San Lorenzo Valley Water District

Bracken Brae and Forest Springs Consolidation Project

Draft Initial Study/Mitigated Negative Declaration

April 2023

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PANORAMA ENVIRONMENTAL, INC.

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Prepared for:
San Lorenzo Valley Water District
13060 Highway 9
Boulder Creek, California 95006

Prepared by:
Panorama Environmental, Inc.
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Table of Contents

List of Tables

List of Figures

List of Appendices

Acronyms

APN	
AMBAD	Association of Monterey Bay Area Governments
AQMP	Air Quality Management Plan
BMP	best management practices
CAA	Clean Air Act
CAAP	Climate Action and Adaptation Plan
CAAQS	California Ambient Air Quality Standards
CAP	Climate Action Plan
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQA	California Environmental Quality Act
CH	methane
CHRIS	California Historical Resources Information System
CIP	Cast Iron
CGP	Construction General Permit
CO	carbon monoxide
CRHR	California Register of Historical Resources
dB	decibels
DIP	ductile iron pipeline
District	San Lorenzo Valley Water District
DTSC	California Department of Toxic Substances Contro
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GHG	Greenhouse gases
GIS	Geographic Information Systems
HFC	hydrofluorocarbons
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
Kw	kilowatt
kWh	kilowatt-hours
hp	horsepower
MBARD	The Monterey Bay Air Resources District
MLD	Most Likely Descendant
MRZ	mineral resource zone
NAAQS	National Ambient Air Quality Standards
NCCAB	North Central Coast Air Basin

NAHC	Native American Heritage Commission
NO	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
OSHA	Occupational Safety and Health Administration
PFC	perfluorocarbons
PG&E	Pacific Gas & Electric
PM	particular matter
PPV	peak particle velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
R-R	rural residential
ROW	right-of-way
SCADA	supervisory control and data acquisition
SF	sulfur hexafluoride
SLOAPCD	San Luis Obispo County Air Pollution Control District
SLVWD	San Lorenzo Valley Water District
SO	oxides of sulfur
SRA	State Responsibility Areas
SWPPP	stormwater pollution prevention plan
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds
W	Watt
WAT	Worker Awareness Training

1 Mitigated Negative Declaration

Project Summary

1. **Project title**
   Bracken Brae and Forest Springs Consolidation Project (proposed project)
2. **Lead Agency name and address**
   San Lorenzo Valley Water District
   13060 Highway 9
   Boulder Creek, California 95006
3. **Contact person and phone number**
   Carly Blanchard
   Environmental Programs Manager
   831-338-2153
4. **Location**
   The proposed project is located in the community of Boulder Creek and unincorporated Santa Cruz County. Pipeline construction would occur within the following roadways: State Highway 236 (Big Basin Highway), Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way (refer to Figure 2). Big Basin Highway is the primary access route for the Boulder Creek Community. The existing Forest Springs water storage tank is located on APN 083-23-102 at the terminus of Reservoir Road. The Bracken Brae water storage tanks are located at the end of Burnside Bend. The proposed pump station would be located within an easement on APN 082-03-118, located at the corner of Ridge Drive and Big Basin Highway.
5. **Project sponsor's name and address**
   San Lorenzo Valley Water District
   13060 Highway 9
   Boulder Creek, California 95006
6. **General Plan designation and zoning**
   The existing pipeline is located within the public ROW, and the existing Forest Springs and Bracken Brae water storage tanks are located on parcels designated as rural residential (R-R). The pump station would be within an easement also designated as rural residential (R-R).
7. **Description of the proposed project**
   The San Lorenzo Valley Water District (SLVWD or District) was established in 1941 to provide water and wastewater service to residential, commercial, and industrial customers within an approximately 60-square-mile area. The purpose

of the Bracken Brae and Forest Springs Consolidation Project (proposed project) is to consolidate and incorporate two small mutual water companies, Bracken Brae and Forest Springs, into the SLVWD system. The proposed project includes the following actions: installation of 8,960 linear feet of 10- and 12-inch diameter water main in the existing SLVWD right-of-way (ROW); installation of a new pump station in located within an easement on APN 082-03-118, located at the corner of Ridge Drive and Big Basin Highway; demolishing the two existing 17,500-gallon existing concrete block Forest Springs water storage tanks (37,000 gallons total capacity) and four 10,000-gallon (40,000 gallons total capacity) Bracken Brae temporary water storage tanks; and installation of one or two water storage tanks (total 120,000-gallon capacity) at the existing Forest Springs water storage tank site.

8. **Surrounding land uses and setting**
   The lands surrounding the proposed project site are developed with single-family residences. The proposed project site is developed with the existing water tank and associated utilities and infrastructure.
9. **Other public agencies whose approval is required**
   Regional Water Quality Control Board – National Pollutant Discharge Elimination System Construction General Permit
10. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**
    Notices about the proposed project were sent to Native American tribes. No Native American tribes have requested consultation (see Appendix C).

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the proposed project, but impacts would be mitigated to a less-than-significant level as indicated in the Initial Study.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Energy Use
☒ Geology and Soils	☐ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☒ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Utilities and Service Systems
☐ Tribal Cultural Resources	☐ Wildfire	☐ Mandatory Findings of Significance

Environmental Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the Project MAY have a "potentially significant impact" or "potentially significant impact unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required. ☐

Pursuant to Section 21082.1 of the California Environmental Quality Act, the San Lorenzo Valley Water District (SLVWD) has independently reviewed and analyzed the Initial Study and Mitigated Negative Declaration for the proposed project and finds that the Initial Study and Mitigated Negative Declaration reflect the independent judgement of SLVWD. The SLVWD further finds that the project mitigation measures shall be implemented as stated in this Mitigated Negative Declaration.

I hereby approve this project:

Signature	Name/Title	Date

2 Project Description

2.1 Overview

The San Lorenzo Valley Water District (SLVWD or District) was established in 1941 to provide water and wastewater service to residential, commercial, and industrial customers within an approximately 60-square-mile area. The purpose of the Bracken Brae and Forest Springs Consolidation Project (proposed project) is to consolidate and incorporate two small mutual water companies, Bracken Brae and Forest Springs, into the SLVWD system. The proposed project includes the following actions:

1. Installation of 8,960 linear feet of 10- and 12-inch diameter water main in the existing SLVWD right-of-way (ROW)
2. Installation of a new pump station in SLVWD ROW
3. Demolishing the two existing 17,500-gallon existing concrete block Forest Springs water storage tanks (37,000 gallons total capacity) and four 10,000-gallon (40,000 gallons total capacity) Bracken Brae temporary water storage tanks
4. Installation of one or two water storage tanks (total 120,000-gallon capacity) at the existing Forest Springs water storage tank site

2.2 Project Location and Site Description

The proposed project is located in the community of Boulder Creek and unincorporated Santa Cruz County (refer to Figure 1). Pipeline construction would occur within the following roadways: State Highway 236 (Big Basin Highway), Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way (refer to Figure 2). Big Basin Highway is the primary access route for the Boulder Creek Community. A brief description of each roadway where the proposed project would be located is provided below:

- **Big Basin Highway.** Big Basin Highway consists of two lanes (one in each direction) with limited shoulders. The highway crosses both Foreman and Boulder Creek within the proposed project area.
- **Park Street and Oak Avenue.** Park Street and Oak Avenue are narrow one lane roads with paved widths of less than 20 feet.
- **West Park Avenue.** West Park Avenue is a county road that parallels Big Basin Highway and consists of a one-lane paved road with unpaved road shoulders. The paved portion of West Park Avenue ends approximately 120 feet north of

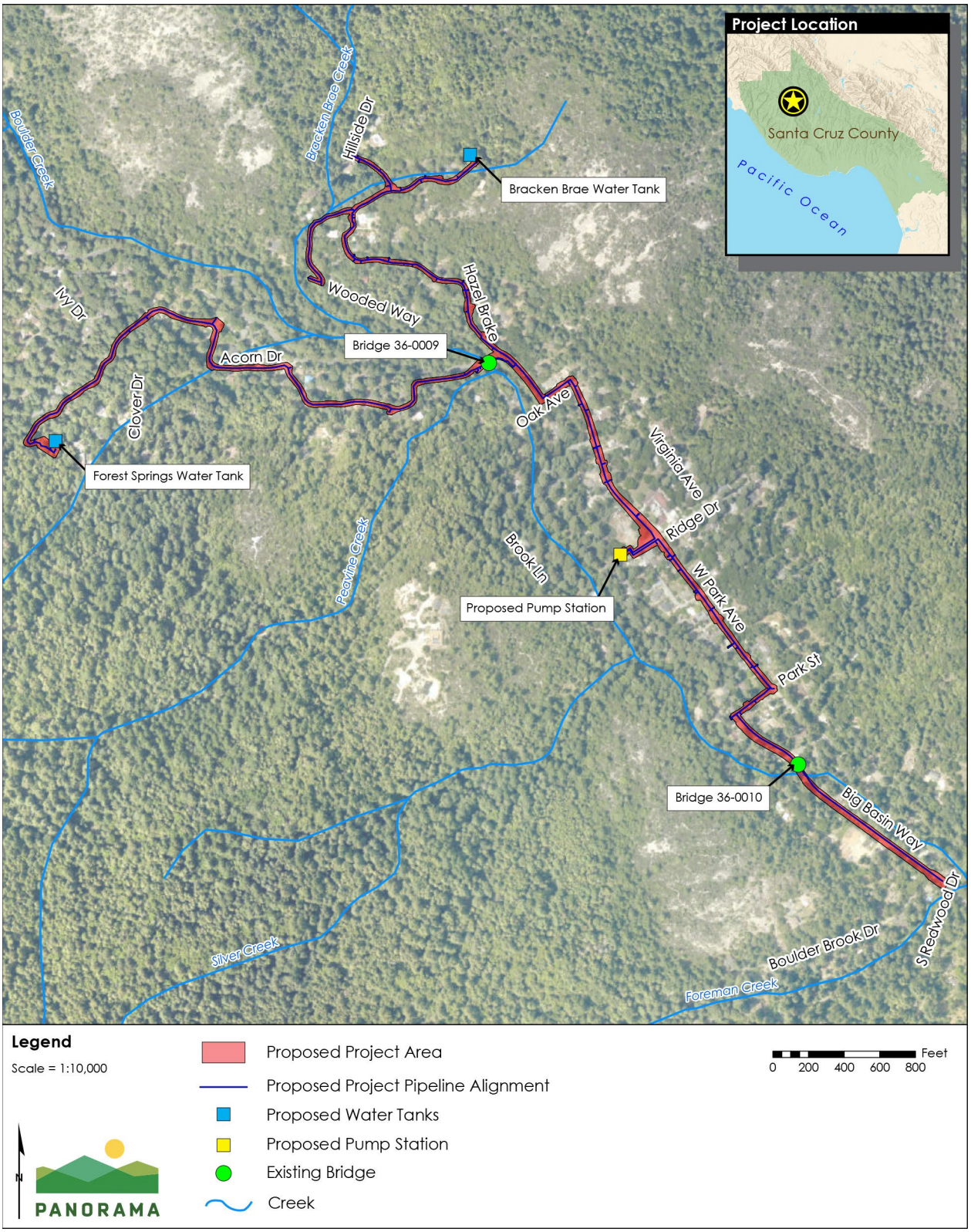
the intersection of Oak Avenue and West Park Avenue and continues as an undeveloped ROW.

- **Acorn Way.** Acorn Way is a paved narrow roadway with paved widths less than 16 feet. Acorn Way intersects Big Basin Highway at four separate locations. Acorn Way connects to the existing Forest Springs Tank site via Reservoir Road.
- **Hazel Brake.** Hazel Brake is a narrow one-lane paved roadway that connects to Burnside Bend, which leads to the existing Bracken Brae storage tank location.

The existing Forest Springs water storage tank and proposed consolidated water storage tank would be located within APN 083-23-102, at the terminus of Reservoir Road, at an elevation of approximately 640 feet. The proposed pump station would be located within an easement on APN 082-03-118, located at the corner of Ridge Drive and Big Basin Highway. The pump station site is approximately 1,800 square feet. The existing Bracken Brae water storage tank is located at the end of Burnside Bend.

Figure 1 Regional Location

Figure 2 Project Location



2.3 Project Components

2.3.1 Main Line Pipe Installation and Upgrades

The proposed project would replace existing 2-inch *cast iron pipe* (CIP) and 4-inch diameter *high-density polyethylene* (HDPE) pipeline with 10- and 12-inch diameter *ductile iron pipeline* (DIP) for 8,660 feet and install 300 feet of new 12-inch DIP. The proposed pipeline would include valves, blow-offs, air reliefs, fittings, sample stations, and fire hydrants. The pipeline would tie into the existing water supply distribution system and reconnect to all existing services and new services as required.

The pipeline replacement would be divided in four segments. A description of each segment and the location, size, and length of each pipeline segment is shown in Table 1-1.

Table 2-1 Proposed Pipeline Segments

Segment description	Pipeline sizes and type		Length (feet)*
	Existing	Proposed	
1 (SLVWD) – From the intersection of Big Basin Highway/South Redwood Drive to the intersection of Big Basin Highway/Oak Avenue	2-inch CIP and 4-inch HDPE	12-inch DIP	3,870
2 (Big Basin Highway) – Big Basin Highway from South Redwood Drive to Park Street and from Oak Street to Hazel Brake. The pipeline would cross Foreman Creek north of South Redwood Drive and Boulder Creek via the Chipmunk Hollow bridge (Bridge 36-0010).	N/A	12-inch DIP	300
3 (Hazel Brake Bracken Brae Interconnect) – From Big Basin Highway to Burnside Bend and the current Bracken Brae storage tank location	4-inch PVC	10-inch DIP and 12-inch DIP	1,890
4 (Forest Springs) – From the existing Forest Springs storage tanks at the end of Reservoir Road to the Big Basin Highway intersection at Hazel Brake. The pipeline would primarily be located within Acorn Way. The pipeline would cross Boulder Creek at the Hazel Brake Bridge (Bridge 36-0009) near the Hazel Brake intersection.	unknown	10-inch DIP and 12-inch DIP	2,700

Note: * Pipeline lengths are approximate and may change in the remaining design process.

Fire Hydrants

Fire hydrants would be installed along the pipeline to meet the minimum 1,000-foot spacing per, Table C102.1 in the California Fire Code. Approximately 25 fire hydrants would be installed along the proposed pipeline. The disturbance area for each fire hydrant would be approximately 6 feet by 6 feet.

