also be impacted by the project as well. We respectfully request inclusion or mitigation measures at least equivalent to the mitigation measures contained in our code for the mitigation of Oak trees in the city of Agoura Hills. 1

The project also contains retaining walls in excess of what is permissible per our Municipal Code. While we understand the project is not subject to our local regulations, we respectfully request the use of retaining walls consistent with our adopted regulations for construction of retaining walls. 2

There is an existing trail the allows residents to access recreational opportunities on Ladyface Mountain. The project, as proposed, impedes access. We respectfully request access be provided to the public and incorporated into the project. 3

The height of the main structure of the project along with the height of the retaining walls create mass and bulk inconsistent with mass and bulk requirements set by our architectural design guidelines adopted by the City Council. While it is understood the project is not subject to the adopted architectural guidelines, we respectfully request the mass and bulk be broken up more and the height, or appearance of height of the retaining walls be reduced or treated to blend into Ladyface Mountain. 4

II. PEIR Specific Comments

We also would like to offer the following changes to specific passages within the PEIR: **Section 3.5.4 - Aesthetics: Page 3-10 Mit Measure 3-1: Light and Glare** – Include 5

Letter 11 continued

a statement in Mitigation Measure 3-1 that all construction and operation lighting will be screened from and/or shielded from the open space areas south of the project site.

5

**Section 5.5 - Biological Resources: Page 5-33 Mit Measure 5-4 - Oak Trees** – Please review the City of Agoura Hills’s Oak Tree Preservation Guidelines (Agoura Hills Municipal Code) Section 9657.5 (C)(3) with regard to removal or relocation of Oak Trees. Additionally, please identify the percent of Oak Tree canopy proposed to be removed within the subject property.

6

**Section 6.5 - Archeological: Page 6-39 Mit Measure 6-1a** – Identify the Archeological Surveys to be preformed (i.e.: Phase I, Phase II, etc.). Additionally, please define “PRMMP.”

7

**Table ES-1. Impact 11-3 page 9** – Sections 8.2 and 8.3 state Geotechnical Studies should to be performed, to determine groundwater table. Alternatively if LVMWD has this data from earlier regional studies, call it out.

8

**Section 11.4.1.1 – Page 225 - Geology and Soils (Grading)** – The Draft EIR indicates 2.7 acres of the site will be graded and also indicates that the existing conditions will remain the same. Please identify the amount of grading (cut and fill) which will occur as a result of the project and explain how the existing conditions will remain the same.

9

Additionally, developments are required to design drainage improvements so post development runoff is equal to or better than undeveloped runoff. How will this be addressed?

The proposed development meets threshold for LID requirement.

**Section 13.6 - Noise: Page 13-28 Mit Measure 13.6** – Please be advised that the City of Agoura Hills does not issue temporary construction noise variances for excessive construction noise. Additionally, the Draft EIR indicates that blasting during construction will be avoided to the extent reasonable and feasible; please include a statement in the mitigation measure that requires JPA to coordinate all blasting activities with the surround local jurisdictions.

10

**Section 15.1.1.2 – Transportation and Traffic: Page 299** - Within the existing setting, please add a discussion that addresses how the construction traffic and/or heavy vehicle trucks will be handled. Agoura Road was designed with a Traffic Index of 9 (and TI of 9.5 at intersections), based on Caltrans Highway Design Manual (2009).

The WB (Northside of the) roadway was existing prior to the widening project and was provided a 1.5" ARHM Overlay. Geotechnical Report provided one boring log near this area that showed 8" AC but base was nonexistent or not present in the one log. The 2019 PMS shows this segment of Agoura Road as a PCI 94.

11

Based on the information above, Agoura Road was designed to handle truck traffic, per 2009 standards. However, the City should recommend the following for the Pure Water Project: As part of their Geotechnical analysis, provide at least 2 boring logs for pavement section on NS and SS, for analysis and verification of recommended pavement section for their project, particularly at expected NB left turn pocket into project site from Agoura Road; and as mitigation for temporary construction impacts to Agoura Road (due to trucking) Rehabilitation of adjacent roadways after construction trenching and heavy load/trucking use, both NS and SS. (JF edit)



Letter 11 continued

**Section 15.1.1.2 – Transportation and Traffic: Page 300** - Mitigations for the trench construction in arterial roads shall include full trench restoration and 1/2 street pavement improvements to the satisfaction of the City Engineer. 12

**Section 15.1.2 – Transportation and Traffic: Page 302** - Re- striping of bikeway facilities on Agoura Road will be consistent with the draft Bicycle Master Plan, which is anticipated to be adopted in February 2023. Conflict Zone Striping at Driveways will be implemented to allow safe crossing of the driveways, due to the nature of the driveways not being perpendicular to Agoura Road. 13

**Section 15.1.3 – Transportation and Traffic: Page 302** - Please revise pedestrian facilities from "Agoura Road east of Kanan Road" to "Agoura Road east of Cornell Road." 14

**Section 15.2.3.1 – Transportation and Traffic: Page 304** – Please revise to General Plan (2022a) & add any planning considerations. 15

**Section 15.2.3.1 – Transportation and Traffic: Page 304** - Please describe the number of trips that are anticipated by the final project. 16

**Section 15.4.1.1 – Transportation and Traffic: Page 306** - Applicant shall provide conflict striping in bicycle lanes adjacent to the Agoura Road AWPf driveways as called out in the City of Agoura Hills Draft Bicycle Master Plan. 17

Please feel free to contact me at [dthomas@agourahillscity.org](mailto:dthomas@agourahillscity.org) or (818) 597-7300 if you have any questions regarding our comments.

Regards,

Denice Thomas, AICP  
Community Development Director



**Responses to Letter 11**

- 11-1 The Las Virgenes-Triunfo Joint Powers Authority (JPA) agrees that oak tree impacts should be avoided and minimized as much as possible. As shown on Figure 4, Site Plan, the Agoura Road Advanced Water Purification Facility (AWPF) has been sited to maximize use of open areas and minimize impacts to oak trees. As required by Mitigation Measure 5-4, oak tree impacts will be mitigated through additional plantings that meet or exceed City of Agoura Hills standards.
- 11-2 The retaining wall at the Agoura Hills AWPF site has been conceptually sized to be as low as possible given the necessary configuration of the treatment facility and the site conditions. Efforts to further lower the wall would require additional encroachment to the back of the site, causing additional environmental impacts to the native habitat and potentially requiring the acquisition of additional property. For these reasons, this was determined to be infeasible. As the JPA advances from conceptual design to detailed design (expected to be by a Design Build Contractor), the JPA will continue to collaborate with the City of Agoura Hills on all aspects of AWPF site planning and design.
- 11-3 Regarding the informal trail through the Agoura Road AWPF site, the JPA took care to design the AWPF to avoid use of the trail such that ongoing access will not be impeded (also see discussion in Chapter 14, Recreation).
- 11-4 See response to Comment 11-2. The JPA will continue to collaborate with the City of Agoura Hills on AWPF site planning and design.
- 11-5 The JPA agrees that lighting should be screened or shielded from the open space area south of the project site. Language to that effect has been added to Mitigation Measure 3-1, Light and Glare.
- 11-6 Regarding oak trees in general, see response to Comment 11-1. Based on the conceptual design, the expected canopy removal is estimated to be approximately 40% across the Agoura Road AWPF site.
- 11-7 Surveys that may be completed as part of Mitigation Measure 6-1a will be determined by the qualified archaeologist and will likely consist of Phase I pedestrian surveys of previously unsurveyed areas and subsurface testing, including hand-augured borings and excavated test pits, which are often characterized as “Extended Phase I” (or Phase II) surveys.
- PRMMP is defined in Section 6.4.4.1 as Paleontological Resources Monitoring and Mitigation Plan.
- 11-8 The Draft Program Environmental Impact Report (EIR) text is correct, including the discussion of additional geotechnical investigations, such as the requirements of Mitigation Measure 8-1. Preliminary investigations for the Agoura Road AWPF conceptual design indicate that groundwater at the site is not shallow; however, a complete geotechnical investigation will be performed as part of the detailed design work as required by Mitigation Measure 8-1 and good design practices.
- 11-9 The Draft Program EIR text regarding site development is correct. The commenter references specific text about a small, onsite drainage channel that would “remain unchanged,” which is correct because it is outside of the construction footprint. Overall site drainage will change because of the 2.8 acres of development. The JPA agrees with the commenter about the need for post-development runoff to be managed consistent with applicable standards, including the Low Impact Development standards from the municipal general permit. This is described in Section 11.4.1.1, Agoura Road Advanced Water Purification Facility.

- 11-10 See response to Comment 7-2 (the City of Westlake Village raised similar concerns). As stated in that response, additional text has been added to Mitigation Measure 13-1, Noise Control Plan, to recognize the importance of adhering to the local standards.
- 11-11 The commenter provides specific text to be added regarding the JPA's future geotechnical investigations at the Agoura Road AWPf site. The revisions regard maintaining a suitable Pavement Condition Index along Agoura Road, specifically at the AWPf entry and exit driveways. The JPA agrees that the temporary construction impacts of the project may damage Agoura Road and will work with the commenter (for example, through encroachment permits) to meet appropriate road standards. However, the JPA does not recommend that the Draft Program EIR text be changed – the topic should be addressed as an engineering design consideration.
- 11-12 See response to Comment 11-11.
- 11-13 The entry and exit driveways will require careful consideration of bicycle and pedestrian traffic flow. The comment recommending conflict zone striping at the driveways is reasonable and will be fully addressed during detailed design. The JPA does not recommend changes to the Draft Program EIR because there is no environmental impact.
- 11-14 The recommended text change has been made in the Final Program EIR.
- 11-15 The recommended text changes have been made in the Final Program EIR.
- 11-16 Comment does not apply to Section 15.2.3.1; please see Sections 15.4.1.1 and 15.4.1.2 for information about the number of trips generated by the Pure Water Project.
- 11-17 See response to Comment 11-13.

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Re: **Comments on Draft Program Environmental Impact Report for Pure Water Project Las Virgenes-Triunfo (SCH No. 2021090157)**

Dear Mr. Schlageter, Mr. Slosser, and Ms. Guzman:

On behalf of County Line Alliance for Sustainable Projects ("CLASP"), we submit these comments on the Draft Program Environmental Impact Report ("DPEIR") prepared by Las Virgenes-Triunfo Joint Powers Authority ("JPA") pursuant to the California Environmental Quality Act<sup>1</sup> ("CEQA") for the Pure Water Project Las Virgenes-Triunfo (SCH No. 2021090157) ("Project").<sup>2</sup> The JPA proposes to construct a new advanced water purification facility ("AWPF") to treat recycled water for indirect potable reuse and convey the purified water to the existing Las Virgenes Reservoir, where it will be blended with the existing drinking water supplies.<sup>3</sup> Pipeline construction will be required to extend the existing recycled water system to the AWPF, convey purified water from the AWPF to Las

<sup>1</sup> Pub. Resources Code ("PRC") § 21000 et seq.

<sup>2</sup> Las Virgenes-Triunfo Joint Powers Authority, Pure Water Project Las Virgenes-Triunfo, Public Review Draft Programmatic Environmental Impact Report (August 22, 2022) p. 77. (hereinafter "DPEIR").

<sup>3</sup> DPEIR, p. 2-1.

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Virgenes Reservoir located in Westlake Village, and convey the “reject” waste stream (brine or concentrate) from the AWPF to the Calleguas Salinity Management Pipeline.<sup>4</sup> The Project would require a series of interrelated pipelines including (1) a source water pipeline, (2) a purified water pipeline, (3) a brine pipeline, (4) a sewer pipeline, and (5) a potential source water augmentation pipeline.<sup>5</sup> A portion of the brine pipeline will be constructed in Agoura Hills and Westlake Village, but most of the brine pipeline will extend outside of the JPA’s jurisdiction and through the City of Thousand Oaks.<sup>6</sup> Construction of the AWPF is expected to last approximately 15 months, and construction of the various pipelines is estimated to take 30 months.<sup>7</sup>

We reviewed the DPEIR, its technical appendices, and reference documents with assistance of CLASP’s expert consultants, whose comments and qualifications are attached. Based on our review, it is clear that the DPEIR fails as an informational document under CEQA and lacks substantial evidence to support its conclusions that the Project’s significant impacts would be mitigated to the greatest extent feasible.

There is also substantial evidence demonstrating that the Project’s potentially significant environmental impacts are far more extensive than disclosed in the DPEIR. CLASP and our expert consultants identified numerous potentially significant impacts that the DPEIR either mischaracterizes, underestimates, or fails to identify. Moreover, many of the mitigation measures described in the DPEIR will not, in fact, mitigate impacts to the extent claimed.

For example, CLASP’s air quality expert, James Clark, Ph.D., concludes that the Project’s operational emissions will exceed applicable significance threshold. Dr. Clark also found that the DPEIR underestimates the Project’s greenhouse gas (“GHG”) emissions during both construction and operation.<sup>8</sup> CLASP’s biological resources expert, Shawn Smallwood, Ph.D., concludes that the Project would have potentially significant and unmitigated impacts to wetland and riparian habitat, as well as significant and unmitigated impacts from habitat loss and wildlife

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<sup>4</sup> DPEIR, p. 2-1.

<sup>5</sup> *Id.* at 2-14.

<sup>6</sup> *Id.* at 2-17.

<sup>7</sup> *Id.* at 2-22.

<sup>8</sup> See **Exhibit A**, James Clark, Ph.D., Clark and Associates, Comments on Pure Water Project Las Virgenes-Triunfo Project Draft Program Environmental Impact Report (SCH # 2021090157) (“Clark Comments”).

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movement.<sup>9</sup> CLASP's hydrology and groundwater expert, Jim Bailey, concludes that the Project may result in potentially significant impacts to groundwater contamination, recharge, and quality.<sup>10</sup>

Dr. Clark, Dr. Smallwood, and Mr. Bailey's comment letters and all attachments hereto are incorporated by reference as if fully set forth herein.<sup>11</sup> The JPA must respond to each expert's comments separately and fully.

**I. STATEMENT OF INTEREST**

CLASP is an unincorporated association of individuals and labor organizations with members who may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The association includes Ventura County residents, Los Angeles County residents, Southern California Pipe Trades District Council 16 and its members and their families and other individuals that live, recreate, and/or work in or near Thousand Oaks, Agoura Hills, Westlake Village, and Calabasas.

CLASP supports the development of sustainable projects, including those that improve access to potable water and California's resilience to droughts, where those projects are properly analyzed and carefully planned to minimize impacts on public health and the environment. Sustainable projects should avoid impacts to sensitive species and habitats, water resources, and public health, and should take all feasible steps to ensure unavoidable impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can projects be deemed truly sustainable.

The individual members of CLASP and the members of the affiliated labor organizations live, work, recreate, and raise their families in the vicinity of the Project. Accordingly, they will be directly affected by the Project's environmental and health and safety impacts. Individual members may also work on the Project

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<sup>9</sup> See **Exhibit B**, Shawn Smallwood, Ph.D., Pure Water Project – Las Virgenes-Triunfo (September 28, 2022) ("Smallwood Comments").

<sup>10</sup> See **Exhibit C**, Jim Bailey, Shannon & Wilson, Review Groundwater Conditions Relevant to the Draft Program Environmental Impact Report for Las Virgenes-Triunfo Joint Powers Authority – Proposed Pure Water Project (October 2, 2022) ("Bailey Comments").

<sup>11</sup> CLASP reserves the right to supplement these comments, and to file further comments at any and all future proceedings and hearings related to the Project. Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* ("Bakersfield") (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

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itself. They will be the first in line to be exposed to any health and safety hazards which may exist onsite. They each have a personal interest in protecting the Project area from unnecessary, adverse environmental and public health impacts.

CLASP and its members also have an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for the members that they represent. Environmental degradation destroys cultural and wildlife areas, consumes limited fresh surface and ground water resources, causes water pollution, and imposes other stresses on the environmental carrying capacity of the state. This in turn jeopardizes future development by causing construction moratoriums and otherwise reducing future employment opportunities for CLASP's members. CLASP therefore has a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment.

Finally, CLASP and its members are concerned about projects that risk serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment.<sup>12</sup> It is in this spirit we offer these comments.

## II. LEGAL BACKGROUND

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR").<sup>13</sup> The EIR is the very heart of CEQA.<sup>14</sup> "The foremost principle in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language."<sup>15</sup>

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.<sup>16</sup> "Its purpose is to inform the public and its responsible officials of the

<sup>12</sup> PRC § 21081(a)(3); *Citizens for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151, 171.

<sup>13</sup> See e.g., PRC § 21100.

<sup>14</sup> *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652.

<sup>15</sup> *Communities for a Better Environment v. Cal. Res. Agency* (2002) 103 Cal. App.4th 98, 109 ("CBE v. CRA").

<sup>16</sup> PRC § 21061; 14 Cal. Code Regs. ("CCR") §§ 15002(a)(1); 15003(b)-(e); *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 517 ("[T]he basic purpose of an EIR is to provide public agencies and the



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environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'<sup>17</sup> The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."<sup>18</sup>

Second, CEQA directs public agencies to avoid or reduce environmental damage when "feasible" by requiring consideration of environmentally superior alternatives and adoption of all feasible mitigation measures.<sup>19</sup> The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced."<sup>20</sup> If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns."<sup>21</sup>

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. *A clearly inadequate or unsupported study is entitled to no judicial deference.*'"<sup>22</sup> As the courts have explained, "a prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decision making and informed public participation, thereby thwarting the statutory goals of the EIR process."<sup>23</sup> Further, "an agency may abuse

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public in general with detailed information about the effect [that] a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.").

<sup>17</sup> *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.

<sup>18</sup> *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal.App.4th 1344, 1354 ("Berkeley Jets"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

<sup>19</sup> 14 CCR § 15002(a)(2) and (3); see also *Berkeley Jets*, 91 Cal.App.4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564.

<sup>20</sup> 14 CCR § 15002(a)(2).

<sup>21</sup> PRC § 21081; 14 CCR § 15092(b)(2)(A)-(B).

<sup>22</sup> *Berkeley Jets*, 91 Cal.App.4th at 1355 (emphasis added), quoting, *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391 409, fn. 12.

<sup>23</sup> *Berkeley Jets*, 91 Cal.App.4th at 1355; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 946.

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its discretion under CEQA by either failing to proceed in the manner CEQA provides or by reaching factual conclusions unsupported by substantial evidence.”<sup>24</sup>

Substantial evidence means “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.”<sup>25</sup> Substantial evidence “shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts,”<sup>26</sup> but it does not include “[a]rgument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment.”<sup>27</sup>

The failure to provide information required by CEQA is a failure to proceed in the manner required by CEQA.<sup>28</sup> Challenges to an agency's failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project's environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency's factual conclusions.<sup>29</sup> In reviewing challenges to an agency's approval of an EIR based on a lack of substantial evidence, the court will “determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements.”<sup>30</sup>

A PEIR may be prepared for a series of actions that can be characterized as one large project and are related:

- (1) Geographically;
- (2) As logical parts in the chain of contemplated actions;
- (3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or

<sup>24</sup> PRG § 21168.5.

<sup>25</sup> 14 CCR § 15384(a).

<sup>26</sup> *Id.* § 15384(b).

<sup>27</sup> *Id.* § 15384(a).

<sup>28</sup> *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.

<sup>29</sup> *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.

<sup>30</sup> *Id., Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.

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- (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.<sup>31</sup>

A PEIR designed to allow approval of activities within the program without the need for further CEQA review must provide a description of the activities that would implement the program and a specific and comprehensive evaluation of the program's foreseeable environmental impacts.<sup>32</sup> As with any EIR, a PEIR must provide decision-makers with "sufficient analysis to intelligently consider the environmental consequences of the project,"<sup>33</sup> and "[d]esignating an EIR as a program EIR also does not by itself decrease the level of analysis otherwise required in the EIR."<sup>34</sup> A lead agency preparing a PEIR must disclose what it reasonably can, and any determinations that it is not feasible to provide specific information must be supported by substantial evidence.<sup>35</sup>

### III. THE DPEIR FAILS TO PROVIDE A COMPLETE AND ACCURATE PROJECT DESCRIPTION

The DPEIR does not meet CEQA's requirements because it fails to include an accurate, complete, and stable description of the Project, rendering the entire analysis inadequate. CEQA requires that an EIR "set forth a project description that is sufficient to allow an adequate evaluation and review of the environmental impact."<sup>36</sup> An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.<sup>37</sup> "An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR."<sup>38</sup> Accordingly, a lead agency may not hide behind its failure to obtain a complete and accurate project description.<sup>39</sup>



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<sup>31</sup> 14 CCR § 15168(a).

<sup>32</sup> *Id.* § 15168(c)(1)-(2), (5); *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 Cal.App.4th 214, 237.

<sup>33</sup> *Cleveland Nat'l Forest Found. v. San Diego Ass'n of Gov'ts* (2017) 17 Cal.App.5th 413, 426.

<sup>34</sup> *Friends of Mammoth*, 82 CA 4th at 533.

<sup>35</sup> *Cleveland Nat'l Forest Found.*, 17 Cal.App.5th at 440.

<sup>36</sup> *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 654 (citing 14 C.C.R. § 15124).

<sup>37</sup> *McQueen v. Board of Directors* (1988) 202 Cal. App. 3d 1136, 1143.

<sup>38</sup> *Santiago County Water Dist. v. County of Orange* 118 Cal. App. 3d 818, 829-830.

<sup>39</sup> *Sundstrom v. County of Mendocino* ("Sundstrom") (1988) 202 Cal.App.3d 296, 311.



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CEQA forbids piecemeal review of the significant environmental impacts of a project.<sup>40</sup> Agencies cannot allow “environmental considerations [to] become submerged by chopping a large project into many little ones—each with a minimal potential impact on the environment—which cumulatively may have disastrous consequences.”<sup>41</sup> “A narrow view of a project could result in the fallacy of division . . . , that is, overlooking its cumulative impact by separately focusing on isolated parts of the whole.”<sup>42</sup> “Where an individual project is a necessary precedent for action on a larger project, or commits the Lead Agency to a larger project, with significant environmental effect, an EIR must address itself to the scope of the larger project.”<sup>43</sup>

The DPEIR impermissibly piecemeals the review of the Project by failing to analyze the “whole of [the] action”.<sup>44</sup> The whole of the action, here, includes the Summer Flow Augmentation Project (“SFAP”). The SFAP is a new pipeline being constructed to augment summertime streamflow in Malibu Creek with the required volumes of water meeting the nutrient discharge limits for nitrogen and phosphorus as defined in the NPDES permit for the Tapia Water Reclamation Facility (“Tapia WRF”).<sup>45</sup> The SFAP “would help maintain minimum instream flows in Malibu Creek during the summer and would support maintaining instream flow requirements once the Pure Water Project is in operation.”<sup>46</sup> Because the SFAP is a necessary precedent for action on the larger project, and is necessary to further the objectives of the proposed Project, it should be fully analyzed in the DPEIR.<sup>47</sup>

The DPEIR omits information regarding the SFAP’s impacts on “Water Quality Standards and WDRs during Construction,” “Water Quality Standards and WDRs during Operation,” and “Drainage and Flood Risk.”<sup>48</sup> These sections of the DPEIR are left blank.<sup>49</sup> The omission of these impact analyses results in impermissible piecemealing of the Project analysis. The DPEIR must be revised

<sup>40</sup> 14 CCR § 15165; *Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1222; *Berkeley Jets*, 91 Cal.App.4th at 1358.

<sup>41</sup> *Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 283-284.

<sup>42</sup> *McQueen*, 202 Cal.App.3d at 1144.

<sup>43</sup> 14 CCR § 15165.

<sup>44</sup> *Id.* § 15378(a).

<sup>45</sup> Las Virgenes-Tirunfo Joint Powers Authority, CEQA Initial Study and Mitigated Negative Declaration: Summer Flow Augmentation of Malibu Creek (Jan. 2019) p. 1-2. Available at <https://www.lvmwd.com/home/showpublisheddocument/11594/636832337955670000>.

<sup>46</sup> DPEIR, pp. 5-27 to 5-28.

<sup>47</sup> 14 CCR § 15165.

<sup>48</sup> DPEIR, p. 11-15.

<sup>49</sup> *Id.*

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and recirculated to adequately address the potentially significant impacts from the SFAP on water quality standards during construction and operation and drainage and flood risk associated with the SFAP.



**IV. THE DPEIR'S DESCRIPTION OF THE ENVIRONMENTAL SETTING IS INADEQUATE**

The DPEIR fails to adequately describe the environmental setting against which the Project's environmental impacts are to be measured for several critical aspects of the Project. This contravenes the fundamental purpose of the environmental review process, which is to determine whether there is a potentially substantial, adverse change compared to the existing setting. CEQA requires that a lead agency include a description of the physical environmental conditions, or "baseline," in the vicinity of the project as they exist at the time environmental review commences.<sup>50</sup> As the courts have repeatedly held, the impacts of a project must be measured against the "real conditions on the ground."<sup>51</sup> The description of the environmental setting constitutes the "baseline" physical conditions against which the lead agency assesses the significance of a project's impacts.<sup>52</sup>

**A. The DPEIR Fails to Accurately Describe the Project's Environmental Setting Related to Biological Resources**

The DPEIR does not contain any analysis supported by detection surveys for special status species.<sup>53</sup> The JPA did not conduct detection surveys for the Bell's vireo or any other special status species that may occur onsite.<sup>54</sup> Although general biological surveys were completed between January 14 and January 15, 2022 to assess the habitat suitability for special-status species,<sup>55</sup> the DPEIR lacks essential methodological details needed to assess their validity. For example, the DPEIR does not identify who performed general biological surveys, when they were conducted, or how long they lasted.<sup>56</sup> Further, the JPA did not provide any records to substantiate the general biological surveys despite members of CLASP



<sup>50</sup> 14 CCR § 15125(a); *Communities for a Better Environment*, 48 Cal. 4th at 321.  
<sup>51</sup> *Communities for a Better Environment*, 48 Cal. 4th at 321; *Save Our Peninsula Com. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 121-22; *City of Carmel-by-the-Sea v. Board of Supervisors of Monterey County* (1986) 183 Cal.App.3d 229, 246.  
<sup>52</sup> 14 CCR § 15125(a); *Communities for a Better Environment*, 48 Cal. 4th at 321.  
<sup>53</sup> Smallwood Comments, p. 20.  
<sup>54</sup> *Id.*  
<sup>55</sup> DPEIR, p. 5-5 to 5-6.  
<sup>56</sup> *Id.*

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requesting all records referenced and relied upon in the DPEIR,<sup>57</sup> and more targeted requests for the underlying data.<sup>58</sup>

As Dr. Smallwood explains, the DPEIR “inadequately discloses the methodological details of one the most important steps toward characterization of the existing environmental setting, which is one of CEQA’s important objectives.”<sup>59</sup> Absent the methodological data supporting the general biological surveys, the DPEIR’s analysis of the existing environmental setting for special-status species is not supported by substantial evidence.

**B. Substantial Evidence Shows the Existing Setting is More Biologically Sensitive than Disclosed and Analyzed in the DPEIR**

The DPEIR defines special-status species as those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (“USFWS”) under the Federal Endangered Species Act (“ESA”); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (“CDFW”) under the California Endangered Species Act (“CESA”); plants occurring on lists 1B and 2 of the California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California (CNPS 2001); and animals designated as “Species of Special Concern”.<sup>60</sup> However, the DPEIR erroneously excludes Birds of Conservation Concern (“BCC”) from categorization as special-status wildlife.

The BCC is an effort by the USFWS to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species

<sup>57</sup> Letter from Adams Broadwell Joseph & Cardozo to Las Virgenes Municipal Water District, Request for Immediate Access to Documents Referenced in the Draft Programmatic Environmental Impact Report - Pure Water Project (SCH No. 2021090157) (Aug. 31, 2022) (requesting “any and all documents referenced, incorporated by reference, and relied upon in the Draft Programmatic Environmental Impact Report prepared for the Pure Water Project – Las Virgenes Triunfo”).

<sup>58</sup> Email from Oliver Slosser, Las Virgenes Municipal Water District to Adams Broadwell Joseph & Cardozo, RE: Public Records Act Request – Pure Water Project – Las Virgenes-Triunfo (SCH No. 2021090157) (Sept. 19, 2022) (responding to ABJC request for “Reports generated related to the general biological surveys conducted on January 13 and 14, 2022.” Mr. Slosser responded: “No reports were generated related to the general biological surveys conducted on January 13 and 14, 2022.”).

<sup>59</sup> Smallwood Comments, p. 21.

<sup>60</sup> DPEIR, p. 5-2.

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Act.”<sup>61</sup> Species identified as BCC qualify for special-status under CEQA Guidelines § 15380(b)(2)(B), which permits a species to be designated as “rare” if the “species is likely to become endangered within the foreseeable portion throughout all or a significant portion of its range and may be consider ‘threatened’ as that term is used in the ESA.”<sup>62</sup> Therefore, the DPEIR should have disclosed species designated as BCC with the potential to occur in the Project vicinity. However, the DPEIR entirely omits discussion of BCC-designated species identified in violation of CEQA. Dr. Smallwood observed numerous BCC-designated species at the Agoura Road and Reservoir sites,<sup>63</sup> but the DPEIR omits analysis of BCC-designated species.

Moreover, the DPEIR asserts that “[n]o special-status wildlife were observed during the general wildlife surveys,” which is clearly erroneous given the general biological surveys identified BCC-designated species.<sup>64</sup> For example, the DPEIR discloses that a Nuttall’s woodpecker was observed during the general biological survey.<sup>65</sup> Because the Nuttall’s woodpecker is a BCC-designated species, the DPEIR’s assertion is not supported by the substantial evidence presented in the DPEIR itself.

Additionally, the DPEIR notes that gulls (*Larus sp*) were observed onsite during the general biological survey.<sup>66</sup> The DPEIR’s description of this species is unclear and cannot be verified. During Dr. Smallwood’s survey of the Project site, he observed Western gulls (a BCC-designated species) near the Project site. As discussed above, BCC-designated are special-status species under CEQA and, therefore, the DPEIR’s analysis of this species is incomplete and unsupported by substantial evidence.

Further, the DPEIR’s baseline discussion relies on the lack of any positive identification of a species in CDFW’s California Natural Diversity Database (“CNDDDB”) to assert that the Project site does not contain special-status species. But the absence of special-status species in the CNDDDB does not necessarily indicate absence of special-status species from the Project area. As Dr. Smallwood explains, the DPEIR makes inappropriate use of CNDDDB to assess habitat of special-status species at the AWPf sites.<sup>67</sup>

<sup>61</sup> 16 U.S.C § 2912(a)(2)

<sup>62</sup> 14 § 15380(b)(2)(B).

<sup>63</sup> Smallwood Comments, pp. 25-29.

<sup>64</sup> DPEIR, p. 5-6.

<sup>65</sup> Smallwood Comments, p. 22.

<sup>66</sup> DPEIR, p. 5-8.

<sup>67</sup> Smallwood Comments, p. 23.

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The DPEIR screens out species from further consideration if CNDDDB occurrence records do not exist within 5 miles of the Project, which includes the AWPf alternatives and the various pipeline routes.<sup>68</sup> By relying on CNDDDB records to determine species' absences, the DPEIR misapplies the database, because CNDDDB was not designed to support absence determinations or to screen out species from characterization of a site's wildlife community.<sup>69</sup> As CDFW notes in the database guidelines, "[t]he CNDDDB is a positive sighting database. It does not predict where something may be found. [CDFW] map occurrences only where we have documentation that the species was found at the site. There are many areas of the state where no surveys have been conducted and therefore there is nothing on the map. That does not mean that there are no special status species present."<sup>70</sup>

Because the Western gull, the California thrasher and multiple other species were not assigned special status until 2021, these species would have lacked many records in CNDDDB when the Notice of Preparation was issued.<sup>71</sup> The lack of CNDDDB records has nothing to do with true geographic distributions of the species at issue.<sup>72</sup> And because negative findings are not reported to CNDDDB, it cannot serve the basis for establishing the likelihood of a species to occur in the Project area (such as low occurrence likelihood).<sup>73</sup> Therefore, the DPEIR's reliance on the CNDDDB to assert the absence of special status species in the environmental setting discussion is not supported by substantial evidence.