Pipeline Bridge Crossings

The new pipeline would cross Boulder Creek along Big Basin Highway at Chipmunk Hollow Bridge (Bridge 36-0010) and at Hazel Brake Bridge (Bridge 36-0009). Both bridges were constructed in 1921. All work would occur above grade, and no trenching would be required under either bridge. The new pipeline would tie into the existing 2-inch pipeline that feeds the existing 4-inch water line, which the proposed project is replacing. The pipelines would be supported by vertical pipeline-support brackets consisting of galvanized steel or stainless steel, with brackets spaced approximately 8 to 10 feet apart along the underside of the bridge deck. The design of the pipeline along the bridge deck would be subject to Caltrans review and approval.

2.3.2 Pump Station

The proposed project would install a new duplex booster pump station that is required to pump water to Bracken Brae and Forest Springs service areas since both service elevations are higher than SLVWD supply pressure-zone elevation. The pump station would create a single pressure zone encompassing both the Bracken Brae and Forest Springs service territories. The primary purpose of the pump station is to maintain the water level in the Forest Springs tank(s), which in turn would provide water by gravity flow to the services within the pressure zone. In the event the domestic water storage in the tanks is depleted, the pump system would become the primary source of water to the zone. The pump would be controlled by water level in the new water storage tank.

The pump station would be located within an easement on APN 082-03-118, at the intersection of Big Basin Highway and Ridge Drive. The pump station would be located in a relatively flat area within a residential neighborhood (refer to Figure 1). Suction-side piping would run from West Park Avenue west along Ridge Drive to the pump station. The discharge piping from the pump house would run east along Ridge Drive to West Park Avenue.

The pump station would consist of a pre-fabricated concrete panelized structure or concrete block structure approximately 15 feet by 25 feet at the base and approximately 10 feet high. The pump station would be constructed on a concrete slab. The texture and coloring of the pump station would be designed to be neutral and consistent with the surrounding residential uses. Noise attenuation ventilation would be installed in the pump station. Electrical power would be provided through a new Pacific Gas & Electric (PG&E) connection from an existing overhead electrical line adjacent the pump station. The pump station would be unmanned and equipped with a remote monitoring system, known as a *supervisory control and data acquisition* (SCADA) system, which would allow SLVWD to monitor pump system operations, water flow, pressure, and water quality. Two 15-*horsepower* (hp) vertical multistage centrifugal pumps would be installed inside the pump station.

Figure 3 Photo of Pump Station Area

Generator

A generator would be housed in the pump station in a room specifically designed for the generator. The generator would be a fully contained skip-mounted internal combustion-engine-powered unit sized to meet the electrical demands of the pump station. The unit would be approximately 35 kW and include engine controls, automatic transfer switch, passive and active ventilation, and noise attenuation to meet the demands of the siting in a residential area. The generator would be powered by propane from an on-site storage tank. The propane tank would be sized to provide a minimum of 5 days of full-load running.

2.3.3 Forest Springs Water Storage Tank

The existing Forest Springs tank is located on a small level area that was previously graded within the hillside. The flat area is roughly 20 feet wide and 60 feet long. The existing 8-foot-tall, 1,300 square-foot concrete tank would be demolished and removed from the site. One new 120,000-gallon bolted steel tank would be constructed at the site after the existing tanks have been removed. The proposed tank would be approximately 25 feet in diameter and 30 feet in height. To accommodate the larger proposed tank, the area for the water storage tanks would be increased by expanding the flat pad for the water storage tanks. Clearance around the tanks

would be a minimum of 6 feet, with 15-foot clearance along the northern side of the tank to permit vehicle access. The proposed water tank would be painted green to help screen the water tanks into the surrounding vegetation. Depending on site grading and geotechnical restrictions, two 60,000-gallon tanks may be used in place of the single 120,000-gallon tank.

Retaining Walls

Two new retaining wall systems would be installed at the Forest Springs water tank site. New retaining walls would be installed upslope and downslope of the expanded tank pad to support the larger tank within the hill slope. The retaining walls would range from 1 foot to 16 feet in height. Overall volume of soil removed and replaced is anticipated to be approximately 1,000 CY over an approximate area of 8,000 square feet. The hill slope adjacent the new retaining walls would be revegetated with native plant species.

Security Fencing

Security fencing would be installed along the perimeter of the Forest Springs water tank site. The fencing would consist of a maximum 8-foot-tall chain link fence with barbed wire. A 12-foot-tall gate would be installed at the western entrance of the site, providing access to the site from Reservoir Road.

2.3.4 Lighting

The pump station and Forest Springs tank site would include the minimum interior lighting based on OSHA 1926.56(a) for electrical or mechanical rooms. Exterior lighting would be installed around the tank site and pump station at door locations for safety and security purposes. Cutoff fixtures would be used to limit light onto the neighboring properties.

2.4 Project Construction

Typical construction activities would occur between 8:00 a.m. and 5:00 p.m., Monday through Friday. No construction-noise generating work would occur on Saturdays, Sundays, or federal holidays.

2.4.1 Schedule

An average of eight construction workers are expected to be on site daily during construction, with a maximum crew size of 14 workers at any given time. Project construction is anticipated to begin in Summer 2024 and take approximately 12 months to complete. The proposed project construction schedule by project component is presented in Table 1-2.

Table 2-2 Project Schedule

Project element	Approximate start date	Approximate end date	Approximate duration (months)
Pipelines	Summer 2024	Spring 2025	12
Pump station	Summer 2024	Fall 2024	4

Project element	Approximate start date	Approximate end date	Approximate duration (months)
Forest spring tank site	Fall 2024	Spring 2025	6
Total	Summer2024	Spring 2025	12

2.4.2 Equipment

The types of equipment that would be used during project construction would include, but not be limited to, the following equipment listed in Table 1-3, below.

Table 2-3 Anticipated Construction Equipment, Quantity, and Daily Usage

Equipment	Quantity	Daily usage (hours)
Pier-drilling rig	1	8
Concrete pump truck	1	8
Manlifts	2	4
Crane	1	4
Forklift	1	4
Roller	1	4
Leader	1	4
Welders	2	4
Pavers	1	8
Paving equipment	1	6
Rollers	1	8
Rubber tired dozers	1	8
Generator	1	8

2.4.3 Site Preparation and Vegetation Management

Prior to and during construction, vegetation would be grubbed and removed from work areas as necessary. Erosion control *best management practices* (BMPs) would be implemented where soil has been disturbed by construction activities. All erosion control BMP components would be installed prior to any clearing and grubbing or earthwork operations. Erosion control components would be inspected daily to ensure they are well-maintained and in proper working order. Damage to or improper functioning of erosion control components would be immediately corrected.

2.4.4 Soil Excavation, Fill, and Quantities

The trench for the proposed pipelines would be approximately 3 feet wide and 4.5 feet deep. Pipeline excavation would require approximately 3,800 cubic yards of cut. The trenches would be backfilled with cement slurry and repaved in accordance with the County of Santa Cruz Public Works Department or California Department of Transportation (Caltrans) requirements. A summary of soil excavation is provided in Table 1-4. Estimated quantities of construction materials are provided in Table 1-5.

Table 2-4 Project Soil Excavation and Disturbance Estimates

Project component	Soil excavation	Fill and removal
Forest Springs tank site	150 CY	130 CY native fill; remove 20 CY
Retaining walls	1,000 CY	Remove 1,000 CY native fill; 10 CY concrete
Pump station	20 CY	15 CY native fill; remove 5 CY
Propane tank pad	9 CY	6 CY native fill; remove 3 CY
Pipeline trench	3,800 CY	3,200 CY slurry; remove 3,800 CY
Hydrants	50 CY	40 CY native fill; remove 10 CY
CY = cubic yards		

Table 2-5 Construction Materials Quantity Estimates

Project component	Quantity
Asphalt concrete (AC)	900 CY
Concrete	100 CY
Two-sack cement slurry	3,200 CY

2.4.5 Pipeline Construction

A minimum construction corridor width of 14 feet would be needed to accommodate pipeline storage and allow trucks and equipment access along the trench. Other construction activities, such as installation of pipeline connections, could require larger excavations. Open trench construction in public roadways could necessitate the closure of at least one travel lane, depending on roadway width and the size of the pipeline and trench. Complete road closures to through traffic are anticipated for Park Street, Oak Avenue, West Park Avenue, Acorn Way, and Hazel Brake, during which the entire roadway width would be required for construction of the pipeline. Approximately 60 to 140 feet of pipeline would be constructed and installed per day. The pipeline would be installed following standard pipeline installation methods.

Pipeline staging would be on roadways adjacent the pipeline alignment. Before installation, sections of the pipeline would be laid out along the alignment. The pipeline then would be lowered into the trench. DIP is slip-fit except at fittings, which are bolted. No welding is anticipated. The trench would then be backfilled. The pipeline would be pressure and backflow tested prior to completion of construction.

Pipeline construction consists of the following steps each day:

1. Set traffic control
2. Mobilize equipment to the work area from the overnight staging area (Forest Springs tank site and pump station site)
3. Sawcutting (if not completed for the entire project prior to beginning pipe work)
4. Stage pipe and lay out within the work area
5. Excavate up to 40 feet of trench
6. Place pipe and make connections
7. Plate open trench
8. Repeat as time allows
9. Backfill trench with 2-sack slurry
10. Plate all slurried trench for 48-hours
11. Install temporary surface treatment (cold mix asphalt or similar)

Pump station construction consists of the following:

1. Site layout/construction staking
2. Equipment and materials mobilization
3. Grading and site preparation
4. Construction of below grade piping and conduits
5. Placement of pre-fabricated pump station building
6. Construction of pumps and associated piping and controls
7. Installation of generator and associated wiring
8. Construction of concrete pad for propane tank
9. Installation of propane tank
10. Paving and site security construction

11. Site restoration and erosion control

Storage tank(s) construction consists of the following:

1. Site layout/construction staking
2. Equipment and materials mobilization
3. Temporary storage/staging and system connection
4. Demolition of existing tanks and install temporary tank(s)
5. Grading, site preparation, install retaining walls
6. Construction of below grade piping and conduits
7. Construction of bolted steel storage tank and associated piping and controls
8. Testing of tank and site piping
9. Paving and site security construction
10. Site restoration and erosion control
11. Demolition of temporary tank(s)

2.4.6 Grading

Grading would be conducted at the Forest Springs tank site. Grading would consist of "cut and fill" to construct an expanded level pad for the tank(s). It is anticipated that the majority of the existing native soil and bedrock would be used as engineered fill onsite.

2.4.7 Foundation Construction

Foundation(s) would be installed for the new tank(s), and a concrete slab foundation would be poured at the pump station. The ring foundations for the new tank would be constructed by first excavating the area for the ring foundation and then installing a form for the concrete foundation. Concrete would be poured within the form to construct the ring foundation for the proposed tanks.

2.4.8 Install Structures

Wall sections of the new tank(s) would be hauled in on trucks and assembled on site. The new tank(s) would be installed on a ring spread footing foundation. The tank(s) would be installed in sections and bolted to the foundation.

The pre-fabricated concrete pump station infrastructure would be delivered to the site and set in place on the concrete slab foundation with a crane. The new pumps and generator would be installed within the concrete pump station structure.

2.4.9 Demolition

The proposed project includes the demolition of the existing 37,000-gallon Forest Springs water storage tanks (37,000 gallons total capacity) and 40,000-gallon Bracken Brae temporary water storage tanks. The Forest Springs water tank would be replaced with a new water tank(s) at the same site (see Section 1.3.3) while the Bracken Brae water tanks would not be replaced. Demolition of the water tanks would be performed in accordance with the County of Santa

Cruz Public Works Department. The construction contractor would prepare a demolition plan. All concrete and other debris would be removed from the project site and disposed of by the contractor at an appropriately permitted landfill.

Existing pipelines would be abandoned in place except in areas in conflict with the proposed project or other uses. The removed pipelines would be disposed of by the contractor at an appropriately permitted landfill.

2.4.10 Site Restoration and Repaving

Trenches would be restored in conformance with the appropriate Encroachment Permit (Caltrans for CA 236, Santa Cruz County for County-maintained roads). Trenches outside of public ROW would be restored in conformance with the Santa Cruz County Encroachment Permit.

2.4.11 Vehicle and Equipment Staging

Construction staging for the proposed tank(s) and pump station would occur adjacent the tank and pump station construction area and within the boundaries of the project site. Staging for the proposed pipeline and fire hydrants would occur in disturbed areas within the road ROW. Overnight storage areas for equipment would be at the Forest Springs tank site and pump station.

2.4.12 Construction Traffic

Construction may include traffic delays due to temporary lane closures for pipeline installation. Prior to and during construction, SLVWD would coordinate all temporary roadway closures and detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times. Short-term traffic impacts would cease following construction. Construction is anticipated to require 16 truck trips per day and 10 vehicle trips per day on average, with a peak of 24 truck trips and 16 vehicle trips during tank construction.

2.4.13 Construction Waste, Electricity, and Water Use

Construction waste would include the following:

- Demolition waste from the removed water storage tanks
- Worker waste
- Packaging and excess building materials
- Sanitary waste

Demolition waste would be characterized, and any materials classified as hazardous would be hauled to a Class I landfill authorized to accept hazardous waste. Excess soil materials and any recyclable elements would be recycled. All other solid waste would be brought to a Class III landfill. The Ben Lomond Transfer Station is located approximately 4 miles southwest of the proposed project site while the nearest landfill, Buena Vista Landfill (Class III), is located approximately 23 miles southwest of the proposed project site.

Electricity during construction would be provided by portable generators. Project construction would require approximately 70,000 gallons of water during the entire construction period. Water would be used for dust control, soil compaction, drinking water, and concrete curing. Water would be obtained from SLVWD.

2.5 Project Operation

Operation and maintenance activities would be conducted by SLVWD employees and would require approximately one trip per month to the pump station and tank site. The pump station would require a minimum of 200 amps of 1-phase power at 240 volts, or 125 amps of 3-phase power at 208 volts. The extension of power to the pump station would require either a new overhead or underground interconnection to the neighboring distribution line. If the new interconnection line is located underground, the line would be located in a trench for approximately 50 feet to the nearest distribution line pole. If the interconnection line is located overhead, one new pole would be installed adjacent the pump station, and a new segment of power line would be installed from the nearest joint pole.