Dr. Smallwood observed a bat flying at the Project site, but the DPEIR fails to mention the occurrence of bats, or the use of the Project site as a wildlife corridor for bats to forage, den, or roost, or seek out water.<sup>74</sup> Dr. Smallwood opines that the bat observed onsite was a *Myotis*,<sup>75</sup> many of which are species that are "imperiled or at high risk of imperilment" according to the Western Bat Working Group,<sup>76</sup> or listed as special status by the U.S. Forest Service and Bureau of Land



<sup>68</sup> Smallwood Comments, p. 23.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*; State of California Department of Fish and Game, California Natural Diversity Database, CNDDDB Data Use Guidelines, p. 12. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27285&inline>.

<sup>71</sup> Smallwood Comments, p. 23.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* at 41.

<sup>75</sup> *Id.* at 40.

<sup>76</sup> Western Bat Working Group, Species Matrix. Available at: <http://wbwg.org/matrices/species-matrix/>.

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Management.<sup>77</sup> In fact, all five of the species of *Myotis* in the Project area are ranked by the Western Bat Working Group as either moderate or high priority for conservation.<sup>78</sup> But, analysis of special-status bats was omitted from the DPEIR despite the presence of special-status bats in the Project area, as evidenced by Dr. Smallwood's observations. The DPEIR's failure to identify and analyze all special-status wildlife that could potentially be impacted by construction and operation of the Project renders the DPEIR inadequate as a matter of law, and renders the conclusion that impacts to special-status wildlife are less than significant unsupported by substantial evidence.

Dr. Smallwood surveyed the AWPf sites and observed 120 special-status species of vertebrate wildlife, and another 2 species of invertebrate wildlife.<sup>79</sup> The DPEIR's failure to disclose the existence of all special-status species on the Project site prevents meaningful analysis of the Project's environmental impacts, and is a failure to proceed in the manner required by law. Moreover, the DPEIR's discussion of the baseline conditions is not supported by substantial evidence. The DPEIR must be revised and recirculated to accurately disclose the existing environmental setting of the Project.

**V. THE DPEIR FAILS TO ACCURATELY ANALYZE, QUANTIFY, AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS TO AIR QUALITY**

An EIR must fully disclose all potentially significant impacts of a Project and implement all feasible mitigation to reduce those impacts to less than significant levels.<sup>80</sup> The lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.<sup>81</sup> An agency cannot conclude that an impact is less than significant unless it produces rigorous analysis and concrete substantial evidence justifying the finding.<sup>82</sup> Here, the DPEIR fails to adequately analyze the Project's construction and operational emissions, in violation of CEQA.

<sup>77</sup> Western Bat Working Group, Western Bat Species. Available at: <http://wbwg.org/western-bat-species/>.

<sup>78</sup> Smallwood Comments, p. 40; see also Western Bat Working Group, Species Matrix, <http://wbwg.org/matrices/species-matrix/> (last visited Oct. 7, 2022).

<sup>79</sup> Smallwood Comments, p. 40.

<sup>80</sup> 14 CCR § 15121.

<sup>81</sup> *Id.* § 15064(b).

<sup>82</sup> *Kings County Farm Bureau v. Hanford* (1990) 221 Cal.App.3d 692, 732.

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**A. The DPEIR Fails to Analyze the Project’s Potentially Significant Impacts from Construction and Operation Emissions**

*1. The DPEIR Fails to Analyze the Impact of Diesel Particulate Matter Emissions from Construction of Agoura Road AWPF*

The DPEIR recognizes diesel exhaust as a toxic air contaminant (“TAC”) that may pose a threat to human health.<sup>83</sup> TACs refer to a diverse group of air pollutants that can cause chronic and acute adverse effects on human health. The DPEIR provides an extremely brief, conclusory discussion of potential health impacts associated with diesel particulate matter (“DPM”) produced from construction activities.<sup>84</sup> It states:

Exhaust emissions from construction equipment would also contain TACs, such as diesel particulate matter, that have potential cancer and noncancer chronic health effects. Although some of the project’s construction activities may be near residential areas, construction activities would be short term and limited to a relatively small area where only a few pieces of construction equipment would be operating at a time. [¶] Exposures from the construction activity TAC emissions would be short term in nature, and long-term exposure to diesel particulate matter from construction would not occur. In addition, project construction is required to implement BMPs and follow the emission control measures described in the South Coast AQMD and Ventura County APCD CEQA guidelines, including minimizing idling times and maintaining equipment in good condition. These measures would help minimize exposure of nearby sensitive receptors to construction-related pollutants.<sup>85</sup>

Even though the DPEIR acknowledges potential cancer and non-cancer chronic health effects associated with construction activities, the DPEIR concludes the impact would be less than significant.<sup>86</sup>

“[A] sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the

<sup>83</sup> DPEIR, p. 4-5.  
<sup>84</sup> *Id.* at 4-13.  
<sup>85</sup> *Id.*  
<sup>86</sup> *Id.* at 4-9, 4-13.

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nature and magnitude of the impact.”<sup>87</sup> The DPEIR lacks substantial evidence to support its significance conclusion because it failed to analyze the potentially significant health impacts to sensitive receptors located 360 feet away from the proposed Agoura Road AWPF who would be exposed to DPM emissions during construction.<sup>88</sup>

The Office of Environmental Health Hazard Assessment (“OEHHA”) has developed guidelines for preparation of a health risk assessment (“HRA”).<sup>89</sup> OEHHA recommends that a HRA be performed for projects lasting longer than 2 months.<sup>90</sup> For projects lasting more than 6 months, OEHHA recommends that exposure be evaluated for the duration of the project.<sup>91</sup> Here, construction of the Agoura AWPF would last 15 months (August 2015 to November 2027).<sup>92</sup> Moreover, as Dr. Clark notes, other lead agencies have required a quantitative analysis of TACs from diesel exhaust in CEQA documents.<sup>93</sup> Further, Dr. Clark concludes that the JPA’s analysis ignores the presence of TACs being emitted with diesel exhaust during the construction and operational phases of the project without making any attempt to quantify the impacts.<sup>94</sup>

The South Coast Air Quality Management District (“SCAQMD”) has established significant thresholds for TACs.<sup>95</sup> The significance threshold for cancer risk is 10 in one million.<sup>96</sup> The significance threshold for cancer burden is 0.5 excess cancer cases (in areas greater than or equal to one in one million).<sup>97</sup> And the significance threshold for chronic and acute hazard index is greater than or equal to 1 (project increment).<sup>98</sup> None of these significance thresholds are disclosed in the DPEIR section discussing the SCAQMD’s CEQA air quality significance thresholds

<sup>87</sup> *Sierra Club*, 6 Cal.5th at 519.

<sup>88</sup> Clark Comments, p. 7.

<sup>89</sup> Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* (Feb. 2015), Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>.

<sup>90</sup> *Id.* at p. 8-18.

<sup>91</sup> *Id.*

<sup>92</sup> DPEIR, p. 2-21.

<sup>93</sup> Clark Comments at p. 6.

<sup>94</sup> *Id.*

<sup>95</sup> South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds* (last revised April 2019). Available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

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(Section 4.3.1.1).<sup>99</sup> The DPEIR must analyze the significance of DPM impacts from construction of the Agoura Road AWPf, and should utilize the SCAQMD thresholds for TACs given that it utilized the air district's thresholds to analyze the impact of criteria pollutants.

The DPEIR is legally inadequate for the same reasons identified by the California Supreme Court in *Sierra Club v. County of Fresno*. In that case, the Supreme Court found "the EIR insufficient because [the lead agency] failed to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences."<sup>100</sup> "Without such information, the general public and its responsible officials cannot make an informed decision on whether to approve the project."<sup>101</sup> The DPEIR should be revised and recirculated to include a quantified health risk assessment to connect the Project's impacts with human health consequences and, if health risk is found to be significant, to implement all feasible mitigation to reduce impacts to less than significant levels.

2. *The DPEIR Underestimates DPM Emissions Caused by Operation of Diesel-Powered Emergency Generators at the Agoura Road AWPf*

The DPEIR proposes to utilize two diesel-powered emergency generators at the AWPf.<sup>102</sup> The DPEIR includes discussion of air quality and greenhouse gas ("GHG") impacts associated with routine maintenance and testing of the emergency generators.<sup>103</sup> It claims that exposure to DPM emissions from emergency generators would be minimal because emergency testing would not occur daily and typically last less than an hour.<sup>104</sup> As a result, the DPEIR concludes impacts would be less than significant.<sup>105</sup>

However, the DPEIR excludes an analysis of air quality and GHG impacts associated with operation of the generators during emergencies. SCAQMD regulations allow emergency generators to operate up to 200 hours per year, including testing and maintenance activities.<sup>106</sup>

<sup>99</sup> DPEIR, p. 4-7.

<sup>100</sup> *Sierra Club*, 6 Cal.5th at 525.

<sup>101</sup> *Santa Clarita Organization for Planning the Environment* 106 Cal.App.4th 715, 724.

<sup>102</sup> DPEIR, pp. 2-3, 4-8; see also *id.*, Appendix A, p. 2 (Number of Generators: 2).

<sup>103</sup> DPEIR, p. 4-11 to 4-12.

<sup>104</sup> *Id.*, at 4-12.

<sup>105</sup> *Id.*

<sup>106</sup> Clark Comments at p. 4; South Coast Air Quality Management District, Rule 1470; Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Engines (last amended





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Emergency operation of the diesel-powered generators is likely, especially given the recent increase in Public Safety Power Shutoffs (“PSPS”) and extreme heat events (“EHEs”). EHEs are defined as periods where in the temperatures throughout California exceed 100 degrees Fahrenheit. The number of EHEs is likely to increase in California with the continuing change in climate the State is currently undergoing. In 2021, the Governor of California declared that during extreme heat events the use of stationary generators shall be deemed an emergency use under 17 CCR § 93115.4(a)(30)(A)(2).

PSPS events are also becoming more frequent. According to the California Public Utilities Commission’s 2019 PSPS report, utilities implemented over 800 PSPS events that impacted almost 973,000 customers (~7.5% of households in California), of which 854,000 were residential customers.<sup>107</sup> In 2019, the total duration of the PSPS events lasted between 141 hours to 154 hours.<sup>108</sup>

CARB’s data also indicated that on average each of these customers had about 43 hours of power outage in October 2019.<sup>109</sup> Using the actual emission factors for each diesel BUG engine in the air district’s stationary backup generator database, CARB staff calculated that the 1,810 additional stationary generators (like those proposed for the Project) running during a PSPS in October 2019 generated 126 tons of NO<sub>x</sub>, 8.3 tons of particulate matter, and 8.3 tons of DPM.<sup>110</sup> For every PSPS or EHE triggered during the operational phase of the project, significant concentrations of DPM will be released.

The DPEIR should evaluate operational DPM impact from diesel-fired emergency generators based on the maximum number of hours the generators are allowed to operate under SCAQMD rules. At a minimum, the DPEIR should evaluate impacts based on 100 hours of emergency operation in addition to testing and maintenance. Such an analysis would be consistent with the guidance issued by the Bay Area Air Quality Management District (“BAAQMD”).<sup>111</sup> BAAQMD

Oct. 1, 2021). Available at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1470.pdf?sfvrsn=4>.

<sup>107</sup> California Air Resources Board, Potential Emissions Impacts of Public Safety Power Shutoff (PSPS) (January 30, 2020). Available at: [https://ww2.arb.ca.gov/sites/default/files/2020-01/Emissions Inventory Generator Demand%20Usage During Power Outage 01 30 20.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-01/Emissions%20Inventory%20Generator%20Usage%20During%20Power%20Outage%2001%2030%2020.pdf).

<sup>108</sup> *Id.*

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> Bay Area Air Quality Management District, Policy: Calculating Potential to Emit for Emergency Backup Power Generators (June 3, 2019). Available at:

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found that "100 hours represents a reasonable worst-case assumption regarding the amount of time during any given year that a facility could have to operate without outside power, which would necessitate emergency operation of the facility's backup generator(s).<sup>112</sup> The presumption of 100 hours per year is consistent with the U.S. Environmental Protection Agency's approach to calculating the potential to emit of emergency generators.<sup>113</sup>



The JPA must recirculate an adequate DEIR which includes an analysis of the operation of the emergency generators that will occur at the Project site that is not accounted for in the current air quality and GHG analyses.

**VI. THE DPEIR FAILS TO ADEQUATELY ANALYZE IMPACTS TO BIOLOGICAL RESOURCES**

The DPEIR fails to adequately analyze the Project's potentially significant impacts to biological resources. First, the DPEIR fails to analyze potentially significant impacts to special-status fish in the Malibu Creek. Dr. Smallwood found that the DPEIR's conclusion that the Project's impacts to special-status fish species are less than significant is not supported by substantial evidence, as shown below. Second, the DPEIR fails to accurately analyze and mitigate potentially significant impacts from habitat loss and habitat fragmentation. Third, the DPEIR fails to analyze the Project's value as a habitat corridor, and the Project's significant interference with the movement of resident migratory fish and wildlife. These impacts must be analyzed and mitigated in a revised and recirculated DPEIR.

**A. The DPEIR Fails to Accurately Analyze Potentially Significant Impacts to Special-Status Fish in Malibu Creek**

Discharges from the Tapia WRF make up a considerable portion of flow during dry periods.<sup>114</sup> The DPEIR concludes that the Project would cause reduction in discharges from Tapia WRF between November 15 and April 15 because the current NPDES permit prohibits discharges between April 15 and November 15.<sup>115</sup> But the DPEIR claims that construction of the SFAP would help maintain



[https://www.baaqmd.gov/~media/files/engineering/policy\\_and\\_procedures/banking-and-offsets/calculating-pte-for-emergency-generators-06032019-pdf.pdf?la=en](https://www.baaqmd.gov/~media/files/engineering/policy_and_procedures/banking-and-offsets/calculating-pte-for-emergency-generators-06032019-pdf.pdf?la=en).

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> DPEIR, p. 5-9.

<sup>115</sup> *Id.* at 5-27.

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minimum instream flows in Malibu Creek during the summer and would support the instream flow requirements once the Project is operation.<sup>116</sup> As a result, the DPEIR concludes the Project would have less than significant impact special-status fish species which rely upon Malibu Creek.<sup>117</sup>

The DPEIR's conclusion that the Project's impacts to special-status fish species are less than significant is not supported by substantial evidence. As Dr. Smallwood explains, the four special-status fish species identified in the DPEIR "appear on the precipice of extirpation from Malibu Creek, which has been disturbed in multiple ways and which faces a new source of stress from the proposed project."<sup>118</sup> In fact, according to the DPEIR, summer and fall flows in Malibu Creek have only barely met the instream flow requirements of 2.5 cubic feet per second ("cfs") established by Tapia WRF's NPDES permit to sustain endangered species habitat during dry periods.<sup>119</sup> Given current conditions, there is no margin for error.<sup>120</sup>

The JPA disregards CDFW's recommendation that the DPEIR "disclose whether the Project would reduce flows below 2.5 cfs or eliminate flows entirely, both during the summer and/or winter season. If the Project proposes to modify flow release, the PEIR should provide a clear explanation of when those flow reductions would occur and how much flow would be reduced based on the time of year."<sup>121</sup> The DPEIR does not disclose when the flows may be reduced below 2.5 cfs, nor does the DPEIR analyze impacts to fishes based on the additional recommended factors in the CDFW letter, including "water availability; water flows; water quality; benthic invertebrates and microorganisms; and habitat requirements (e.g., pools, slower moving waters, water temperature, substrate, vegetation)."<sup>122</sup> Absent



<sup>116</sup> DPEIR, p. 5-27 to 5-28.

<sup>117</sup> *Id.* at 5-28.

<sup>118</sup> Smallwood Comments, p. 31.

<sup>119</sup> *Id.* at p. 32 (citing DPEIR, p. 11-7 (Figure 11-4: Tapia Discharge Contribution to Low Flows), p. 11-19 (Figure 11-5: Streamflow Conditions in Malibu Creek During Low-flow Conditions)).

<sup>120</sup> Smallwood comments, p. 32.

<sup>121</sup> Letter from California Department of Fish and Wildlife to Las Virgenes-Triunfo Joint Powers Authority, Notice of Preparation of a Programmatic Environmental Impact Report for the Pure Water Project Las Virgenes-Triunfo, SCH #2021090157, Los Angeles and Ventura County (Oct. 11, 2021) p. 4. Available at: [https://files.ceqanet.opr.ca.gov/272736-1/attachment/2OSWBLLAAzKAeKqIVXoXv\\_MHv9wVX8zzjWzFqBcEaEREcpu4N1\\_5piR5xnRwp0wAGZitVaYGP3gXonZEEQ](https://files.ceqanet.opr.ca.gov/272736-1/attachment/2OSWBLLAAzKAeKqIVXoXv_MHv9wVX8zzjWzFqBcEaEREcpu4N1_5piR5xnRwp0wAGZitVaYGP3gXonZEEQ) ("CDFW Letter").

<sup>122</sup> *Id.* at 5.

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this information, the DPEIR lacks substantial evidence to conclude that impacts to fish in Malibu Creek will be less than significant.<sup>123</sup>

Further, the DPEIR concludes that “the existing suboptimal physical habitat conditions are expected to continue in Malibu Creek.”<sup>124</sup> Based on this, the DPEIR illogically concludes that the Project would have less than significant impacts on Southern California steelhead and its critical habitat.<sup>125</sup> Not only will the Project continue to result in suboptimal conditions for steelhead, but may exacerbate the habitat conditions for steelhead resulting in a significant and unmitigated impact to the endangered Southern California steelhead.<sup>126</sup> The DPEIR must be revised to accurately analyze the potentially significant impact to Southern California steelhead.

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**B. The DPEIR Fails to Accurately Analyze and Mitigate Potentially Significant Impacts from Habitat Loss and Habitat Fragmentation**

The DPEIR identifies four individual species and “[o]ther migratory birds” as special-status species with the potential to occur in the Project area.<sup>127</sup> The DPEIR claims that habitat loss from the development of the Project is not anticipated to significantly impact special-status wildlife due to relatively low acreage, proximity to existing development, and the amount of remaining suitable habitat in the surrounding area.<sup>128</sup> As a result, the DPEIR concludes less than significant with implementation of MM 5-2, which requires preconstruction surveys for special-status wildlife that potentially occur within the construction area.<sup>129</sup> The DPEIR’s conclusory discussion of habitat loss lacks any substantive discussion or analysis, in violation of CEQA.

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As Dr. Smallwood explains, the habitat loss associated with Project construction and operation will be severe, significant, and remains unmitigated. Dr. Smallwood calculated that construction and operation of the Agoura Road AWPf would result in an estimated loss of 144 bird nests, while construction and

<sup>123</sup> DPEIR, p. 5-28.

<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> Smallwood Comments, p. 32.

<sup>127</sup> DPEIR, p. 5-26 to 5-27 (Coastal California gnatcatcher, Coastal whiptail, Southern California legless lizard, and Western Pond turtle).

<sup>128</sup> DPEIR, pp. 5-26 to 5-27.

<sup>129</sup> *Id.*

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operation of the AWPF would result in an estimated loss of 350 bird nests.<sup>130</sup> Dr. Smallwood concludes that construction of the proposed building at either alternative site would result in the average of at least a 93% reduction in the abundance of each of the special-status species detected by Dr. Smallwood's team, as well as of each of the special-status species not detected due to insufficient survey effort.<sup>131</sup>

Regrettably, Dr. Smallwood concluded that few if any oak titmouse (a BCC-designated species) would survive construction of the Project or remain on the Project site.<sup>132</sup> The same would be true for California thrasher, Southern California rufous-crowned sparrow, Nuttall's woodpecker and all of the other special-status species.<sup>133</sup> Although the DPEIR acknowledges that the Southern California rufous-crowned sparrow is a special-status species and has potential to occur within the Project area,<sup>134</sup> it does not discuss this species in the impact analysis.<sup>135</sup>

The DPEIR also fails to analyze impacts caused by habitat fragmentation. Habitat fragmentation occurs when large expanse of habitat is transformed into a number of smaller patches of smaller total area isolated from each other by a matrix of habits unlike the original.<sup>136</sup> As Dr. Smallwood explains, the Project area is undergoing severe habitat fragmentation, which poses the greatest threat to wildlife conservation.<sup>137</sup> He found that the project would contribute further to habitat fragmentation in an environmental setting in which wildlife would be devastated by further habitat fragmentation.<sup>138</sup>

The DPEIR fails to adequately analyze and mitigate the Project's impacts associated with habitat loss and habitat fragmentation, awarding only three conclusory sentences to the habitat loss, and no discussion or analysis of habitat fragmentation. The DPEIR must be revised and recirculated to adequately analyze

<sup>130</sup> Smallwood Comments, p. 33.

<sup>131</sup> *Id.* at 35.

<sup>132</sup> *Id.* at 33.

<sup>133</sup> *Id.*

<sup>134</sup> DPEIR, p. 5-2, p. 5-6.

<sup>135</sup> *Id.* at 5-26 to 5-27.

<sup>136</sup> Jordan E. Rogan, et.al., Impacts of Habitat Loss and Fragmentation on Terrestrial Biodiversity (2018) Reference Module in Earth Systems and Environmental Sciences. Available at: [https://www.sciencedirect.com/topics/earth-and-planetary-sciences/habitat-fragmentation#:~:text=Habitat%20fragmentation%20is%20defined%20as.original%20\(Fahrig%20%202003\).](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/habitat-fragmentation#:~:text=Habitat%20fragmentation%20is%20defined%20as.original%20(Fahrig%20%202003).)

<sup>137</sup> Smallwood Comments, p. 32.

<sup>138</sup> *Id.*

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the Project's impacts to habitat loss and habitat fragmentation, as required by CEQA.<sup>139</sup>

**C. The DPEIR Fails to Analyze the Project Significant Impacts to Wildlife Movement**

The DPEIR concludes impacts to wildlife corridors would be less than significant because the Project would not produce new bottlenecks to wildlife movement in the area and its proximity to existing barriers and development.<sup>140</sup> However, the DPEIR fails to adequately analyze the Project impacts associated with the interference with the movement of native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites, as required by CEQA Guidelines Appendix G.

As Dr. Smallwood explains, the project would cut wildlife off from stopover and staging opportunities, forcing volant wildlife to travel even farther between remaining stopover sites.<sup>141</sup> This results in a significant impact due to increased risk of starvation, exhaustion, and disorientation from longer duration between stopover sites.<sup>142</sup> The DPEIR does not include an analysis of volant wildlife movement, instead referring only to linear features which would occur only during construction.<sup>143</sup> Therefore, the analysis ignores the impacts from the loss of wildlife movement opportunities over the estimated 30-year lifetime of the Project. This impact must be analyzed in a revised and recirculated DPEIR before the Project can be approved.

**VII. THE DPEIR FAILS TO ADEQUATELY MITIGATE IMPACTS TO BIOLOGICAL RESOURCES**

CEQA requires that "an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment."<sup>144</sup> Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments.<sup>145</sup> Failure to include enforceable mitigation measures

<sup>139</sup> CEQA Guidelines Appendix G.

<sup>140</sup> DPEIR, p. 5-30.

<sup>141</sup> Smallwood Comments, p. 36.

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> PRC § 21002.1.

<sup>145</sup> 14 CCR § 15126.4(a)(2).

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is considered a failure to proceed in the manner required by CEQA.<sup>146</sup> In order to meet this requirement, mitigation measures must be incorporated directly into the EIR to be enforceable.<sup>147</sup> “An EIR is inadequate if [t]he success or failure of mitigation efforts ... may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR.”<sup>148</sup>

Formulation of mitigation measures shall not be deferred until “some future time.”<sup>149</sup> Deferring formulation of mitigation measures to post-approval studies is generally impermissible.<sup>150</sup> Mitigation measures adopted after project approval deny the public the opportunity to comment on the project as modified to mitigate impacts.<sup>151</sup> “By deferring environmental assessment to a future date, the conditions run counter to that policy of CEQA which requires environmental review at the earliest feasible stage in the planning process.”<sup>152</sup>

The specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project’s environmental review provided that the agency: (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard and that will [be] considered, analyzed, and potentially incorporated in the mitigation measure.<sup>153</sup> Courts have held that simply requiring a project applicant to obtain a future report and then comply with the report’s recommendations is insufficient to meet the standard for properly deferred mitigation.<sup>154</sup>

MM 5-4 requires the preparation and implementation of a mitigation plan for oak trees and oak tree natural communities.<sup>155</sup> MM 5-4 improperly defers

<sup>146</sup> *San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.App.4th 645, 672.

<sup>147</sup> *Lotus v. Dept of Transportation* (2014) 223 Cal. App. 4th 645, 651-52.

<sup>148</sup> *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, quoting *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 92, quoting *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645-670.

<sup>149</sup> *Id.* at § 15126.4(a)(1)(B).

<sup>150</sup> *Sundstrom*, 202 Cal.App.3d at 308-09; PRC § 21061.

<sup>151</sup> *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1393; *Quail Botanical*, 29 Cal.App.4th at p. 1604, fn. 5.

<sup>152</sup> *Sundstrom*, 202 Cal.App.3d at 305.

<sup>153</sup> 14 CCR § 15126.4(a)(1)(B).

<sup>154</sup> *Ibid.*

<sup>155</sup> DPEIR, p. 5-33.

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mitigation by requiring that the future plan establish success criteria, instead of expressly identifying the success criteria in measure.<sup>156</sup> The DPEIR does not state why specifying the performance standards is impractical or infeasible.

The DPEIR's failure is similar to *Preserve Wild Santee v. City of Santee*. In that case, a city impermissibly deferred mitigation where the EIR did not state why specifying performance standards for mitigation measures "was impractical or infeasible at the time the EIR was certified."<sup>157</sup> The court determined that although the city must ultimately approve the mitigation standards, this does not cure these informational defects in the EIR.<sup>158</sup> Here, the DPEIR's failure to specify performance standards for the MM 5-2 results in impermissibly deferred mitigation, in violation of CEQA. The DPEIR must be revised and recirculated to adequately mitigate impacts to oak trees and oak tree natural communities.

A case study from northwestern California similarly illustrates why oaks have difficulty regenerating on sites where oaks were removed.<sup>159</sup> The study authors determined that deciduous oaks, particularly blue oak, required artificial plantings given shade and protection from browsing for successful restoration.<sup>160</sup> Restoration of a site on the Sierra Foothill Range and Field Station where blue oaks had been completely removed in the 1960s was finally successful after 2 attempts were thwarted by grasshopper and rodent browsing.<sup>161</sup> The oak tree mitigation plan should only include replanting if it also includes measures to ensure the trees are given shade and protection from browsing for successful restoration.

Moreover, MM 5-1 and MM 5-2 does not mitigate impacts to special-status species caused by habitat fragmentation. MM 5-2 only requires preconstruction surveys for the Coastal California Gnatcatcher, special-status reptiles, and nesting birds.<sup>162</sup> While MM 5-2 may reduce the Project's construction-related impacts, it does not reduce the habitat fragmentation impacts caused by operation of the

<sup>156</sup> DPEIR, p. 5-33.

<sup>157</sup> *Preserve Wild Santee*, 210 Cal.App.4th at 281.

<sup>158</sup> *Id.*

<sup>159</sup> Brooks, Colin N.; Merenlender, Adina M. 2001 *Determining the pattern of oak woodland regeneration for a cleared watershed in northwest California: a necessary first step for restoration*, Restoration Ecology, 9(1): 1-12.

<sup>160</sup> *Id.*

<sup>161</sup> Fryer, Janet L. 2007. *Quercus douglasii* Fire Effects Information System, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory, Available at: <https://www.fs.fed.us/database/feis/plants/tree/quedou/all.html>.

<sup>162</sup> DPEIR, pp. 5-32 to 5-33.

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Project.<sup>163</sup> Dr. Smallwood concluded that significant numbers of animals would be lost as a direct result of construction and as the indirect result of denial of reproductive productivity due to habitat fragmentation and habitat loss.<sup>164</sup>

Additionally, Dr. Smallwood noted that MM 5-1 and MM 5-2 are inadequate absent a “qualified bat biologist...completing a protocol-level detection survey for bats” to determine whether bats roost in the area and whether bats forage onsite.<sup>165</sup> Absent such analysis, these mitigation measures are inadequate. The DPEIR must be revised and recirculated to adequately mitigate significant impacts to species at the Project site.

**VIII. THE DPEIR FAILS TO ADEQUATELY ANALYZE IMPACTS TO HYDROLOGY AND WATER QUALITY**

The DPEIR failed to adequately analyze the Project’s potentially significant impacts to hydrology and water quality. First, the DPEIR failed to analyze potentially significant impacts associated with groundwater recharge. Second, the DPEIR fails to analyze potentially significant impacts to water quality from PFAS contamination. These impacts must be analyzed and mitigated in a revised and recirculated DPEIR.

**A. The DPEIR Failed to Adequately Analyze Groundwater Impacts from Source Water Augmentation**

The DPEIR concludes source water augmentation using groundwater from the Los Robles well would result in less than significant impacts because the annual volume of groundwater production from the well would not exceed the estimated sustainable yield of the groundwater basin.<sup>166</sup> While the DPEIR estimates that the annual volume production for the well is between 400 and 700 AFY,<sup>167</sup> the DPEIR does not disclose the sustainable yield for the groundwater basin. The DPEIR’s analysis of groundwater impacts is inadequate because it does not connect the groundwater extraction rate to the sustainable yield. Such a discussion would allow the public to make an informed decision, as CEQA requires.<sup>168</sup>

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<sup>163</sup> Smallwood Comments, p. 35.

<sup>164</sup> *Id.*

<sup>165</sup> *Id.*, at 40.

<sup>166</sup> DPEIR, p. 11-21.

<sup>167</sup> *Id.*

<sup>168</sup> *Sierra Club*, 6 Cal.5th at 521.

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The DPEIR also fails to support its conclusion that groundwater impacts are less than significant with substantial evidence. A study on extended pumping at the Los Robles well performed by the City of Thousand Oaks demonstrates that “700 AFY production would require additional average annual recharge from average rainfall conditions to maintain a sustainable yield.”<sup>169</sup> Because the DPEIR does not include any mitigation measures limiting the amount of groundwater that can be utilized by the Project for source water augmentation, the DPEIR’s conclusion that the impact is less than significant is unsupported by substantial evidence.



Mr. Bailey confirms that the results of the long-term pumping test described in the Kennedy Jenks Report establish that exceeding a withdrawal rate greater than 600 AFY in the Los Robles could have a significant impact on the aquifer.<sup>170</sup> The DPEIR must consider adding mitigation measures to ensure impacts to groundwater recharge are reduced to less than significant.<sup>171</sup>

**B. The DPEIR Failed to Adequately Analyze Groundwater Contamination**

Additionally, the DPEIR fails to adequately analyze potentially significant groundwater impacts to the Los Robles well from the TFX Aviation site. Mr. Bailey concludes that absent assurance of whether the DPEIR evaluated both shallow and deeper groundwater systems and if numerical modeling was used to estimate potential impacts, the public cannot determine whether the JPA’s analysis is supported by substantial evidence.<sup>172</sup> In fact, substantial evidence supports the assertion that the Project will result in potentially significant and unmitigated impacts to groundwater contamination at the TFX Aviation site.<sup>173</sup>



The DPEIR recognizes that DTSC expressed concerns that additional pumping could destabilize the groundwater contamination plume at the TFX Aviation site.<sup>174</sup> The DPEIR asserts that source water augmentation system impacts are potentially significant but would be reduced to a less than significant

<sup>169</sup> City of Thousand Oaks, Thousand Oaks Extended Pumping at Los Robles Golf Course Well, Kennedy Jenks (Nov. 9, 2021) p. 4-8, 7-1.  
<sup>170</sup> Bailey Comments, p. 5; City of Thousand Oaks, Thousand Oaks Extended Pumping at Los Robles Golf Course Well, Kennedy Jenks (Nov. 9, 2021) p. 4-8, 7-1.  
<sup>171</sup> Bailey Comments, p. 5.  
<sup>172</sup> *Id.*  
<sup>173</sup> *Id.*  
<sup>174</sup> DPEIR, p. 10-12.