2.6 Project Design Features

The proposed project would incorporate the following SLVWD contractor specifications as *project design features* (PDFs):

Worker awareness training (WAT). For all activities with the potential for ground disturbance (excluding vegetation and tree trimming as well as hand pulling smaller vegetation), all contractors and workers would receive training on cultural and biological resources:

- **Cultural resources:** Training shall be prepared by and/or conducted by a professional archaeologist (who meets the U.S. Secretary of Interior's professional standards set forth in 48 CFR parts 44738 and 44739 and Appendix A to 36 CFR 61) prior to beginning work. The training will address the potential for exposing subsurface resources, recognizing basic signs of a potential resource, understanding required procedures if a potential resource is exposed, including protecting the resource and reporting the resource to a professional archaeologist, and, understanding all procedures required under Health and Safety Code section 7050.5 and PRC sections 5097.94, 5097.98, and 5097.99 for the discovery of human remains.
- **Biological resources:** A U.S Fish and Wildlife Service-approved biologist shall conduct employee education training for employees working on earthmoving and/or construction activities. Personnel shall be required to attend the presentation, which shall describe the federal and State statutes protecting threatened, endangered, and special-status species that may be encountered on site; minimization and conservation measures; legal protection of species; and other related issues. Specifically, the WAT shall include a description of all

species identified as having moderate potential to occur, the areas on site where they may occur, and any mitigation required to reduce impacts on those species. All attendees shall sign an attendance sheet along with their printed name, company or agency, email address, and telephone number.

Unanticipated discovery. In the event that a previously unidentified cultural resource is discovered during implementation of an activity, all work within a minimum of 50 feet of the discovery would stop. The boundaries around the resource with a suitable buffer would be temporarily marked with visible protective fencing or visible flagging. A professional archaeologist would review the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts would occur, the resource would be documented on California State Department of Parks and Recreation cultural resource record forms (DPR 523) and a *primary resources number* obtained from the California Historical Resources Information System, Northwest Information Center (CHRIS/NWIC). In addition, the resource would be located, identified, and recorded in the SLVWD cultural resources GIS database. No further effort would be required.

Data regarding archaeological and tribal cultural resources would be kept confidential in accordance with state law but may be shared with Native American tribes identified by the Native American Heritage Commission (NAHC) to be traditionally and culturally affiliated with the geographic area of the project site, if archaeological in nature and if the tribe has requested that such information be shared with them.

Should the project proponent wish to continue work in the discovery area and no additional finds are anticipated, the professional archaeologist would review the proposed work activity and develop appropriate measures to ensure avoidance of impacts to the resource. Measures may include monitoring by a professional archaeologist of any potential subsurface impacts; use of small hand or powered hand tools only; no parking, turning, or entry of vehicles of any kind within the discovery area; no piling or burning slash within the discovery area; and any trees or vegetation removed within 100 feet of the discovery would be fallen away and supervised by the Registered Professional Forester (RPF) on site.

Alternatively, the professional archaeologist would evaluate the resource and determine if it is:

- Eligible for the California Register of Historical Resources (CRHR) (and a historical resource for purposes of CEQA);
- A unique archaeological resource as defined by CEQA; and/or,
- A potential tribal cultural resource (all archaeological resources could be a tribal cultural resource).

If the resource is determined to be neither a unique archaeological resource, historical resource, or potential tribal cultural resource, work may commence in the area without further management. After work is completed, all cultural resource delineators (e.g., flags, fencing) would be removed in order to avoid potential vandalism, unauthorized excavation(s), etc.

If the resource meets the criteria for either a historical resource or unique archaeological resource and/or it is a potential tribal cultural resource, work would remain halted in the buffered area around the resource. Should the professional archaeologist determine that a discovery may be a tribal cultural resource, he or she would, within 48 hours of the discovery, notify and consult with each Native American tribe identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the discovery. Tribal members would be invited to consult on the discovery and permitted to inspect the resource to determine if it constitutes a tribal cultural resource. If no responses are received within 48 hours of the requests to the tribes, the professional archaeologist would continue the archaeological review.

If the professional archaeologist determines that the resource is eligible for the CRHR, work would only be allowed within 100 feet of the discovery if it could be performed without affecting the resource.

Human remains. In the event of an unanticipated discovery of human remains during project implementation, the SLVWD shall ensure that construction crews stop all work within 100 feet of the discovery. The SLVWD shall treat any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities according to applicable State laws. Such treatment includes work stoppage and immediate notification of the SLVWD coroner, requisition of a qualified archaeologist, and, in the event that the coroner determines that the human remains are Native American, notification of the Native American Heritage Commission (NAHC) according to the requirements in Public Resources Code (PRC) section 5097.98. The NAHC would appoint a *most likely descendant* (MLD). A qualified archaeologist, the SLVWD, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines § 15064.5(d)). The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. Work may recommence in the area of discovery following treatment of remains and any associated funerary objects.

Tribal cultural resources inadvertent discovery. In the event that an archaeological resource is discovered, ground-disturbing work shall be halted within 50 feet of the find and a qualified tribal cultural monitor shall be brought to the site. The qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is of special importance to a California Native American tribe. If the resource is determined not to be of importance to the tribe, work may commence in the area.

If the resource meets the criteria for an important tribal resource, work shall remain halted within 50 feet of the find, and the qualified tribal cultural monitor shall evaluate the resource and determine whether it is an important resource to the local Native American tribe. If the resource is important to the tribe, work shall remain halted within 100 feet of the area of the find and the qualified tribal cultural monitor shall consult with SLVWD staff regarding

methods to ensure that no substantial adverse change would occur to the significance of the tribal cultural resource pursuant to PRC section 21084.3. Methods may include the following:

- Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts on tribal cultural resources.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource
  - Protecting the traditional use of the resource
  - Protecting the confidentiality of the resource
  - Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
  - Protecting the resource

Work in the area may commence upon completion of treatment, as approved by the SLVWD.

Construction hour limits. Construction shall be limited to Monday through Friday, from 8:00 a.m. to 5:00 p.m., and Saturday from 9:00 a.m. to 6:00 p.m. No noise-generating work shall occur on Saturdays, Sundays, or federal holidays.

Construction staging areas and stationary equipment locations. The contractor shall select equipment staging areas and stationary noise-generating construction equipment locations as far as practicable from sensitive receivers.

Equipment maintenance. All contractors, as a condition of contract, shall be required to maintain and tune up all construction equipment to minimize noise emissions.

Idling prohibition and enforcement. Unnecessary idling of internal combustion engines shall be prohibited. In practice, this would mean turning off equipment if it would not be used for five or more minutes.

Equipment shielding. Stationary equipment areas with appropriate acoustic shielding shall be designated on building and grading plans. Equipment and shielding shall be installed prior to construction and remain in designated locations throughout construction activities. Impact-noise-producing equipment (e.g., jackhammers, pavement breaker[s]) shall be equipped with noise-attenuating shields, shrouds, or portable barriers or enclosures to reduce operating noise.

Mufflers. All diesel equipment shall be operated with closed engine doors and shall be equipped with properly operating and maintained residential-grade mufflers. Pneumatic impact tools and equipment used at the construction site shall have intake and exhaust mufflers recommended by the manufacturers.

Electrically powered tools and facilities. Whenever feasible, electrical power, rather than diesel equipment, shall be used to run air compressors and similar power tools.

Pre-construction notification. Prior to construction, written notification that identifies the type, duration, and frequency of construction activities shall be provided to residents within 100 feet of the project site.

Traffic control requirements. Traffic control plans shall be approved by the District. District standards require that traffic control plans comply with relevant State and/or County requirements.

- The contractor shall supply and install all traffic control devices (including all warning, regulatory, and guide signs) as required in section 7-1.08 "Public Convenience," section 7-1.09 "Public Safety," and section 12 "Construction Area Traffic Control Devices" of the CALTRANS Standard Specifications. Traffic control for road closures shall comply with Caltrans Temporary Road Closure plan TA-13 and shall be augmented as described in this section.
- The contractor shall furnish traffic control plans for approval by the District a minimum of 5 full working days prior to the pre-construction meeting. The traffic control plans are subject to public review and must be approved by the District prior to any installation of traffic control devices. A copy of the plans shall be submitted to the Engineer, marked "For Information Only". The traffic control plan shall, at a minimum, address the following:
  - Flagger location in relation to the work, including provisions to make flagger more visible in areas of tight corners and heavy vegetation along the road
  - Placement of all signage, which may include but not be limited to the following:
    - "Road Closed"
    - "Flagger Ahead"
    - "Wait for Pilot Car"
    - "One Way Traffic Ahead"
    - "One Lane Road Ahead"
    - "Steel Plates Ahead"
    - "Bicycles Use Full Lane"
    - Temporary road closure locations
    - One-way traffic control areas
    - Bicycle access
- The traffic control plans shall be to scale and complete for each significant portion of the work requiring road closures, lane closures, traffic detours, and/or restriction of traffic movements. The traffic control plans shall indicate the work area, all proposed signs, the spacing and location of all traffic control devices (e.g., arrow boards, flagmen, barricades, cones, pylon construction

markers), the limits of proposed parking prohibitions, and the width and location of any rerouted traffic lanes. If pilot cars will be needed, the traffic control plan shall identify locations where pilot cars will be used, the type of vehicle to be used, the locations of "Wait for Pilot Car" signage, and pilot car turnaround areas.

- All open trenches must be adequately delineated by use of acceptable warning signs and devices during non-construction hours. The contractor shall devise a typical plan indicating the type and spacing of barricades, signs, arrow boards, warning lights, pylon construction markers, construction tape, etc., to be used during non-construction hours. This plan must be submitted to the Engineer at the preconstruction meeting for review and approval.
- It is imperative that field traffic control be handled in such a manner as to adequately and safely direct all traffic movements in the project area. The contractor shall not be allowed to proceed with construction at any time that, in the opinion of the Engineer, traffic control is inadequate to meet the field conditions. Traffic control measures, in addition to those indicated on the approved traffic control plans may be required as field conditions dictate.

Temporary crossings.

- ***General***. Continuous, unobstructed, safe, and adequate pedestrian, bicycle, and vehicular access shall be provided to fire hydrants, commercial, agricultural and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Safe and adequate public transportation stops and pedestrian crossings at intervals not exceeding 500 feet shall be provided. The contractor shall cooperate with parties involved in the delivery of mail and removal of trash and garbage so as to maintain existing schedules for such services. Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time.
- ***Temporary bridges***. Wherever necessary, the contractor shall provide suitable temporary bridges or steel plates over unfilled excavations. All such bridges or steel plates shall be maintained in service until access is provided across the backfilled excavation. Temporary bridges or steel plates for street and highway crossing shall conform to the requirements of the authority having jurisdiction in each case, and the contractor shall adopt designs furnished by said authority for such bridges or steel plates, or shall submit designs to said authority for approval, as may be required. If contractor does not consider temporary bridge or steel plates necessary, contractor shall secure written approval from the Engineer to omit the steel plates prior to excavation. Steel plates or other approved bridging materials shall be staged immediately adjacent any open trench, and equipment suitable to properly place such plates or other materials to allow access across the work site shall be immediately available any time

such trenches are open. Emergency vehicle (e.g., fire, law enforcement, EMS) access shall be provided within a maximum of 5 minutes of notification. Contractor shall identify the point of contact for emergency access and shall provide contact information (cell phone and physical location) to the District and to the local fire district. Contact cell phone number shall be included on all project identification signage.

Street use. The contractor shall not have exclusive use of any public street, alleyway, or parking area during the project construction. The contractor shall follow the provisions listed below:

- No street shall be closed to the public without first obtaining permission of the District Engineer.
- Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated.
- Where excavation is being performed in a one-lane road and requires closure of the entire road, road closures shall be approved by the District prior to placement.
- Toe boards shall be provided to retain excavated material if required by the Engineer or the agency having jurisdiction over the street or highway.
- Fire hydrants on or adjacent the work area shall be kept accessible to firefighting equipment at all times.
- Temporary provisions shall be made by the contractor to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.
- Driveway access to adjacent properties shall not be blocked without the consent of the affected landowner.

3 Environmental Checklist

3.1 Approach to Environmental Analysis

This Initial Study/Mitigated Negative Declaration (IS/MND) environmental checklist includes an evaluation of impacts based on the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations Title 14, division 6, chapter 3) Appendix G Environmental Checklist. This IS/MND includes descriptions of the environmental setting to provide context to understand project impacts (or the absence of impacts). An evaluation of potential impacts and mitigation measures to reduce potentially significant impacts is presented in the analysis. This IS checklist evaluates the potential environmental impacts of the project. The level of significance for each resource topic is determined by considering the predicted magnitude of the impact. Four levels of impact significance are evaluated in this IS checklist:

> **No Impact.** The project would not have the impact described. The project may have a beneficial effect, but there is no potential for the project to create or add increment to the impact described.
>
> **Less-than-Significant Impact.** The project would have the impact described, but the impact would not be significant. Mitigation is not required, although the project applicant may choose to modify the project to avoid the impacts.
>
> **Less-than-Significant with Mitigation.** The project would have the impact described, and the impact could be significant. One or more mitigation measures have been identified that will reduce the impact to a less than significant level.
>
> **Significant and Unavoidable Impact.** The project would have the impact described, and the impact could be significant. The impact cannot be reduced to a less-than-significant level by incorporating mitigation measures. An environmental impact report must be prepared for this project.

Each question on the checklist was answered by first evaluating the project as proposed—that is, without considering the effect of any added mitigation measures. The checklist includes a discussion of the impacts and mitigation measures that have been identified to reduce impacts.

San Lorenzo Valley Water District (SLVWD) has agreed to accept all mitigation measures listed in this checklist as conditions of approval of the project and to obtain all necessary permits.

3.2 Environmental Analysis

3.2.1 Aesthetics

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
1. AESTHETICS. Except as provided in Public Resources Code section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

Scenic Vista

The County did not designate scenic vistas in the 1994 General Plan (County of Santa Cruz, 1994). However, Policy 5.10.2 requires discretionary review for all development within the visual resource area of Highway 1, located along the Pacific Ocean. The project site is located approximately 12 miles from Highway 1.

State Scenic Highway

Basin Highway is identified as a designated scenic road in the Santa Cruz County General Plan and considered an "eligible" State scenic highway (Caltrans 2022; Santa Cruz County 1994). An eligible State scenic highway is considered a scenic highway under CEQA.

The existing Forest Springs tank is located on a small level area that was previously graded within the hillside. The tank site is developed with the existing water supply infrastructure and surrounded by residential uses. The area surrounding the existing tank site is forested and is not visible from Reservoir Road.

Discussion

A) No Impact

The County did not designate scenic vistas in the 1994 General Plan (County of Santa Cruz, 1994). However, Policy 5.10.2 requires discretionary review for all development within the visual resource area of Highway One located along the Pacific Ocean. The project site is located approximately 12 miles from Highway 1. Therefore, the proposed project would not impact any scenic vista.