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level with the implementation monitoring program required by MM 10-2.<sup>175</sup> However, Mr. Bailey found that MM 10-2 is inadequate because the JPA has provided the public no certainty that the monitoring program would adequately address the potentially significant impacts because it only provides an early warning mechanism if impacts are occurring.<sup>176</sup> The DPEIR must be revised and recirculated to provide binding mitigation to mitigate groundwater and water quality impacts.

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**IX. THE DPEIR FAILS TO ADEQUATELY MITIGATE IMPACTS TO HYDROLOGY AND WATER QUALITY**

MM 10-2 establishes a monitoring program for the Los Robles Well.<sup>177</sup> The monitoring program requires a quarterly review groundwater level changes and migration of the groundwater plumes.<sup>178</sup> It also requires an assessment of changes in hydraulic control of the TFX Aviation groundwater plume.<sup>179</sup> The monitoring program begins after pumping resumes at the Los Robles well. Monitoring may be reduced to semiannually or annual if there is no destabilization of the groundwater plume (with the time frame provided in a sampling plan submitted to DTSC prior to well operation).<sup>180</sup> If monitoring indicates that the hydraulic control of the groundwater plume is being affected, the JPA must reassess the project impact on plume migration in the next quarter.<sup>181</sup>

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MM 10-2 constitutes impermissibly deferred mitigation because it lacks performance standards. As Mr. Bailey explains, the monitoring program only acts as early warning system.<sup>182</sup> If the groundwater plume is being affected, MM 10-2 does not require any action to correct the impact. Rather, MM 10-2 simply requires that the JPA reanalyze the project's impact on the groundwater plume in the next quarter.<sup>183</sup> "Since a groundwater monitoring and sampling plan has not yet been developed, it is not possible to determine if it will ensure that any groundwater contamination impacts are less than significant."<sup>184</sup> The DPEIR must be revised

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<sup>175</sup> DPEIR, p. 10-12.

<sup>176</sup> Bailey Comments at p. 5.

<sup>177</sup> DPEIR, p. 10-12.

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*

<sup>182</sup> Bailey Comments at p. 5.

<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

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and recirculated to adequately mitigate impacts to hydrology and groundwater from Project components.

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**X. THE DPEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE CUMULATIVE IMPACTS**

An EIR must discuss a cumulative impact if the project's incremental effect combined with the effects of other projects is "cumulatively considerable."<sup>185</sup> This determination is based on an assessment of the project's incremental effects "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."<sup>186</sup> "Cumulative impacts" are defined as "two or more individual effects, which, when considered together, are considerable or which compound or increase other environmental impacts."<sup>187</sup> The purpose of this requirement is to avoid "piecemeal" approval of projects without consideration of the total environmental effects the project would have when taken together.<sup>188</sup>

"The analysis should not be so general that the potential combined impacts of the project and a key nearby project are not disclosed."<sup>189</sup> Even though CEQA does not require a quantified analyses on a subject, an EIR's qualitative discussion must not omit meaningful information on a subject from the cumulative impacts analysis.<sup>190</sup> The adequacy of an EIR's discussion of cumulative impacts is determined by a standard of practicality and reasonableness.<sup>191</sup>

**A. The DPEIR Erroneously Excludes Relevant Past, Present and Future Projects from the Cumulative Impact Analysis**

The CEQA Guidelines set forth two methods for satisfying the cumulative impacts analysis requirement: the list-of-projects approach and the summary-of-projections approach.<sup>192</sup> Under either method, an EIR must summarize the

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<sup>185</sup> 14 CCR § 15130(a).

<sup>186</sup> *Id.* § 15065(a)(3); *Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1228; see also 14 CCR § 15355(b).

<sup>187</sup> 14 CCR § 15355.

<sup>188</sup> Cecily Talbert Barelay and Matthew S. Gray, *California Land Use and Planning Law* (Solano Press, 37th ed. 2020) p. 180.

<sup>189</sup> *Environmental Protection & Information Center v. California Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 525; 14 CCR § 15130(b).

<sup>190</sup> *City of Long Beach v. City of Los Angeles* (2018) 19 Cal.App.5th 465, 490.

<sup>191</sup> *Environmental Protection & Information Center*, 44 Cal.4th at 525; 14 CCR § 15130(b).

<sup>192</sup> 14 CCR § 15355.





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expected environmental impacts of the project and related projects, provide a reasonable analysis of cumulative impacts, and examine reasonable options for mitigating or avoiding the project's contribution to any significant cumulative impacts.<sup>193</sup> It should also provide a specific reference to additional information stating where it is available.<sup>194</sup>

Here, the cumulative impacts analysis is inadequate because it is too general. "The analysis should not be so general that the potential combined impacts of the project and a key nearby project are not disclosed."<sup>195</sup> In *City of Long Beach v. City of Los Angeles*, the court held that the fact that "CEQA does not require quantified analysis does not mean that all meaningful information on a subject can be omitted from an EIR's cumulative impacts analysis."<sup>196</sup> The DEIR is inadequate because it omits meaningful information to determine the cumulative impact on agricultural resources.

The DPEIR utilizes the list of projects approach for its cumulative analysis.<sup>197</sup> However, the DPEIR improperly limits the scope of review by identifying only projects "that compare in scale to the Pure Water Project."<sup>198</sup> CEQA does not mandate the list include only projects of the same scale as the proposed project, but rather it requires lead agencies to analyze related or cumulative impacts. Therefore, the DPEIR's cumulative impact analysis fails to comply with CEQA.

The DPEIR fails to analyze "past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency."<sup>199</sup> CEQA Guidelines section 15130 require that an adequate cumulative impact analysis include a list of the projects producing related or cumulative impacts, a summary of the expected environmental impacts from those projects and a reasonable analysis of the cumulative impacts of the relevant projects.<sup>200</sup> But, the DPEIR fails to analyze the dozens of commercial

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<sup>193</sup> 14 CCR § 15130(b)(1)(A), 15130(b)(4)-(5).

<sup>194</sup> *Id.* § 15130(b)(4).

<sup>195</sup> *City of Long Beach*, 19 Cal.App.5th at 490.

<sup>196</sup> *Id.*

<sup>197</sup> DPEIR, p. 18-2.

<sup>198</sup> *Id.*

<sup>199</sup> 14 CCR § 15130(b); DPEIR, p. 18-1.

<sup>200</sup> *Kings County Farm Bureau*, 221 Cal.App.3d at 729.

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projects pending and under construction in the Project vicinity in Thousand Oaks,<sup>201</sup> Ventura County,<sup>202</sup> and Los Angeles County.

When using a list approach, the EIR should define the relevant area affected and provide a reasonable explanation for the geographic limitation used.<sup>203</sup> The DPEIR fails to provide a reasonable explanation of the geographic limitation used in the DPEIR, and states that the cumulative impact analysis focuses only “on construction of Pure Water Project features because construction impacts are the most common and widespread impacts expected to occur over the long project implementation period.”<sup>204</sup> This analysis does not satisfy the purpose of the CEQA requirement to include an analysis of cumulative impacts. An analysis of Project elements is required to be included in the DPEIR, but the CEQA Guidelines also requires analysis of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.<sup>205</sup> The DPEIR omits this analysis in violation of CEQA. The DPEIR must be revised and recirculated to adequately analyze the cumulative impacts associated with the Project.

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**B. The DPEIR Fails to Adequately Analyze Cumulative Biological Impacts**

The DPEIR concludes there would be a significant cumulative effect to biological resources, but then finds that the Project’s cumulative contribution to biological resources impacts would be reduced to less than cumulatively considerable level with implementation of MM 5-1 through 5-4.<sup>206</sup> The DPEIR improperly limited the scope of the cumulative impact analysis by failing to smaller projects with similar impacts on biological resources. For example, as discussed in Section III(A)(1), the DPEIR erroneously piecemeals the SFAP from the DPEIR which prevents a meaningful analysis of impacts on special-status fish. As a result, the Project’s cumulative impacts on special-status fish remain significant and unmitigated.

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<sup>201</sup> City of Thousand Oaks, Development Activity Report (October 2022). Available at: <https://www.toaks.org/home/showpublisheddocument/27570/638003892154270000>.

<sup>202</sup> County of Ventura, Pending Projects as of October 4, 2022. Available at: [https://vcrma.org/docs/images/pdf/planning/pending/2022-10-04\\_pending\\_projects.pdf](https://vcrma.org/docs/images/pdf/planning/pending/2022-10-04_pending_projects.pdf).

<sup>203</sup> Cecily Talbert Barclay and Matthew S. Gray, *California Land Use and Planning Law* (Solano Press, 37th ed. 2020) p. 181.

<sup>204</sup> DPEIR, p. 18-2.

<sup>205</sup> 14 CCR § 15130.

<sup>206</sup> DPEIR, p. 18-3.

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The DPEIR also concludes the Project would contribute to cumulative benefits to biological resources.<sup>207</sup> However, the DPEIR does not cite any evidence in support of this conclusory statement. And Dr. Smallwood provided substantial evidence that the Project would, in fact, not benefit wildlife at either of the AWP sites.<sup>208</sup>

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**C. The DPEIR Fails to Analyze How the Biological Resources Mitigation Measures Reduce the Project's Cumulatively Considerable Impact**

The DPEIR asserts that the Project's cumulative contribution to biological resources would be reduced to less than cumulative considerable with implementation of MM 5-1 through MM 5-4.<sup>209</sup> However, the DPEIR lacks any discussion how these mitigation measures would reduce the Project's cumulative contribution to less than significant. An EIR must discuss a project's cumulative impacts when they are cumulatively considerable,<sup>210</sup> and must also examine reasonable options for mitigating or avoiding the project's contribution to significant cumulative impacts.<sup>211</sup> Here, the DPEIR fails to provide any analysis or substantial evidence that these measures would adequately mitigate the Project's cumulative contribution to significant biological resources impacts.

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**XI. CONCLUSION**

For the reasons discussed above, the DPEIR for the Project remains wholly inadequate under CEQA. It must be thoroughly revised to provide legally adequate analysis of, and mitigation for, all the Project's potentially significant impacts. These revisions will necessarily require that the DPEIR be recirculated for public review. Until the DPEIR has been revised and recirculated, as described herein, the JPA may not lawfully approve the Project.

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<sup>207</sup> *Id.* at 18-3 to 18-4.  
<sup>208</sup> Smallwood Comments, p. 38.  
<sup>209</sup> DPEIR, p. 18-3.  
<sup>210</sup> PRC § 21083(b)(3); 14 CCR § 15130.  
<sup>211</sup> 14 CCR § 15130(b)(3).

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Thank you for your attention to these comments. Please include them in the record of proceedings for the Project.

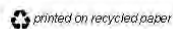
Sincerely,



Kelilah D. Federman

Attachments  
KDF:acp

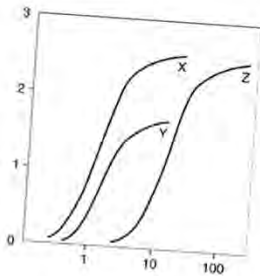
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## **EXHIBIT A**

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October 6, 2022

Adams Broadwell Joseph & Cardozo  
601 Gateway Boulevard, Suite 1000  
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**Attn: Ms. Kelilah D. Federman**

**Subject: Comments On Pure Water Project Las Virgenes-Triunfo  
Project Draft Program Environmental Impact Report  
(SCH # 2021090157).**

Dear Ms. Federman:

At the request of Adams Broadwell Joseph & Cardozo (ABJC), Clark and Associates (Clark) has reviewed materials related to the August 22, 2022 Las Virgenes-Triunfo Joint Powers Authority' (JPA) DPEIR of the above referenced project.

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

**Project Description:**

According to the DPEIR, the Las Virgenes-Triunfo Joint Powers Authority (JPA) is proposing the Pure Water Project – Las Virgenes-Triunfo (Pure Water Project or project), which addresses new stringent water quality standards for discharge to Malibu Creek through a new Advanced Water Purification Facility (AWPF). The AWPF would treat recycled water for indirect potable reuse through reservoir augmentation.

The project consists of treating effluent from the Tapia Water Reclamation Facility (WRF) at an AWPF, discharging the purified water to Las Virgenes Reservoir, and sending the filtered reject stream ("concentrate") for ocean disposal using the Calleguas Salinity Management Pipeline. This Program EIR evaluates all Pure Water



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Project features, including the AWWP, pipelines, a source water augmentation project, and other ancillary facilities. Chapter 2, Project Description, provides additional detail on the individual project components, including expected construction methods and timing. The Program EIR evaluates two AWWP alternatives:

- Under Alternative 1 Agoura Road AWWP, Tapia WRF effluent would be conveyed by the recycled water system to a new AWWP located along Agoura Road in Agoura Hills.
- Under Alternative 2 Reservoir AWWP, Tapia WRF effluent would be conveyed by the recycled water system to a new AWWP located next to Las Virgenes Reservoir in Westlake Village. The Reservoir AWWP would require construction of a new access road between Triunfo Canyon Road and Las Virgenes Reservoir.

According to the DPEIR, CEQA requires that the Program EIR identify areas of controversy and issues to be resolved; for this project, this includes:

- Selection of either the Agoura Road or Las Virgenes Reservoir site as the preferred alternative.
- The community's and agency acceptance of the loss of oak trees and impacts to special-status plants as a consequence of building the Pure Water Project
- The community's acceptance of impacts during construction activities and project operations at either AWWP site
- The community's acceptance of traffic pattern disruptions, temporary construction noise, and changes to (or loss of) recreational access during pipeline construction

There are additional substantial impacts that are not addressed in the JPA's analysis, as well as numerous feasible mitigation measures that the JPA fails to consider, that must be addressed in a revised draft program environmental impact report (R-DPEIR).

**Specific Comments:**

1. **The JPA's CalEEMOD Analysis Of Air Quality And GHG Emissions From The Project Fails To Consider The Presence Of Back Up Generators (BUGs) That Must Be Installed For The Project**

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In the DPEIR, the JPA<sup>1</sup> states that the “only emission source during project operation would be the limited number of vehicle trips to the AWPf and the diesel-powered emergency generator. The project would not expose sensitive receptors to substantial pollution concentrations, and would not affect a substantial number of people with objectionable odor.” The report<sup>2</sup> goes on to state that “Onsite operation emissions from the AWPf would be from the routine testing and maintenance of the emergency generators, which would only occur once or twice a month and typically last less than an hour. Exposure of diesel emissions to the sensitive receptors in the area would be minimal because the emissions from the emergency testing would not occur every day.” The emissions from the emergency generator was estimated to be no more than 50 hours of testing and maintenance per year, which is the maximum number of hours allowed by CARB’s Air Toxics Control Measures for Tier 2 diesel.<sup>3</sup>

According to SCAQMD Rules 1110.2, 1470, back-up generators (BUGs) are allowed to operate for up to *200 hours per year* and maintenance cannot exceed more than 50 hours per year. The JPA must revise its air quality analysis to include the use of BUGs onsite in a revised DPEIR.

In addition to the testing emissions, the air quality analysis must include the substantial increase in operational emissions from BUGs in the Air Basin due to unscheduled events, including but not limited to Public Safety Power Shutoff (PSPS) events and extreme heat events. Extreme heat events are defined as periods where in the temperatures throughout California exceed 100 degrees Fahrenheit.<sup>4</sup> From January, 2019 through December, 2019, Southern California Edison reported 158 of their circuits underwent a PSP event<sup>5</sup>. In Los Angeles County, two circuits had 4 PSPS events during that period lasting an average of 35 to 38 hours. The total duration of the PSPS events lasted between 141 hours to 154 hours in 2019. In 2021, the Governor of California declared that, during extreme heat events, the use of stationary generators shall be deemed an emergency use under

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<sup>1</sup> JPA. 2022. Draft Environmental Impact Report. Pg 4-8.

<sup>2</sup> JPA. 2022. Draft Environmental Impact Report. Pg 4-12.

<sup>3</sup> JPA. 2022. Draft Environmental Impact Report. Pg 9-6.

<sup>4</sup> Governor of California. 2021. Proclamation of a state of emergency. June 17, 2021.

<sup>5</sup> SCAQMD. 2020. Proposed Amendment To Rules (PARS) 1110.2, 1470, and 1472. Dated December 10, 2020. [http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1110.2/1110-2\\_1470\\_1472/par1110-2\\_1470\\_wgm\\_121020.pdf?sfvrsn=6](http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1110.2/1110-2_1470_1472/par1110-2_1470_wgm_121020.pdf?sfvrsn=6).

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California Code of Regulations (CCR), title 17, section 93115.4 sub. (a) (30) (A)(2). The number of Extreme Heat Events is likely to increase in California with the continuing change in climate the State is currently undergoing.

Power produced during PSPS or extreme heat events is expected to come from engines regulated by CARB and California's 35 air pollution control and air quality management districts (air districts).<sup>6</sup> Of particular concern are health effects related to emissions from diesel back-up engines. Diesel particulate matter (DPM) has been identified as a toxic air contaminant, composed of carbon particles and numerous organic compounds, including over forty known cancer-causing organic substances. The majority of DPM is small enough to be inhaled deep into the lungs and make them more susceptible to injury.

According to the California Public Utilities Commission (CPUC) de-energization report<sup>7</sup> in October 2019, there were almost *806 PSPS events* (emphasis added) that impacted almost 973,000 customers (~7.5% of households in California) of which ~854,000 of them were residential customers, and the rest were commercial/industrial/medical baseline/other customers. CARB's data also indicated that, on average, each of these customers had about 43 hours of power outage in October 2019.<sup>8</sup> Using the actual emission factors for each diesel BUG engines in the air district's stationary BUGs database, CARB staff calculated that the 1,810 additional stationary generators (like those proposed for the Project) running during a PSPS in October 2019 generated 126 tons of NOx, 8.3 tons of particulate matter, and 8.3 tons of DPM.

For every PSPS or Extreme Heat Event (EHE) triggered during the operational phase of the project, significant concentrations of DPM will be released that are not accounted for in the County's analysis. In 2021, two EHEs have been declared so far. For the June 17, 2021 Extreme Heat Event, the period for which stationary generator owners were allowed to use their BUGs lasted 48 hours. For the July 9, 2021 EHE, the period for which stationary generator owners were allowed to use their

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<sup>6</sup> CARB. 2019. Use of Back-up Engines For Electricity Generation During Public Safety Power Shutoff Events. October 25, 2019.

<sup>7</sup> <https://www.cpuc.ca.gov/deenergization/> as cited in CARB, 2020. Potential Emission Impact of Public Safety Power Shutoff (PSPS), Emission Impact: Additional Generator Usage associated With Power Outage.

<sup>8</sup> CARB, 2020. Potential Emission Impact of Public Safety Power Shutoff (PSPS), Emission Impact: Additional Generator Usage associated With Power Outage.



**Letter 12 continued**

BUGs lasted 72 hours. A revised EIR must be written for the Project that includes an analysis of the operation of the BUG that will occur at the project site that is not accounted for in the current air quality analysis.

**2. The JPA Has Failed To Quantify All Of The Health Impacts Emissions From The Project On The Surrounding Community.**

The JPA must assess the air quality impacts for all toxic air contaminants (TACs) that will be released during the construction and operational phases of the project. CARB<sup>9</sup> defines diesel exhaust as a complex mixture of inorganic and organic compounds that exists in gaseous, liquid, and solid phases. CARB and U.S. EPA identify 40 components of the exhaust as suspected human carcinogens, including formaldehyde, 1,3-butadiene, and benzo[a]pyrene. The inhalation unit risk factor identified by OEHHA for use in risk assessments is for the diesel particulate matter (DPM) fraction of diesel exhaust and not the vapor phase components identified by CARB and U.S. EPA.

There is notable precedent requiring a quantitative analysis of TACs from diesel exhaust in CEQA documents. Moreover, the absence of this analysis renders the DPEIR's health risk analysis incomplete. In a 2017 Air Quality Technical Report<sup>10</sup> submitted in support of a Draft EIR for the Turk Island Landfill Consolidation and Residential Subdivision<sup>11</sup>, proponents accounted for the gaseous phase of diesel emission and detailed the speciated diesel total organic gas (TOG) emissions along with the DPM emissions for all construction equipment. The speciated diesel TOG emissions and DPM emissions were utilized in dispersion modeling to identify the maximally exposed individual sensitive receptor (MEISR) of the project to determine the health risks associated with all sources of air toxins from the construction phase of the project. This is a common and feasible analysis that is routinely performed for development projects like the JPA's Clean Water Project.

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<sup>9</sup> CARB. 1998. Report to the Air Resources Board on the Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Part A, Public Exposure To, Sources and Emissions of Diesel Exhaust In California. April 22, 1998. Pg A-1.

<sup>10</sup> Ramboll Environ. 2017. Air Quality Technical Report Turk Island Landfill Consolidation And Residential Subdivision Project. Prepared For City of Union City, Union City, CA. Prepared by Ramboll Environ US Corporation, San Francisco, CA August, 2017. <https://www.unioncity.org/DocumentCenter/View/1867/Turk-Island--App-D--AQ-Emissions-Report?bidId=>

<sup>11</sup> Union City. 2018. Draft Environmental Impact Report (DEIR) Turk Island Landfill Consolidation And Residential Subdivision Project. SCH Number 20008112107. Dated 3/15/2018. <https://www.unioncity.org/DocumentCenter/View/1863/Turk-Island-DEIR?bidId=>

**Letter 12 continued**

Here, the JPA's analysis ignores the presence of TACs being emitted with diesel exhaust during the construction and operational phases of the project without making any attempt to quantify the impacts. This omission is a continuing flaw that must be addressed by the JPA. The results should then be presented in an R-DPEIR.

**3. The JPA's Assumption That The DPM From The Project Site Will Not Impact Sensitive Receptors Is Not Supported In The Text Of The DPEIR.**

The JPA's assumption that DPM from the construction activities and operation of the BUG would not reach sensitive receptors is not support by the facts in the DPEIR. Under Impact 4-3: Pollutant Concentrations pg4-12) the JPA states that "exhaust emissions from construction equipment would also contain TACs, such as diesel particulate matter, that have potential cancer and noncancer chronic health effects. Although some of the project's construction activities may be near residential areas, construction activities would be short term and limited to a relatively small area where only a few pieces of construction equipment would be operating at a time. Exposures from the construction activity TAC emissions would be short term in nature, and long-term exposure to diesel particulate matter from construction would not occur."<sup>12</sup>

According to the DPEIR, "onsite operation emissions from the AWPf would be from the routine testing and maintenance of the emergency generators, which would only occur once or twice a month and typically last less than an hour. Exposure of diesel emissions to the sensitive receptors in the area would be minimal because the emissions from the emergency testing would not occur every day."<sup>13</sup> The assumed low contact rate is not supported by any quantitative analysis.

Recently the South Coast Air Quality Management District (SCAQMD) completed its multiple site monitoring program with ten stations, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the Basin (known as MATES V). The study focused on the carcinogenic risk from exposure to air toxics, such as DPM, but did not estimate mortality or other health effects from particulate exposures. Sources of DPM monitored and later modeled in MATES V were miles away from monitoring stations. The transport of transport of small particles

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<sup>12</sup> DPEIR. 2022. Pg 4-12

<sup>13</sup> DPEIR. 2022. Pg 4-12

Letter 12 continued

such as DPM from sources to receptors hundreds of feet away from a generator are not only possible, they are expected.

The western boundary of Alternative 1 Agoura AWWP site is located adjacent to apartment complexes and single-family residences. The treatment building would be 360 feet from the closest residence. Residents are considered a potentially sensitive receptor.



Figure 13-4. Agoura Road Advanced Water Purification Facility and Surrounding Area

Dispersion modeling of the emissions from the BUGs would provide certainty regarding the ground level concentration of DPM. The JPA must model the impacts and present them in a R-DPEIR for the project.



**Letter 12 continued**

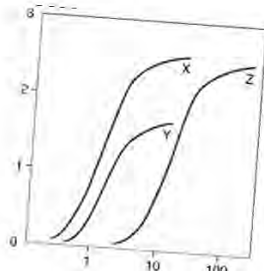
**Conclusion**

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project could result in significant unmitigated impacts if the DPEIR is approved. The JPA must re-evaluate the significant impacts identified in this letter by requiring the preparation of a revised draft environmental impact report.

Sincerely,

A handwritten signature in black ink, appearing to read "J. J. Coe".

Letter 12 continued



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**James J. J. Clark, Ph.D.**

*Principal Toxicologist*

**Toxicology/Exposure Assessment Modeling**

**Risk Assessment/Analysis/Dispersion Modeling**

**Education:**

Ph.D., Environmental Health Science, University of California, 1995

M.S., Environmental Health Science, University of California, 1993

B.S., Biophysical and Biochemical Sciences, University of Houston, 1987

**Professional Experience:**

Dr. Clark is a well recognized toxicologist, air modeler, and health scientist. He has 20 years of experience in researching the effects of environmental contaminants on human health including environmental fate and transport modeling (SCREEN3, AEROMOD, ISCST3, Johnson-Ettinger Vapor Intrusion Modeling); exposure assessment modeling (partitioning of contaminants in the environment as well as PBPK modeling); conducting and managing human health risk assessments for regulatory compliance and risk-based clean-up levels; and toxicological and medical literature research.

Significant projects performed by Dr. Clark include the following:

**LITIGATION SUPPORT**

**Case:** James Harold Caygle, et al, v. Drummond Company, Inc. Circuit Court for the Tenth Judicial Circuit, Jefferson County, Alabama. Civil Action. CV-2009

**Client:** Environmental Litigation Group, Birmingham, Alabama

Dr. Clark performed an air quality assessment of emissions from a coke factory located in Tarrant, Alabama. The assessment reviewed include a comprehensive review of air quality standards, measured concentrations of pollutants from factory, an inspection of the facility and detailed assessment of the impacts on the community. The results of the assessment and literature have been provided in a declaration to the court.

**Letter 12 continued**

**Case Result: Settlement in favor of plaintiff.**

**Case: Rose Roper V. Nissan North America, et al. Superior Court of the State Of California for the County Of Los Angeles – Central Civil West. Civil Action. NC041739**

**Client: Rose, Klein, Marias, LLP, Long Beach, California**

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to multiple chemicals, including benzene, who later developed a respiratory distress. A review of the individual's medical and occupational history was performed to prepare an exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to respiratory irritants. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Settlement in favor of plaintiff.**

**Case: O'Neil V. Sherwin Williams, et al. United States District Court Central District of California**

**Client: Rose, Klein, Marias, LLP, Long Beach, California**

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to petroleum distillates who later developed a bladder cancer. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Summary judgment for defendants.**

**Case: Moore V., Shell Oil Company, et al. Superior Court of the State Of California for the County Of Los Angeles**

**Client: Rose, Klein, Marias, LLP, Long Beach, California**

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to chemicals while benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.



**Letter 12 continued**

**Case Result: Settlement in favor of plaintiff.**

**Case: Raymond Saltonstall V. Fuller O'Brien, KILZ, and Zinsser, et al. United States District Court Central District of California**

**Client: Rose, Klein, Marias, LLP, Long Beach, California**

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Settlement in favor of plaintiff.**

**Case: Richard Boyer and Elizabeth Boyer, husband and wife, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-7G.**

**Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.**

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Settlement in favor of plaintiff.**

**Letter 12 continued**

**Case: JoAnne R. Cook, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-9R**

**Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.**

Dr. Clark performed a toxicological assessment of an individual exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Settlement in favor of plaintiff.**

**Case: Patrick Allen And Susan Allen, husband and wife, and Andrew Allen, a minor, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-W**

**Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.**

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Settlement in favor of plaintiff.**

**Case: Michael Fahey, Susan Fahey V. Atlantic Richfield Company, et al. United States District Court Central District of California Civil Action Number CV-06-7109 JCL.**

**Letter 12 continued**

**Client: Rose, Klein, Marias, LLP, Long Beach, California**

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Settlement in favor of plaintiff.**

**Case: Constance Acevedo, et al., V. California Spray-Chemical Company, et al., Superior Court of the State Of California, County Of Santa Cruz. Case No. CV 146344**

Dr. Clark performed a comprehensive exposure assessment of community members exposed to toxic metals from a former lead arsenate manufacturing facility. The former manufacturing site had undergone a DTSC mandated removal action/remediation for the presence of the toxic metals at the site. Opinions were presented regarding the elevated levels of arsenic and lead (in attic dust and soils) found throughout the community and the potential for harm to the plaintiffs in question.

**Case Result: Settlement in favor of defendant.**

**Case: Michael Nawrocki V. The Coastal Corporation, Kurk Fuel Company, Pautler Oil Service, State of New York Supreme Court, County of Erie, Index Number 12001-11247**

**Client: Richard G. Berger Attorney At Law, Buffalo, New York**

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the



**Letter 12 continued**

known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

**Case Result: Judgement in favor of defendant.**

**SELECTED AIR MODELING RESEARCH/PROJECTS**

**Client – Confidential**

Dr. Clark performed a comprehensive evaluation of criteria pollutants, air toxins, and particulate matter emissions from a carbon black production facility to determine the impacts on the surrounding communities. The results of the dispersion model will be used to estimate acute and chronic exposure concentrations to multiple contaminants and will be incorporated into a comprehensive risk evaluation.

**Client – Confidential**

Dr. Clark performed a comprehensive evaluation of air toxins and particulate matter emissions from a railroad tie manufacturing facility to determine the impacts on the surrounding communities. The results of the dispersion model have been used to estimate acute and chronic exposure concentrations to multiple contaminants and have been incorporated into a comprehensive risk evaluation.

**Client – Los Angeles Alliance for a New Economy (LAANE), Los Angeles, California**

Dr. Clark is advising the LAANE on air quality issues related to current flight operations at the Los Angeles International Airport (LAX) operated by the Los Angeles World Airport (LAWA) Authority. He is working with the LAANE and LAX staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

**Letter 12 continued**

**Client – City of Santa Monica, Santa Monica, California**

Dr. Clark is advising the City of Santa Monica on air quality issues related to current flight operations at the facility. He is working with the City staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

**Client: Omnitrans, San Bernardino, California**

Dr. Clark managed a public health survey of three communities near transit fueling facilities in San Bernardino and Montclair California in compliance with California Senate Bill 1927. The survey included an epidemiological survey of the effected communities, emission surveys of local businesses, dispersion modeling to determine potential emission concentrations within the communities, and a comprehensive risk assessment of each community. The results of the study were presented to the Governor as mandated by Senate Bill 1927.

**Client: Confidential, San Francisco, California**

Summarized cancer types associated with exposure to metals and smoking. Researched the specific types of cancers associated with exposure to metals and smoking. Provided causation analysis of the association between cancer types and exposure for use by non-public health professionals.

**Client: Confidential, Minneapolis, Minnesota**

Prepared human health risk assessment of workers exposed to VOCs from neighboring petroleum storage/transport facility. Reviewed the systems in place for distribution of petroleum hydrocarbons to identify chemicals of concern (COCs), prepared comprehensive toxicological summaries of COCs, and quantified potential risks from carcinogens and non-carcinogens to receptors at or adjacent to site. This evaluation was used in the support of litigation.

**Client – United Kingdom Environmental Agency**

Dr. Clark is part of team that performed comprehensive evaluation of soil vapor intrusion of VOCs from former landfill adjacent residences for the United Kingdom's Environment

## Letter 12 continued

Agency. The evaluation included collection of liquid and soil vapor samples at site, modeling of vapor migration using the Johnson Ettinger Vapor Intrusion model, and calculation of site-specific health based vapor thresholds for chlorinated solvents, aromatic hydrocarbons, and semi-volatile organic compounds. The evaluation also included a detailed evaluation of the use, chemical characteristics, fate and transport, and toxicology of chemicals of concern (COC). The results of the evaluation have been used as a briefing tool for public health professionals.

### EMERGING/PERSISTENT CONTAMINANT RESEARCH/PROJECTS

#### **Client: Ameren Services, St. Louis, Missouri**

Managed the preparation of a comprehensive human health risk assessment of workers and residents at or near an NPL site in Missouri. The former operations at the Property included the servicing and repair of electrical transformers, which resulted in soils and groundwater beneath the Property and adjacent land becoming impacted with PCB and chlorinated solvent compounds. The results were submitted to U.S. EPA for evaluation and will be used in the final ROD.

#### **Client: City of Santa Clarita, Santa Clarita, California**

Dr. Clark is managing the oversight of the characterization, remediation and development activities of a former 1,000 acre munitions manufacturing facility for the City of Santa Clarita. The site is impacted with a number of contaminants including perchlorate, unexploded ordinance, and volatile organic compounds (VOCs). The site is currently under a number of regulatory consent orders, including an Imminent and Substantial Endangerment Order. Dr. Clark is assisting the impacted municipality with the development of remediation strategies, interaction with the responsible parties and stakeholders, as well as interfacing with the regulatory agency responsible for oversight of the site cleanup.

#### **Client: Confidential, Los Angeles, California**

Prepared comprehensive evaluation of perchlorate in environment. Dr. Clark evaluated the production, use, chemical characteristics, fate and transport, toxicology, and remediation of perchlorate. Perchlorates form the basis of solid rocket fuels and have recently been detected in water supplies in the United States. The results of this research



**Letter 12 continued**

were presented to the USEPA, National GroundWater, and ultimately published in a recent book entitled *Perchlorate in the Environment*.

**Client – Confidential, Los Angeles, California**

Dr. Clark is performing a comprehensive review of the potential for pharmaceuticals and their by-products to impact groundwater and surface water supplies. This evaluation will include a review of available data on the history of pharmaceutical production in the United States; the chemical characteristics of various pharmaceuticals; environmental fate and transport; uptake by xenobiotics; the potential effects of pharmaceuticals on water treatment systems; and the potential threat to public health. The results of the evaluation may be used as a briefing tool for non-public health professionals.

**PUBLIC HEALTH/TOXICOLOGY**

**Client: Brayton Purcell, Novato, California**

Dr. Clark performed a toxicological assessment of residents exposed to methyl-tertiary butyl ether (MTBE) from leaking underground storage tanks (LUSTs) adjacent to the subject property. The symptomology of residents and guests of the subject property were evaluated against the known outcomes in published literature to exposure to MTBE. The study found that residents had been exposed to MTBE in their drinking water; that concentrations of MTBE detected at the site were above regulatory guidelines; and, that the symptoms and outcomes expressed by residents and guests were consistent with symptoms and outcomes documented in published literature.

**Client: Confidential, San Francisco, California**

Identified and analyzed fifty years of epidemiological literature on workplace exposures to heavy metals. This research resulted in a summary of the types of cancer and non-cancer diseases associated with occupational exposure to chromium as well as the mortality and morbidity rates.

**Client: Confidential, San Francisco, California**

Summarized major public health research in United States. Identified major public health research efforts within United States over last twenty years. Results were used as a briefing tool for non-public health professionals.

**Letter 12 continued**

**Client: Confidential, San Francisco, California**

Quantified the potential multi-pathway dose received by humans from a pesticide applied indoors. Part of team that developed exposure model and evaluated exposure concentrations in a comprehensive report on the plausible range of doses received by a specific person. This evaluation was used in the support of litigation.

**Client: Covanta Energy, Westwood, California**

Evaluated health risk from metals in biosolids applied as soil amendment on agricultural lands. The biosolids were created at a forest waste cogeneration facility using 96% whole tree wood chips and 4 percent green waste. Mass loading calculations were used to estimate Cr(VI) concentrations in agricultural soils based on a maximum loading rate of 40 tons of biomass per acre of agricultural soil. The results of the study were used by the Regulatory agency to determine that the application of biosolids did not constitute a health risk to workers applying the biosolids or to residences near the agricultural lands.

**Client – United Kingdom Environmental Agency**

Oversaw a comprehensive toxicological evaluation of methyl-*tertiary* butyl ether (MTBE) for the United Kingdom's Environment Agency. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MTBE. The results of the evaluation have been used as a briefing tool for public health professionals.

**Client – Confidential, Los Angeles, California**

Prepared comprehensive evaluation of *tertiary* butyl alcohol (TBA) in municipal drinking water system. TBA is the primary breakdown product of MTBE, and is suspected to be the primary cause of MTBE toxicity. This evaluation will include available information on the production, use, chemical characteristics, fate and transport in the environment, absorption, distribution, routes of detoxification, metabolites, carcinogenic potential, and remediation of TBA. The results of the evaluation were used as a briefing tool for non-public health professionals.

**Client – Confidential, Los Angeles, California**

Prepared comprehensive evaluation of methyl *tertiary* butyl ether (MTBE) in municipal drinking water system. MTBE is a chemical added to gasoline to increase the octane

**Letter 12 continued**

rating and to meet Federally mandated emission criteria. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MTBE. The results of the evaluation have been used as a briefing tool for non-public health professionals.

**Client – Ministry of Environment, Lands & Parks, British Columbia**

Dr. Clark assisted in the development of water quality guidelines for methyl tertiary-butyl ether (MTBE) to protect water uses in British Columbia (BC). The water uses to be considered includes freshwater and marine life, wildlife, industrial, and agricultural (e.g., irrigation and livestock watering) water uses. Guidelines from other jurisdictions for the protection of drinking water, recreation and aesthetics were to be identified.

**Client: Confidential, Los Angeles, California**

Prepared physiologically based pharmacokinetic (PBPK) assessment of lead risk of receptors at middle school built over former industrial facility. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

**Client: Kaiser Venture Incorporated, Fontana, California**

Prepared PBPK assessment of lead risk of receptors at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

**RISK ASSESSMENTS/REMEDIAL INVESTIGATIONS**

**Client: Confidential, Atlanta, Georgia**

Researched potential exposure and health risks to community members potentially exposed to creosote, polycyclic aromatic hydrocarbons, pentachlorophenol, and dioxin compounds used at a former wood treatment facility. Prepared a comprehensive toxicological summary of the chemicals of concern, including the chemical characteristics, absorption, distribution, and carcinogenic potential. Prepared risk characterization of the carcinogenic and non-carcinogenic chemicals based on the exposure assessment to quantify the potential risk to members of the surrounding community. This evaluation was used to help settle class-action tort.



**Letter 12 continued**

**Client: Confidential, Escondido, California**

Prepared comprehensive Preliminary Endangerment Assessment (PEA) of dense non-aqueous liquid phase hydrocarbon (chlorinated solvents) contamination at a former printed circuit board manufacturing facility. This evaluation was used for litigation support and may be used as the basis for reaching closure of the site with the lead regulatory agency.

**Client: Confidential, San Francisco, California**

Summarized epidemiological evidence for connective tissue and autoimmune diseases for product liability litigation. Identified epidemiological research efforts on the health effects of medical prostheses. This research was used in a meta-analysis of the health effects and as a briefing tool for non-public health professionals.

**Client: Confidential, Bogotá, Columbia**

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of a 13.7 hectares plastic manufacturing facility in Bogotá, Colombia. The risk assessment was used as the basis for the remedial goals and closure of the site.

**Client: Confidential, Los Angeles, California**

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally cadmium) and VOCs from soil and soil vapor at 12-acre former crude oilfield and municipal landfill. The site is currently used as a middle school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and was used as the basis for regulatory closure of site.

**Client: Confidential, Los Angeles, California**

Managed remedial investigation (RI) of heavy metals and volatile organic chemicals (VOCs) for a 15-acre former manufacturing facility. The RI investigation of the site included over 800 different sampling locations and the collection of soil, soil gas, and groundwater samples. The site is currently used as a year round school housing approximately 3,000 children. The Remedial Investigation was performed in a manner

**Letter 12 continued**

that did not interrupt school activities and met the time restrictions placed on the project by the overseeing regulatory agency. The RI Report identified the off-site source of metals that impacted groundwater beneath the site and the sources of VOCs in soil gas and groundwater. The RI included a numerical model of vapor intrusion into the buildings at the site from the vadose zone to determine exposure concentrations and an air dispersion model of VOCs from the proposed soil vapor treatment system. The Feasibility Study for the Site is currently being drafted and may be used as the basis for granting closure of the site by DTSC.

**Client: Confidential, Los Angeles, California**

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally lead), VOCs, SVOCs, and PCBs from soil, soil vapor, and groundwater at 15-acre former manufacturing facility. The site is currently used as a year round school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and will be basis for regulatory closure of site.

**Client: Confidential, Los Angeles, California**

Prepared comprehensive evaluation of VOC vapor intrusion into classrooms of middle school that was former 15-acre industrial facility. Using the Johnson-Ettinger Vapor Intrusion model, the evaluation determined acceptable soil gas concentrations at the site that did not pose health threat to students, staff, and residents. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

**Client: Dominguez Energy, Carson, California**

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of 6-acre portion of a 500-acre oil and natural gas production facility in Carson, California. The risk assessment was used as the basis for closure of the site.

**Kaiser Ventures Incorporated, Fontana, California**

Prepared health risk assessment of semi-volatile organic chemicals and metals for a fifty-year old wastewater treatment facility used at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

**Letter 12 continued**

**ANR Freight - Los Angeles, California**

Prepared a comprehensive Preliminary Endangerment Assessment (PEA) of petroleum hydrocarbon and metal contamination of a former freight depot. This evaluation was as the basis for reaching closure of the site with lead regulatory agency.

**Kaiser Ventures Incorporated, Fontana, California**

Prepared comprehensive health risk assessment of semi-volatile organic chemicals and metals for 23-acre parcel of a 1,100-acre former steel mill. The health risk assessment was used to determine clean up goals and as the basis for granting closure of the site by lead regulatory agency. Air dispersion modeling using ISCST3 was performed to determine downwind exposure point concentrations at sensitive receptors within a 1 kilometer radius of the site. The results of the health risk assessment were presented at a public meeting sponsored by the Department of Toxic Substances Control (DTSC) in the community potentially affected by the site.

**Unocal Corporation - Los Angeles, California**

Prepared comprehensive assessment of petroleum hydrocarbons and metals for a former petroleum service station located next to sensitive population center (elementary school). The assessment used a probabilistic approach to estimate risks to the community and was used as the basis for granting closure of the site by lead regulatory agency.

**Client: Confidential, Los Angeles, California**

Managed oversight of remedial investigation most contaminated heavy metal site in California. Lead concentrations in soil excess of 68,000,000 parts per billion (ppb) have been measured at the site. This State Superfund Site was a former hard chrome plating operation that operated for approximately 40-years.

**Client: Confidential, San Francisco, California**

Coordinator of regional monitoring program to determine background concentrations of metals in air. Acted as liaison with SCAQMD and CARB to perform co-location sampling and comparison of accepted regulatory method with ASTM methodology.



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**Client: Confidential, San Francisco, California**

Analyzed historical air monitoring data for South Coast Air Basin in Southern California and potential health risks related to ambient concentrations of carcinogenic metals and volatile organic compounds. Identified and reviewed the available literature and calculated risks from toxins in South Coast Air Basin.

**IT Corporation, North Carolina**

Prepared comprehensive evaluation of potential exposure of workers to air-borne VOCs at hazardous waste storage facility under SUPERFUND cleanup decree. Assessment used in developing health based clean-up levels.

**Professional Associations**

American Public Health Association (APHA)  
 Association for Environmental Health and Sciences (AEHS)  
 American Chemical Society (ACS)  
 California Redevelopment Association (CRA)  
 International Society of Environmental Forensics (ISEF)  
 Society of Environmental Toxicology and Chemistry (SETAC)

**Publications and Presentations:**

**Books and Book Chapters**

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## **EXHIBIT B**

**Letter 12 continued**

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3108 Finch Street  
Davis, CA 95616

Kelilah Federman  
Adams Broadwell Joseph & Cardozo  
601 Gateway Boulevard, Suite 1000  
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6 October 2022

RE: Pure Water Project – Las Virgenes-Triunfo

Dear Ms. Federman,

I write to comment on the Programmatic Environmental Impact Report (PEIR) prepared by the Las Virgenes-Triunfo Joint Powers Authority (JPA) for the Pure Water Project – Las Virgenes-Triunfo. I understand this project would add a 48,000-ft<sup>2</sup> building per Alternative 1 – the Agoura Road Advanced Water Purification Facility – onto a graded area of about 4.2 acres of a 7.1-acre site, and per Alternative 2 – the Reservoir Advanced Water Purification Facility – onto 10.2 acres (3 acres for the facility along with about 7.2 acres of grading for a 3,200-foot-long paved access road) of a 26.33-acre site. Alternative 2 would add 1.7 acres of impervious surface.

My qualifications for preparing expert comments are the following. I hold a Ph.D. degree in Ecology from University of California at Davis, where I also worked as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, wildlife interactions with the anthroposphere, and conservation of rare and endangered species. I authored many papers on these and other topics. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and Raptor Research Foundation, and I've lectured part-time at California State University, Sacramento. I was Associate Editor of wildlife biology's premier scientific journal, *The Journal of Wildlife Management*, as well as of *Biological Conservation*, and I was on the Editorial Board of *Environmental Management*. I have performed wildlife surveys in California for thirty-seven years. My CV is attached.

**SITE VISIT**

I visited the proposed project site with Noriko Smallwood, a wildlife ecologist who received her Master's Degree from California State University Los Angeles. We surveyed the Agoura Road site (Alternative 1) for 134 minutes, 16:59–19:13 hours, on 19 September 2022. We surveyed the Reservoir site including the reach of its proposed access road (Alternative 2) for 210 minutes, 06:29–09:59 hours, on 20 September 2022. We used binoculars to scan for wildlife at both sites. On the 19<sup>th</sup>, the sky was clear, 9–10 MPH west wind, and temperatures ranged 79–71° F. On the 20<sup>th</sup>, the sky was cloudy to partly cloudy, 0–2 MPH northeast wind, and the starting temperature was 61° F. The grassland at the Agoura Road site had been mowed, and both alternative project sites were recovering from wildfire (Photos 1–6).



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**Photos 1–3.** Views of the Agoura Road site (Alternative 1), 19 September 2022. Top photo shows boundary between mowed and unmowed grassland.

Letter 12 continued



**Photo 4–6.** Views of the Reservoir site (Alternative 2), 20 September 2022.



## Letter 12 continued



**Photo 7.** *California buckwheat* was abundant at both the Agoura Road and Reservoir sites, 19–20 September 2022.

Between the two site alternatives, Noriko and I detected 54 species of vertebrate wildlife, including 12 special-status species (Table 1). We detected 30 species at the Agoura Road site, and 49 species at the Reservoir site where we spent more time. The numbers of species we detected per hour were nearly equal between the two site surveys. Considering the nearness of the two sites, and the overlap in species we detected, the two sites essentially support the same wildlife communities, with the exception being the adjacency of the Reservoir site to a large body of water that hosted water-adapted birds such as American coot and Clark's grebe.

We saw keystone species such as California ground squirrels and acorn woodpeckers (Photos 8 and 9), and members of western side-blotched lizard (Photo 10), Allen's hummingbird and Anna's hummingbird (Photos 11 and 12), Southern California rufous-crowned sparrow (Photos 13 and 14), Oak titmouse, white-breasted nuthatch and California scrub-jay (Photos 15-17), dark-eyed junco and Say's phoebe (Photos 18 and 19), spotted towhee and bushtit (Photos 20 and 21), house finch and Canada goose (Photos 22 and 23), California towhee, black phoebe and acorn woodpecker (Photos 24-26), lesser goldfinch and lark sparrow (Photos 27 and 28), and mourning dove (Photo 29). We also saw evidence of breeding such as adult and juvenile western gulls (Photos 30 and 31), and adult acorn woodpeckers feeding their young (Photos 32 and 33). The two alternative sites are inherently rich in wildlife species.



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**Table 1.** Species of wildlife Noriko and I observed during 2.23 hours (4.46 person-hours) at Agoura Road on 19 September 2022, and during 3.5 hours (7 person-hours) of survey at the Reservoir site on 20 September 2022.

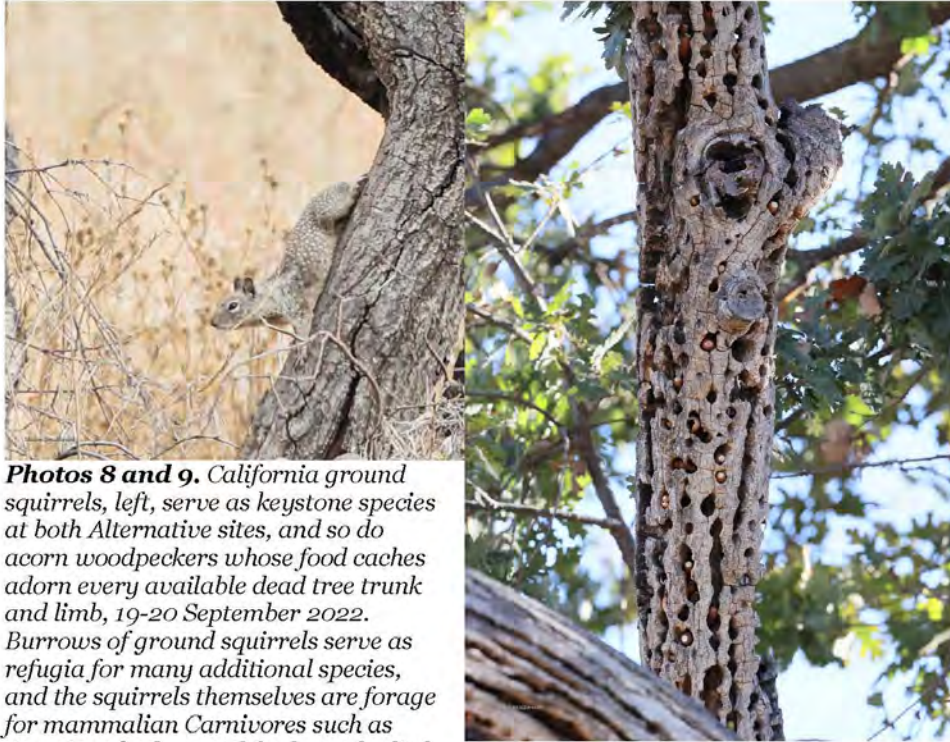
Common name	Species name	Status <sup>1</sup>	Agoura Rd	Reservoir	Notes
Western fence lizard	<i>Sceloporus occidentalis</i>		X		
Western side-blotched lizard	<i>Uta stansburiana elegans</i>		X		
Canada goose	<i>Branta canadensis</i>			X	Many flew over, low
Mallard	<i>Anas platyrhynchos</i>		X	X	Flyover
California quail	<i>Callipepla californica</i>			X	
Pied-billed grebe	<i>Podilymbus podiceps</i>			X	Just off site
Clark's grebe	<i>Anser albifrons</i>	BCC		X	Just off site
Band-tailed pigeon	<i>Patagioenas fasciata</i>			X	Just off site
Mourning dove	<i>Zenaida macroura</i>		X	X	
Anna's hummingbird	<i>Calypte anna</i>		X	X	
Allen's hummingbird	<i>Selasphorus sasin</i>	BCC		X	
American coot	<i>Fulica americana</i>			X	Just off site
Western gull	<i>Larus occidentalis</i>	BCC	X	X	
Double-crested cormorant	<i>Nannopterum auritum</i>	TWL		X	Just off site
Great egret	<i>Ardea alba</i>			X	Just off site
Turkey vulture	<i>Cathartes aura</i>	BOP	X	X	Many at Reservoir site
Red-shouldered hawk	<i>Buteo lineatus</i>	BOP		X	
Red-tailed hawk	<i>Cathartes aura</i>	BOP	X	X	Just off site, Agoura Rd.
Acorn woodpecker	<i>Melanerpes formicivorus</i>		X	X	Feeding juveniles, Agoura Rd.
Nuttall's woodpecker	<i>Dryobates nuttallii</i>	BCC	X	X	
Peregrine falcon	<i>Falco peregrinus</i>	BCC, CFP, BOP		X	Call mimicked by California thrasher
Cassin's kingbird	<i>Tyrannus vociferans</i>			X	
Western kingbird	<i>Tyrannus verticalis</i>			X	
Black phoebe	<i>Sayornis nigricans</i>		X	X	
Say's phoebe	<i>Tyrannus vociferans</i>			X	
California scrub-jay	<i>Aphelocoma californica</i>		X	X	
American crow	<i>Corvus brachyrhynchos</i>		X	X	
Common raven	<i>Corvus corax</i>		X	X	
Oak titmouse	<i>Baeolophus inornatus</i>	BCC	X	X	

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Common name	Species name	Status <sup>1</sup>	Agoura Rd	Reservoir	Notes
Swallow sp.				X	
Bushtit	<i>Psaltriparus minimus</i>		X	X	
White-breasted nuthatch	<i>Sitta carolinensis</i>			X	
House wren	<i>Troglodytes aedon</i>			X	
Bewick's wren	<i>Thryomanes bewickii</i>		X	X	
California thrasher	<i>Toxostoma redivivum</i>	BCC		X	
Western bluebird	<i>Sialia mexicana</i>		X	X	Just off site, Agoura Rd.
House finch	<i>Haemorphous mexicanus</i>		X	X	
Lesser goldfinch	<i>Spinus psaltria</i>		X	X	
Lark sparrow	<i>Chondestes grammacus</i>			X	
Dark-eyed junco	<i>Junco hyemalis</i>		X	X	
White-crowned sparrow	<i>Zonotrichia leucophrys</i>		X		
Song sparrow	<i>Melospiza melodia</i>			X	
California towhee	<i>Pipilo crissalis</i>		X	X	
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	TWL		X	
Spotted towhee	<i>Spotted towhee</i>			X	
Myotis spp.	<i>Myotis</i>		X		Just off site
Desert cottontail	<i>Sylvilagus audubonii</i>			X	Scat
California ground squirrel	<i>Otospermophilus beecheyi</i>		X	X	Burrows both sites, individuals at Reservoir site
Raccoon	<i>Procyon lotor</i>			X	Scat
Coyote	<i>Canis latrans</i>			X	Tracks and scat
Southern mule deer	<i>Odocoileus hemionus fuliginatus</i>		X	X	1 at Agoura Rd, tracks at Reservoir site
California vole	<i>Microtus californicus</i>		X		Burrows
Botta's pocket gopher	<i>Thomomys bottae</i>		X	X	Burrows
Kangaroo rat sp.	<i>Dipodomys</i>			X	Burrows, tail drags

<sup>1</sup> Listed as BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, SSC3 = California Bird Species of Special Concern priority 3 (Shuford and Gardali 2008), TWL = Taxa to Watch List (Shuford and Gardali 2008), and BOP = Birds of Prey (California Fish and Game Code 3503.5).

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**Photos 8 and 9.** California ground squirrels, left, serve as keystone species at both Alternative sites, and so do acorn woodpeckers whose food caches adorn every available dead tree trunk and limb, 19-20 September 2022. Burrows of ground squirrels serve as refugia for many additional species, and the squirrels themselves are forage for mammalian Carnivores such as American badger and for large-bodied raptors.



**Photo 10.** Western side-blotched lizard at the Agoura Road site, 19 September 2022.



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**Photos 11 and 12.** Allen's hummingbird, left, and Anna's hummingbird, right, 20 September 2022. Allen's hummingbird is a US Fish and Wildlife Service Bird of Conservation Concern.



**Photos 13 and 14.** Southern California rufous-crowned sparrows, the one at right on its way to pounce on a black phoebe, 20 September 2022. This subspecies of rufous-crowned sparrow is on California Department of Fish and Wildlife's Taxa to Watch List.

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**Photos 15 and 16.** Oak titmouse, left, and white-breasted nuthatch, right, 20 September 2022. Oak titmouse is a US Fish and Wildlife Service Bird of Conservation Concern.

**Photo 17.** California scrub-jay – another keystone species for its role in food-caching acorns, which helps to propagate oaks, 20 September 2022.



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**Photos 18 and 19.** Dark-eyed junco, left, and Say's phoebe on the proposed footprint of the Reservoir Alternative site, 9-20 September 2022.



**Photos 20 and 21.** Spotted towhee, left, and bushtit, right, 19-20 September 2022.



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**Photos 22 and 23.** House finches on proposed footprint of Reservoir site alternative, top, and one of multiple flocks of Canada goose that flew along proposed route of access road to the Reservoir site, bottom, 20 September 2022.

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**Photo 24.** California towhee on the Reservoir alternative site, 20 September 2022.



**Photos 25 and 26.** Black phoebe, left, and acorn woodpecker, right, 20 September 2022.

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**Photos 27 and 28.** Lesser goldfinch, left, and lark sparrow, right, 20 September 2022.



**Photo 29.** Mourning dove on the Agoura Road alternative site, 19 September 2022.



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**Photo 30.** Adult western gull right over the Reservoir alternative site, 20 September 2022. The western gull is a US Fish and Wildlife Service Bird of Conservation Concern.



**Photo 31.** Juvenile western gull right over the Reservoir alternative site, 20 September 2022. The occurrence of juveniles is evidence of breeding in the vicinity of the project site.



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**Photos 32 and 33.** Adult acorn woodpecker feeds a fledgling juvenile on the Agoura Road alternative site, 19 September 2022. The site is obviously important to breeding birds.

Noriko Smallwood certifies that the foregoing and following survey results are true and accurately reported.

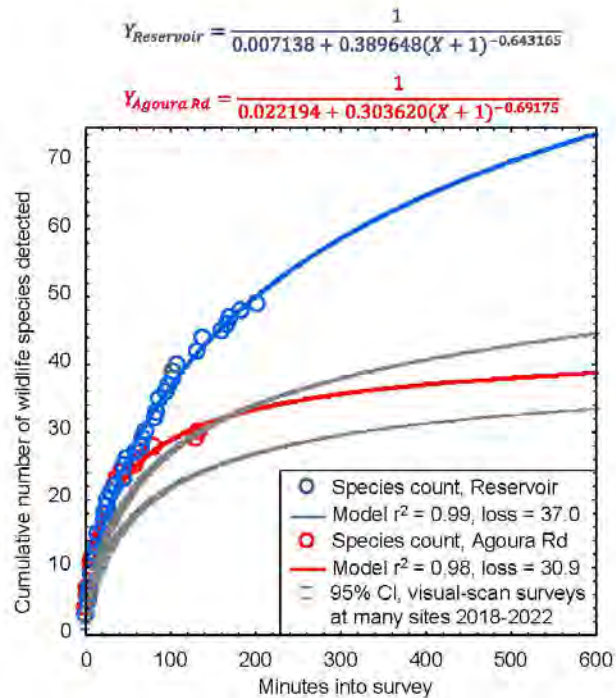
Noriko Smallwood  
Noriko Smallwood

Whereas Noriko and I detected many species at the two project site alternatives, it would be unreasonable to expect that we would have detected more than a small sample of the species that compose the wildlife communities of these sites. Fortunately, our reconnaissance-level surveys can be useful for confirming presence of species that are detected, as well as for estimating the number of species that are not detected. I modeled the pattern in species detections during each survey as a means to estimate the number of species that used the site but were undetected during the survey. To support this modeling effort, we recorded the times into the survey when each species was first detected. The cumulative number of species' detections typically increases with increasing survey time, but eventually with diminishing returns. In our surveys, the patterns in the data (Figure 1) predict that had we spent more time on site, or had we help from additional biologists, we would have detected 45 species of vertebrate wildlife during the evening survey of the 19<sup>th</sup> of September, and 130 species on the morning of the 20<sup>th</sup>. The smaller number of species predicted at the Agoura Road site likely resulted from the approach of night, as our rate of species detections over the first hour equaled or exceeded that of our survey at the Reservoir site the next morning. Our rate of species detections at both sites exceeded the upper bound of the 95% confidence interval that I estimated from multiple previous surveys in the region. Both alternative project sites support many species of wildlife, including many more than we could detect during a couple of brief reconnaissance-level surveys. However, although this modeling approach

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is useful for more realistically representing the species richness of the site at the time of a survey, it cannot represent the species richness throughout the year or across multiple years because many species are seasonal or even multi-annual in their movement patterns and in their occupancy of habitat.

**Figure 1.** Actual and predicted relationships between the number of vertebrate wildlife species detected and the elapsed survey time based on our visual-scan surveys on 19 and 20 September 2022, and 95% CI based on our surveys at many other project sites in the region between Ventura and Burbank, California 2018-2022. Note that the relationships would differ if the surveys were based on another method or during another season.



By use of an analytical bridge, a modeling effort applied to a much larger, more robust data set at a research site can predict the number of vertebrate wildlife species likely making use of the site over the longer term. As part of my research, I completed a much larger survey effort across 167 km<sup>2</sup> of annual grasslands of the Altamont Pass Wind Resource Area, where from 2015 through 2019 I performed 721 1-hour visual-scan surveys, or 721 hours of surveys, at 46 stations. I used binoculars and otherwise the methods were the same as the methods Noriko and I and other consulting biologists use for surveys at proposed project sites. At each of the 46 survey stations, I tallied new species detected with each sequential survey at that station, and then related the cumulative species detected to the hours (number of surveys, as each survey lasted 1 hour) used to accumulate my counts of species detected. I used combined quadratic and simplex methods of estimation in Statistica to estimate least-squares, best-fit nonlinear models of the number of cumulative species detected regressed on hours of survey (number of surveys) at the station:  $\hat{R} = \frac{1}{1/a + b \times (\text{Hours})^c}$ , where  $\hat{R}$  represented cumulative species richness detected. The coefficients of determination,  $r^2$ , of the models ranged



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0.88 to 1.00, with a mean of 0.97 (95% CI: 0.96, 0.98); or in other words, the models were excellent fits to the data.

I projected the predictions of each model to thousands of hours to find predicted asymptotes of wildlife species richness. The mean model-predicted asymptote of species richness was 57 after 11,857 hours of visual-scan surveys among the 46 stations. I also averaged model predictions of species richness at each incremental increase of number of surveys, i.e., number of hours (Figure 2). On average I detected 18.67 species over the first 5.73 hours of surveys in the Altamont Pass (5.73 hours to match the number of hours I surveyed at the project site), which composed 32.77% of the total predicted number of species I would detect with a much larger survey effort. Given the example illustrated in Figure 2, the 54 species we detected after our 5.73 hours of survey at the project site likely represented 32.77% of the species to be detected after many more visual-scan surveys over another year or longer. With many more repeat surveys through the year, we would likely detect  $54 / 0.3277 = 165$  species of vertebrate wildlife at the project sites.

Again, however, my prediction of 165 species of vertebrate wildlife is derived from visual-scan surveys during the daytime, and would not detect nocturnal mammals. The true number of species composing the wildlife community of the site must be larger. A couple of reconnaissance-level surveys should serve only as a starting point toward characterization of a site's wildlife community, but they certainly cannot alone inform of the inventory of species that use the site. Considering all of the bat species and small mammals, reptiles and amphibians we are unlikely to see during visual-scan surveys typical of reconnaissance-level surveys, the true number of vertebrate species that compose the wildlife communities of the two alternative project sites must number more like 250 or closer to 300 species.