B) Less-than-Significant Impact

A segment of the proposed pipeline alignment is located on Big Basin Highway, which is a scenic highway. Construction activities that would be visible from the state scenic highway would include staging of equipment, trench excavation, pipeline installation, and repaving. Construction activities would move along the alignment each day. At completion of the pipeline construction, the buried pipeline would not be visible, and the roadway would appear the same as the existing roadway. The new fire hydrants would be similar to existing fire hydrants on the roadway and would not impact the visual quality of the scenic highway. No tree removal is anticipated to install the pipeline within Big Basin Highway or to install the fire hydrants. The Forest Spring tank site where the new tank(s) would be installed is 1,200 feet from Big Basin Highway. The existing water storage tanks at Bracken Brae and Forest Springs are not visible from Big Basin Highway, and removal of the tanks would not affect the scenic highway. The proposed water storage tank(s) would be screened from views from Big Basin Highway by vegetation, residences, and topography due to intervening hill slope and would not affect the scenic highway.

The proposed pump station is located at the corner of Ridge Drive and Big Basin Highway. The pump station would consist of a pre-fabricated concrete panelized structure approximately 15 feet by 25 feet at the base and approximately 10 feet high. The texture and coloring of the pump station would be designed to be neutral and consistent with the surrounding residential uses. Due to the low profile of the pump station and because it would be set back from the road within the forested site, visibility of the pump station would be minimal from Big Basin Highway. The pump station would also be consistent with the surrounding residences because the pump station would be painted a neutral color, with an architectural design similar to that of a residential building. As the visual impact from the pump station would be consistent with the surrounding land uses, the pump station would not substantially damage scenic resources from the scenic highway. The overall project impact on scenic resources within a scenic highway would be less than significant.

C) Less-than-Significant Impact

The visual character of the proposed project area comprises mountainous terrain, redwoods, and rural single-family homes. As the project is located in a non-urbanized area, the proposed project would result in a significant impact if development of the project substantially degraded the existing visual character or quality of public views of the site and its surroundings.

The proposed pipeline alignment would occur within the ROW along existing roadways. As public roads are publicly accessible, views from roadways are considered as public views. The proposed pump station would be located within an easement at the corner of Ridge Drive and Big Basin Highway. While the proposed Forest Springs replacement tank is located on a private parcel, the proposed tank(s) may be visible from nearby roadways, including Beaver Road.

Construction impacts would be temporary and would not permanently change the visual character of the area. The pipeline would be underground and would not be visible during operations. The proposed fire hydrants would be low to the ground and would be similar in appearance to existing fire hydrants along the roadways. The proposed project would replace the existing tank with one to two new water storage tanks with greater storage capacity. The flat pad for the water storage tank(s) would be expanded, and two new retaining walls would be installed at the tank site. A new 8-foot-tall chain-link fence with barbed wire would be constructed around the tank site. The proposed water storage tank(s) would be shielded by existing trees at the tank site and surrounding properties. As the tank site is already developed with existing water infrastructure, the project would not change the existing character of the site or surrounding areas. The pump station would be visible from Big Basin Highway, Ridge Drive, and surrounding residences. As discussed in response B) above, the pump station would be painted with natural colors that would be consistent with the surrounding residences. Because the tank site would be minimally visible from any public viewpoint and the pump station would be consistent with the surrounding residential setting, the impacts on visual quality from public viewpoints would be less than significant.

D) Less-than-Significant Impact

The proposed pipeline would be underground and would not result in a new source of light or glare. Exterior lighting would be installed on the exterior of the pump station and new tank site for safety and security purposes. The pump station would include the minimum interior lighting based on OSHA 1926.56(a) for electrical or mechanical rooms. Cutoff fixtures would be used to limit light onto the neighboring properties. The lighting at the pump station and tank site would be motion censored and would not create a new source of substantial light or glare that would adversely affect day or nighttime views.

The pump station and tank site would be painted a neutral color and would not include features that would produce glare. The new tank(s) would be painted with natural colors that blend in with the surrounding vegetation. The proposed project would not create substantial new sources of light or glare. Because the lighting at the pump station would be designed to be on motion sensors and to avoid light transmitting onto neighboring properties, the impact from new sources of light would be less than significant.

3.2.2 Agriculture and Forestry

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

A and B) No Impact

The majority of the proposed project is located within an ROW within existing roadways. The proposed water tank(s) would replace the existing Forest Springs water tank on the same parcel. The proposed project site is not adjacent or near agricultural lands. The proposed project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation (2022). The proposed project site is designated "Urban and Built-Up Land," which is not an agricultural designation (California Department of Conservation 2022). There are no Williamson Act contracts on the

property. No impact to Farmland, agricultural zoning, or a Williamson Act contract would occur.

C, D and E) Less-than-Significant Impact

No land within the proposed project area is zoned as forest land, Timberland, or a Timberland Production Zone within the proposed project site. Thus, the proposed project would not conflict with zoning of lands that have a Timberland Preserve designation. The site is not identified as having timber resources in the County's GIS mapping system (Santa Cruz County Planning Department 2022). In addition, the proposed project would not involve changes that would result in conversion of Farmland or forestland to non-agricultural or non-forest use.

However, the proposed project would result in the removal of trees immediately adjacent the tank site to allow for expansion of the tank pad. The trees to be removed are not considered to be forest resources or forest land under state definitions as the site and surrounding forestland are not managed for the production of forest products or traditional forest uses but comprise residential uses within a wooded setting. Because the number of trees would be limited and the proposed project area is not zoned for forest land and does not contain any forest uses, the removal of a few trees at the tank site would not impact forest land zoning or convert forest land to non-forest uses. No impact to forest resources would occur.

3.2.3 Air Quality

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Overview

Air Basin

Santa Cruz County is within the North Central Coast Air Basin (NCCAB). The Monterey Bay Air Resources District (MBARD) is responsible for air quality management and regulates activities that may affect air quality within the NCCAB.

Air Quality

Federal Standards

The U.S. Environmental Protection Agency (USEPA) is responsible for setting National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA). National primary standards "provide public health protection, including protecting the health of 'sensitive' populations such as asthmatics, children, and the elderly." National secondary standards "provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings" (USEPA 2022).

State Standards

The California Air Resources Board (CARB) is the State agency responsible for regulating mobile-source (vehicle) emissions and overseeing the activities of local air pollution control districts. CARB has established California Ambient Air Quality Standards (CAAQS) for all federally regulated pollutants in addition to sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The State standards generally are more stringent than the federal standards. Areas have been designated as being in attainment, nonattainment, or unclassified with respect to State ambient air quality standards under the California Clean Air Act (CCAA).

NCCAB Attainment Status

The status of NCCAB with regards to State and federal air quality standards is shown in Table 2.2-1. The MBARD 2012-2015 Air Quality Management Plan (AQMP) assesses the attainment status of the NCCAB (MBARD 2017). As shown in Table 2.2-1 , the NCCAB is in nonattainment for particulate matter 10 microns in diameter or less (PM_{10}). The NCCAB is in attainment or unclassified for all federal air quality standards.

Table 3-1 NCCAB Attainment Status

Pollutant	California attainment status	Federal attainment status
Ozone	Attainment	Unclassified/attainment (8-hour)
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Attainment	Unclassified/attainment
Carbon monoxide	Unclassified	Unclassified/attainment
Nitrogen oxide	Attainment	Unclassified/attainment
Sulfur dioxide	Attainment	Unclassified/attainment
Lead	Attainment	Unclassified/attainment

PM_{10} = particulate matter less than 10 microns in aerodynamic diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in aerodynamic diameter

Source: (CARB 2020).

Air Quality Emission Thresholds

MBARD's *CEQA Air Quality Guidelines* provide air quality significance thresholds for volatile organic compounds (VOC), carbon monoxide (CO), oxides of nitrogen (NO_x), oxides of sulfur (SO_x), and PM_{10} to determine where air emissions generated during project construction and operation would be significant, as shown in Table 2.2-2 (MBARD 2008). It also identifies sensitive receptors as "any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes." The closest sensitive receptors to the proposed project site are residences located along the pipeline alignment, adjacent the pump station, and adjacent the water storage tank sites. Construction activities would be as close as 25 feet from residential structures.

According MBARD's *CEQA Air Quality Guidelines*, construction activities (e.g., excavation, grading, on-site vehicle operation) that can directly generate 82 pounds per day or more of PM_{10} would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors. Construction of the proposed infrastructure would occur nearby residential sensitive receptors; therefore, the PM_{10} threshold of 82 pounds per day would apply to the proposed project's construction activities.

MBARD's *CEQA Air Quality Guidelines* also identifies screening thresholds for the evaluation of PM_{10} emissions. Construction projects with less than 8.1 acres per day of minimal earthmoving or 2.2 acres per day of earthmoving (e.g., grading, excavation) are assumed to be below the PM_{10} threshold of 82 pounds per day (MBARD 2008).

Table 3-2 Criteria Pollutant Thresholds of Significance

Pollutant	Construction emissions threshold of significance (lbs./day)	Operation emissions threshold of significance (lbs./day)
VOC/NO_x	N/A	137
CO	N/A	550
SO_x	N/A	150
PM_{10}	82	82

lbs./day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; SO_x = oxides of sulfur; PM_{10} = particulate matter less than 10 microns in aerodynamic diameter; VOC = volatile organic compounds

Source: (MBARD 2008)

Discussion

A) Less-than-Significant Impact

The MBARD AQMP estimates growth in emissions based on population forecasts prepared by the Association of Monterey Bay Area Governments (AMBAD) and other indicators. The proposed project would not include new housing or businesses that would directly result in population growth. The proposed project would replace and improve the existing infrastructure to better service the existing community.

MBARD's *CEQA Air Quality Guidelines* states indirect emissions from a proposed non-residential project intended to meet the needs of the population are consistent with the AQMP if the current population of the county does not exceed the AQMP population forecasts. The current population estimate for the Santa Cruz County is 267,792 persons (U.S. Census Bureau 2021). The California Department of Finance (2022) estimates that the Santa Cruz County population would be 288,195 by 2035, which does not exceed the AQMP population forecasts. The proposed project would not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

B) Less-than-Significant Impact

Construction

The proposed project would require the temporary use of equipment for grading, excavation, construction, and vehicle transport, which would generate air emissions. As discussed above, the MBARD's *CEQA Air Quality Guidelines* states that construction projects with less than 8.1 acres per day of minimal earthmoving or 2.2 acres per day of earthmoving (e.g., grading, excavation) are assumed to be below the PM_{10} threshold of 82 pounds per day. The proposed project would involve work within 40 feet per day along the pipeline or up to 20 CY of disturbance at the pump station and 150 CY at the Forest Springs water tank site. The area of disturbance each day would be less than 2.2 acres and therefore would not exceed the MBARD threshold. Construction-related air quality impacts would be less than significant.

Operation

The proposed project would generate air quality emissions in connection with the operation of the water storage tank(s) and the pump station. SLVWD employees would maintain the water tank(s) and pump station approximately once per month. Operational emissions would be from the monthly maintenance vehicle trips, the electrical power required for the pump at the pump station, and lights at the water storage tanks and pump station. The pump station also includes an emergency generator that would be a fully contained skip-mounted internal-combustion-engine powered unit sized to meet the electrical demands of the pump station. The unit would be approximately 35 kW and powered by propane from an on-site storage tank. The propane tank would be sized to provide a minimum of 5 days of full-load running. The operational emissions were calculated using the California Emissions Estimator Model (CalEEMod) and summarized in Table 2.2-3. As shown in the table below, the estimated emissions would not exceed the MBARD thresholds of significance for any criteria pollutants. The impact would be less than significant.

Table 3-3 Proposed Project Operational Emission Estimates

Pollutant	MBARD operation emissions threshold of significance (lbs./day)	Project maximum operation emissions (lbs./day)
VOC/NO_x	137	<0.005
CO	550	<0.005
SO_x	150	<0.005
PM_{10}	82	<0.005

lbs./day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; SO_x = oxides of sulfur; PM_{10} = particulate matter less than 10 microns in aerodynamic diameter; VOC = volatile organic compounds

Source: (MBARD 2008; California Air Pollution Control Officers Association 2022))

C) Less-than-Significant Impact

Sensitive receptors in the vicinity of the proposed project site are local residences located along Big Basin Highway, Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way. Multiple residences are located approximately 25 feet from the proposed construction areas and could be exposed to construction-related diesel emissions.

MBARD's *CEQA Air Quality Guidelines* states that a project would have a significant impact to sensitive receptors if it would cause a violation of any CO, PM_{10}, or toxic air contaminant standards at an existing or reasonably foreseeable sensitive receptor. As discussed under impact discussion (b), the proposed project would not exceed MBARD construction or operation emission thresholds. Construction activities for the entire project that would utilize diesel-generating equipment would last approximately 12 months. Construction activities for the proposed pipeline component of the proposed project would be temporary and would continuously move along each proposed pipeline segment and thus not remain in the same place for more than two weeks. The construction activities for the pump station would last four months, and construction of the new water storage tank(s) would last up to six months. According to the Office of Environmental Health Hazard Assessment, it is not recommended for health risk assessments to be conducted for projects lasting less than two months at the *maximally exposed individual resident* (MEIR) (OEHHA 2015). Although the construction activities at the pump station site and the water storage tank site would last more than 2 months, the duration of ground-disturbing activities and the use of heavy equipment during those periods of time would not be more than 2 months in total and would not be continuous. In addition, Title 13 of the California Code of Regulations (section 2485(c)(1)) prohibits idling of a diesel engine for more than 5 minutes in any location. For those reasons, a health risk assessment is not required for the proposed project. Construction activity emissions would cease after the completion of the project. Therefore, the proposed project would not expose sensitive receptors to substantial diesel pollutant concentrations. The impact would be less than significant.

D) Less-than-Significant Impact

Typical sources of objectionable odors identified in MBARD's *CEQA Air Quality Guidelines* include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, and refineries. During construction of the proposed project, the use of diesel-powered vehicles and equipment would generate temporary and localized odors. The use of diesel-powered vehicles and equipment would be temporary and would continuously move along each proposed pipeline segment and thus would not remain in the same place for more than two weeks. Although construction activities for the pump station and new water storage tanks would be stationary for a longer period, 4 months and 6 months, respectively, the use of heavy equipment during those periods of time would be sporadic, and equipment would not be in use during the entire construction period. Furthermore, Title 13 of the California Code of Regulations (section 2485(c)(1)) prohibits idling of a diesel engine for more than 5 minutes in any location. Project emissions would cease after the completion of construction. The proposed project would not create new or long-term objectionable odors. The impact would be less than significant.