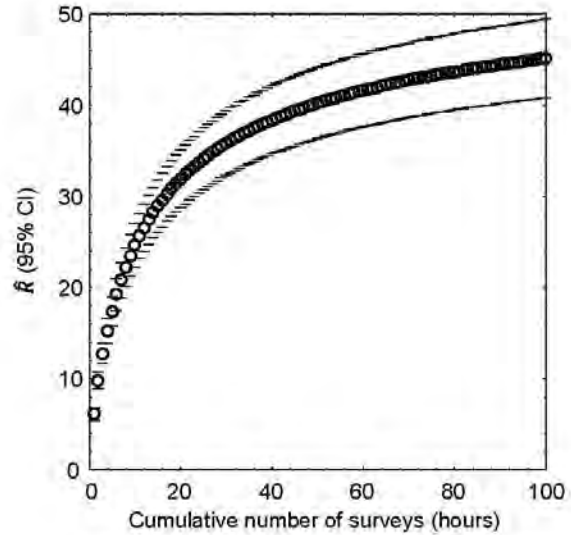
Additionally, the likelihood of detecting special-status species is typically lower than that of more common species. This difference can be explained by the fact that special-status species tend to be rarer and more cryptic, and thus less detectable than common species. Special-status species tend to be more cryptic, fossorial, or active during nocturnal periods when reconnaissance surveys are not performed. Another useful relationship from careful recording of species detections and subsequent comparative analysis is the probability of detection of listed species as a function of an increasing number of vertebrate wildlife species detected (Figure 3). (Note that listed species number fewer than special-status species, which are inclusive of listed species. Also note that I include California Fully Protected species and federal Candidate species as "listed" species.)

As demonstrated in Figures 1 and 2, the number of species detected is largely a function of survey effort. Greater survey effort also increases the likelihood that listed species will be detected, which is the first tenet of detection surveys for special-status species (see below). Based on the outcomes of surveys earlier completed at 199 project sites in California, our survey effort at the project site carried an 90% chance of detecting a listed species, whereas the survey effort reported in the PEIR carried a 12% chance of detecting a listed species (Figure 3). Noriko and I detected peregrine falcon – a

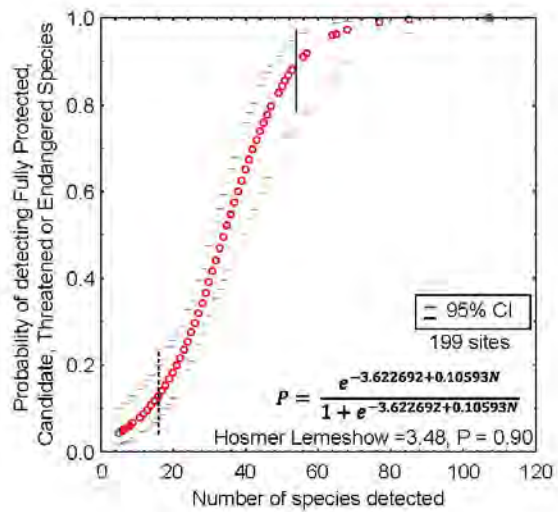
Letter 12 continued

California Fully Protected species – thanks to the incorporation of its call into a California thrasher’s mimicry, but it should be of no surprise that the survey effort reported in the PEIR resulted in no detections of listed species, because it carried only a 12% chance of doing so.

**Figure 2.** Mean (95% CI) predicted wildlife species richness,  $\hat{R}$ , as a nonlinear function of hour-long survey increments across 46 visual-scan survey stations across the Altamont Pass Wind Resource Area, Alameda and Contra Costa Counties, 2015–2019.



**Figure 3.** Probability of detecting  $\geq 1$  Candidate, Threatened or Endangered Species of wildlife listed under California or federal Endangered Species Acts, based on survey outcomes logit-regressed on the number of wildlife species Noriko Smallwood and I detected during surveys at 199 project sites in California, 1999–2022. The solid vertical line represents the number of species we detected.





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### EXISTING ENVIRONMENTAL SETTING

The first step in analysis of potential project impacts to biological resources is to accurately characterize the existing environmental setting, including the biological species that use the site, their relative abundances, how they use the site, key ecological relationships, and known and ongoing threats to those species with special status. A reasonably accurate characterization of the environmental setting can provide the basis for determining whether the site holds habitat value to wildlife, as well as a baseline against which to analyze potential project impacts. For these reasons, characterization of the environmental setting, including the project's site's regional setting, is one of CEQA's essential analytical steps (§15125). Methods to achieve this first step typically include (1) surveys of the site for biological resources, and (2) reviews of literature, databases and local experts for documented occurrences of special-status species. In the case of this project, these essential steps remain incomplete and misleading.

#### Environmental Setting informed by Field Surveys

To CEQA's primary objective to disclose potential environmental impacts of a proposed project, it helps for both the analyst and the public to be informed of which biological species are known to occur at the proposed project site, which special-status species are likely to occur, as well as the limitations of the survey effort directed to the site. Analysts need this information to characterize the environmental setting as a basis for opining on, or predicting, potential project impacts to biological resources.

There are three types of survey for wildlife at a project site that are typical of CEQA review. One is known as a species-specific **detection survey**, which follows a methodological protocol formulated by experts on the species. The protocol balances cost against a reasonable likelihood of detection should the species be present. If the protocol is followed, but the species is not detected, then the negative outcome of the detection survey can serve as support for an absence determination, i.e., the species at issue can be determined absent from the site for however long the protocol specifies. It is therefore important that the details of the detection survey be reported so that the reader can compare these details to the minimum standards of the detection survey protocol.

Two other types of survey for wildlife at proposed project sites are known as **reconnaissance survey**, otherwise known as **general survey**, and **habitat assessment**. The typical objective of reconnaissance survey is to inventory the species that compose the wildlife community, whereas that of habitat assessment is to assign occurrence likelihoods to special-status species based on documented associations between each species and environmental settings. Unlike the carefully formulated protocols of detection surveys, reconnaissance surveys and habitat assessments lack formal standards of implementation and interpretation. The outcome of a 5-minute reconnaissance survey should not be afforded the same credibility as that of a 5-hour reconnaissance survey, but no guidance is available on how long a reconnaissance survey should last or what its findings should mean. It is therefore very important that the methodological details of reconnaissance surveys and habitat assessments be



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reported. It is just as important that the standards of interpretation be reported, along with sources of uncertainty and bias.

Sources of potential uncertainty and bias abound in reconnaissance surveys for the purpose of wildlife species inventory. Biologists vary in their skill at detecting wildlife species, and all are imperfect observers. After all, some species are large, loud, colorful or abundant, and can readily be seen during diurnal surveys, whereas others are tiny, quiet, cryptic or rare, or are detectable only by night or by trapping or use of remote-sensing technology. In my experience, some species typically do not reveal themselves until I have been on the survey station for 20 minutes, 30 minutes, or for hours. The inventory will be the product of the amount of survey time and the range of survey methods invested. As examples, because nocturnal surveys and trapping with live bait are rarely implemented as part of reconnaissance surveys, bats and shrews rarely find their places on species inventories at proposed project sites. Membership on an inventory can also carry different meanings based on how each species occurs at the site. Whereas some species are resident year-round, others can be seasonal or ephemeral in their occurrences at a site. Should a species be included on an inventory depends on the analyst's standard of what counts as presence, but that standard should be reported so that the public can decide whether to agree with it. In short, reconnaissance survey can only sample the true suite of wildlife species of a site, and most often, the sample will be biased against the rare, sensitive and threatened or endangered species that CEQA is most concerned about.

Reconnaissance surveys occasionally reveal the presence of special-status species, sometimes due to the skill of the observer but often due to luck of survey timing. What these surveys cannot reveal is the absences of any species whose geographic ranges overlap the site and whose habitat associations at all resemble conditions of the site. And it is habitat associations that consulting biologists often rely upon to determine likelihoods of occurrence of special-status species. Unfortunately, habitat associations often poorly comport with the habitat concept, which is that habitat is that part of the environment that is used by a species (Hall et al. 1997), and which is described by scientists through measurement (Smallwood 2002). Habitat associations defined by consulting biologists typically lack foundation in actual measurements of habitat use, and are therefore speculative and prone to error. One source of error is to map vegetation complexes as habitat types, to which consulting biologists assign species by association without concern for the unrealistically hard boundaries that divide the mapped habitat types. Another source of error is to pigeon-hole species into unrealistically narrow portions of the environment, which can then be said not to exist on the project site. A third source of error is to assign functions to habitat for the purpose of dividing habitat into unrealistic functional parts, such as between breeding habitat versus foraging habitat. Primacy is assigned to breeding habitat, which often can be said not to exist on the project site. In reality, all parts of an animal's habitat are essential to breeding success, regardless of where breeding opportunities occur.<sup>1</sup>

<sup>1</sup> Animals unable to find sufficient forage, refugia, or travel opportunities are just as unable to reproduce as those unable to find sufficient nest-site opportunities. Per the precautionary principle of risk analysis and consistent with the habitat concept, CEQA review should be based on the broadest of available habitat characterizations, which should be interpreted on the whole rather than contrived functional parts. Any

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Given the true cost of species inventory, the temptation to shortcut the analysis of occurrence likelihoods is understandable. In the spirit and intent of CEQA, a reasonably feasible sampling of the species inventory should be the first objective of reconnaissance surveys. Several approaches to sound interpretation of the sampled inventory are defensible. One is to commit to a survey effort that results in the detection of a sufficient number of species to accurately estimate the number of species yet to be detected, which is the approach I applied in this comment letter. A second approach is to honestly report the uncertainties and biases of the characterizations of the species inventory and of the likelihoods of occurrence of special-status species. In the third approach, the analyst can assume species are present until suitable evidence is acquired in support of an absence determination. This last approach would be consistent with the precautionary principle of risk analysis directed toward rare and precious resources (National Research Council 1986). Regardless of the approach, most important is to refrain from determining species are absent before sufficient survey has been completed, and to refrain from asserting certainty in the species inventory when that certainty is unjustified.

***How did the PEIR address the wildlife species inventory and special-status species occurrence likelihoods at the project site?***

No detection surveys were completed for any special-status species of wildlife. Even though California gnatcatcher is known to the area, no detection surveys were performed for this species. No detection surveys were performed for least Bell's vireo, nor for any other special-status species. Unless the case can be made for lack of overlap of geographic range and obvious lack of habitat, then no evidence is available in defense of absence determinations made for special-status species of wildlife.

The PEIR reports that general biological surveys were completed on 14-15 January 2022. The objectives of the survey were to assess the habitat suitability for special-status species occurrence, and to identify species of trees on site. However, the essential methodological details needed by the reader to assess the survey's outcome are not reported for the two general biological surveys, such as who performed them, time of day when the surveys started, and how long the surveys lasted. It is not even clear which consulting firm completed the surveys. I understand that the PEIR prepared by Jacobs, but I can only assume the general biological surveys were completed by Rincon Consultants. No stand-alone report of the surveys appears to have been prepared. In short, the PEIR inadequately discloses the methodological details of one the most important steps toward characterization of the existing environmental setting, which is one of CEQA's important objectives.

The PEIR reports the detections of 21 species of vertebrate wildlife (other than domestic dogs), or only 39% of the number of species Noriko and I detected. On page 5-6, the PEIR reports, "No special-status wildlife were observed during the general wildlife surveys." However, the PEIR also reports the detections of red-tailed hawk and turkey

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detections of a species on or over a site, regardless of time of year, should be interpreted as that species' use of habitat, any part of which is critical to breeding success.



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vulture, both of which are raptors, which are protected under California Fish and Game Code 3503.5), and of Nuttall's woodpecker, which is a U.S. Fish and Wildlife Service Bird of Conservation Concern. The PEIR also reports the detection of an unidentified species of gull, but if the gulls detected were the same western gulls Noriko and I saw in abundance at both project site alternatives, the that species, too, was a U.S. Fish and Wildlife Service Bird of Conservation Concern. In other words, and contrary to what is reported, the general surveys in support of the PEIR actually detected three to four special-status species. But even this number is between only a quarter to a third of the number of special-status species that Noriko and I detected. The general biological surveys were not nearly as productive as ours, and were, therefore, likely inaccurate.

Even had the findings of the general biological surveys been accurate, their reporting neglects the context of survey effort and survey methods needed to assess their veracity. As shown in Figures 1 through 3, the number of wildlife species detected during a survey is largely a function of survey duration, which the PEIR does not disclose. The PEIR's implication that special-status species of wildlife are absent is unsupported by evidence.

Nor is evidence provided from the general biological surveys that habitat was assessed as unsuitable for any special-status species of wildlife. The PEIR reports no methods nor standards used for such an assessment. The PEIR (page 5-7) reports that "wildlife observed were recorded, and photographs were taken of the general site condition," but no explanation is provided of how wildlife observations or site photographs translated into assessments of habitat suitability. There appears to have been no scientific method behind the habitat assessments, nor any recognizable method of any kind. In fact, except for 5 special-status species granted "some potential to occur," habitat assessments are not even reported in the PEIR, leaving unfulfilled the stated primary objective of the general biological surveys.

**Environmental Setting informed by Desktop Review**

The purpose of literature and database review, and of consulting with local experts, is to inform the reconnaissance-level survey, to augment it, and to help determine which protocol-level detection surveys should be implemented. Analysts need this information to identify which species are known to have occurred at or near the project site, and to identify which other special-status species could conceivably occur at the site due to geographic range overlap and site conditions. This step is important because the reconnaissance-level survey is not going to detect all of the species of wildlife that make use of the site. This step can identify those species yet to be detected at the site but which have been documented to occur nearby or whose available habitat associations are consistent with site conditions. Some special-status species can be ruled out of further analysis, but only if compelling evidence is available in support of such determinations (see below).

The PEIR (Page 5-2) reports, "Most special-status wildlife species known to occur in the region are not expected to occur within the project footprint due to lack of suitable habitat." However, no evidence is provided of how or why suitable habitat is lacking for any special-status species of wildlife. No evidence is cited from the general biological



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surveys, nor is evidence cited from the literature review. It is implied, however, that lack of California Natural Diversity Data Base (CNDDDB) occurrence records within 5 miles of the project site is evidence of unsuitable habitat. There are two problems with this implication. The first problem is confusion over what the PEIR means by habitat suitability. The term *habitat suitability* is redundant and begs the question of what is unsuitable habitat (Hall et al., 1997, Krausman 2016). Because habitat is defined as “the resources and conditions present in an area that produce occupancy – including survival and reproduction – by a given organism” (Hall et al. 1997), or “that part of the environment where the species lives” (Smallwood 2015), the detection of a species at a particular place is the most effective means of determining that the place provides habitat for the species. If a place provides habitat, then that place, by definition, cannot be unsuitable to the species. Unfortunately, and as I commented earlier, no detection surveys were completed for any special-status species, and the general biological surveys were unsuitable for providing evidence of absence of any species. In support of this conclusion, Noriko and I detected 12 special-status species of wildlife at or adjacent to the project site alternatives, and each of these detections proved that habitat is available to these species at or adjacent to the project sites.

The PEIR makes inappropriate use of CNDDDB to assess habitat of special-status species at the project site alternatives. The PEIR screens out species from further consideration if CNDDDB occurrence records do not exist within 5 miles of the project’s sites. By relying on CNDDDB records to determine species’ absences, the PEIR misapplies CNDDDB, because CNDDDB was not designed to support absence determinations or to screen out species from characterization of a site’s wildlife community. As noted by CNDDDB, “*The CNDDDB is a positive sighting database. It does not predict where something may be found. We map occurrences only where we have documentation that the species was found at the site. There are many areas of the state where no surveys have been conducted and therefore there is nothing on the map. That does not mean that there are no special status species present.*”<sup>2</sup>

CNDDDB relies entirely on volunteer reporting from biologists who were allowed access to whatever properties they report from. Many properties have never been surveyed by biologists. Many properties have been surveyed, but the survey outcomes never reported to CNDDDB. Many properties have been surveyed multiple times, but not all survey outcomes reported to CNDDDB. Furthermore, CNDDDB is interested only in the findings of special-status species, which means that species more recently assigned special status will have been reported many fewer times to CNDDDB than were species assigned special status since the inception of CNDDDB. Because western gull, California thrasher and multiple other species were not assigned special status until 2021, these species would have lacked many records in CNDDDB when the PEIR was prepared. This lack of CNDDDB records had nothing to do with true geographic distributions of the species at issue. And because negative findings are not reported to CNDDDB, CNDDDB cannot provide the basis for estimating occurrence likelihoods (such as low occurrence likelihood), either.

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<sup>2</sup> State of California Department of Fish and Game, California Natural Diversity Database, CNDDDB Data Use Guidelines, p. 12. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27285&inline>.

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In my assessment based on database reviews and on reconnaissance surveys, 120 special-status species of vertebrate wildlife (and another 2 species of invertebrate wildlife) are known to occur near enough to either of the alternative project sites to be analyzed for occurrence potential at one time or another and therefore to result in potentially significant impacts (Table 2). Of these, 11 have been documented on the Agoura Road site, and database occurrences include 25 (20%) within 1.5 miles of the site, 38 (31%) within 1.5 and 4 miles ('Nearby'), and 43 (35%) within 4 to 30 miles ('In region'). Seventeen have been documented on the Reservoir site, and database occurrences include 32 (26%) very close, 28 (23%) nearby, and 40 (33%) in the region. More than half (61%) of the potentially-occurring species of vertebrate wildlife in Table 2 have been recorded within 4 miles of the Agoura Road site, and nearly two-thirds (63%) have been recorded within 4 miles of the Reservoir site. With so many species known to occur so close to the project site, it is easy to conclude that the site carries a lot of potential for supporting special-status species of wildlife and the project might result in potentially significant impacts to such species. On any given day, one or more of these species likely make use of the project site, but multiple surveys are needed to document that use (see Figures 1 and 2), especially for those species whose occurrence records are nearby or regional in location (see below).

To quantify the relationship between detection probability of special-status species of birds and proximity of database occurrence records, I logit-regressed whether we detected each bird species in Table 2 on mean distance (km) of the nearest 3 eBird occurrence records to each alternative project site (Figure 4). According to Figure 4, we had a mean 50% likelihood of detecting bird species whose 3 nearest occurrence records were on site. Our mean likelihood of detection dropped to 10.5% for bird species whose nearest 3 occurrence records averaged 580 m from the site, and it approached 0% for bird species with farther mean occurrence records. However, the upper bounds of the confidence intervals reveal large degrees of uncertainty that are more in favor of detection of species whose occurrence records average up to 9 km from the site.

Sufficient survey effort should be directed to the site to either confirm the species in Table 2 use the site or to support absence determinations. But surveys completed to date cannot support an absence determination assigned to any of the species in Table 2, including California gnatcatcher.

**BIOLOGICAL IMPACTS ASSESSMENT**

Determination of occurrence likelihoods of special-status species is not, in and of itself, an analysis of potential project impacts. An impacts analysis should consider whether and how a proposed project would affect members of a species, larger demographic units of the species, or the whole of a species. In the following, I analyze several types of impacts likely to result from the project, none of which are analyzed in the PEIR.



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**Table 2.** Occurrence likelihoods of special-status bird species at or near the proposed project site, according to eBird/iNaturalist records (<https://ebird.org>, <https://www.inaturalist.org>) and on-site survey findings. 'Very close' indicates within 1.5 miles of the site, "nearby" indicates within 1.5 and 4 miles, and "in region" indicates within 4 and 30 miles, and 'in range' means the species' geographic range overlaps the site. Entries in bold font indicate species we observed during our surveys on 19-20 September 2022.

Common name	Species name	Status <sup>1</sup>	Occurrence Potential		
			PEIR, both sites	Based on database records, Site visits	
				Agoura Rd	Reservoir
Monarch	<i>Danaus plexippus</i>	FC		Very close	Very close
Crotch's bumble bee	<i>Bombus crotchii</i>	OCE		Nearby	Nearby
Coast range newt	<i>Taricha torosa</i>	SSC		Nearby	Very close
Western spadefoot	<i>Spea hammondi</i>	SSC		In region	In region
California red-legged frog	<i>Rana draytonii</i>	FT, SSC		Nearby	Nearby
Western pond turtle	<i>Emys marorata</i>	SSC	Yes	Nearby	Nearby
Coast horned lizard	<i>Phrynosoma blainvillii</i>	SSC		Nearby	Very close
Coastal whiptail	<i>Aspidoscelis tigris stejnegeri</i>	SSC	Yes	Very close	On site, many
Southern California legless lizard	<i>Anniella stebbinsi</i>	SSC	Yes	Nearby	Nearby
Coast patch-nosed snake	<i>Salvadora hexalepis virgulata</i>	SSC		Nearby	Nearby
Two-striped gartersnake	<i>Thamnophis hammondi</i>	SSC		Very close	Very close
South coast gartersnake	<i>Thamnophis sirtalis pop. 1</i>	SSC		In range	In range
Brant	<i>Branta bernicla</i>	SSC <sub>2</sub>		In region	Nearby
Cackling goose (Aleutian)	<i>Branta hutchinsii leucopareia</i>	WL		In region	Nearby
Redhead	<i>Aythya americana</i>	SSC <sub>3</sub>		Very close	Very close
Western grebe	<i>Aechmophorus occidentalis</i>	BCC		Very close	On site
Clark's grebe	<i>Aechmophorus clarkii</i>	BCC		Nearby	<b>Very close</b>
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FT, CE, BCC		In region	In region
Black swift	<i>Cypseloides niger</i>	SSC, BCC		In region	Nearby
Vaux's swift	<i>Chaetura vauxi</i>	SSC <sub>2</sub>		Nearby	Very close
Costa's hummingbird	<i>Calypte costae</i>	BCC		Very close	Very close
Rufous hummingbird	<i>Selasphorus rufus</i>	BCC		Very close	Very close
Allen's hummingbird	<i>Selasphorus sasin</i>	BCC		On site	<b>On site</b>
Mountain plover	<i>Charadrius montanus</i>	SSC, BCC		In region	In region
Snowy plover	<i>Charadrius nivosus</i>	BCC		Nearby	Very close



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Common name	Species name	Status <sup>1</sup>	Occurrence Potential		
			PEIR, both sites	Based on database records, Site visits	
				Agoura Rd	Reservoir
Western snowy plover	<i>Charadrius nivosus nivosus</i>	FT, SSC, BCC		In region	In region
Whimbrel	<i>Numenius phaeopus</i>	BCC		In region	In region
Long-billed curlew	<i>Numenius americanus</i>	BCC, WL		In region	In region
Marbled godwit	<i>Limosa fedoa</i>	BCC		In region	In region
Red knot (Pacific)	<i>Calidris canutus</i>	BCC		In region	In region
Short-billed dowitcher	<i>Limnodromus griseus</i>	BCC		In region	Nearby
Willet	<i>Tringa semipalmata</i>	BCC		Nearby	Nearby
Heermann's gull	<i>Larus heermanni</i>	BCC		In region	In region
Western gull	<i>Larus occidentalis</i>	BCC		<b>On site</b>	<b>On site</b>
California gull	<i>Larus californicus</i>	WL, BCC		Very close	Very close
California least tern	<i>Sternula antillarum browni</i>	FE, CE, FP		In region	In region
Caspian tern	<i>Hydroprogne caspia</i>	BCC		Nearby	Very close
Black tern	<i>Chlidonias niger</i>	SSC, BCC		In region	In region
Elegant tern	<i>Thalasseus elegans</i>	WL, BCC		In region	Nearby
Black skimmer	<i>Rynchops niger</i>	SSC, BCC		In region	In region
Common loon	<i>Gavia immer</i>	SSC		Nearby	Very close
Double-crested cormorant	<i>Phalacrocorax auritus</i>	WL		Very close	<b>Very close, on site</b>
American white pelican	<i>Pelicanus erythrorhynchos</i>	SSC <sub>1</sub>		Very close	Very close
Least bittern	<i>Ixobrychus exilis</i>	SSC, BCC		Nearby	Very close
White-faced ibis	<i>Plegadis chihi</i>	WL		In region	Nearby
Turkey vulture	<i>Cathartes aura</i>	BOP	Seen	<b>On site</b>	<b>On site</b>
Osprey	<i>Pandion haliaetus</i>	WL, BOP		Nearby	Very close
White-tailed kite	<i>Elanus leucurus</i>	CFP, BOP		Very close	Very close
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA, CFP, BOP, BCC		Very close	Very close
Northern harrier	<i>Circus cyaneus</i>	SSC <sub>3</sub> , BOP		Very close	Very close
Sharp-shinned hawk	<i>Accipiter striatus</i>	WL, BOP		Very close	Very close
Cooper's hawk	<i>Accipiter cooperii</i>	WL, BOP		Very close	On site <sup>2</sup>

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Common name	Species name	Status <sup>1</sup>	PEIR, both sites	Occurrence Potential	
				Based on database records, Site visits	
				Agoura Rd	Reservoir
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, BCC, CFP		Nearby	Very close
Red-shouldered hawk	<i>Buteo lineatus</i>	BOP		On site	<b>Just offsite, on site</b>
Swainson's hawk	<i>Buteo swainsoni</i>	CT, BOP, BCC		Very close	Nearby
Red-tailed hawk	<i>Buteo jamaicensis</i>	BOP	Seen	<b>On site</b>	<b>On site</b>
Ferruginous hawk	<i>Buteo regalis</i>	WL, BOP		Nearby	In region
Barn owl	<i>Tyto alba</i>	BOP		Very close	Very close
Western screech-owl	<i>Megascops kennicotti</i>	BOP		Nearby	Very close
Great horned owl	<i>Bubo virginianus</i>	BOP		Very close	Very close
Burrowing owl	<i>Athene cunicularia</i>	BCC, SSC <sub>2</sub> , BOP		Nearby	Nearby
Long-eared owl	<i>Asio Otis</i>	SSC <sub>3</sub> , BCC, BOP		Nearby	In region
Short-eared owl	<i>Asia flammeus</i>	SSC <sub>3</sub> , BOP		In region	In region
Lewis's woodpecker	<i>Melanerpes lewis</i>	BCC		Nearby	Nearby
Nuttall's woodpecker	<i>Picoides nuttallii</i>	BCC	Seen	<b>On site</b>	<b>On site</b>
American kestrel	<i>Falco sparverius</i>	BOP		On site	On site
Merlin	<i>Falco columbarius</i>	WL, BOP		Very close	Very close
Peregrine falcon	<i>Falco peregrinus</i>	CFP, BOP, BCC		Very close	<b>On site</b> <sup>3</sup>
Prairie falcon	<i>Falco mexicanus</i>	BCC, WL, BOP		Nearby	Very close
Olive-sided flycatcher	<i>Contopus cooperi</i>	BCC, SSC <sub>2</sub>		Nearby	Nearby
Willow flycatcher	<i>Empidonax trailii</i>	CE, BCC		Very close	Nearby
Southwestern willow flycatcher	<i>Empidonax trailii extimus</i>	FE, CE		In region	In region
Vermilion flycatcher	<i>Pyrocephalus rubinus</i>	SSC <sub>2</sub>		In region	In region
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE, CE		In region	In region
Loggerhead shrike	<i>Lanius ludovicianus</i>	BCC, SSC <sub>2</sub>		Nearby	On site
Oak titmouse	<i>Baeolophus inornatus</i>	BCC		<b>On site</b>	<b>On site</b>
California horned lark	<i>Eremophila alpestris actia</i>	WL		Nearby	Nearby
Bank swallow	<i>Riparia riparia</i>	CT		Nearby	Nearby
Purple martin	<i>Progne subis</i>	SSC <sub>2</sub>		In region	In region
Wrenit	<i>Chamaea fasciata</i>	BCC		On site	On site

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Common name	Species name	Status <sup>1</sup>	Occurrence Potential		
			PEIR, both sites	Based on database records, Site visits	
				Agoura Rd	Reservoir
California gnatcatcher	<i>Poliopitila c. californica</i>	CT, SSC	Yes	Nearby	Nearby
California thrasher	<i>Toxostoma redivivum</i>	BCC		On site	<b>On site</b>
Cassin's finch	<i>Haemorhous cassinii</i>	BCC		In region	In region
Lawrence's goldfinch	<i>Spinus lawrencei</i>	BCC		Very close	Very close
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC <sub>2</sub>		Nearby	Very close
Black-chinned sparrow	<i>Spizella atrogularis</i>	BCC		Nearby	Nearby
Brewer's sparrow	<i>Spizella breweri</i>	BCC		Nearby	Nearby
Bell's sparrow	<i>Amphispiza b. belli</i>	WL, BCC		Nearby	In region
Oregon vesper sparrow	<i>Pooecetes gramineus affinis</i>	SSC <sub>2</sub> , BCC		Nearby	Nearby
Belding's savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	CE		In region	In region
Large-billed savannah sparrow	<i>Passerculus sandwichensis rostratus</i>	SSC <sub>2</sub>		In region	In region
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	WL		Very close	<b>On site</b>
Yellow-breasted chat	<i>Icteria virens</i>	SSC <sub>3</sub>		Nearby	Nearby
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC <sub>3</sub>		In region	Nearby
Bullock's oriole	<i>Icterus bullockii</i>	BCC		On site	Very close
Tricolored blackbird	<i>Agelaius tricolor</i>	CT, BCC, SSC		Nearby	Very close
Lucy's warbler	<i>Leiothlypis luciae</i>	SSC, BCC		In region	In region
Virginia's warbler	<i>Leiothlypis virginiae</i>	WL, BCC		In region	In region
Yellow warbler	<i>Dendroica petechia</i>	BCC, SSC <sub>2</sub>		Very close	Very close
Summer tanager	<i>Piranga rubra</i>	SSC <sub>1</sub>		Nearby	Nearby
Pallid bat	<i>Antrozous pallidus</i>	SSC, WBWG:H		In region	In region
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC, WBWG:H		In region	In region
Spotted bat	<i>Euderma maculatum</i>	SSC, WBWG:H		In range	In range
Western red bat	<i>Lasiurus blossevillii</i>	SSC, WBWG:H		In region	In region
Hairy bat	<i>Lasiurus cinereus</i>	WBWG:M		In region	In region
Western yellow bat	<i>Lasiurus xanthinus</i>	SSC, WBWG:H		In region	In region
Western small-footed myotis	<i>Myotis ciliolabrum</i>	WBWG:M		In region	In region
Miller's myotis	<i>Myotis evotis</i>	WBWG:M		In region	In region



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Common name	Species name	Status <sup>1</sup>	Occurrence Potential		
			PEIR, both sites	Based on database records, Site visits	
				Agoura Rd	Reservoir
Fringed myotis	<i>Myotis thysanodes</i>	WBWG:H		In range	In range
Long-legged myotis	<i>Myotis volans</i>	WBWG:H		In range	In range
Yuma myotis	<i>Myotis yumanensis</i>	WBWG:LM		In region	In region
Western mastiff bat	<i>Eumops perotis</i>	SSC, WBWG:H		In region	In region
Western red bat	<i>Lasiurus blossevillii</i>	SSC, WBWG:H		In region	In region
Big brown bat	<i>Episticus fuscus</i>	WBWG:L		Nearby	Nearby
California myotis	<i>Myotis californicus</i>	WBWG:L		Very close	Very close
Canyon bat	<i>Parastrellus hesperus</i>	WBWG:M		Nearby	In region
Big free-tailed bat	<i>Nyctinomops macrotis</i>	SSC, WBWG:MH		In region	In region
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	SSC		In range	In range
Los Angeles pocket mouse	<i>Perognathus longimembris brevinasus</i>	SSC		In region	In region
Bryant's woodrat	<i>Neotoma lepida intermedia</i>	SSC		In region	In region
American badger	<i>Taxidea taxus</i>	SSC		In region	In region
Mountain lion	<i>Puma concolor</i>	CCT		Nearby	Nearby

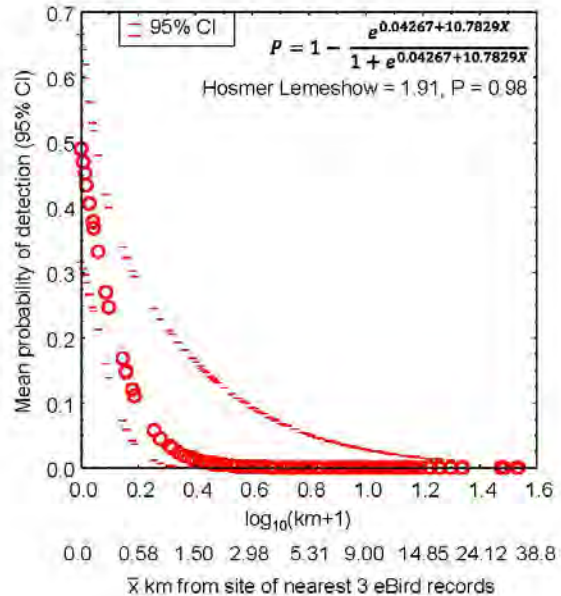
<sup>1</sup> Listed as FT or FE = federal threatened or endangered, FC = federal candidate for listing, BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, CT or CE = California threatened or endangered, CCE = California candidate endangered species, SSC = California species of special concern (not threatened with extinction, but rare, very restricted in range, declining throughout range, peripheral portion of species' range, associated with habitat that is declining in extent), CFP = California Fully Protected (CFG Code 3511), BOP = Birds of prey (California Fish and Game Code 3503.5), and SSC<sub>1</sub>, SSC<sub>2</sub> and SSC<sub>3</sub> = California Bird Species of Special Concern priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), and WL = Taxa to Watch List (Shuford and Gardali 2008), WBWG = Western Bat Working Group listing as low, moderate or high priority.

<sup>2</sup> A bird enthusiast saw a Cooper's hawk right next to us during our survey, but we missed it.

<sup>3</sup> Call clearly mimicked by California thrasher on site, which means peregrine falcon has been to the site.

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**Figure 4.** Probability of detection of special-status species of bird during reconnaissance surveys at both alternative project sites based on detection outcome logit-regressed on  $\log_{10}$  mean distance of 3 nearest eBird occurrence records.



**FISH IN MALIBU CREEK**

The PEIR describes a management history of Malibu Creek and its fishes that warrants concern. After physical alternations to Malibu Creek and reductions in stream flow, four species of fish in the watershed have been assigned special status, two of which have had critical habitat designated on Malibu Creek. One species – tidewater goby (*Eucyclogobius newberryi*) – was extirpated from Malibu Creek in the 1950s, but was fortunately successfully reintroduced in 1991. It is federally listed as endangered. Pacific lamprey (*Entosphenus tridentatus*), which is a California Species of Special Concern and a U.S. Fish and Wildlife Service Species of Concern, has not been detected in Malibu Creek for several decades. Arroyo chub (*Gila orcuttii*) is a California Species of Special Concern, and Malibu Creek appears to be one of the last two places where it occurs. Malibu Creek was also identified as a high-value recovery planning area for Southern California steelhead (*Oncorhynchus mykiss irideus pop. 10*), which is a federally listed as endangered. These fishes appear on the precipice of extirpation from Malibu Creek, which has been disturbed in multiple ways and which faces a new source of stress from the proposed project. I concur with CDFW’s stated concern that “a decrease in the amount of water entering Malibu Creek watershed could substantially alter the present flow regime in Malibu Creek.” (11 October 2021 letter from Erinn Wilson-Olgin, CDFW to Eric Schlageter, Las Virgenes-Triunfo Joint Powers Authority).

I also support CDFW’s recommended PEIR disclosure: “CDFW recommends the PEIR disclose whether the Project would reduce flows below 2.5 cfs or eliminate flows entirely, both during the summer and/or winter season. If the Project proposes to modify flow release, the PEIR should provide a clear explanation of when those flow

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reductions would occur and how much flow would be reduced based on the time of year." Unfortunately, the PEIR is vague on when flows would be reduced below 2.5 cfs. Nor does the PEIR clearly analyze impacts to fishes based on the additional recommended factors in the CDFW letter, including "water availability; water flows; water quality; benthic invertebrates and microorganisms; and habitat requirements (e.g., pools, slower moving waters, water temperature, substrate, vegetation)." Regarding summer instream flows, the PEIR claims that the Metropolitan potable water pipeline, once constructed, would maintain flows in Malibu Creek at or greater than the required 2.5 cfs, but no details are provided on how this would happen, what margin of flow would be provided to ensure compliance, and the cited source to this claim (JPA 2019) does not appear in the PEIR's list of references.

Considering the PEIR's assertion that Metropolitan potable water pipeline would make up for the project's lost instream flows, the potential impacts of the Metropolitan potable water pipeline should be analyzed as part of the Pure Water Project. To not do so is to piecemeal the project. According to CEQA Guidelines Section 15165, "Where an individual project is a necessary precedent for action on a larger project, or commits the Lead Agency to a larger project, with significant environmental effect, an EIR must address itself to the scope of the larger project." The PEIR needs to be revised to include analysis of the Metropolitan potable water pipeline.

Regarding CDFW's recommended analysis of habitat requirements, the PEIR simply writes, "Aquatic habitat conditions, including the proportion of riffles, glides, and pool habitats, would continue to vary annually and with flows, but would remain within the range experienced prior to project implementation." This statement, however, does not inspire confidence, considering the history of collapse of fish populations in Malibu Creek (see comments above). The range of habitat conditions of the past has proven deficient, so maintaining that range is unlikely to improve the prospects of persistence of the four special-status species of fish that are at risk in Malibu Creek. Indeed, the PEIR (page 5-28) acknowledges this: "The existing suboptimal physical habitat conditions are expected to continue in Malibu Creek." Incredibly, the continuation of intolerable stresses to Malibu creek is interpreted as having "less than significant impacts on Southern California steelhead and its critical habitat." This is a dangerous conclusion in the context of a situation that presents no margin for error, where the continuation, and likely exacerbation, of the suboptimal physical habitat conditions is a potentially significant impact.

The PEIR should be revised to provide a sound analysis of potential project impacts to special-status species of fish in Malibu Creek. The CDFW letter of 11 October 2021 provided excellent recommendations, which should be followed. The ecological integrity of Malibu Creek is severely diminished, and based on survey outcomes for the 4 special-status species of fish, it appears to be on the brink of collapse. According to Figures 11-4 and 11-5 of the PEIR, summer and fall flows of Malibu Creek have only barely met the instream flows of 2.5 cfs required of the Regional Board's NPDES Permit. There is no margin for error regarding the instream flow requirement. The PEIR needs to be revised to not only assure continued compliance with the instream flow requirement, but it needs to also explain what would be done to meet the requirement should the



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Metropolitan potable water pipeline fail to perform as predicted. The revised PEIR also needs to provide information on the condition and trends of the other factors listed by CDFW (letter of 11 October 2021), such as water quality attributes, benthic invertebrates and microorganisms, and habitat requirements of the 4 special-status species of fish.

**HABITAT LOSS**

The project area is undergoing severe habitat fragmentation, which is a process widely believed to pose the greatest threat to wildlife conservation (Smallwood 2015). Habitat fragmentation is a process of diminishing size and increasing isolation of habitat fragments that, relative to habitat loss, results in disproportionately greater reductions in numerical or functional capacity of a species, guild or ecological community. This larger impact of habitat fragmentation results from habitat fragments becoming too small or too isolated to support the species, guild or ecological community, thereby effectively contributing to the habitat loss that generated the fragmentation. The project would contribute further to habitat fragmentation in an environmental setting in which wildlife are vulnerable to furtherance of this process.

Habitat fragmentation and habitat loss have been recognized as the most likely leading causes of a documented 29% decline in overall bird abundance across North America over the last 48 years (Rosenberg et al. 2019). Habitat loss not only results in the immediate numerical decline of wildlife, but it also results in permanent loss of productive capacity. Two study sites in grassland/wetland/woodland complexes had total bird nesting densities of 32.8 and 35.8 nests per acre (Young 1948, Yahner 1982) for an average 34.3 nests per acre.

Assuming the project site supports the same total nesting density as the above-referenced study sites, and applying this adjusted density to the 4.2 acres of the Agoura Road project site, one can predict a loss of 144 bird nests. Applying this density to the 10.2 acres of habitat loss at the Reservoir site, one can predict a loss of 350 bird nests.

The loss of 144 to 350 nest sites of birds would qualify as a significant project impact that has not been addressed in the PEIR. But the impact does not end with the immediate loss of nest sites as the site is graded in preparation for impervious surfaces. The reproductive capacity of the site would be lost. The average number of fledglings per nest in Young's (1948) study was 2.9. Assuming Young's (1948) study site typifies bird productivity, the project would prevent the production of 418 fledglings per year at the Agoura Road site or 1,015 fledglings per year at the Reservoir site. Assuming an average bird generation time of 5 years, the lost capacity of both breeders and annual fledgling production can be estimated from an equation in Smallwood (2022):  $\{(nests/year \times chicks/nest \times number\ of\ years) + (2\ adults/nest \times nests/year) \times (number\ of\ years \div years/generation)\} \div (number\ of\ years) = 477\ birds\ per\ year\ denied\ to\ California\ by\ the\ project\ at\ the\ Agoura\ Road\ site,$  and 1,155 birds per year denied to California by the project at the Reservoir site. The project's denial to California of 477 to 1,155 birds per year has not been analyzed as a potential impact in the PEIR, nor does the PEIR provide any compensatory mitigation for this impact.

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The above are predictions of impacts to birds resulting from habitat loss. Predicted impacts are normal for CEQA review, but I have also measured impacts. Over the last several years, Noriko and I have re-surveyed sites of proposed warehouses, which are large building structures similar to the building proposed at either site alternative 1 or 2. Some of the project sites Noriko and I resurveyed had remained undeveloped and some had been constructed since our initial survey. We surveyed each site using the same methods, including the same season of the year, the same start time, the same survey duration, and the same person or by both of us together – however the site was earlier surveyed. I assigned sites that remained undeveloped as experimental controls and sites that were since developed as the experimental impact treatment, and I compared our survey outcomes in a before-after, control-impact (BACI) experimental design. One survey outcome was total number of species seen during the survey, including species seen off the project site. A second survey outcome was total number of species seen only on the project site. A third survey outcome was total number of live animals counted during the survey. To remove any bias from variation in species richness among sites, I normalized each survey outcome metric to the count at each site in the before-construction phase. For each survey outcome metric, I quantified the expected outcome at impact sites ( $E[I_A]$ ) relative to the before-after change in outcomes at the control site, and the effect of the impact:

$$E[I_A] = (C_B - C_A) \times I_B,$$

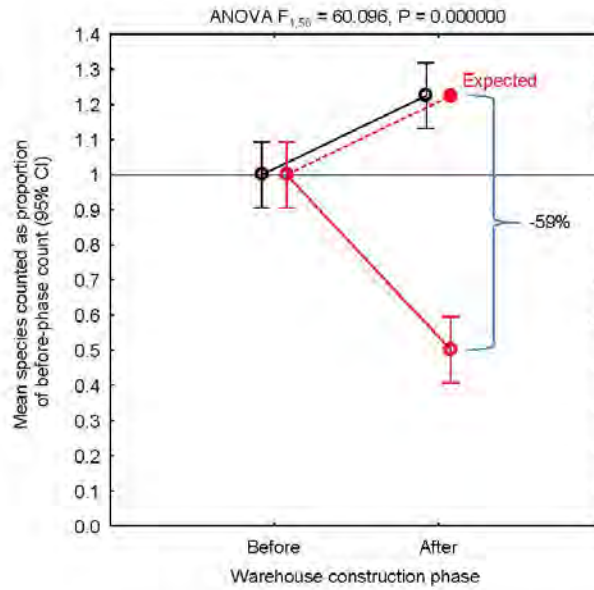
$$IMPACT\ EFFECT = \frac{(E[I_A] - I_A)}{E[I_A]} \times 100\%.$$

I used 2-factor analysis of variance with interest only in the significance of the interaction effect between before-after time period (BA) and control-impact treatment (CI) of each BACI experiment.

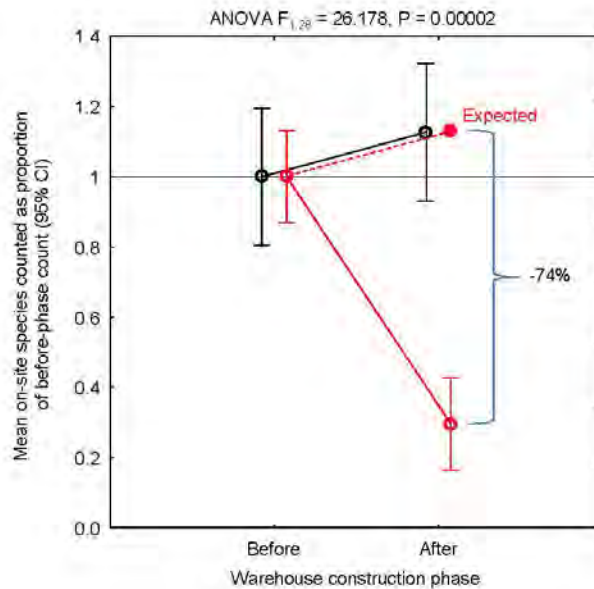
The effect of newly constructed warehouses was a 59% decline in the number of wildlife species detected within an unconstrained survey viewshed (Figure 5), a 74% decline in the number of wildlife species detected only within the bounds of the project site (Figure 6), and a 93% decline in the number of live animals counted during the survey (Figure 7). The effects I found are highly significant and very substantial. These results contradict the PEIR's (page 5-26) assertion that "Habitat loss from the development of the proposed project is not anticipated to significantly impact special-status wildlife species due to the relatively low acreage, proximity to existing development, and the amount of remaining suitable habitat in the surrounding area." These same conditions can be ascribed to most of the project sites that contributed to my BACI experiments, all of which included special-status species as members of the local wildlife community, and nearly all of which were of roughly the same acreages and proximal to both existing development and open space. These conditions, after all, typify locations where new construction projects are proposed.

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**Figure 5.** BACI test of the effect of warehouse construction on the counts of wildlife species detected from surveys at 28 project sites in California, showing an average 59% reduction in species counted as a result of warehouse construction.



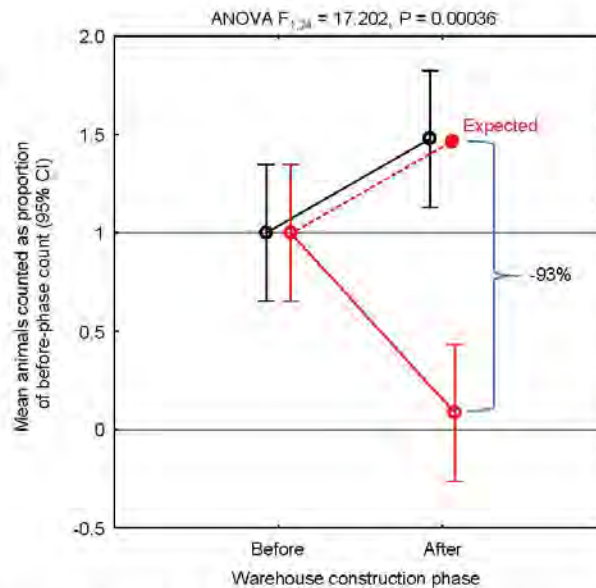
**Figure 6.** BACI test of the effect of warehouse construction on the counts of wildlife species detected from surveys at 24 project sites in California, showing an average 74% reduction in species counted strictly on the project sites as a result of warehouse construction.





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**Figure 7.** BACI test of the effect of warehouse construction on the counts of live animals detected from surveys at 12 project sites in California, showing an average 93% reduction in animals counted as a result of warehouse construction.



Based on the evidence, construction of the proposed building at either alternative site would result in the average of at least a 93% reduction in the abundance of each of the special-status species we detected, as well as of each of the special-status species we did not detect due to insufficient survey effort. I added the phrase “at least” because I noticed that special-status species were more adversely affected by new buildings than were species without special status. That is, within a survey viewshed at the peripheries of the new building at either site alternative 1 or 2, the evidence shows that few if any oat titmouse would be seen again. The same would be true for California thrasher, Southern California rufous-crowned sparrow, Nuttall’s woodpecker and all of the other special-status species.

The PEIR should be revised to appropriately analyze the project’s impacts to wildlife caused by habitat loss and habitat fragmentation. At a minimum, every species in Table 2 that has been documented on the Alternative project sites should be analyzed for the project’s impacts to them as a result of habitat loss. These impacts can and should be analyzed as the numbers of animals that would be lost as a direct result of construction and as the indirect result of denial of productivity, as exemplified for all birds as a group in my comments.

**WILDLIFE MOVEMENT**

The PEIR’s analysis of whether the project would interfere with wildlife movement in the region is fundamentally flawed. The PEIR characterizes the site as occurring within the recognized Santa Monica–Sierra Madre Connection that serves as an important linkage for wildlife in the Santa Monica Mountains Significant Ecological Area (South

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Coast Wildlands 2008). The PEIR also notes the largest wildlife overcrossing in the world – the Wallis Annenberg Wildlife Crossing – is under construction about 1 mile from the project site. This wildlife crossing coupled with the designation of the Santa Monica–Sierra Madre Connection highlights the well-recognized critical need to minimize and reverse the interferences of human activities to wildlife movement in the region for animals such as American badgers and mountain lions, but also for many additional species. Despite the PEIR's acknowledgement of these efforts to reverse the effects of interference with wildlife movement in the immediate project area, the PEIR (page 5-30) concludes, "it is unlikely the Pure Water Project would have an effect, given the existing barriers and proximity to existing development. In addition, the project would not produce new bottlenecks to wildlife movement in the area, with linear features only having short-term effects during construction. Therefore, the impact would be less than significant." In other words, the PEIR implies that ongoing efforts to minimize and reverse the effects of interference to wildlife movement in the region are wasted.

The PEIR's argument is flawed, as I initially pointed out. It is flawed because evidence of wildlife movement across the project site alternatives is already abundant. At both site alternatives, Noriko and I watched numerous western gulls selectively fly over and across the sites. We saw multiple other species target the sites as part of their movement paths through the area, including Canada goose (Photo 34), mallards, mourning doves, Cassin's kingbirds, western kingbirds, red-tailed hawks, and turkey vultures (Photo 35). At one point, we watched a group of 15 turkey vultures gain lift within a thermal that formed in the canyon along the proposed access road to the Reservoir site, and they did so as they followed the thermal northeastward. And for many of the other animals we saw at both sites, they were there to be detected because they had traveled there. Individuals of most animal species disperse from natal areas to areas where they will live as adults, and individuals of many animal species must migrate. Therefore, most of the animals we saw at the sites were there because they are still able to travel, which means the PEIR's argument is fundamentally flawed.

Another fundamental flaw of the PEIR's analysis is its implied premise that only disruption of the function of a wildlife corridor can interfere with wildlife movement in the region. This premise represents a false CEQA standard, and is therefore inappropriate to the analysis. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. Sites such as the proposed project sites are critically important for wildlife movement because they compose increasingly diminished areas of open space within a growing expanse of anthropogenic uses, forcing more members of volant wildlife species to use the sites for stopover and staging during migration, dispersal, and home range patrol (Warnock 2010, Taylor et al. 2011, Runge et al. 2014). The project would cut wildlife off from stopover and staging opportunities, forcing volant wildlife to travel even farther between remaining stopover sites. Traveling farther risks exhaustion, disorientation and starvation, all outcomes of which certainly contribute to interference with wildlife movement in the region.

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**Photo 34.** Another flock of Canada goose flying selectively across the building-free aspect of the Reservoir site, 20 September 2022.



**Photo 35.** Turkey vulture at the Agoura Road site alternative, 19 September 2022.



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**CUMULATIVE IMPACTS**

The PEIR's cumulative effects analysis is flawed. According to the PEIR (Page 18-3), "Preconstruction surveys, avoidance and minimization measures, habitat restoration, and offsite compensatory mitigation are typically prescribed for these types of effects consistent with local policies and state and federal requirements. Other projects with discretionary approvals are likely to follow mitigation requirements similar to Mitigation Measures 5-1 through 5-4 in this document. With implementation of these measures, the Pure Water Project's cumulative contribution to biological resources impacts would be reduced to a less than cumulatively considerable level." The PEIR implies that cumulative impacts are really residual impacts left over by inadequate mitigation of project impacts. This notion of residual impacts being the source of cumulative impacts is inconsistent with CEQA's definition of cumulative effects. Individually mitigated projects do not negate the significance of cumulative impacts. If they did, then CEQA would not require a cumulative effects analysis. To summarize, the PEIR presents no cumulative effects analysis as defined in two ways by CEQA.

Another flaw in the analysis is the PEIR's (Page 18-4) claim of cumulative benefits to biological resources: "...the Pure Water Project would contribute to cumulative benefits along with removal of Rindge Dam." This assertion is based on nothing more than vague speculation. I assume this statement is supposed to apply to fishes in Malibu Creek; it certainly does not bear on wildlife at either of the project site alternatives.

**MITIGATION****Mitigation Measure 5-1: Prepare and implement a mitigation plan for special-status plants and plant communities**

I concur with the conceptual plan to minimize impacts to special-status species of plants on the two alternative project sites, but I recommend that the PEIR be revised to include more details of the plan. As is, the mitigation measure defers the formulation of an actual plan to some unspecified date prior to construction. By deferring the formulation of this plan, the JPA precludes experts among the public from providing meaningful comments. Should the plan be completed 1 day prior to construction, for example, no meaningful participation from experts would be possible.

A revised PEIR should identify candidate mitigation sites, along with explanations of why planting at these sites would not disrupt the local ecology thereby causing additional project impacts. It should detail site preparation methods. It should present explicit success criteria along with how monitoring would be performed and how decisions would be made over whether success thresholds were achieved. It should present explicit measures that would be implemented in the cases where success thresholds are not achieved.

The PEIR says that the plan would be formulated with the help of state and federal agencies. This looks good on paper, but our state and federal agencies have been underfunded and often unable to participate where they are needed. The PEIR should be

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revised to include funding commitments to ensure state and federal agency participation.

**Mitigation Measure 5-2: Perform preconstruction surveys and construction monitoring for special-status wildlife species**

Protocol-level detection surveys for California gnatcatcher should be completed prior to the circulation of a revised PEIR. The PEIR proposes to implement these surveys as preconstruction take-avoidance surveys, but this is not the intended purpose of detection surveys. Detection surveys were developed by experts on the species to provide a reasonable likelihood of detection of the species if the species is indeed present, and otherwise to support determinations of absence. Detection surveys are needed to (1) support negative findings of species when appropriate, (2) inform preconstruction surveys to improve their efficacy, (3) estimate project impacts to be summarized in environmental review documents, and (4) inform compensatory mitigation and other forms of mitigation. Performing the detection surveys after certification of the PEIR would fail to achieve any of the intended objectives of the surveys.

The same shortfalls of the measure apply to reptiles and nesting birds. Preconstruction surveys are only intended as last-minute, one-time salvage and rescue operations targeting readily detectable nests or individuals before they are crushed under heavy construction machinery. These surveys need to be informed by protocol-level detection surveys. I must add that, even if the surveys are performed appropriately, following detection surveys, they cannot prevent the permanent loss of productivity of each species affected by the project. The animals saved by preconstruction surveys would be very few compared to those denied existence as a result of the project.

It should be required that reports be completed of preconstruction surveys, detailing the methods used and the animals found and salvaged (or not). The reports should be made available to the public.

**Mitigation Measure 5-3: Avoid and minimize impacts to jurisdictional waters, including wetlands**

Acquisition of take permits for jurisdictional waters is not a valid mitigation measure, as these take permits are required and provide no conservation benefits. Too few details are provided other than the vague promise of a 1:1 mitigation ratio to be paid to an unidentified mitigation bank. The PEIR needs to be revised to provide more information about the wetlands at risk and how potential impacts to them would be mitigated.

**Mitigation Measure 5-4: Prepare and implement a mitigation plan for oak trees and oak tree natural communities**

I concur with the conceptual plan to minimize impacts to oaks, but I recommend that the PEIR be revised to include more details of the plan. Like Mitigation Measure 5-1,



**Letter 12 continued**

this measure defers formulation of an actual plan to an unidentified later date. The PEIR should be revised to identify mitigation areas and to explicitly detail success criteria. One of the success criteria should include a threshold capacity for storage of acorn woodpecker and California scrub-jay food caches, and another should include a threshold capacity for support of bird nests. Therefore, monitoring is needed of food caches and bird nests before construction as well as at mitigation sites before and after construction. Without baselines, there can be no measurement of success of the mitigation, including to wildlife associates of oaks such as woodpeckers, California scrub-jay, oak titmouse, and many other special-status species in Table 2.

**RECOMMENDED MEASURES**

Below are few suggestions of measures that ought to be considered in a revised PEIR.

**Detection Surveys:** If the project goes forward, species detection surveys are needed for multiple special-status species that appear in Table 2 and have yet to be documented on the site. Detection survey protocols and guidelines are available from resource agencies for most special-status species. Otherwise, professional standards can be learned from the scientific literature and species' experts.

**Detection Surveys for Bats:** Multiple special-status species of bats likely occur on and around the project site. I saw a small bat – likely a species of *Myotis* – while completing our survey at the Agoura Road site. All five species of *Myotis* in the project area are ranked by Western Bat Working Group as either moderate or high priority for conservation. A qualified bat biologist should be tasked with completing protocol-level detection surveys for bats. It needs to be learned whether bats roost in the area and whether bats forage on site.

**Preconstruction surveys:** Completion of reports of the methods and outcomes of preconstruction surveys should be required. The reports should be made available to the public.

**Construction Monitoring:** If the project goes forward, two or more qualified biologists need to serve as construction monitors. They should have the authority to stop construction when construction poses a threat to wildlife, and they should have the authority to rectify situations that pose threats to wildlife. The events associated with construction monitoring, such as efforts to avoid impacts and findings of dead and injured wildlife, need to be summarized in a report that is subsequently made available to the public.

**Habitat Loss:** If the project goes forward, compensatory mitigation would be warranted for habitat loss. At least an equal area of land should be protected in perpetuity as close to the project site as possible, but a larger area is likely warranted to mitigate for the impacts to so many special-status species of wildlife as likely occur on the site. And additional compensatory mitigation should be linked to impacts identified in construction monitoring.



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**Fund Wildlife Rehabilitation Facilities:** Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Many animals would likely be injured during construction or by collisions with the building or with cars traveling along the access road to the Reservoir site.

Thank you for your attention,



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Shawn Smallwood, Ph.D.

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**Letter 12 continued**

*Bushtit at the Agoura  
Road site alternative, 19  
September 2022.*



*Oak titmouse at the  
Reservoir site alternative,  
20 September 2022.*





Letter 12 continued

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**Ecologist**

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- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

**Education**

Ph.D. Ecology, University of California, Davis. September 1990.  
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  - 24 in non-reviewed proceedings
  - 371 reports, declarations, posters and book reviews
  - 8 in mass media outlets
  - 87 public presentations of research results

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC

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reviewed the science underlying the Alameda County Avian Protection Program, and advised the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their

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## Smallwood CV

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conservation and restoration opportunities based on ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science, *U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

### Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District. I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a \$718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin. I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS



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analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founts of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al.* v. Rockwell International *et al.*, No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a \$553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

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Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HICPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersions of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the



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County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

**Peer Reviewed Publications**

Smallwood, K. S. and M. L. Morrison. 2018. Nest-site selection in a high-density colony of burrowing owls. *Journal of Raptor Research* 52:454-470.

Smallwood, K. S., D. A. Bell, E. L. Walther, E. Leyvas, S. Standish, J. Mount, B. Karas. 2018. Estimating wind turbine fatalities using integrated detection trials. *Journal of Wildlife Management* 82:1169-1184.

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May, R., Gill, A. B., Köppel, J., Langston, R. H.W., Reichenbach, M., Scheidat, M., Smallwood, S., Voigt, C. C., Hüppop, O., and Portman, M. 2017. Future research directions to reconcile wind turbine-wildlife interactions. Pages 255-276 in Köppel, J., Editor. *Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference*. Springer. Cham, Switzerland.

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Mete, A., N. Stephenson, K. Rogers, M. G. Hawkins, M. Sadar, D. Guzman, D. A. Bell, J. Shipman, A. Wells, K. S. Smallwood, and J. Foley. 2014. Emergence of *Knemidocoptic* mange in wild Golden Eagles (*Aquila chrysaetos*) in California. *Emerging Infectious Diseases* 20(10):1716-1718.

Smallwood, K. S. 2013. Introduction: Wind-energy development and wildlife conservation. *Wildlife Society Bulletin* 37: 3-4.

Smallwood, K. S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. *Wildlife Society Bulletin* 37:19-33. + Online Supplemental Material.

Smallwood, K. S., L. Neher, J. Mount, and R. C. E. Culver. 2013. Nesting Burrowing Owl Abundance in the Altamont Pass Wind Resource Area, California. *Wildlife Society Bulletin*: 37:787-795.