3.2.4 Biological Resources

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

Biological Evaluation Methods

A Biological Evaluation Report was prepared for the project to document existing biological conditions within the project study area. The project study area for the purpose of the Biological Evaluation Report consists of the pipeline alignment, proposed water storage tank, proposed pump station, existing water storage tanks for demolition, and a 20-foot buffer surrounding the proposed project construction areas. A literature review and field survey of the project study area were conducted (Vollmar Natural Lands Consulting 2023). The Biological Evaluation Report is provided in Appendix A.

Regional Setting

The project study area is situated in the central Santa Cruz Mountains, within a moderately broad valley created by Boulder Creek and its tributary streams. The Santa Cruz Mountains are a region of great biological diversity, comprising cool, moist coastal forests as well as warm, dry chaparral. Much of the habitat in the Santa Cruz Mountains is temperate rainforest. Forests of this region are ecologically and genetically distinct from those of the redwood ecoregions farther north.

Project Setting

Aquatic Habitats, Riparian Areas, and Natural Communities

Aquatic habitats, including multiple drainages that could be subject to State and federal jurisdiction, occur within the project study area. Habitat types along the aquatic resources include perennial and seasonal streams as well as ephemeral incised channels, swales, and roadside ditches. Wetland and riparian habitats appeared to be limited to the perennial stream corridors, which are limited within the project study area to the perennial creeks located at bridge crossings.

The other natural habitats within the project study area include cismontane woodland and North Coast coniferous forest, as classified by the California Native Plant Society (CNPS). Cismontane woodland and North Coast coniferous forest habitats primarily surround Big Basin highway and several roads along which the proposed pipeline would be installed. One plant community in the study areas is ranked as sensitive: redwood forest and woodland alliance. This plant community is most commonly found in the North Coast coniferous forest and woodland habitat, which is ranked by NatureServe as S3.2 and G3. meaning that the habitat is

considered sensitive.[1] A description of the habitats is provided in the Biological Evaluation Report in Appendix A (Vollmar Natural Lands Consulting 2023).

Critical Habitats

Designated critical habitat for steelhead is present in Boulder Creek, which crosses through the project study area in two locations. No other critical habitat occurs within the project study area.

Special-status Plant Species

While the project site itself consists primarily of existing paved roads, road shoulders, and leveled and/or developed areas, the study area (i.e., the project site and 20-foot buffer) encompasses natural habitats as well as residential landscaped habitats. Where not developed as residential housing or landscaping, natural soils adjacent the developed areas support plant communities that in some areas include a significant cover of native plant species, particularly in the tree and shrub strata. Accordingly, there is potential for special-status plants to be present within these more natural habitats within the project study area.

Eight special-status plant species could occur within habitat types present in the project study area. Refer to Table 3-1 for a description of the species that have the potential to occur on site. None of the plant species are federally listed. Two of the plant species are listed by the State of California as endangered or rare, and six plants are listed as California Rare Plant Rank (CRPR) plants. Plant species with a CRPR rank of 1B are plants that are rare, threatened, or endangered in California and elsewhere. Two of the taxa are associated with North Coast coniferous forest habitat, and seven are associated with cismontane woodland. One plant is associated with both on-site habitats.

Table 3-4 Special-status Plant Species with Potential to Occur in the Proposed Project Area

Common name (*family*)	Scientific name [1]	Regulatory status	Habitat; microhabitat; elevation; blooming period [2]	Potential to occur
Humboldt County milkvetch (*Fabaceae*)	*Astragalus agnicidus*	—/CE/1B.1	Broadleaf upland forest, North Coast coniferous forest; disturbed areas, openings, roadsides (sometimes); 395–2,625 feet; April–September	**Yes.** Suitable habitat is present
Santa Clara red ribbons (*Onagraceae*)	*Clarkia concinna* ssp. *automixa*	—/—/4.3	Chaparral, cismontane woodland; none; 295–4,920 feet; (April) May–June (July)	**Yes.** Suitable habitat is present
Arcuate bush-mallow (*Malvaceae*)	*Malacothamnus arcuatus*	—/—/1B.2	Chaparral, cismontane woodland; none; 50–1,165 feet; April–September	**Yes.** Suitable habitat is present

[1] The *3* designation indicates that the habitat is "vulnerable-at moderate risk of extirpation in the jurisdiction [globally (G) or statewide (S)] due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors" (ibid). The .*2* indicates that the habitat is "threatened", as opposed to .1 for "very threatened" or .*3* for "no current threat known" (California Native Plant Society, 2023).

Common name (*family*)	Scientific name [1]	Regulatory status	Habitat; microhabitat; elevation; blooming period [2]	Potential to occur
Marsh microseris (*Asteraceae*)	*Microseris paludosa*	—/—/1B.2	Cismontane woodland, closed-cone coniferous forest, coastal scrub, valley and foothill grassland; none; 15–1,165 feet; April–June (July)	**Yes.** Suitable habitat is present
Elongate copper moss (*Mielichhoferiaceae*)	*Mielichhoferia elongata*	—/—/4.3	Broadleaf upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest; acidic (usually), carbonate (sometimes), metamorphic, roadsides (often), adnd vernally mesic (usually) soils; 0–6,430 feet; no bloom period listed	**Yes.** Suitable habitat is present
Dudley's lousewort (*Orobanchaceae*)	*Pedicularis dudleyi*	—/CR/1B.2	Chaparral (maritime), cismontane woodland, North Coast coniferous forest, valley and foothill grassland; none; 195–2,955 feet; April–June	**Yes.** Suitable habitat is present
Pine rose (*Rosaceae*)	*Rosa pinetorum*	—/—/1B.2	Cismontane woodland, closed-cone coniferous forest; none; 5–3,100 feet; May–July	**Yes.** Suitable habitat is present
Chaparral ragwort (*Asteraceae*)	*Senecio aphanactis*	—/—/2B.2	Chaparral, cismontane woodland, coastal scrub; alkaline soils (sometimes); 50–2,625 feet; January–April (May)	**Yes.** Suitable habitat is present

Notes:

1. S = subnational/state conservation status, critically imperiled (S1) to secure (S5)
   CE = listed as endangered by the State of California
   CR = listed as rare by the State of California
   CRPR = California Rare Plant Rank; CRPR ranges from 1A (presumed extirpated in California and either rare or extinct elsewhere to 4 (plants of limited distribution, watch list). Ranks at each level also include a threat rank from seriously threatened (0.1) to not very threatened (0.3).
2. Elevation range within the study area is 550 to 975 set.

Source: (Vollmar Natural Lands Consulting 2023).

Special-status Animal Species

Eight special-status animal species have potential to occur within the project study area based on the habitat requirements of the species, known species range, and habitats occurring within the project study area. Four of the special-status animal species are state or federally listed, and four are species of special concern that have not been listed by state or federal agencies. In addition to special-status species, migratory birds occurring in the area would be protected under the Migratory Bird Treaty Act (MBTA). Table 3-2 provides a description of each relevant special-status wildlife species along with its regulatory status, its habitat requirements, and an evaluation of its potential to occur in the study area.

Table 3-5 Special-status Animal Species with Potential to Occur in the Project Study Area

Common name	Scientific name	Regulatory status	Habitat	Potential to occur
Santa Cruz black salamander	*Aneides niger*	SSC	Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, and under damp logs and other objects.	**Yes.** Boulder Creek and tributaries provide suitable habitat for this species, and there are CNDDB documentations within 1.25 miles of the study area.
California giant salamander	*Dicamptodon ensatus*	SSC	Occurs in wet coastal forests in or near clear, cold, permanent or semipermanent streams, often with shelter such as rocks, logs, or stones.	**Yes.** Boulder Creek and tributaries provide suitable habitat for this species, and there are CNDDB documentations within 1/3 mile of the study area.
Foothill yellow-legged frog—Central Coast DPS	*Rana boylii* pop. 4	FPT; SE	Generally occurs in partially shaded and shallow streams with a rocky substrate. Requires aestivation habitat and enough permanent water for larval development.	**Yes.** Boulder Creek and tributaries provide suitable habitat for this species, and they are known to be present in the watershed. The closest CNDDB documentations are mostly historical, and the area needs further study, but their presence should not be ruled out.
California red-legged frog	*Rana draytonii*	FT; SSC	Breeds in perennial and seasonal ponds and slow-moving streams; shelters in adjacent uplands and shrubby or emergent riparian vegetation.	**Yes.** Boulder Creek and tributaries provide suitable habitat (primarily during periods of low flow) for this species, and it is known to be present in the watershed. There is critical habitat for California red-legged frog within 1 mile of the study area.

Common name	Scientific name	Regulatory status	Habitat	Potential to occur
Marbled murrelet (nesting)	*Brachyramphus marmoratus*	FT; SE	Nests in moist, coastal coniferous forests, preferring old-growth forests. Nests on large moss or lichen-covered branches over 40 feet above the ground or, less commonly, on the ground in a depression within a rocky area.	**Yes.** Suitable habitat is of marginal quality within the study area (no old-growth forests), but there are critical habitat and known occurrences within 3 miles of the study area.
Steelhead—Central California Coast DPS	*Oncorhynchus mykiss irideus* pop. 8	FT	Streams, rivers, lakes, estuaries, and ocean from Russian River south to Soquel Creek and to, but not including, the Pajaro River. Also includes San Francisco and San Pablo Bay basins.	**Yes.** The study area is within designated critical habitat for steelhead, and there is suitable habitat present.
Pallid bat	*Antrozous pallidus*	SSC; WBWG:H	Forages in a variety of habitats including shrub-steppe grasslands, oak savannah grasslands, open Ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, porches, bat boxes, and buildings.	**Yes.** Trees and buildings may provide suitable day and night roosts, and forest within the study area provides suitable foraging habitat. No obvious roost locations were observed during the field survey, but they may still be present.
Townsend's big-eared bat	*Corynorhinus townsendii*	SSC; WBWG:H	Roosts in caves, cliffs, rock ledges, and man-made structures. Found in a wide variety of habitats, excluding subalpine and alpine habitats and including grasslands, shrublands, oak woodlands and forests.	**Yes.** Trees and buildings may provide suitable day and night roosts, and forest within the study area provides suitable foraging habitat. No obvious roost locations were observed during the field survey, but they may still be present.

Common name	Scientific name	Regulatory status	Habitat	Potential to occur

Notes:
S = subnational/state conservation status, critically imperiled (S1) to secure (S5)
FC = candidate for federal listing
FT = federally listed as threatened
FE = federally listed as endangered
FPT - federal proposed threatened
SE - state endangered
SSC = CDFW species of special concern
BCC = USFWS bird of conservation concern
CDFW FP = fully protected by State of California
CDFW WL = State of California watch list
WBWG: Western Bat Working Group High ('H') Priority

Source: (Vollmar Natural Lands Consulting 2023).

Discussion

A) Less than Significant with Mitigation Incorporated

Special-status Plants

The project site consists primarily of existing paved roads, road shoulders, and leveled and/or developed areas. The majority of the construction activities would occur within developed areas; however, some staging could occur off of the paved road or developed road shoulder, fire hydrants would be installed outside of the paved roadway, and the water storage tank pad would be expanded into undeveloped habitats. Natural habitats including cismontane woodland and North Coast coniferous forest within the project area have the potential to support special-status plant species. Staging of equipment, construction of fire hydrants, and expansion of the water storage tank pad could disturb natural habitats containing special-status plants. Staging equipment or grading in areas containing special-status plants could result in removal of the special-status plants or damage to the plant community, which would be a significant impact due to the rarity of these plants.

Mitigation Measure Bio-1 would be implemented to reduce impacts on special-status plants. Mitigation Measure Bio-1 requires the implementation of preconstruction surveys during the appropriate blooming period for each special-status plant within suitable habitat areas that would be disturbed prior to construction. The special-status plant surveys would conform to protocols established by the CNPS and the CDFW for rare plant surveys.

Any occurrences of rare plants would be avoided where possible. Where avoidance of the rare plant is not possible, the plants would be transplanted or replaced, and monitoring would be conducted to ensure survival and success of the transplanted or replacement plantings. Because Mitigation Measure Bio-1 includes procedures to identify, avoid, and mitigate for any special-

status plants occurring in the project area, impacts to special-status plant species would be less than significant with mitigation.

Special-status Animals

Foothill Yellow-legged Frog* (Rana boylii)*—Central Coast DPS: Federally Proposed as Threatened, State Endangered

Foothill yellow-legged frog has been documented in the watershed within 1 mile of the project site. Boulder Creek and some of its tributaries provide suitable habitat for foothill yellow-legged frog, particularly during periods of low flow. As the foothill yellow-legged frog is known to be present in the watershed and suitable habitat is present along Boulder Creek, it is assumed that foothill yellow-legged frog could occur within Boulder Creek and adjacent riparian habitat. While the project would avoid construction within Boulder Creek, there is a possibility that foothill yellow-legged frog could move into and aestivate in upland areas adjacent Boulder Creek. If the project were to entail staging of materials or excavation of a trench for a fire hydrant in areas adjacent Boulder Creek, there is a possibility that foothill yellow-legged frog could be encountered and impacted by the project. Any "take" of foothill yellow-legged frog under state or federal law would be a significant impact on the species. Mitigation Measure Bio-2 requires either avoidance of any ground-disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid periods when foothill yellow-legged frog are most active (i.e., rainy season) and pre-construction surveys and installation of temporary exclusion fencing under the supervision of a USFWS-approved biologist to avoid impacts on the species. Impacts on foothill yellow-legged frog would be less than significant with implementation of Mitigation Measure Bio-2.

California Red-legged Frog* (Rana draytonii)*: Federally Listed as Threatened, CDFW Species of Special Concern

California red-legged frog have been documented along the lower San Lorenzo River watershed approximately 6.5 air miles south of the project site. In addition, critical habitat for California red-legged frog has been designated 1 mile to the west of the project site. Boulder Creek and some of its tributaries provide suitable habitat for California red-legged frog, particularly during periods of low flow. It is therefore assumed that California red-legged frog could occur within Boulder Creek. California red-legged frog are also known to aestivate in upland habitat and can occur up to 300 feet from ponds, streams, and other suitable habitat. Project construction activities within 300 feet of Boulder Creek have the potential to encounter and impact California red-legged frog. Any "take" of California red-legged frog would be a significant impact on the species. Mitigation Measure Bio-2 requires either avoidance of any ground-disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid periods when California red-legged frog are active (i.e., rainy season) and pre-construction surveys and installation of temporary exclusion fencing under the supervision of a USFWS-approved biologist to avoid impacts on the species. Impacts on California red-legged frog would be less than significant with mitigation.