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**Comments on Environmental Documents**

I was retained or commissioned to comment on environmental planning and review documents, including:

- The Villages of Lakeview EIR (2017; 28 pp);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4 pp);
- San Geronio Crossings EIR (2017; 22 pp);
- Replies to responses on Jupiter Project IS and MND (2017; 12 pp);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12 pp);
- Central SoMa Plan DEIR (2017; 14 pp);
- Colony Commerce Center Specific Plan DEIR (2016; 16 pp);
- Fairway Trails Improvements MND (2016; 13 pp);
- Review of Avian-Solar Science Plan (2016; 28 pp);
- Replies to responses on Initial Study for Pyramid Asphalt (2016; 5 pp);
- Initial Study for Pyramid Asphalt (2016; 4 pp);
- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14 pp);
- Santa Anita Warehouse IS and MND (2016; 12 pp);
- CapRock Distribution Center III DEIR (2016; 12 pp);
- Orange Show Logistics Center Initial Study and MND (2016; 9 pp);
- City of Palmdale Oasis Medical Village Project IS and MND (2016; 7 pp);
- Comments on proposed rule for incidental eagle take (2016, 49 pp);
- Grapevine Specific and Community Plan FEIR (2016; 25 pp);
- Grapevine Specific and Community Plan DEIR (2016; 15 pp);
- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study (2016; 6 pp);
- Tri-City Industrial Complex Initial Study (2016; 5 pp);
- Hidden Canyon Industrial Park Plot Plan 16-PP-02 (2016; 12 pp);
- Kimball Business Park DEIR (2016; 10 pp);
- Jupiter Project IS and MND (2016; 9 pp);
- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18 pp);
- Palo Verde Mesa Solar Project Draft Environmental Impact Report (2016; 27 pp);



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- Reply Witness Statement on Fairview Wind Project, Ontario, Canada (2016; 14 pp);
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- Supplementary Reply Witness Statement Amherst Island Wind Farm, Ontario (2015, 38 pp);
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- Columbia Business Center MND (2015; 8 pp);
- West Valley Logistics Center Specific Plan DEIR (2015, 10 pp);
- World Logistic Center Specific Plan FEIR (2015, 12 pp);
- Bay Delta Conservation Plan EIR/EIS (2014, 21 pp);
- Addison Wind Energy Project DEIR (2014, 32 pp);
- Response to Comments on the Addison Wind Energy Project DEIR (2014, 15 pp);
- Addison and Rising Tree Wind Energy Project FEIR (2014, 12 pp);
- Alta East Wind Energy Project FEIS (2013, 23 pp);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16 pp);
- Clearwater and Yakima Solar Projects DEIR (2013, 9 pp);
- Cuyama Solar Project DEIR (2014, 19 pp);
- Draft Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49 pp);
- Kingbird Solar Photovoltaic Project EIR (2013, 19 pp);
- Lucerne Valley Solar Project Initial Study & Mitigated Negative Declaration (2013, 12 pp);
- Palen Solar Electric Generating System Final Staff Assessment of California Energy Commission, (2014, 20 pp);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9 pp);
- Rising Tree Wind Energy Project DEIR (2014, 32 pp);
- Response to Comments on the Rising Tree Wind Energy Project DEIR (2014, 15 pp);
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- Comment on the Biological Opinion (08ESMF-00-2012-F-0387) of Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3 pp);
- West Antelope Solar Energy Project Initial Study and Negative Declaration (2013, 18 pp);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28 pp);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10 pp);
- Declaration on Tule Wind project FEIR/FEIS (2013; 24 pp);
- Sunlight Partners LANDPRO Solar Project Mitigated Negative Declaration (2013; 11 pp);
- Declaration in opposition to BLM fracking (2013; 5 pp);
- Rosamond Solar Project Addendum EIR (2013; 13 pp);
- Pioneer Green Solar Project EIR (2013; 13 pp);
- Reply to Staff Responses to Comments on Soccer Center Solar Project Mitigated Negative

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- Declaration (2013; 6 pp);
- Soccer Center Solar Project Mitigated Negative Declaration (2013; 10 pp);
- Plainview Solar Works Mitigated Negative Declaration (2013; 10 pp);
- Reply to the County Staff's Responses on comments to Imperial Valley Solar Company 2 Project (2013; 10 pp);
- Imperial Valley Solar Company 2 Project (2013; 13 pp);
- FRV Orion Solar Project DEIR (PP12232) (2013; 9 pp);
- Casa Diablo IV Geothermal Development Project (2013; 6 pp);
- Reply to Staff Responses to Comments on Casa Diablo IV Geothermal Development Project (2013; 8 pp);
- FEIS prepared for Alta East Wind Project (2013; 23 pp);
- Metropolitan Air Park DEIR, City of San Diego (2013; );
- Davidson Homes Tentative Subdivision Map and Rezoning Project DEIR (2013; 9 pp);
- Analysis of Biological Assessment of Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10 pp);
- Declaration on Campo Verde Solar project FEIR (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8 pp);
- Declaration on North Steens Transmission Line FEIS (2012; 62 pp);
- City of Lancaster Revised Initial Study for Conditional Use Permits 12-08 and 12-09. Summer Solar and Springtime Solar Projects (2012; 8 pp);
- J&J Ranch, 24 Adobe Lane Environmental Review (2012; 14 pp);
- Reply to the County Staff's Responses on comments to Hudson Ranch Power II Geothermal Project and the Simbol Calipatria Plant II (2012; 8 pp);
- Hudson Ranch Power II Geothermal Project and the Simbol Calipatria Plant II (2012; 9 pp);
- Desert Harvest Solar Project EIS (2012; 15 pp);
- Solar Gen 2 Array Project DEIR (2012; 16 pp);
- Ocotillo Sol Project EIS (2012; 4 pp);
- Beacon Photovoltaic Project DEIR (2012; 5 pp);
- Declaration on Initial Study and Proposed Negative Declaration for the Butte Water District 2012 Water Transfer Program (2012; 11 pp);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16 pp);
- City of Elk Grove Sphere of Influence EIR (2011; 28 pp);
- Comment on Sutter Landing Park Solar Photovoltaic Project MND (2011; 9 pp);
- Statement of Shawn Smallwood, Ph.D. Regarding Proposed Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4 pp);
- Declaration of K. Shawn Smallwood on Biological Impacts of the Ivanpah Solar Electric Generating System (ISEGS) (2011; 9 pp);
- Comments on Draft Eagle Conservation Plan Guidance (2011; 13 pp);
- Comments on Draft EIR/EA for Niles Canyon Safety Improvement Project (2011; 16 pp);
- Declaration of K. Shawn Smallwood, Ph.D., on Biological Impacts of the Route 84 Safety Improvement Project (2011; 7 pp);
- Rebuttal Testimony of Witness #22, K. Shawn Smallwood, Ph.D, on Behalf of Intervenor Friends of The Columbia Gorge & Save Our Scenic Area (2010; 6 pp);
- Prefiled Direct Testimony of Witness #22, K. Shawn Smallwood, Ph.D, on Behalf of



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- Intervenors Friends of the Columbia Gorge & Save Our Scenic Area. Comments on Whistling Ridge Wind Energy Power Project DEIS, Skamania County, Washington (2010; 41 pp);
- Evaluation of Klickitat County's Decisions on the Windy Flats West Wind Energy Project (2010; 17 pp);
- St. John's Church Project Draft Environmental Impact Report (2010; 14 pp.);
- Initial Study/Mitigated Negative Declaration for Results Radio Zone File #2009-001 (2010; 20 pp);
- Rio del Oro Specific Plan Project Final Environmental Impact Report (2010; 12 pp);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9 pp);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington. Second Declaration to Friends of the Columbia Gorge, Inc. and Save Our Scenic Area (Dec 2008; 17 pp);
- Comments on Draft 1A Summary Report to CAISO (2008; 10 pp);
- County of Placer's Categorical Exemption of Hilton Manor Project (2009; 9 pp);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3 pp);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142 pp);
- Delta Shores Project EIR, south Sacramento (2009; 11 pp + addendum 2 pp);
- Declaration of Shawn Smallwood in Support of Care's Petition to Modify D.07-09-040 (2008; 3 pp);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9 pp);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11 pp);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7 pp.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington. Declaration to Friends of the Columbia Gorge, Inc. and Save Our Scenic Area (Sep 2008; 16 pp);
- California Energy Commission's Preliminary Staff Assessment of the Colusa Generating Station (2007; 24 pp);
- Rio del Oro Specific Plan Project Recirculated Draft Environmental Impact Report (2008; 66 pp);
- Replies to Response to Comments Re: Regional University Specific Plan Environmental Impact Report (2008; 20 pp);
- Regional University Specific Plan Environmental Impact Report (2008; 33 pp.);
- Clark Precast, LLC's "Sugarland" project, Negative Declaration (2008; 15 pp.);
- Cape Wind Project Draft Environmental Impact Statement (2008; 157 pp.);
- Yuba Highlands Specific Plan (or Area Plan) Environmental Impact Report (2006; 37 pp.);
- Replies to responses to comments on Mitigated Negative Declaration of the proposed



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- Mining Permit (MIN 04-01) and Modification of Use Permit 96-02 at North Table Mountain (2006; 5 pp);
- Mitigated Negative Declaration of the proposed Mining Permit (MIN 04-01) and Modification of Use Permit 96-02 at North Table Mountain (2006; 15 pp);
- Windy Point Wind Farm Environmental Review and EIS (2006; 14 pp and 36 Powerpoint slides in reply to responses to comments);
- Shiloh I Wind Power Project EIR (2005; 18 pp);
- Buena Vista Wind Energy Project Notice of Preparation of EIR (2004; 15 pp);
- Negative Declaration of the proposed Callahan Estates Subdivision (2004; 11 pp);
- Negative Declaration of the proposed Winters Highlands Subdivision (2004; 9 pp);
- Negative Declaration of the proposed Winters Highlands Subdivision (2004; 13 pp);
- Negative Declaration of the proposed Creekside Highlands Project, Tract 7270 (2004; 21 pp);
- On the petition California Fish and Game Commission to list the Burrowing Owl as threatened or endangered (2003; 10 pp);
- Conditional Use Permit renewals from Alameda County for wind turbine operations in the Altamont Pass Wind Resource Area (2003; 41 pp);
- UC Davis Long Range Development Plan of 2003, particularly with regard to the Neighborhood Master Plan (2003; 23 pp);
- Anderson Marketplace Draft Environmental Impact Report (2003; 18 pp + 3 plates of photos);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6 pp);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002; 23 pp);
- Response to testimony of experts at the East Altamont Energy Center evidentiary hearing on biological resources (2002; 9 pp);
- Revised Draft Environmental Impact Report, The Promenade (2002; 7 pp);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002; 3 pp);
- UC Merced -- Declaration of Dr. Shawn Smallwood in support of petitioner's application for temporary restraining order and preliminary injunction (2002; 5 pp);
- Replies to response to comments in Final Environmental Impact Report, Atwood Ranch Unit III Subdivision (2003; 22 pp);
- Draft Environmental Impact Report, Atwood Ranch Unit III Subdivision (2002; 19 pp + 8 photos on 4 plates);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002; 17 pp + 3 photos; follow-up report of 3 pp);
- Initial Study and Negative Declaration, Silver Bend Apartments, Placer County (2002; 13 pp);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001; 26 pp);
- Initial Study, Colusa County Power Plant (2001; 6 pp);
- Comments on Proposed Dog Park at Catlin Park, Folsom, California (2001; 5 pp + 4 photos);
- Pacific Lumber Co. (Headwaters) Habitat Conservation Plan and Environmental Impact Report (1998; 28 pp);
- Final Environmental Impact Report/Statement for Issuance of Take authorization for listed

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- species within the MSCP planning area in San Diego County, California (Fed. Reg. 62 (60): 14938, San Diego Multi-Species Conservation Program) (1997: 10 pp);
- Permit (PRT-823773) Amendment for the Natomas Basin Habitat Conservation Plan, Sacramento, CA (Fed. Reg. 63 (101): 29020-29021) (1998);
- Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). (Fed. Reg. 64(176): 49497-49498) (1999: 8 pp);
- Review of the Draft Recovery Plan for the Arroyo Southwestern Toad (*Bufo microscaphus californicus*) (1998);
- Ballona West Bluffs Project Environmental Impact Report (1999: oral presentation);
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Negative Declaration for the Sunset Sky ranch Airport Use Permit (1999);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000: 10 pp);
- California Energy Commission's Final Staff Assessment of the proposed Metcalf Energy Center (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000: 4 pp);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11 pp);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7 pp);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9 pp).

**Comments on other Environmental Review Documents:**

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12 pp);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015: 8 pp);
- Draft Program Level EIR for Covell Village (2005: 19 pp);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping document (2003: 7 pp.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7 pp);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8 pp.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001: 2 letters totaling 35 pp.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2 pp.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7 pp.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis canadensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytoni*), on behalf of The Wildlife Society—Western Section (2000: 10 pp.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7 pp.);



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- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10 pp);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOAA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 pp + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

**Position Statements** I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society--Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

**Posters at Professional Meetings**

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts. Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian



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fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County, California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

#### Presentations at Professional Meetings and Seminars

Repowering the Altamont Pass. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area, 1999-2007. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Conservation and recovery of burrowing owls in Santa Clara Valley. Santa Clara Valley Habitat Agency, Newark, California, 3 February 2017.

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind

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power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

Update on Wildlife Impacts in the Altamont Pass Wind Resource Area. Raptor Symposium, The Wildlife Society—Western Section, Riverside, California, February 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh, Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13<sup>th</sup> Annual Conference, UC Santa

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Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society, Los Angeles, CA, January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society, Los Angeles, CA, January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association,



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Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar. Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

"No Surprises" -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

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In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomysidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference. Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

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Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis, May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California, February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California, March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion; Mountain lion control; Political status of the mountain lion in California.

**Other forms of Participation at Professional Meetings**

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm, Sweden, February 2013.
- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.
- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.



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- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.
- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.
- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

**Printed Mass Media**

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

**Radio/Television**

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

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KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

**Reviews of Journal Papers** (Scientific journals for whom I've provided peer review)

<b>Journal</b>	<b>Journal</b>
American Naturalist	Journal of Animal Ecology
Journal of Wildlife Management	Western North American Naturalist
Auk	Journal of Raptor Research
Biological Conservation	National Renewable Energy Lab reports
Canadian Journal of Zoology	Oikos
Ecosystem Health	The Prairie Naturalist
Environmental Conservation	Restoration Ecology
Environmental Management	Southwestern Naturalist
Functional Ecology	The Wildlife Society--Western Section Trans.
Journal of Zoology (London)	Proc. Int. Congress on Managing for Ecosystem Health
Journal of Applied Ecology	Transactions in GIS
Ecology	Tropical Ecology
Wildlife Society Bulletin	Peer J
Biological Control	The Condor

**Committees**

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento

**Letter 12 continued**

Smallwood CV

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**Other Professional Activities or Products**

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of \$553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines, Amherst Island, and Fairview Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

**Memberships in Professional Societies**

The Wildlife Society  
Raptor Research Foundation

**Honors and Awards**

Fulbright Research Fellowship to Indonesia, 1987  
J.G. Boswell Full Academic Scholarship, 1981 college of choice  
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001  
Northern California Athletic Association Most Valuable Cross Country Runner, 1984  
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977  
CIF Section Champion, Cross Country in 1978  
CIF Section Champion, Track & Field 2 mile run in 1981  
National Junior Record, 20 kilometer run, 1982  
National Age Group Record, 1500 meter run, 1978

**Community Activities**

District 64 Little League Umpire, 2003-2007  
Dixon Little League Umpire, 2006-07  
Davis Little League Chief Umpire and Board member, 2004-2005  
Davis Little League Safety Officer, 2004-2005  
Davis Little League Certified Umpire, 2002-2004  
Davis Little League Scorekeeper, 2002  
Davis Visioning Group member  
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002  
Served on campaign committees for City Council candidates



**Letter 12 continued**

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**Representative Clients/Funders**

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Law Offices of Stephan C. Volker	EDF Renewables
Blum Collins, LLP	National Renewable Energy Lab
Eric K. Gillespie Professional Corporation	Altamont Winds LLC
Law Offices of Berger & Montague	Salka Energy
Lozeau   Drury LLP	Comstocks Business (magazine)
Law Offices of Roy Haber	BioResource Consultants
Law Offices of Edward MacDonald	Tierra Data
Law Office of John Gabrielli	Black and Veatch
Law Office of Bill Kopper	Terry Preston, Wildlife Ecology Research Center
Law Office of Donald B. Mooney	EcoStat, Inc.
Law Office of Veneruso & Moncharsh	US Navy
Law Office of Steven Thompson	US Department of Agriculture
Law Office of Brian Gaffney	US Forest Service
California Wildlife Federation	US Fish & Wildlife Service
Defenders of Wildlife	US Department of Justice
Sierra Club	California Energy Commission
National Endangered Species Network	California Office of the Attorney General
Spirit of the Sage Council	California Department of Fish & Wildlife
The Humane Society	California Department of Transportation
Hagens Berman LLP	California Department of Forestry
Environmental Protection Information Center	California Department of Food & Agriculture
Goldberg, Kamin & Garvin, Attorneys at Law	Ventura County Counsel
Californians for Renewable Energy (CARE)	County of Yolo
Seatuck Environmental Association	Tahoe Regional Planning Agency
Friends of the Columbia Gorge, Inc.	Sustainable Agriculture Research & Education Program
Save Our Scenic Area	Sacramento-Yolo Mosquito and Vector Control District
Alliance to Protect Nantucket Sound	East Bay Regional Park District
Friends of the Swainson's Hawk	County of Alameda
Alameda Creek Alliance	Don & LaNelle Silverstien
Center for Biological Diversity	Seventh Day Adventist Church
California Native Plant Society	Escuela de la Raza Unida
Endangered Wildlife Trust	Susan Pelican and Howard Beeman
and BirdLife South Africa	Residents Against Inconsistent Development, Inc.
AquAlliance	Bob Sarvey
Oregon Natural Desert Association	Mike Boyd
Save Our Sound	Hillcroft Neighborhood Fund
G3 Energy and Pattern Energy	Joint Labor Management Committee, Retail Food Industry
Emerald Farms	Lisa Rocca
Pacific Gas & Electric Co.	Kevin Jackson
Southern California Edison Co.	Dawn Stover and Jay Letto
Georgia-Pacific Timber Co.	Nancy Havassy
Northern Territories Inc.	Catherine Portman (for Brenda Cedarblade)
David Magney Environmental Consulting	Ventus Environmental Solutions, Inc.
Wildlife History Foundation	Panorama Environmental, Inc.
NextEra Energy Resources, LLC	Adams Broadwell Professional Corporation
Ogin, Inc.	

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## Letter 12 continued

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## Representative special-status species experience

Common name	Species name	Description
<b>Field experience</b>		
California red-legged frog	<i>Rana aurora draytonii</i>	Protocol searches; Many detections
Foothill yellow-legged frog	<i>Rana boylei</i>	Presence surveys; Many detections
Western spadefoot	<i>Spea hammondi</i>	Presence surveys; Few detections
California tiger salamander	<i>Ambystoma californiense</i>	Protocol searches; Many detections
Coast range newt	<i>Taricha torosa torosa</i>	Searches and multiple detections
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	Detected in San Luis Obispo County
California horned lizard	<i>Phrynosoma coronatum frontale</i>	Searches; Many detections
Western pond turtle	<i>Clemmys marmorata</i>	Searches; Many detections
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Protocol searches; detections
Sumatran tiger	<i>Panthera tigris</i>	Track surveys in Sumatra
Mountain lion	<i>Puma concolor californicus</i>	Research and publications
Point Arena mountain beaver	<i>Aplodontia rufa nigra</i>	Remote camera operation
Giant kangaroo rat	<i>Dipodomys ingens</i>	Detected in Cholame Valley
San Joaquin kangaroo rat	<i>Dipodomys nitratoides</i>	Monitoring & habitat restoration
Monterey dusky-footed woodrat	<i>Neotoma fuscipes luciana</i>	Non-target captures and mapping of dens
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	Habitat assessment, monitoring
Salinas harvest mouse	<i>Reithrodontomys megalotus distichlus</i>	Captures; habitat assessment
<b>Bats</b>		
California clapper rail	<i>Rallus longirostris</i>	Thermal imaging surveys
Golden eagle	<i>Aquila chrysaetos</i>	Surveys and detections
Swainson's hawk	<i>Buteo swainsoni</i>	Numerical & behavioral surveys
Northern harrier	<i>Circus cyaneus</i>	Numerical & behavioral surveys
White-tailed kite	<i>Elanus leucurus</i>	Numerical & behavioral surveys
Loggerhead shrike	<i>Lanius ludovicianus</i>	Large area surveys
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Detected in Monterey County
Willow flycatcher	<i>Empidonax traillii extimus</i>	Research at Sierra Nevada breeding sites
Burrowing owl	<i>Athene cunicularia hypugia</i>	Numerical & behavioral surveys
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Monitored success of relocation and habitat restoration
<b>Analytical</b>		
Arroyo southwestern toad	<i>Bufo microscaphus californicus</i>	Research and report.
Giant garter snake	<i>Thamnophis gigas</i>	Research and publication
Northern goshawk	<i>Accipiter gentilis</i>	Research and publication
Northern spotted owl	<i>Strix occidentalis</i>	Research and reports
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	Expert testimony

**Letter 12 continued**

## **EXHIBIT C**



Letter 12 continued



October 6, 2022

Ms. Kelilah D. Federman  
Adams Broadwell Joseph & Cardozo  
601 Gateway Boulevard, Suite 1000  
South San Francisco, CA 94080

RE: REVIEW GROUNDWATER CONDITIONS RELEVANT TO THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR LAS VIRGENES-TRIUNFO JOINT POWERS AUTHORITY-PROPOSED PURE WATER PROJECT

Dear Ms. Federman:

This letter is provided to summarize the findings of my review of the Draft Program Environmental Impact Report (DPEIR) for the Las Virgenes-Triunfo Joint Powers Authorities Proposed Pure Water Project, Los Angeles and Ventura County, California (Proposed Project), and publicly available documents related to the findings of impacts to groundwater and surface water described in the DPEIR. My review focused specifically on potential impacts to groundwater due to the proposed consumptive water use and changes in groundwater flow as evaluated and described in the DPEIR. I have not performed any independent analyses or calculations.

#### SUPPORTING DOCUMENTATION

The information presented below is largely drawn from the following reports:

1. California Department of Water Resources. 2004. "Conejo Valley Groundwater Basin. Hydrologic Region South Coast." California's Groundwater Bulletin 118. Sacramento, CA. February 27, 2004.
2. California Natural Resources Agency. Department of Water Resources, California Groundwater Basin Descriptions. Online database <https://data.cnra.ca.gov/dataset/ca-gw-basin-boundary-descriptions>.
3. City of Thousand Oaks. 2021b. Groundwater Utilization Project Final Initial Study/Mitigated Negative Declaration. Prepared by Kennedy/Jenks Consultants. August 2021.
4. DPEIR, specifically Sections 8, 10, and 11.
5. Hopkins Groundwater Consultants, Inc., Preliminary Hydrogeologic Study, Long Term Production Test for Brackish Groundwater Utilization Project, Thousand Oaks, California. October, 2021.

## Letter 12 continued



Ms. Kelliah D. Federman  
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6. Kennedy Jenks, Thousand Oaks Extended Pumping at Los Robles Golf Course Well, November 9, 2021.
7. Preliminary Geotechnical Desktop Study for the Due Diligence Review, 30800 Agoura Road, Agoura Hills, Pure Water Project Advanced Water Treatment Plant Siting Study, Las Virgenes-Triunfo Joint Powers Authority. Oakridge GeoScience Inc. June 30, 2017.
8. Pure Water Project Las Virgenes-Triunfo: Draft Preliminary Design Report for Pure Water Demonstration Project. CDM Smith. June 30, 2017.
9. Thousand Oaks Groundwater and Reclaimed Water Study. Prepared for the City of Thousand Oaks Public Works Department by CDM Smith. February 2016.
10. Water Augmentation Study, Preliminary Screening Presentation, Pure Water Project Las Virgenes-Triunfo, February 22, 2021.

### CONSUMPTIVE GROUNDWATER USE

#### Draft Program Environmental Impact Report Finding

The DPEIR specifies that the Proposed Project will need to use groundwater to augment the Tapia Water Reclamation Facility recycled water supply. The proposed groundwater source is the existing Los Robles Golf Course well, which could have a total consumptive use between 360,000 to 626,400 gallons per day or 400 to 700 acre-feet per year (AFY).<sup>1</sup> This well is in the Conejo Valley Groundwater Basin (CVGB) 4-010. The estimated safe yield of the CVGB is assumed to be about 3,500 AFY.<sup>2</sup> The DPEIR states that since use of the Los Robles well would not exceed the sustainable yield, the groundwater use impact would be less than significant.<sup>3</sup>

#### Evaluation of Draft Program Environmental Impact Report Finding

The DPEIR does not specifically describe the current groundwater use in the CVGB except to state that groundwater is not widely used in the project area.<sup>4</sup> According to the CDM Smith 2016 report, there are approximately 488 other existing wells also located in the CVGB

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<sup>1</sup> Section 2.1.5, pdf page 47 of the DPEIR.

<sup>2</sup> Page 3, Thousand Oaks Groundwater and Reclaimed Water Study, CDM Smith, February 2016.

<sup>3</sup> Section 11.4.4, pdf page 231 of the DPEIR.

<sup>4</sup> Section 11.1.4, pdf page 218 of the DPEIR.

<sup>5</sup> Page 2, Thousand Oaks Groundwater and Reclaimed Water Study, CDM Smith February, 2016.

<sup>6</sup> California DWR Online database, [https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/4\\_010\\_Conejo-alley.pdf](https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/4_010_Conejo-alley.pdf)

## Letter 12 continued



Ms. Kelliah D. Federman  
Adams Broadwell Joseph & Cardozo  
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with most of them being domestic (single family) wells.<sup>5</sup> Groundwater withdraw for these other sources is estimated at 100 AFY in 2003.<sup>6</sup> The DPEIR does not attempt to estimate a current consumptive use of groundwater in the CVGB so it is not possible to definitively evaluate if the use of the Los Robles Golf Course well will have a significant impact on the current groundwater levels in the CVGB. The DPEIR states that a pumping rate of 400 to 700 AFY would be a sustainable yield for the aquifer. The 2016 CDM Study concluded that pumping Los Robles well above 600 AFY could exceed the sustainable yield of the aquifer.

## GROUNDWATER QUALITY

### Pipeline Impacts

As stated in the DPIER, both Pure Water project pipeline alignment Alternatives 1 and 2 will be located underground, primarily along existing roadways. The pipeline alignments will cross portions of three groundwater basins, Conejo Groundwater Basin 4-010 (Figure 1), Thousand Oaks groundwater Basin 4-019 (Figure 2), and Russell Valley Groundwater Basin 4-020 (Figure 3). Most of the pipeline would be installed using open cut construction/trenching, measuring 3 to 5 feet in width.<sup>7</sup> During construction, shallow groundwater will be encountered that requires temporary dewatering during construction. Both pipeline Alternatives 1 and 2 would be constructed near former or existing hazardous waste cleanup sites (Figure 4). Dewatering discharge will be handled according to local jurisdictional requirements and should have limited impacts on groundwater quality.

### Los Robles Well Impacts

The operation of the Los Robles Golf Course well for source water augmentation will result in hydraulic changes to the groundwater flow regime in the vicinity of the well. The DPIER indicates pumping from the Los Robles Well could destabilize the groundwater contamination plume at an active hazardous waste site (TFX Aviation site). This could result in contaminated groundwater impacting the CVGB. The potential risk to the CVGB is addressed in the DPIER only through a proposed groundwater monitoring program that would be implemented after start of pumping in the Los Robles Well.<sup>8</sup>

Kennedy Jenks prepared a report for the City of Thousand Oaks, on the results of a long-term pumping test in the Los Robles Well conducted between August 4, 2020, and March 30, 2021 (KJ Report).<sup>9</sup> Groundwater quality samples collected during the pumping test found detectable levels of Per- and Polyfluoroalkyl Substances (PFAS). The source of this contamination is not discussed in the report. The DPIER does not mention the presence of



## Letter 12 continued



Ms. Kelliah D. Federman  
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PFAS contamination in the Robles Well or in any other discussion of background groundwater quality of the project area.

### Evaluation of Draft Program Environmental Impact Report Finding

The potential water quality impacts from construction of pipeline Alignments 1 and 2 are minimal if the mitigation measures described in the DPEIR are implemented. After pipeline construction, the backfill material placed around the pipes may become a preferred conduit for groundwater flow. If shallow contaminated ground water is present, the new pipeline could increase the potential for degradation of groundwater along the alignments. The proposed mitigation measures in the DPEIR don't address any future monitoring of the pipeline alignments after construction.

The DPEIR concludes there is a low potential for a significant impact to groundwater quality from use of the Los Robles Well for source water augmentation. A review of the KJ Report indicates the presence of existing PFAS contamination in the Los Robles Well. PFAS are widely used, long lasting chemicals, which break down very slowly in groundwater over time. The KJ Report does not discuss the source of the PFAS contamination nor does the DPEIR mention them as a potential water quality concern. The presence of these chemicals in the well indicates a source(s) within the radius of influence during the extended pumping test performed by the City of Thousand Oaks in 2021.

The hydrogeologic study performed for the KJ Report did not directly address potential water quality impacts from the TFX Aviation plume due to pumping of the Los Robles Well.<sup>10</sup> The hydrogeologic information provided in the KJ Report only evaluated the long-term capacity of the Robles Well to provide source water for the project.

### CONCLUSIONS

After pipeline construction the backfill material placed around the pipes may become a preferred conduit for groundwater flow. If contaminated ground water is present, the new pipeline could increase the potential for degradation of shallow groundwater along the alignments. The DPEIR does not address this potential risk.

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<sup>7</sup> City of Thousand Oaks. 2021b. Groundwater Utilization Project Final Initial Study/Mitigated Negative Declaration., pdf page 77.

<sup>8</sup> Section 10.5, pdf page 210 of the DPEIR.

<sup>9</sup> Kennedy Jenks, Thousand Oaks Extended Pumping at Los Robles Golf Course Well, November 9, 2021.

<sup>10</sup> Hopkins Groundwater Consultants, Inc., Preliminary Hydrogeologic Study, Long Term Production Test for Brackish Groundwater Utilization Project, Thousand Oaks, California. October, 2021.



**Letter 12 continued**



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Figure 3 – Russell Valley Groundwater Basin Description  
Figure 4 – Hazardous Materials Sites in Project Area



Letter 12 continued

Figure 1

# 4-010 CONEJO VALLEY

## Basin Boundaries Description

2003

- County: Ventura
- Surface Area: 28,900 acres (45.2 square miles)

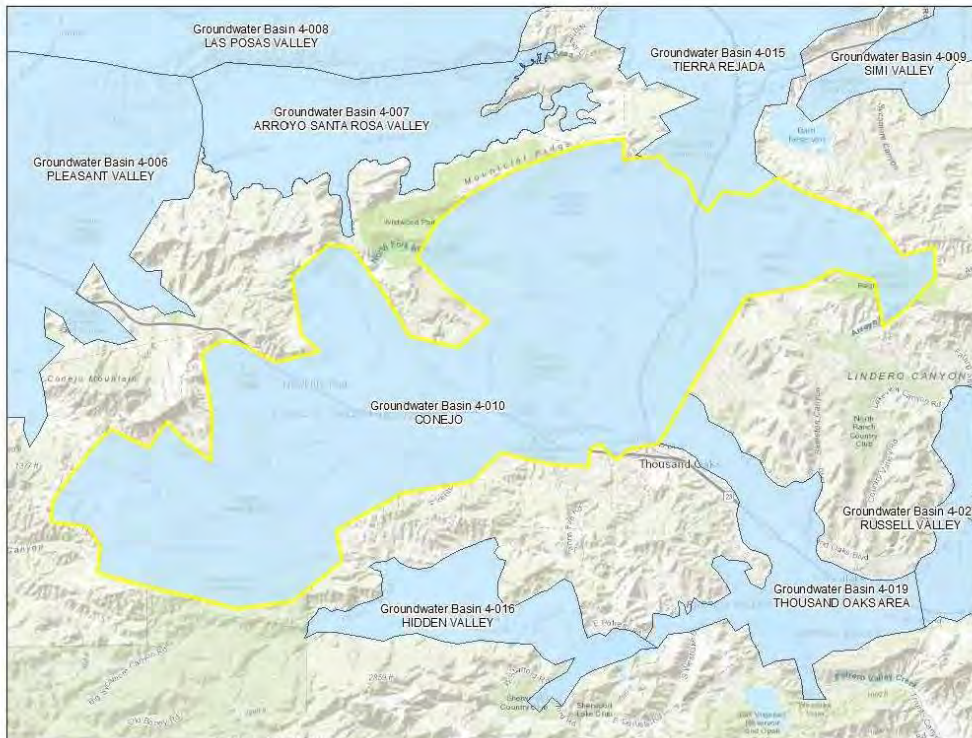
### Summary

This groundwater basin underlies Conejo Valley in southern Ventura County. The basin is bounded by surface drainage divides (CSWRB 1956; DWR 1959). Surface waters are drained westward by Conejo Creek.

Letter 12 continued

Map

4-010 – CONEJO VALLEY



[Map Link](#)

References

This table contains the reference listings for the citations noted in the Summary. Each reference contains the name of the reference and the publication date. For more information, email [sgmps@water.ca.gov](mailto:sgmps@water.ca.gov).

<u>Citation</u>	<u>Pub Date</u>
California State Water Resources Board (CSWRB). 1956. <i>Ventura County Investigation</i> . Bulletin 12. Two Volumes.	1956
California Department of Water Resources (DWR). 1959. <i>Water Quality and Water Quality Problems, Ventura County</i> . Bulletin 75. 195 p.	1959

Letter 12 continued

Figure 2

## 4-019 THOUSAND OAKS AREA

### Basin Boundaries Description

2003

- County: Ventura, Los Angeles
- Surface Area: 3,110 acres (4.9 square miles)

#### Summary

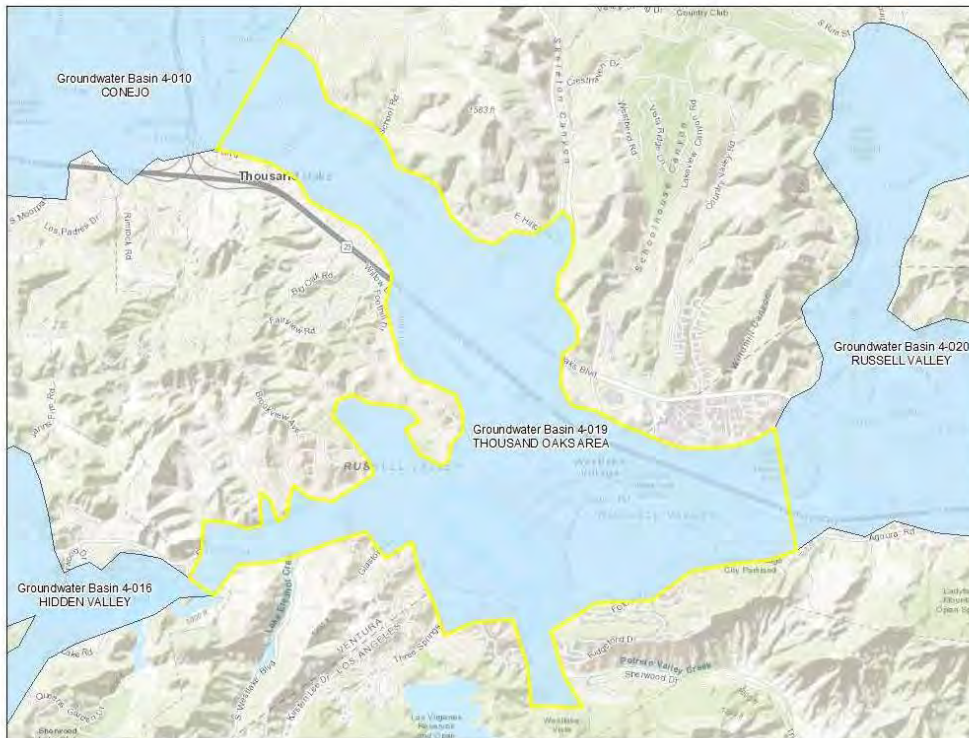
This groundwater basin underlies a small valley between Lake Sherwood and Thousand Oaks in southeastern Ventura County and western Los Angeles County. The basin is bounded by semi-permeable rocks of the Santa Monica Mountains (CSWRB 1953; DWR 1959).



Letter 12 continued

Map

4-019 – THOUSAND OAKS AREA



[Map Link](#)

References

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California State Water Resources Board (CSWRB). 1953. <i>Ventura County Investigation</i> . Bulletin 12. Two Volumes.	1953
California Department of Water Resources (DWR). 1959. <i>Water Quality and Water Quality Problems, Ventura County</i> . Bulletin 75. Two Volumes. 195 p.	1959

Letter 12 continued

Figure 3

## 4-020 RUSSELL VALLEY

### Basin Boundaries Description

2003

- County: Los Angeles, Ventura
- Surface Area: 3,100 acres (4.9 square miles)

#### Summary

The Russell Valley Groundwater Basin is a relatively small alluvial basin bounded by semi-permeable rocks of the Santa Monica Mountains (CSWRB 1953; DWR 1959). The basin is bordered on the west by the Thousand Oaks Groundwater Basin.

Letter 12 continued

Map

4-020 – RUSSELL VALLEY



[Map Link](#)

References

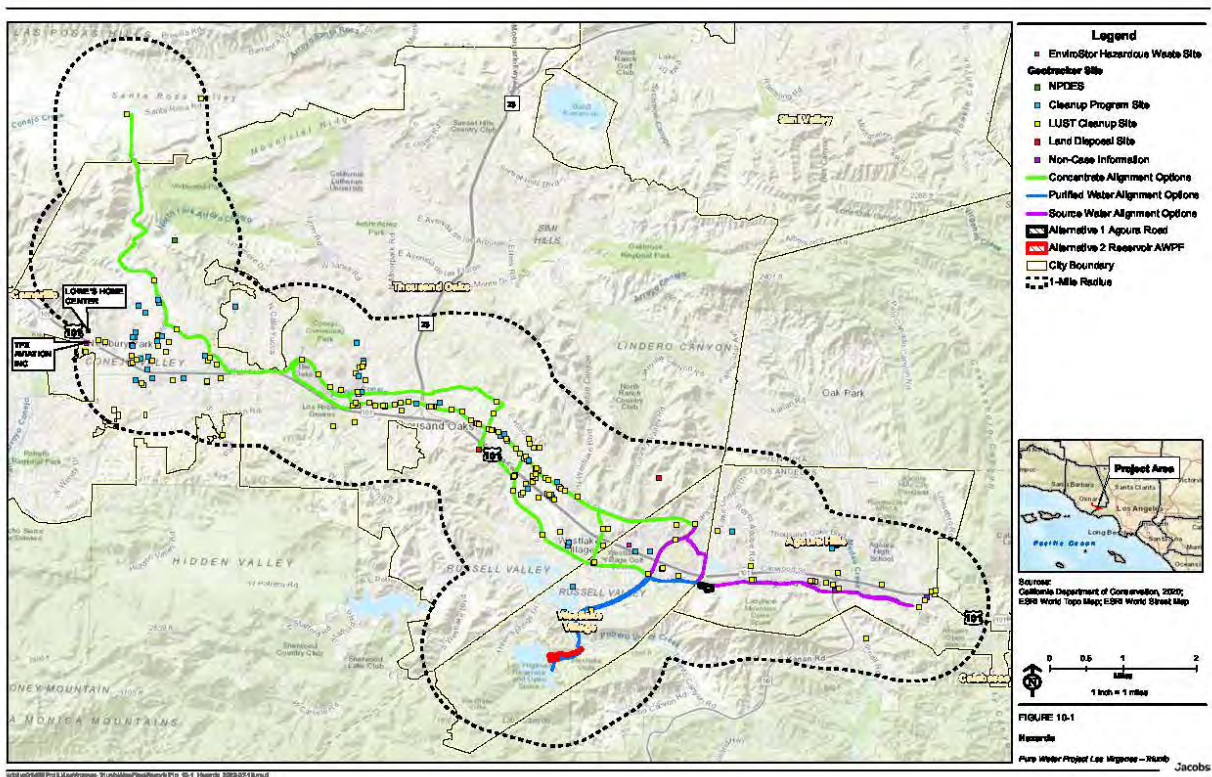
This table contains the reference listings for the citations noted in the Summary. Each reference contains the name of the reference and the publication date. For more information, email [sgmps@water.ca.gov](mailto:sgmps@water.ca.gov).

<u>Citation</u>	<u>Pub Date</u>
California State Water Resources Board (CSWRB). 1953. <i>Ventura County Investigation</i> . Bulletin 12. Two Volumes.	1953
California Department of Water Resources (DWR). 1959. <i>Water Quality and Water Quality Problems, Ventura County</i> . Bulletin 75. Two Volumes. 195 p.	1959



Letter 12 continued

Figure 4 Hazardous materials sites in project area



Letter 12 continued



**JIM BAILEY, RG, LHG**

**Well Services Director**

As Shannon & Wilson's National Well Services Director, Jim has more than three decades of groundwater management and control, water supply development and rehabilitation experience. He has conducted groundwater investigations focused on the groundwater influence on

surface water. His municipal water supply projects included wells constructed in both consolidated and unconsolidated formations at depths up to 1,200 feet. He has extensive experience in the coordination and supervision of well drillers, design of drilling programs, selection and oversight of analytical services, development of specifications for such services, and cost control. Jim is a nationally recognized expert on well design, construction, and rehabilitation. Since 2000, he has worked on over 1,000 wells across the U.S. and Canada.

**Education**

MS Hydrogeology, Washington State Univ., Pullman WA.

**Registration/Certifications**

Registered Geologist/ Hydrogeologist

**Years with the Company**

11

**Years of Experience**

38

**Select Recent Project Experience**

**Coachella Valley Water District Well Rehabilitation Consulting Services, Palm Desert CA.** Since 2019, has been providing hydrogeologic consulting services to Coachella Valley Water District (CVWD) for comprehensive well assessment, construction, and rehabilitation projects. The CVWD operates 101 wells distributed over a service area of almost 1000 square miles. Working closely with District staff, evaluated historical operational data, water quality, and water demands to help prioritize well design and rehabilitation efforts

**On-call Hydrogeologic Services, Bureau of Land Management, Western U.S.** Currently providing comprehensive water supply related hydrogeologic services to the Bureau of Land Management's Western Division. Work has involved well performance evaluations, new well siting, water rights, development of well drilling specifications, well design and testing, construction oversight and reporting. In the last year, hydrogeologic services have included design and construction of three new wells, development of bid specifications, new source water permitting, and wellhead protection delineation.

**Joint Base Lewis McChord, Tacoma, WA.** Mr. Bailey has assisted the US Army Corps of Engineers (USACE) and Joint Base Lewis McChord (JBLM) Public Works expand their water supply options and prepare a comprehensive and coordinated base-wide water system plan to protect water supply wells from impacts to groundwater. Covering an area of more than 135 square miles, JBLM relies entirely on groundwater for meeting its water supply needs. His work for the USACE included drilling, well construction and testing oversight for five new potable water supply replacement wells drilled to depths ranging from 250 feet to more than 1,000 feet. Once these wells were completed, a comprehensive wellhead protection plan (WHPP) for the entire water system was completed. The WHPP work included determining local and regional groundwater level and flow conditions, evaluating pumping impacts to groundwater at all 21 existing supply wells, and development of a detailed numerical groundwater flow and transport model for the entire base.

**Mesa Water District, Costa Mesa, CA.** – Completed a comprehensive well condition assessment and evaluation of 8 deep wells as part of a water system master plan update. The goal of the well evaluation was to determine the efficiency, remaining useful life, and infrastructure condition of Mesa's wells without performing an invasive investigation. The scope of work included review of historical well construction and operational data, evaluating long term well performance changes, running step rate pumping tests to document current capacity, and developing well rehabilitation recommendations for each well.

**Dos Palmas Preserve Well Replacement Project, Mecca CA.** The BLM required a fast track well design project be completed to replace a failing irrigation well. The Dos Palmas Preserve is located just east of the Sultan Sea in southern California in a very arid environment. Subsurface hydrogeologic include a high-pressure aquifer that complicates well drilling and installation. A nearby BLM well installed several years ago encountered difficult drilling conditions due to the unexpected aquifer pressures. Because of Mr. Baileys local experience with this type of aquifer conditions, the detailed drilling specifications where able to be developed quickly and cost effectively. In addition to the drilling specifications, a site investigation and review of relevant hydrogeologic data was completed to verify a location for the new well.



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**Responses to Letter 12**

- 12-1 The commenter correctly states that an Environmental Impact Report (EIR) needs to contain an accurate, stable, and finite project description. However, the commenter states that the Draft Program EIR does not meet this requirement because it does not include another one of the Las Virgenes-Triunfo Joint Powers Authority's (JPA's) projects – summer flow augmentation of Malibu Creek.

The JPA operates the Tapia Water Reclamation Facility (Tapia WRF) to comply with National Pollutant Discharge Elimination System (NPDES) Permit CA0056014, issued by the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Board) in 2017. The permit requires a minimum of 2.5 cubic feet per second (cfs) within Malibu Creek to maintain steelhead habitat and requires the JPA to supplement creek flow, if needed, to maintain the 2.5-cfs minimum.

In early 2019, the JPA approved the environmental evaluation for the installation of a short pipeline (1,270 feet) to connect an existing potable water pipeline to the Tapia WRF and the construction of new chemical treatment facilities at the Tapia WRF to remove ammonia from the new potable water supply. Construction of the project is now underway; and, upon completion (expected March 2023), the JPA will be able to fully comply with the NPDES requirement.

This instream flow requirement exists regardless of the Pure Water Project. Following issuance of the NPDES permit in 2017, the JPA did not delay in studying and implementing a project to comply with the requirement, including the required environmental review. Moving forward with a project to provide summer flow augmentation for Malibu Creek is just like all other activities the JPA undertakes to comply with applicable permit requirements and other wastewater treatment plant operating standards. The Pure Water Project is being implemented to comply with other NPDES permit requirements as well as meet the JPA's other objectives for water supply reliability. Therefore, there is no "piecemealing" as the commenter claims.

- 12-2 The Program EIR describes the biological surveys throughout Section 5.1, Existing Setting. In summary, the document describes:
- Desktop research, including searches of common databases, such as the California Natural Diversity Database (CNDDDB)
  - General biological surveys conducted on January 13 and January 14, 2022, to assess habitat suitability for special-status species
  - Botanical surveys conducted pursuant to established protocols during three periods in early to mid-2022
  - Vegetation characterization surveys conducted on May 31, June 2, and June 3, 2022
  - Oak tree surveys conducted in early 2022
  - Characterization of Malibu Creek biological conditions based on substantial prior analysis and reports

The commenter states that the Draft Program EIR lacks methodological details regarding surveys for special-status species and appears to direct the comment to surveys for special-status wildlife species (the commenter does not question the botanical surveys performed to California Department of Fish and Wildlife [CDFW] standards). In response, it is important to note that California Environmental Quality Act (CEQA) does not mandate specific requirements for exactly how a biological resources analysis must be performed. Although the CEQA Guidelines (such as the Appendix G checklist) clearly recognizes the importance of CDFW guidance, discretion is left to each project analysis to fit the level of detail to the expected types and extent of impacts.



Some state agencies have well-defined protocols for preparing environmental documents, such as the California Department of Transportation (Caltrans) Standard Environmental Reference (a Natural Environment Study is a predecessor study for an Environmental Document). The JPA follows the state CEQA Guidelines in general and has not published any custom CEQA analysis procedures. The results of the general surveys are reported in the body of the Program EIR; neither CEQA nor the JPA require separate reports.

Following publication of the Notice of Preparation and review of scoping comments, the JPA began a general assessment of potential biological resource impacts with desktop research and general biological surveys. Based on this initial step, the JPA determined the need for focused surveys for oak trees, rare plants, and natural communities. The emphasis on these focused surveys was due, in part, to the expected need to mitigate for botanical impacts, which requires careful study well in advance of construction. In addition, the extent of the impacts starting with construction in 2025 is predictable – the oak trees and other botanical resources at the time of construction are likely to be mostly consistent with 2022 surveys.

The JPA determined that focused surveys for potentially occurring special-status wildlife species were not needed. The primary reason, as explained in the Program EIR, is the generally low potential for most special-status species identified in the database searches to occur on the project sites. For the five species with some potential to occur, a general assessment was performed, and mitigation measures were required to appropriately consider these species just prior to construction starting in 2025. Unlike botanical resources, occurrences of special-status wildlife are most appropriately confirmed closer to construction start.

Note also that the number of special-status wildlife species that could be affected by construction has now increased to more than the five species described in the Draft Program EIR – see responses to Comment 1 and Comment 2 from CDFW. The Final Program EIR has been updated in responses to these comments.

Regarding the comment about who performed the general biological surveys, see Chapter 20, Report Preparation. Information about when surveys were performed was provided in the Draft Program EIR (January 13 and 14, 2022). These surveys were performed during the day.

12-3 As described in the response to Comment 12-2, the analysis of potential impacts to biological resources started with desktop research to help determine the potential presence of special-status species. Both the databases searched and the description of “special status” are described in Section 5.1, Existing Setting. For wildlife, the Program EIR describes “special status” as including four categories (page 5-2). These categories are based on standard methods informed by CDFW guidance and the CEQA Guidelines (Appendix G checklist questions).

The commenter states that an additional category should have been considered – Birds of Conservation Concern. As stated by the commenter, Birds of Conservation Concern are a U.S. Fish and Wildlife Service (USFWS) effort to identify non-listed birds that might become candidates for listing in the future. The Program EIR evaluates USFWS listed or candidate species but does not consider species that might become candidates for listing in the future. This is a reasonable approach.

The JPA understands that there is a long list of plants and animals – not just birds – that might experience increased pressure in the future and that might become candidates for listing or, subsequently, become listed species. The Program EIR has an appropriately broad reach to include candidate species as well as listed species and is not required to include *potential* candidates.

Note that birds not specifically identified as listed or candidate species are not excluded from consideration in the Program EIR, which recognizes the importance of the federal Migratory Bird Treaty Act as an applicable law and prescribes Mitigation Measure 5-2 that requires specific actions to protect nesting birds from construction impacts.

- 12-4 Additional clarifications are added to the air quality analysis in the Final Program EIR to justify the qualitative evaluation of the sensitive receptor exposure to toxic air contaminant (TAC) emissions. South Coast Air Quality Management District (South Coast AQMD) CEQA thresholds for health risks are added as commented.

The Office of Environmental Health Hazard Assessment's (OEHHA's) Health Risk Assessment (HRA) guidance states that:

*"Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime."*

The guidance further states that it does not recommend HRA for construction that lasts less than 2 months due to the mentioned uncertainties. The 2-month construction duration is merely the minimum that an HRA can be performed if desired. OEHHA's guidance does not mandate or recommend HRA for all construction projects that are longer than 2 months in duration.

South Coast AQMD has CEQA thresholds for health risks; however, quantitative HRA for construction is not mandated by South Coast AQMD either. Qualitative evaluation of health impacts from exposure to construction TAC emissions are acceptable by South Coast AQMD for CEQA documents, depending on the project site and receptor setting, intensity of construction activities, and local meteorological conditions. South Coast AQMD is one of the review agencies of the Draft Program EIR. Quantitative HRA for the project's construction emissions was not requested in South Coast AQMD's review, indicating that a qualitative discussion of the health impacts from construction activity is sufficient for the Advanced Water Purification Facility (AWPF) project.

The Draft Program EIR acknowledged that the project construction would have TAC emissions, including diesel particulate matter (DPM), from project construction. The Draft Program EIR demonstrated that the project construction emissions would be less than the South Coast AQMD's localized significance thresholds, indicating that the project would not cause localized air quality impacts.

The Draft Program EIR took a qualitative approach to assess the potential health impacts to nearby sensitive receptors from TACs. As indicated in Section 4.4, construction activities would be short-term and would be limited to a relatively small area where only a few pieces of construction equipment would be operating at a time. While the entire site construction duration would be 15 months, the heaviest construction activities would only occur for several months.

The project's construction emissions are not expected to expose the nearby sensitive receptors to substantial pollutant concentrations. Prevailing wind directions in the Agoura Hills and Westlake Valley areas are from the west during March to October, and from the north the rest of the months. Sensitive receptors located at 360 feet referenced in the comment are located to the west of the AWPF, and other residential areas are located approximately 850 feet to the north of the AWPF. These receptors are upwind of the construction site. Therefore, exposure of the nearest sensitive receptors to TAC emissions from the construction site are likely minimal due to its upwind location. Downwind of the AWPF construction site are open spaces and mountains without any receptors within approximately 1.5 miles.

- 12-5 Operation emissions from the AWPf are expected to be minimal, as shown in the Draft Program EIR, due to the limited vehicle trips per day (6 workers and 1 truck) and the infrequent operation of the two small emergency generators rated at 155 horsepower (hp) each. Regardless of the anticipated operating hours, the two generators would require South Coast AQMD permits for installation and operation. Therefore, emissions from the two generators will comply with applicable federal, state, and local air district rules, including California Air Resources Board's (CARB's) air toxic control measures for stationary diesel generators, South Coast AQMD's new source review rules in Regulation XIII, and South Coast AQMD air toxic rules in Regulation XIV. Operation of the emergency generators will also comply with the permit conditions in terms of emission levels and operating hours for nonemergency and emergency uses.

The Draft Program EIR conservatively assumed the engines would be Tier 2 in the emission calculations. Emissions from the two permitted emergency engines at such a small size and meeting the latest CARB and South Coast AQMD emission requirements are not expected to cause significant air quality or greenhouse gas (GHG) impacts. The less than significant impact conclusion for the project's air quality and GHG impacts would not change even if the emergency operating hours are considered.

In terms of evaluating DPM impacts to health, particulate matter with aerodynamic diameter equal to or greater than 10 micrometers (PM<sub>10</sub>) emissions from project operation were used as a surrogate for DPM. South Coast AQMD Rule 1304 exempts emergency engine emissions from new source review offsets and air modeling, and South Coast AQMD Rule 1401 exempts emergency engine emissions from evaluating health risks from TACs. While the comment referenced Bay Area Air Quality Management District (Bay Area AQMD) policy of estimating emissions using 100 hours of emergency operation to determine new source review or major facility review, the policy further indicates that:

*"...this policy does not apply for purposes of the Toxics New Source Review requirements of District Reg. 2-5. Pursuant to Reg. 2-5-111, Reg. 2-5 does not apply to emissions from emergency use of emergency standby engines."*

As such, Bay Area AQMD only considers the routine testing and maintenance hours (nonemergency use) of the emergency engines, which is typically limited at 50 hours per year, in the health risk evaluation under its new source review rules for TACs.

Regardless of the emergency or nonemergency operating hours of the two small generators, the nearest sensitive receptors are located upwind of the AWPf; and the infrequent DPM emissions from the AWPf operation would have minimum effects on these receptors.

- 12-6 The JPA is committed to the 2.5-cfs minimum instream flow requirement. Additional text has been added to the Final Program EIR to confirm that the flow requirement will be met pursuant to the NPDES permit (also see response to Comment 12-1 regarding the separate project for summer flow augmentation). The JPA wants to ensure that all interested parties, including CDFW based on their scoping comment, understand its commitment to maintaining the flow requirement and that commitment does not change under the Pure Water Project.

The additional confirmation about maintaining the 2.5-cfs instream flow requirement does not change the analysis. The analysis and conclusion that impacts to Malibu Creek would be less than significant – see Program EIR Sections 5.4.1.4, 5.4.2, 11.4.2.3, and 11.4.3.2 – are based on maintaining the flow requirements; therefore, there are no changes.

- 12-7 The commenter makes several points about habitat loss and habitat fragmentation at the two alternative AWPf sites. The JPA agrees that constructing a new AWPf will change site conditions because whatever currently exists at the site will change to approximately 2.8 acres



of developed facility. Within the context of a CEQA evaluation, the question is whether these changes will result in a significant impact. The Program EIR makes the following conclusions:

- The project will have a significant impact to special-status plants and plant communities – the impact can be reduced but not to a less than significant level.
- The project may have a significant impact to special-status wildlife species, wetlands, and individual oak trees – the impact can be reduced to a less than significant level with the implementation of mitigation measures.

The comment specifically questions the conclusions regarding wildlife, both in terms of habitat loss and habitat fragmentation. In terms of habitat loss, the JPA strongly disagrees with the statement that few, if any, bird species would “survive construction.” Bird mortality during construction would be a violation of the Migratory Bird Treaty Act; the steps outlined in Mitigation Measure 5-2 are specifically written to prevent that from happening.

The JPA agrees that the abundance of species occurring onsite would be reduced because the site is changing from native habitat to a developed treatment plant. The Program EIR states that the impact would be less than significant “... due to the relatively low acreage, proximity to existing development, and the amount of remaining suitable habitat in the surrounding area.” The JPA offers some additional clarification.

- **Low Acreage.** The AWPf development footprint is approximately 2.8 acres. For special-status wildlife, neither of the AWPf sites is considered critical habitat or otherwise appears to be dependent on these specific sites for conservation.
- **Proximity to Existing Development.** The Agoura Road AWPf site is bounded on the north by Agoura Road (four lanes) and office park development, and on the west by the Lexington apartment complex. The Reservoir AWPf site is bounded on the north by a Westlake Village neighborhood on the west by Las Virgenes Reservoir (an artificial impoundment).
- **Remaining Suitable Habitat in the Surrounding Area.** At the Agoura Road site, there is open space land to the east (partially developed by a storm drainage feature) between the AWPf pad and the Hilton Foundation development. At the Reservoir site, there are large areas of natural habitat to the south and east, including Triunfo Creek Park, most of which are owned by the Mountains Recreation and Conservation Authority and protected in perpetuity.

In addition to these additional clarifications, questions about habitat loss and fragmentation at the Agoura Road site are partially addressed by the *Ladyface Mountain Specific Plan*. This plan was adopted by the City of Agoura Hills to manage development along the northern slope of Ladyface Mountain along Agoura Road (including the AWPf site) and covers an area of approximately 225 developable acres. Within that larger area, development is only allowed on less than 15% of the total area. Because the Agoura Road AWPf site is within the *Ladyface Mountain Specific Plan* area, questions about development – including habitat loss and fragmentation – within the larger landscape have already been addressed.

The comment (and related comments) is about wildlife habitat, but it is important to understand the whole of biological resources impacts, including how plant and plant community impacts are to be mitigated. Pursuant to Mitigation Measure 5-1, the JPA will be restoring habitat to compensate for the loss of habitat within the development footprint, including new areas of native plant communities (for example, planting of Ojai navarretia seedlings cultivated from the project site) and oak woodlands, including individual oak trees mitigated at a 4:1 ratio pursuant to Mitigation Measure 5-4.

The performance standards for this habitat restoration work are described in Mitigation Measure 5-1, which has been enhanced in the Final Program EIR based on comments from CDFW (see response to Comment 4-3, especially) and Mitigation Measure 5-4. The restored

habitat will provide improved conditions for wildlife of all types, in addition to mitigating for the loss of special-status plants and plant communities.

- 12-8 The commenter states that wildlife movement has not been adequately addressed, recognizing (correctly) that Impact 5-4, Wildlife Corridors, focuses on new bottlenecks to wildlife movement. The commenter appears to be talking about habitat fragmentation. In addition to the discussion about habitat loss and fragmentation in response to Comment 12-7, the JPA disagrees that there would be significant impacts to flying wildlife from having to travel farther; therefore, experiencing greater risk from starvation, exhaustion, and disorientation. At the Agoura Road AWPf site, the new facility would result in a gap of approximately 600 feet between the undisturbed eastern and western portions of the site. Birds are likely to fly from one side to the other without significant impacts. Other wildlife will continue to have access along the undisturbed area to the south, which may be enhanced as a result of habitat restoration (see response to Comment 4-3), with only slightly increased travel distance.

There are no native wildlife nurseries associated with either the Agoura Road or Reservoir AWPf sites.

- 12-9 The JPA disagrees that the proposed mitigation measures improperly defer specific details. Regarding all four of the proposed measures:

- The JPA has committed to their implementation by clearly stating they will implement the measures. Certification of the Program EIR also will include a Mitigation Monitoring and Reporting Program, which adds additional certainty that the measures will be implemented.
- Each measure includes specific performance standards that need to be achieved. Note that additional details have been added to some of the measures in response to comments by CDFW.
- Each measure identifies the types of potential actions that can feasibly achieve the standards – also updated with additional information in response to CDFW comments.

For these reasons, the measures go beyond simply preparing a “future report.” The JPA agrees that mitigation plantings must be carefully monitored to ensure success – the monitoring and reporting requirements are included in each of the measures.

Regarding the impacts of habitat fragmentation, see responses to Comments 12-7 and 12-8. Regarding the potential need to protect bats during construction, the JPA agrees that Mitigation Measure 5-2 should be broadened to include special-status bat species. That change has been made in the Final Program EIR.

- 12-10 The JPA recognizes that there is limited information available about the Conejo Valley groundwater basin, mostly because there is little groundwater use in the area. Sustainable yield information is not available and is not likely to become available given the Very Low Priority designation by the California Department of Water Resources. Based on available information from the City of Thousand Oaks, the Pure Water Project source water augmentation project assumed that production from the Los Robles Well in the range of 400 to 700 acre-feet per year (AFY) would be sustainable.

The JPA agrees with the commenter that the available information indicates some uncertainty about the upper end of the range. However, the project description (see Section 2.1.5, Source Water Augmentation) clearly states: “The Los Robles Well would be operated within the safe yield of the underlying groundwater basin.” The project description further clarifies the expected production is expected to be between 400 and 700 AFY, but does not commit the JPA to pumping up to 700 AFY. The JPA is expected to pump within that range, but without exceeding the safe yield; therefore, a mitigation measure is not necessary.

- 12-11 The JPA agrees with the commenter that there is substantial evidence of a significant impact. That evidence is presented under Impact 10-4, Hazardous Sites, describing concerns by the California Department of Toxic Substances Control (DTSC) that pumping from the Los Robles Well could destabilize an existing contaminant plume and exceed the capacity of the existing contaminant treatment system. The Program EIR recognizes the potentially significant impact and prescribes Mitigation Measure 10-2 to reduce the impact to a less than significant level.

The commenter does not provide information to support a conclusion that the impact cannot be mitigated to a less than significant level; rather, the comment is about uncertainty in the outcome of the mitigation effort. It is important to note that implementation of Mitigation Measure 10-2 will be in consultation with the DTSC and will be performed so that the existing contaminant plume remains stable.

Although the measure does not describe what would occur if the JPA's groundwater monitoring effort flagged a potential issue, the outcome must be consistent with DTSC's ongoing regulation governing the contaminant plume and would be confirmed only following consultation with DTSC. These outcomes could include reducing Los Robles Well pumping to a lower rate, supporting increased remediation activity at the plume location, or other options to be confirmed with DTSC. Therefore, it would be speculative to presume the outcome.

However, to clarify the intent, additional text has been added to Mitigation Measure 10-2 to state that any reassessment would be "subject to review and approval by DTSC."

- 12-12 Regarding the potential impacts from groundwater contamination and the additional certainty from changes to Mitigation Measure 10-2, see response to Comment 12-11.

- 12-13 The commenter states that the cumulative impact analysis is too general and omits meaningful information. As part of this comment, the "list of projects" approach is correctly referenced; however, the JPA disagrees that the list is artificially constrained. The list on page 18-2 of the Draft Program EIR includes various land development and public works projects expected to occur in some proximity to Pure Water Project features. Following the list, there is a sentence that "[n]o other major, citywide utility repair or capital projects have been identified that compare in scale to the Pure Water Project." That is a true statement, but it is unrelated to the list. The sentence helps the reader to understand the next few sentences about ongoing utility operations and maintenance work.

In terms of the "dozens of commercial projects pending and under construction in the Project vicinity in Thousand Oaks, Ventura County, and Los Angeles County," the JPA disagrees that these projects were excluded from the analysis. The primary reason is that the Pure Water Project has two types of construction impacts: long-term construction activity at the AWPf site versus short-term pipeline installation activities. The Program EIR focuses more on the two alternative AWPf sites, and no current or proposed development projects were identified. For the Agoura Road AWPf site, the Draft Program EIR identifies continued development within the *Ladyface Mountain Specific Plan* area in case something is proposed between now and the time the AWPf goes to construction (2025).

The Program EIR takes a different approach to the short-term pipeline construction activities, generally describing (1) redevelopment and intensification of land uses, and (2) small suburban development projects. Given the short-term nature of the pipeline installation, a more detailed list was not necessary. The JPA reviewed the current list of projects at the links provided in the comment letter. Yes, there are a half-dozen small commercial and residential projects approved or under review along the conveyance pipeline corridor (for example, a new three-story apartment building at 1774 E. Thousand Oaks Boulevard), but listing the specific projects would not be meaningful for the analysis of the Pure Water Project cumulative impacts. The Draft Program EIR did, however, focus on cumulative projects that could have a meaningful



contribution to the impact analysis, such as the Conejo Canyons Bridge and the Municipal Service Center Access Road.

The JPA disagrees that the Program EIR fails to provide a reasonable explanation for the geographic scope of the cumulative impact analysis. The geographic scope is discussed in Section 18.1.2, including the general statement about the Las Virgenes Municipal Water District (Las Virgenes MWD) and JPA service areas. The Program EIR appropriately focuses the reader on the area where cumulative impacts are most likely to occur – the project list and subsequent paragraphs – which are adequate due to the reasons discussed.

- 12-14 Regarding the adequacy of the biological resources cumulative impact analysis, see responses to Comments 12-1 and 12-7, as well as the more general discussion of the cumulative impacts list in response to Comment 12-13.

The JPA does not state that the Pure Water Project would contribute to cumulative benefits at either of the two AWPf sites. The discussion of cumulative benefits applies to Malibu Creek, focusing on the beneficial effects of one of the listed projects (Rindge Dam removal ... formally the Malibu Creek Ecosystem Restoration Project). This project is a major contributor to ongoing efforts to improve the natural value of Malibu Creek and Malibu Lagoon, so it is reasonable to describe the expected benefits. Given the NPDES permit requirements for nutrient removal, the Pure Water Project can reasonably be said to contribute to cumulative benefits in Malibu Creek.

- 12-15 Regarding the adequacy of the biological resources cumulative impact analysis, see responses to Comments 12-1 and 12-7, as well as the more general discussion of the cumulative impacts list in response to Comment 12-13.