Santa Cruz Black Salamander* (Aneides niger*): CDFW Species of Special Concern
Santa Cruz black salamander is endemic to California, and its range is limited to the Santa Cruz Mountains in San Mateo County, northern Santa Cruz County, and western Santa Clara County. Boulder Creek and its tributaries provide suitable habitat for Santa Cruz black salamander, and salamanders have been documented within 1.25 miles of the project and are assumed to occur within Boulder Creek in the project area due to the presence of suitable habitat. Santa Cruz black salamanders prefer wet habitat and are unlikely to occur within upland areas in the project area. However, there is a possibility that Santa Cruz black salamanders could enter the construction area in areas immediately adjacent Boulder Creek. Staging of materials or excavation in areas containing Santa Cruz black salamander would be a significant impact. Mitigation Measure Bio-2 requires either avoidance of any ground-disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid the rainy season and pre-construction surveys and installation of temporary exclusion fencing to avoid impacts on the species. Impacts on Santa Cruz black salamander would be less than significant with implementation of mitigation.

California Giant Salamander* (Dicamptodon ensatus*): CDFW Species of Special Concern
Boulder Creek and tributaries within the study area provide suitable habitat for the California giant salamander. California giant salamander have been observed within one-third mile of the project site and are assumed to occupy the habitat within Boulder Creek. California giant salamanders are known to travel up to 50 meters from creeks. There is a possibility that Santa Cruz black salamanders could enter the construction site in areas within 50 meters of Boulder Creek. Staging of materials or excavation in areas containing California giant salamander would be a significant impact. Mitigation Measure Bio-2 requires either avoidance of any ground disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid the rainy season and pre-construction surveys and installation of temporary exclusion fencing to avoid impacts on the species. Impacts on California giant salamander would be less than significant with mitigation.

Steelhead—Central California Coast DPS* (Oncorhynchus mykiss irideus *pop. 8): Federally Listed as Threatened
Steelhead presence is monitored by a Santa Cruz County program called the Juvenile Steelhead and Stream Habitat Monitoring Program, which surveys for steelhead at several locations throughout the San Lorenzo watershed on an annual basis. This monitoring program has documented steelhead in Boulder Creek within the project area in recent years. The project would involve installation of the new pipeline on the existing bridges over Boulder Creek and would not involve work within Boulder Creek. While the project would involve construction activities in proximity to Boulder Creek, the project would not affect habitat for steelhead. In addition, the project would avoid indirect impacts on steelhead habitat by implementing erosion and sediment control BMPs in compliance with the State of California Construction General Permit and project-specific Stormwater Pollution Prevention Plan (SWPPP). Due to avoidance of steelhead habitat and minimization of erosion, the impact on steelhead would be less than significant.

Marbled Murrelet* (Brachyramphus marmoratus*): Federally Listed as Threatened, State Endangered

Habitat quality for marbled murrelet in and adjacent the project area is marginal due to recent fires and lack of old growth forest. However, marbled murrelet have been documented within 3 miles of the project and could nest within large coniferous trees in and adjacent the project area. While the project would not remove any large coniferous trees or old-growth forest, noise generated during project construction activities could impact nesting marbled murrelets and result in nest abandonment or take of eggs or nestlings, which would be a significant impact.

The project would reduce potential impacts to marbled murrelet through the implementation of Mitigation Measure Bio-3, which requires timing of activities to avoid the nesting season to the extent feasible, pre-construction surveys for murrelet during the nesting season, and implementation of avoidance buffers for nests should any occur in the area. Mitigation Measure Bio-3 would effectively avoid impacts on marbled murrelet nesting if it occurs in proximity to the project. Impacts would be less than significant with mitigation.

Pallid bat* (Antrozous pallidus*) and Townsend's Big-eared Bat* (Corynorhinus townsendii*): CDFW Species of Special Concern, WBWG High Priority

Bridges, large trees, and buildings within the study area provide suitable day and night roosts for pallid bats and Townsend's big-eared bats. The coniferous forest and cismontane woodland may also provide foraging habitat. The project may require removal of trees adjacent the proposed water storage tank to allow for construction of the larger water storage tanks. The project also involves installation of the proposed water pipeline on existing bridges. Removal of trees containing a pallid bat roost or construction noise activities in proximity to a pallid bat maternal roost could significantly impact pallid bats. Mitigation Measure Bio-4 requires a qualified biologist to conduct a daytime and nighttime preconstruction bat survey to verify potential use of bridges and nearby buildings and trees by bats within two weeks prior to initiation of construction activities. If bats are observed roosting on the nearby structures, the bat roost shall be protected by using a buffer of at least 50 feet to avoid noise impacts on the roost or use of one-way doors to exclude the bats if the roost must be removed to avoid potential mortality. With the implementation of Mitigation Measure Bio-4, impacts on pallid bats would be less than significant.

Mitigation Measure Bio-1: Special-status Plant Pre-construction Surveys and Mitigation

> Prior to the date of initial ground disturbance at the project site, preconstruction surveys for special-status plant species shall be conducted by a qualified botanist during the appropriate blooming period for special-status plants that could occur in the project area. The special-status plant surveys shall conform to protocols established by the California Native Plant Society (CNPS) and the California Department of Fish and Wildlife (CDFW) for rare plant surveys.

All occurrences of special-status plants shall be documented by the botanist and flagged for avoidance. In the event that the special-status plant(s) cannot be avoided during construction, the following measures shall be implemented:

- Special-status perennial plant taxa:
  - Where feasible, the individual or population may be safely extracted and relocated to appropriate habitat outside the work area.
  - Alternatively, a nursery with experience growing special-status plants can be employed to grow seedlings of the species that shall be planted in appropriate habitat outside the work area or in the work area following completion of work. The selected relocation site shall be within the same watershed as the impact area and shall be approved by CDFW botanical staff.
- Special-status annual plant taxa:
  - Seeds of the annuals shall be collected from existing on-site populations or from the same watershed (to maintain local genetic stock) and distributed in appropriate habitat outside the work area (within the same watershed) or in the work area following completion of work.
  - Alternatively, a nursery with experience growing special-status plants shall be employed to grow seedlings of the species (from seeds collected locally in the same watershed) that shall be planted in appropriate habitat outside the work area or in the work area following completion of work. It should be noted that seeds derived from plants in the same watershed as the impact area may be available from local nurseries, and local nurseries may also be able to propagate seeds from adults grown from collected seeds. In this case, seeds would not need to be collected from a specific impact area site.
- Monitoring:
  - Seeded or replanted locations within the study area shall be monitored for a minimum of 3 years, and up to 5 years, based on monitoring results. The new population shall match typical populations for the species as available from rare plant inventories (e.g., CNDDB, USFWS data, local mitigation banks). Due to the variations in population from year to year as a result of weather fluctuations, average population data for annual taxa can be calculated from several years (at least three) of data collected from known populations in the region.

Mitigation Measure Bio-2: Avoidance of Foothill Yellow-legged Frog, California Red-legged Frog, Santa Cruz Black Salamander, and California Giant Salamander

The project shall be designed to avoid construction activities outside of the paved roadway within 300 feet of suitable habitat for special-status amphibians to the extent feasible. Where it is not feasible to avoid construction in undeveloped areas within 300

feet of suitable habitat, the work shall be timed to avoid the period between November 1 and March 31 and any period of rain or 48 hours following rain events. In addition, a qualified biologist(s) shall conduct an investigation for special-status amphibians within 24 hours prior to activities in undeveloped areas within 300 feet of suitable habitat. The designated biologist shall investigate all potential areas that could be used by the species for feeding, sheltering, movement, and other essential behaviors. If any California red-legged frogs or foothill yellow-legged frogs or burrows that could contain either species are found, the designated biologist shall ensure the area is fully avoided and the species can leave the area on its own. Temporary exclusion fencing would then be installed under the supervision of the qualified biologist to avoid any special-status amphibian from entering the work area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence should be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed within suitable habitat for special-status species.

Mitigation Measure Bio-3: Marbled Murrelet Avoidance

If project activities are to occur within nesting/breeding season of marbled murrelet (March 24 to September 15), a targeted habitat assessment shall be conducted by a qualified biologist within the project site and a 0.25-mile buffer. Prior to the start of project activities, in areas where marbled murrelet nesting habitat may be present, a qualified biologist shall conduct a visual inspection for marbled murrelet in suitable habitat within 0.25 mile of the project to identify and flag for avoidance suitable habitat features. Suitable habitat features include the presence of platforms, small patches of old growth forest, or remnant large trees. Platforms are defined as a relatively flat surface at least 10 cm in diameter and 10 meters high, in the live crown of a coniferous tree. Platforms can be created by a wide branch, moss, lichen, mistletoe, tree deformities, or squirrel nests. If any suitable habitat features are observed within 0.25 mile of the project site, either the activities within 0.25 mile of the habitat features shall be timed to avoid the marbled murrelet nesting season or protocol-level surveys shall be conducted to verify absence of the species at the time of construction.

Mitigation Measure Bio-4: Avoidance of Sensitive Bat Species (Pallid Bat and Townsend's Big-Eared Bat)

A qualified biologist shall conduct a daytime and nighttime preconstruction bat survey to verify potential use of bridges and nearby buildings and trees by bats, within two weeks prior to initiation of construction activities.

If bats are observed roosting on the bridges, nearby buildings, or trees, an avoidance buffer shall be installed within 50-feet of the active roost, or appropriate exclusion

measures (such as one- way doors, expandable foam, or steel wool) shall be implemented under the direction of a qualified biologist to avoid potential bat mortality.

B) Less than Significant Impact with Mitigation Incorporated

The project would involve crossings of Boulder Creek, which contains riparian habitat along the stream banks. The project pipeline alignment would also be located within roads adjacent streams and riparian habitat. Riparian vegetation in the project area is limited to the stream banks and does not occur along the road shoulder, at the pump station, or on hill slopes surrounding the water storage tank. The project would entail installation of the proposed pipeline on the existing bridges crossing Boulder Creek and would not require construction access within creeks or riparian areas. The project would therefore avoid impacts on riparian vegetation and habitat along the creeks in the area. In addition, the project would avoid indirect impacts on riparian habitat by implementing erosion and sediment control BMPs in compliance with the State of California Construction General Permit and project-specific Stormwater Pollution Prevention Plan (SWPPP). Because no riparian vegetation or habitat would be disturbed by the project and sediment and erosion controls would be implemented to avoid sedimentation in riparian habitat, the impact to riparian habitat would be less than significant.

The redwood forest and woodland alliance vegetation community within the project area is a sensitive natural community. The redwood forest and woodland alliance is the dominant plant community within the mapped North Coast coniferous forest and woodland. While coast redwood trees and their habitats are relatively common within coastal California, only a fraction of the coastal redwood forests are old growth (i.e., never been logged or harvested). In addition, the County of Santa Cruz has an ordinance (County Code § 16.34.030) that requires a permit to remove "significant" trees, which include all such trees located within sensitive habitats, as defined in chapter 16.32 of the Santa Cruz County Code (Santa Cruz County Planning Department 2023)

The proposed project could require the removal of individual trees in the redwood forest and woodland alliance to grade the pad for the larger water storage tank and retaining walls at the Forest Springs water tank site or, potentially, to install fire hydrants if avoidance of tree removal were not feasible. Removal of redwood trees within the redwood forest and woodland alliance would be a significant impact. The project would implement Mitigation Measure Bio-5 to minimize removal of redwood trees and mitigate for any unavoidable impacts to coast redwood habitats or individual coast redwood trees, including replanting redwood trees or other trees within redwood habitats when existing trees are removed, damaged, or inadvertently killed. One sapling (1–3 inches in diameter at approximately 4.5 feet above the roots) would be planted for every removed sapling, and three saplings would be planted for every tree greater than 5 inches diameter at 4.5 feet above the roots. Because Mitigation Measure Bio-5 defines procedures to avoid coast redwood tree removal or compensate for their removal, the impacts to sensitive communities would be less than significant with mitigation.

Mitigation Measure Bio-5: Impacts to Redwood Forest and Woodland Habitats and Individual Trees

In order to avoid incidental impacts to coast redwood habitats or individual coast redwood trees, the following measure shall be implemented:

- All workers shall be made aware of the importance of avoiding harmful impacts to redwood forest and woodland habitat or individual trees within the habitat.
- Brightly colored silt fencing shall be installed along the edges of the construction areas (such as the pump station) to prevent sedimentation into any nearby drainages as well as to clearly mark the boundaries of the disturbance area.
- In the event that one or more redwood trees or other trees within redwood habitats needs to be removed or is inadvertently killed or severely damaged, seedlings of the same species shall be planted in suitable habitat within the same habitat and within accessible habitat nearby (i.e., within redwood forest and woodland alliance, and not on unauthorized private property). One sapling (1–3 inches in diameter at approximately 4.5 feet above the roots) shall be planted for every removed sapling, and three saplings shall be planted for every tree greater than five inches diameter at 4.5 feet above the roots.

C) Less than Significant Impact with Mitigation Incorporated

Wetland vegetation was observed along roadside ditches and drainage swales adjacent the proposed pipeline alignment and existing roads. No potential wetland habitat was observed within the area of the proposed water storage tank and retaining wall or within the area of the proposed pump station. The project would involve staging of equipment along the road, and equipment staging could potentially involve use of areas along the road shoulder as laydown areas. In addition, fire extinguishers would be installed adjacent the road. Installation of fire extinguishers or staging of equipment adjacent the roadway could potentially impact wetlands adjacent the road. Impacts to wetlands would be a significant impact. Mitigation Measure Bio-6 defines procedures to avoid inadvertent impacts to wetlands and restore any areas that are temporarily impacted during construction. In addition, the project would avoid indirect impacts on wetlands by implementing erosion and sediment control BMPs in compliance with the State of California Construction General Permit and project-specific Stormwater Pollution Prevention Plan (SWPPP).

Mitigation Measure Bio-6: Avoidance and Minimization of Impacts to Waters and Aquatic Habitats

- A minimum of 14 days prior to construction, a wetland delineation study shall be conducted to define the limits of wetlands in areas directly adjacent the roadway/construction area. The limits of all wetlands shall be flagged for avoidance using brightly colored pin flags.

- As part of the worker environmental awareness training, workers shall be trained on the legal protections for wetlands, where wetlands occur on the project site, and procedures to avoid impacts on wetlands during construction
- If any temporary impacts on wetlands are necessary, the wetland shall be regraded to match the existing topography/condition, and native wetland seed shall be applied for revegetation of the soil. If any permanent impacts are required, the impact shall be mitigated through enhancement or creation of wetland habitats commensurate with the degree of impact at a minimum ratio of 1:1. In addition, the District shall consult with U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife to obtain any required permits prior to conducting any work within wetlands or other jurisdictional waters.

D) Less than Significant Impact with Mitigation Incorporated

Streams and riparian habitat provide wildlife connectivity within the project area. Fish, amphibians, and birds often travel along stream corridors. As discussed previously, the project does not involve any construction within stream corridors and would not affect wildlife connectivity within or along stream corridors. The project would use existing bridges crossing the streams and would not create any new barriers to connectivity.

The North Coast coniferous forest habitat on the site can provide habitat connectivity to access other redwood areas such as Big Basin State Redwoods. Migratory birds and bats could also nest and roost in trees within the project area. The project would involve removal of trees and vegetation in the surrounding area, which could result in nest destruction or mortality of young if the trees were removed during the nesting season, which is typically February through September, and an active nest is present. Construction activities and the use of noise-generating equipment could also disturb nesting migratory birds and cause nest abandonment if construction were to occur near an active nest during the nesting season. Loss of an active nest, whether directly through tree removal or indirectly due to adjacent noise and activity, would violate the Fish and Game Code and the Migratory Bird Treaty Act, thereby resulting in a significant impact. Mitigation Measure Bio-7 requires either avoidance of construction during the bird nesting season or pre-construction surveys and buffers from active nests to avoid nest disturbance. Impacts to migratory birds would be less than significant with implementation of mitigation.

Once operational, the project would not result in permanent changes that would impair wildlife movement because the pipeline would be underground and the new water tank(s) would be located at the existing Forest Springs tank site. Therefore, impacts to wildlife movement and the use of native wildlife nursery sites would be less than significant with mitigation incorporated.

Mitigation Measure Bio-7: Migratory Birds

A pre-construction survey for nesting birds shall be conducted by a qualified biologist within 14 days prior to initiation of construction activities if activities are to occur within

nesting/breeding season of native bird species (February–September). The pre-construction survey shall include all areas of construction and a 500-foot buffer around the construction site. If any active nests are observed, the biologist shall establish no-disturbance buffers from the nests at the following distances: 50-foot buffer for passerine (songbird) nests, 200 feet for raptor nests, and 500 feet for rookery nests. The no-disturbance buffer must be maintained until the young have fledged and left the nest, as determined by a qualified biologist.

E) Less-than-Significant Impact

The County of Santa Cruz has an ordinance (County Code section 16.34.030) that requires a permit to remove "significant" trees, which include all such trees located within sensitive habitats, as defined in chapter 16.32 of the County Code (Santa Cruz County Planning Department 2023).

The proposed project may require the removal of individual trees within the redwood forest and woodland alliance at the proposed tank site. In particular, trees may be removed to construct the larger water tank and retaining walls at the Forest Springs water tank site. The project would implement Mitigation Measure Bio-5 to avoid incidental impacts to coast redwood habitats or individual coast redwood trees, including replanting redwood trees or other trees within redwood habitats when existing trees are removed, damaged, or inadvertently killed. One sapling (1–3 inches in diameter at approximately 4.5 feet above the roots) would be planted for every removed sapling, and three saplings would be planted for every tree greater than 5 inches diameter at 4.5 feet above the roots. With the implementation of Mitigation Measure Bio-5, impacts would be less than significant with mitigation incorporated.

F) No Impact

The proposed project site is not located within an area with an adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

3.2.5 Cultural Resources

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Environmental Setting

A cultural resources investigation was conducted to evaluate the potential for significant historic or pre-historic resources to occur within the project area of potential effect (Basin Reseacrh Associates 2023).

Records Search

A prehistoric and historic site record and literature search was conducted by the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park (CHRIS/NWIC, File No. 22-0955 dated 1/18/2023). In addition, reference material from the Bancroft Library at the University of California, Berkeley, internal BASIN files and lists of various state and/or federal historically or architecturally significant structures, landmarks, or points of interest were also reviewed.

The CHRIS/NWIC identified five previous cultural resource studies within or adjacent the project area. The records search found one resource that crosses the site. Additionally, a review of the OHP Built Environment Resources Directory (BERD) for Santa Cruz County and the Caltrans Bridge Inventory indicated that the two bridges in the project area, Chipmunk Hollow Bridge (Bridge 36-0010) and Hazel Brake Bridge (Bridge 36-0009), were both constructed in 1921 and, therefore, are eligible for listing as a historical resource due to the age of the structures. Refer to Table 3-3 for more information on the recorded resources (Basin Reseacrh Associates 2023).

Table 3-6 Cultural Resources in the Proposed Project Area

Resource	Type	Recorded by	Eligibility for NRHP/CRHR	Comments
P-44-000405 CA-SCR-000333H	Historic; structure; Waterman Gap/SR 236	1999 (A. Ruby, S. Mikesell, FWARG, JRP); 2002 (Dana Supernowicz, Caltrans); 2018 (Steven Treffers, Rincon Consultants, Inc,)	Various segments recorded, varying evaluations; in general determined eligible for NRHP/CRHR, criterion A/1	Alignment within portions of the proposed pipeline alignment
Bridge 36-0009	Historic; structure; concrete arch bridge over Boulder Creek on SR 236	2004 (S-030906, C. McMorris, JRP)	7R not evaluated, Santa Cruz County BERD; does not appear eligible	Within project area—milepost 1.61
Bridge 36-0010	Historic; structure; concrete arch bridge over Boulder Creek on SR 236	2004 (S-030906, C. McMorris, JRP)	7R not evaluated, Santa Cruz County BERD; does not appear eligible	Within project area—milepost 1.03

Resource	Type	Recorded by	Eligibility for NRHP/CRHR	Comments
Within 0.5 mile				
	Historic; structure; bridge over High Bridge Creek on SR 236		Determined not eligible 2018, Caltrans Bridge Inventory	Resource is approximately 0.36 mile northwest of the proposed pipeline alignment.

Source: (Basin Reseacrh Associates 2023)

Field Survey

Basin Research Associates conducted a field inventory on February 7, 2023, of the proposed pipeline alignment, pump station location, and existing water tank sites. Results of the field survey can be found in the Cultural Resources Review Memorandum (Basin Reseacrh Associates 2023).

A) Less-than-Significant Impact

No NRHP- or CRHR-listed resources have been identified in or adjacent the proposed project area. The new pipeline would cross Boulder Creek along Big Basin Highway at Chipmunk Hollow Bridge (Bridge 36-0010) and at Hazel Brake Bridge (Bridge 36-0009). Both bridges could be eligible to be listed as historical resources due to the age of the bridges as both bridges were constructed in 1921. Although the bridges have not been formally recorded or evaluated, a review by Caltrans in 2004 determined that neither bridge is eligible for listing under the National Register of Historic Places (NRHP) or, by extension, the CRHR. All work would occur above grade, and no trenching would be required under either bridge. The new pipeline would tie into the existing 2-inch pipeline that feeds the existing 4-inch water line that the proposed project is replacing. The pipelines would be supported along the underside of the bridge deck. The proposed alterations to the bridges would be superficial and would not result in changes to the aesthetics, integrity, or design of the bridges. The design of the pipeline along the bridge deck would also be subject to Caltrans review and approval. Because the bridges were determined by Caltrans to be ineligible for NRHP and the project would not alter the integrity of either bridge, the project would not have an effect on the significance of any historical resource from the pipeline construction at Chipmunk Hollow and Hazel Brake bridges.

Big Basin Highway could be eligible under NRHP/CRHR Criterion A/1 (associated with events that have made a significant contribution to the broad patterns of our history). However, the project would not affect any of the qualities that make Big Basin Highway eligible for the NRHP/CRHR or local significance. The proposed pipeline alignment would occur within the ROW and would be buried below the existing roadway and would not change the characteristics of the highway. The roadway would be repaved/restored at the completion of construction. The impact to Big Basin Highway would therefore be less then significant.

Based on available information reviewed for the project, there is a low potential for the presence of subsurface prehistoric and/or historic deposits either within or adjacent the pipeline

alignments, pump station site, or two tank sites due to the disturbed nature of the sites. However, the project would result in areas of new ground disturbance due to the expansion of the water tank site and installation of fire hydrants. Accordingly, previously undiscovered historic resources could be encountered during ground disturbance. The project would implement Project Design Feature – Worker Awareness Training, which requires trainings to be conducted by a professional archaeologist prior to beginning of work. The training would address the potential for exposing subsurface resources, recognizing basic signs of a potential resource, and understanding required procedures if a potential resource is exposed, including protecting the resource and reporting the resource to a professional archaeologist. Project Design Feature – Unanticipated Discovery outlines the procedures for workers to take in the event that a previously unidentified cultural resource is discovered during demolition or construction. With the implementation of project design features, impacts to historical resources would be less than significant.

B) Less-than-Significant Impact

The records search did not identify an archeological (pre-historic) resource within the project site. No listed local cultural resources/historic properties, landmarks, or points of interest were identified in or adjacent the project site. No Native American villages, traditional use areas, or contemporary use areas or other features of significance have been identified in or adjacent the project area. No Hispanic-era features have been identified in or adjacent the project area. No American Period archaeological sites have been recorded, reported, or identified in or adjacent the project area.

Although the available information reviewed for the project area suggests a low potential for the presence of subsurface prehistoric deposits either within or adjacent the project area, there is potential for unknown buried archaeological resources to be discovered during ground disturbance. Project Design Feature – Worker Awareness Training and Project Design Feature – Unanticipated Discovery would be implemented during demolition and construction to limit potential impacts to undiscovered archaeological resources. Impacts would be less than significant.

C) Less-than-Significant Impact

Proposed bridge demolition and construction would result in ground disturbance during grading and excavation. The potential to encounter undisturbed human remains is considered low due to the disturbed and developed condition of the project area. However, there is still a potential to encounter human remains, which would be a significant impact. The project would implement Project Design Feature – Human Remains, which outlines the procedures to take in the event of the discovery of human remains. Impacts would be less than significant.

3.2.6 Energy

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
6. ENERGY. Would the project:				
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

A) Less-than-Significant Impact

Construction

The construction equipment and vehicles that would be used during construction of the proposed project would consume energy via combustion of petroleum products, including gas, diesel, and motor oil. Consumption of energy during construction would be temporary, lasting approximately 12 months. Electricity during construction would be provided by portable generators. Indirect energy use would be required to make the materials and components used in construction. Indirect energy use includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing. Fuel use would be consistent with typical construction and manufacturing practices and would not require excessive or wasteful use of energy. Construction activities would be temporary and would require limited amounts of energy. Energy use for construction would not be wasteful, inefficient, or unnecessary as economics would lead the contractor to minimize the use of energy during construction. Impacts from energy use during construction would be less than significant.

Operation

The proposed pipeline would be undergrounded and would not require routine maintenance. The proposed water storage tank(s) and pump station road would require minimal maintenance that would be similar to the existing level of required maintenance. Operation and maintenance activities would be conducted by SLVWD employees and would require approximately 1 trip per month to the pump station and tank site. Operations would not increase traffic to and from the proposed project site.

The pump station would require a new service connection to PG&E to supply 200 amps of 1-phase power at 240 volts, or 125 amps of 3-phase power at 208 volts. The power for the pump station is needed to operate the pumps and supply water to the consolidated service territory uphill from the pump station. The equipment has been sized to meet the needs of the proposed project, and the power demand for the pump station would not be wasteful or inefficient.

Operation and maintenance activities would not require inefficient or wasteful use of energy. Impacts would be less than significant.

B) Less-than-Significant Impact

SLVWD has not adopted specific renewable energy or energy efficiency plans. Santa Cruz County has adopted a Climate Action and Adaptation Plan (CAAP) (Santa Cruz County 2022). None of the implementation strategies or measures in the CAAP apply to the proposed project. The proposed project would need to comply with California Building Code Title 24 energy efficiency standards, including electrical and lighting requirements for the new pump station and larger water storage tank.

Electrical power would be provided through a new PG&E connection from an existing overhead electrical line adjacent the pump station. PG&E is required to meet requirements for compliance with California's Renewables Portfolio Standard (RPS).

Because the proposed project would not conflict with or obstruct the State plan for renewable energy and would follow state requirements for energy efficiency, the impact would be less than significant.

3.2.7 Geology and Soils

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
7. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and, potentially, result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Environmental Setting

Santa Cruz County – Local Hazard Mitigation Plan

In 2010, the County Office of Emergency Services prepared a Local Hazard Mitigation Plan (LHMP) for the period 2010 to 2015. The purpose of the LHMP is to identify and reduce risks from natural and other hazards. The LHMP also builds on the objectives established in the Public Safety Element of the County's General Plan. The LHMP was updated and revised in 2021 to reflect current information, changes in development, progress in local mitigation efforts, and changes in priorities. The 2021 update of the LHMP received the required review and approval from CalOES in August 2021 and from FEMA in October 2021. The plan was adopted by the Board of Supervisors in November 2021 (County of Santa Cruz 2023).

Santa Cruz County has implemented the following measures to mitigate the impacts of landslides: using early warning systems (CodeRED), monitoring rainfall events, public education, and increased maintenance and monitoring of storm drainage systems. The County has developed the following tiered system to mitigate landslide hazards:

- Landslide 1: Require the involvement of qualified experts in identifying specific landslide hazards.
- Landslide 2: Maintain records of the types and locations of these hazards.
- Landslide 3: Require that new development avoid landslide areas whenever possible.
- Landslide 4: Ensure that building plans incorporate all reasonable mitigation measures for structures that must be sited in or near hazard areas.

The County has developed the following landslide hazard mitigation strategies (further described in LHMP Chapter 15 Mitigation Strategy):

- Continue to require that the County Geologist review development in areas of suspected landsliding and require engineering geology reports when landsliding is identified or suspected.
- Continue to require that an engineering geologist and/or geotechnical engineer investigate the site of any proposed construction near landsliding and require mitigation of landslide hazards before issuing any building or grading permits.
- Continue to require that an engineering geologist and/or a geotechnical engineer investigate any landslide damage to homes or roadways before repair of the landslide and reuse of the homes or roadways.
- Enhance early warning and rainfall monitoring capacity in the high debris-flow risk areas of the County following the CZU fires of 2020.
- Identify, monitor, and mitigate where feasible the hazards and risks associated with postfire debris flows.

Seismicity

The proposed project is located within a seismically active region in the Santa Cruz mountain range. The proposed project is located within the Zayante Fault Zone, which is a designated by Santa Cruz County as a fault zone hazard area. The San Andreas Fault is located approximately 9 miles east of the proposed project site**.**

Figure 4 Fault Map

Liquefaction

Liquefaction is a phenomenon in which granular material is transformed from a solid state to a liquefied state as a consequence of increased pore-water pressure and reduced effective stress. Increased pore-water pressure is induced by the tendency of granular materials to densify when subjected to cyclic shear stresses associated with earthquakes.

Liquefaction potential varies significantly, and site-specific analysis is needed to accurately determine liquefaction potential in earthquake-prone areas. Most of the valley bottoms in the southern regions of the County are underlain by alluvium and are considered at very high, high, or moderate risk for liquefaction potential based on the Santa Cruz County Liquefaction Hazard Areas map (Figure 9 in the LHMP). The proposed project is not located in areas at risk of liquefaction (County of Santa Cruz 2021).

Landslides

Seismically induced landslides may be triggered by both natural and human-induced changes to the environment, which can create slope instability. The risk of landslide hazard is greatest in areas with steep, unstable slopes. Santa Cruz County terrain, weather, and seismicity increase the likelihood of landslides. Older roadways in the County are susceptible to slope instability, which could increase the likelihood of landslides. Areas that have experienced landslides include the steep hillslopes throughout Santa Cruz County, especially near the Zayante and San Andreas fault zones (County of Santa Cruz 2021).

Portions of the project are located in areas designated as Landslide Hazard Areas and Slopes Greater than 50% in the County's LHMP (refer to LHMP Figure 23: Landslide Hazard Areas) (County of Santa Cruz 2021). The areas most susceptible to landslides appear to be the portions of the pipeline along Big Basin Highway and Acorn Drive. Both of the existing Bracken Brae and Forest Springs systems are located in areas with slopes greater than 50 percent, which could also be susceptible to landslides.

Soils

A total of five distinct soil units are mapped within the study area. As indicated in bold text in Table 2-3, below, all of the soil types are well drained or somewhat excessively drained apart from one soil unit, the Xerorthents-Rock outcrop complex, which is considered excessively drained. The majority of the pipeline would be located within soil units 110 and 111, which are comprised of sandy loam. The tank sites would be located on soil unit 113, which comprises sandy loam and weathered granite (U.S. Department of Agriculture 2023).

Table 3-7 Mapped Soil Units in the Study Area

Map unit symbol	Soil unit	Acres	Percent of project	Hydric rating	Drainage class
110	Ben Lomond sandy loam, 5 to 15 percent slopes	5.1	50.1%	A	Well drained

111	Ben Lomond sandy loam, 15 to 50 percent slopes	1.8	17.6%	A	Well drained
113	Ben Lomond-Catelli-Sur complex, 30 to 75 percent slopes	1.3	12.5%	A	Well drained
173	Sur-Catelli complex, 50 to 75 percent slopes	1.0	10.2%	B	Somewhat excessively drained
181	Xerorthents-Rock outcrop complex, 50 to 100 percent slopes	1.0	9.6%	D	Excessively drained

Source: (U.S. Department of Agriculture 2023)

Discussion

A) (i and ii) Less-than-Significant Impact

The proposed project is within the Zayante Fault Zone, which is designated by Santa Cruz County as a fault zone hazard area (Santa Cruz County Planning Department 2022). The proposed project area could experience very strong intensity ground shaking during a large earthquake. Severe ground shaking resulting from earthquakes has the potential to cause injury to construction workers during construction. However, given the relatively short construction period (12 months), the potential for strong seismic shaking during the construction period is considered low. Precautionary measures including adherence to state-mandated safety standards, including federal Occupational Safety and Health Administration (OSHA) regulations (29 Code of Federal Regulations [CFR], section 1910.120) and California OSHA regulations (8 CCR Title 8, section 5192) during construction would minimize hazards to construction workers associated with strong seismic ground shaking.

The proposed pump station and tank(s) would be designed to incorporate all necessary geotechnical recommendations and to meet current California seismic structure codes. The new water tank(s) would withstand most seismic shaking and would be substantially safer during a seismic event than the existing tanks. Therefore, impacts would be less than significant.

A) (iii) Less than Significant Impact

The proposed project is not located in areas at risk of liquefaction (County of Santa Cruz 2021). The proposed pipeline alignment would occur within the ROW along existing roadways. The pipeline would be installed following standard pipeline installation methods. The trenches would be backfilled with cement slurry and repaved in accordance with the County of Santa Cruz Public Works Department or Caltrans requirements. Furthermore, the proposed tank(s) and pump station would be designed to incorporate all necessary geotechnical recommendations and meet current California seismic structure codes. Impacts would be less than significant.

A) (iv) Less-than-Significant Impact with Mitigation Incorporated

Due to the location of the proposed project in a seismically active region, the proposed project could experience earthquake-caused landslides. Furthermore, portions of the proposed project area are located in areas designated as Landslide Hazard Areas and Slopes Greater than 50% in the County's LHMP (County of Santa Cruz 2021). The areas most susceptible to landslides appear to be the portions of the pipeline along Big Basin Highway and Acorn Drive. Steep slopes and natural terrain further increase the risk of landslides.

Construction may occur in areas with steep slopes and areas prone to landslides. The movement of construction vehicles and equipment may exacerbate landslide risks. However, demolition and construction activities would occur within the existing ROW and on the existing tank site parcels. The majority of the pipeline would be constructed within the existing roadway. The trenches would be backfilled with cement slurry and repaved in accordance with the County of Santa Cruz Public Works Department or Caltrans requirements. The pipeline would not directly or indirectly increase the risk of landslides as the pipeline would be buried and stabilized underground. Given the relatively short construction period (12 months), the potential for landslides during construction period is considered low.

The pump station would be located within an easement at the intersection of Big Basin Highway and Ridge Drive. The pump station is located within a single-family residential neighborhood. The pump station is not located near a hillside or steep slope. The location of the pump station was chosen based on suitable conditions, including a flat level service. The pump station would be constructed in accordance with the California Building Code standards and the data and recommendations provided in the geotechnical investigation as required by Mitigation Measure Geo-1. In addition, as the pump station would be unmanned, the pump station would not put people at risk for landslides.

The proposed project includes the demolition of the existing Forest Springs water storage tanks and Bracken Brae temporary water storage tanks. The Forest Springs water tank would be replaced with a new water tank(s) at the same site (see Section 1.3.3) while the Bracken Brae water tanks would not be replaced. The new water storage tank(s) would have a greater storage capacity than the existing system, so the Forest Springs tank site pad would have to be graded and expanded to meet the new volume. Two new retaining walls would be installed upslope and downslope of the proposed tank(s) to avoid significant erosion on or off site and to stabilize the hill slope over the long term. The retaining walls would range from 1 foot to 16 feet in height. The hill slope adjacent the new retaining walls would be revegetated with native plant species to help stabilize the slope and reduce erosion. The retaining walls would be designed to meet site-specific engineering recommendations and in accordance with the standards of the County of Santa Cruz Public Works Department. Santa Cruz County Code section 16.10 in combination with the California Building Code require careful consideration of landslide factors by both engineering geologists, soils engineers, and civil engineers. In accordance with Mitigation Measure Geo-1, completed grading, foundation, and retaining wall plans shall be reviewed by a qualified geotechnical engineer for conformance with the recommendations presented in a geotechnical report. With the implementation of Mitigation Measure Geo-1, the

proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault or seismic-related ground failure, including liquefaction. The impacts would be less than significant with mitigation incorporated.

> **Mitigation Measure Geo-1: Prepare Geotechnical Report**. The completed grading, foundation, and retaining wall plans shall be reviewed by a qualified geotechnical engineer for conformance with the recommendations presented in a geotechnical report. The following note shall be added to the engineering and design plans:
>
> > "Earthwork, excavation and re-compaction of existing fill, foundation and pavement construction, retaining wall drainage and backfilling, utility trench backfilling, and site drainage should be performed in accordance with the project geotechnical report. A qualified geotechnical engineer shall be notified at least 48 hours in advance of any earthwork and shall observe and test during earthwork, foundation, retaining wall, and pavement construction as recommended in the geotechnical report."
>
> Earthwork, foundation, retaining wall, and pavement construction shall be observed and tested by a qualified geotechnical engineer to 1) confirm that subsurface conditions including but not limited to potential landslide hazards, soil creep, etc. are compatible with those used in the analysis and design, 2) observe compliance with the design concepts, specifications, and recommendations, and 3) allow design changes in the event that subsurface conditions differ from those anticipated. Any design changes will be implemented as recommended by the geotechnical engineer and approved by the SLVWD based on observed site conditions.

B) Less-than-Significant Impact

The majority of pipeline construction would occur within existing paved roadways and would not result in disturbance of topsoil. Excavation and grading activities during pump station construction and tank replacement could result in a temporary increase in erosion. Grading would consist of "cut and fill" to construct an expanded level pad for the proposed pump station and tank(s). It is anticipated that the majority of the existing native soil and bedrock would be used as engineered fill on site. Two new retaining walls would be installed upslope and downslope of the proposed tank(s) to avoid significant erosion on or off site and stabilize the hill slope over the long term. The hill slope adjacent the new retaining walls would be revegetated with native plant species to help stabilize the slope and reduce erosion. Limited grading would also occur at the pump station to level the concrete slab for the foundation of the pump station.

Soil erosion and topsoil loss would be limited by implementing standard construction practices and *best management practices* (BMPs) for erosion and sediment control. The project would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) due to disturbance of more than 1 acre of land. The SWPPP includes erosion control measures that protect exposed

slopes and drainage inlets. The SWPPP would contain soil stabilization and sediment control BMPs required to be implemented during construction. With implementation of these BMPs, the impact from erosion or loss of topsoil would be less than significant.

C) Less-than-Significant with Mitigation Incorporated

Liquefaction
As discussed under impact discussion (a)(iii), the project is not located in areas at risk of liquefaction. Impacts would be less than significant.

Landslides and Lateral Spreading,
Lateral spreading is commonly associated with liquefaction, causing soil mass to move down slopes. The potential for liquefaction and landslide at the proposed project site is considered moderate. Refer to impact discussion (a)(iv), above, for more information on landslides. Impacts would be less than significant with the implementation of Mitigation Measure Geo-1.

Subsidence and Collapse
Subsidence is the vertical displacement of the ground's surface caused by the extraction of large volumes of fluid (water or petroleum products) from deep in the ground, or caused by the collapse of underground mines. Subsidence caused by groundwater withdrawal can occur in unconsolidated to semi-consolidated sediments containing confined or semi-confined sand and gravel aquifers inter-bedded with clay sediments. The proposed project site is not mapped as an area that is impacted by land subsidence (Santa Cruz County Planning Deparmtnet 2022). The trench for the proposed pipelines would be approximately 3 feet wide and 4.5 feet deep. Construction activities would include the backfilling of trenches to minimize any potential subsidence. There is low potential for land subsidence or collapse at the proposed project site.

No known extraction or mining activities take place in the vicinity of the proposed project site that would displace or destabilize the ground in the project area. Accordingly, the potential for subsidence is considered low. The proposed project does not include a housing component, nor would the project result in permanent occupation of the project site. Impacts would be less than significant.

D) No Impact

Expansive soils shrink and swell as a result of moisture changes and can cause heaving and cracking of flatwork and pavement. Changes in soil volume could result in significant expansion pressure on proposed improvements at the project site including damage to the bridge foundation unless properly treated during construction using methods such as water conditioning, over excavation, and appropriate foundation design.

Expansive soils tend to be soils that contain clay minerals such as montmorillonite. As shown in Table 2-3, the soils found in the project site do not contain clay or clay loam. Expansive soils are not expected to be found within the project site. Furthermore, the County's LHMP (refer to Figure 24) did not identify expansive soils in the proposed project area (County of Santa Cruz 2021). The project is not located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994); therefore, no impact would occur.

E) No Impact

The proposed project would not require sanitary sewer service and would not use septic systems. No impact would occur.

F) Less-than-Significant Impact

There are no known paleontological resources or unique geologic features at the proposed project site. No paleontological resources were identified by Santa Cruz County near the proposed project site (Santa Cruz County Planning Department 2022). Most of the site was previously disturbed for construction of the existing water tank. The pump station would be located within an existing residential neighborhood. In addition, the depth of excavation and grading would be minimal. The impact would be less than significant.

3.2.8 Greenhouse Gas Emissions

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
8.. GREENHOUSE GAS EMISSIONS Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Environmental Setting

Greenhouse gases (GHGs) are global pollutants that can increase atmospheric temperatures, leading to global climate change. The increased temperatures associated with climate change results in changes in snow and rainfall patterns and an increase in droughts, tropical storms, and heavy rain events. The following pollutants are the most prominent GHGs that have been identified as contributing to global climate change: Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

The State of California's Assembly Bill 32 (AB 32) requires CARB to develop mandatory reporting rules for significant sources of GHGs in order to reduce GHG emission levels by 40 percent below 1990 levels by 2030 (California Code of Regulations Title 17, subchapter 10, article 1, §§ 95100 to 95133). Most recently, in September 2022, AB 1279 was signed, declaring it a policy of the State to achieve net zero greenhouse gas emissions by 2045 and to achieve and maintain net negative greenhouse gas emissions afterwards. AB 1279 requires that, by 2045, statewide greenhouse gas emissions caused by humans be reduced to at least 85 percent below 1990 levels. Addressing the remaining 15 percent, the bill requires implementation of a variety of policies and strategies to enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California. The County of Santa Cruz adopted the

California Action and Adaption Plan (CAAP) in December 2022, which strives to meet the SB 32 target of reducing GHG emissions 40 percent below 1990 levels before 2030 while simultaneously establishing a policy framework to achieve the longer-term target of net negative GHG emissions by 2045 (County of Santa Cruz 2022).

MBARD is tasked by CARB under AB 32 to regulate GHG emissions related to discretionary project approvals under CEQA. Neither MBARD nor SLVWD currently have thresholds or guidance regarding the significance of construction or water-infrastructure related greenhouse gas emissions. As identified in section 15064.7(c) of the CEQA Guidelines, the Lead Agency may adopt thresholds previously adopted or recommended by other public agencies. The San Luis Obispo County Air Pollution Control District (SLOAPCD) is the nearest jurisdiction with adopted quantitative thresholds for GHG emissions. The SLOAPCD's 2021 Interim CEQA Greenhouse Gas Guidance recommends the consideration of the following (SLOAPCD 2021):

- Consistency with a qualified Climate Action Plan (CAP): CAPs conforming to CEQA Guidelines section 15183 and 15183.5 would be qualified and eligible for project streamlining under CEQA.
- No-net increase: On page 101, California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) states that a no-net increase in GHG emissions relative to baseline conditions "is an appropriate overall objective for new development."
- Lead-Agency-adopted defensible CEQA GHG thresholds, including:
  - Meeting local GHG emission targets with best management practices
  - GHG bright-line and efficiency thresholds

Discussion

A) Less-than-Significant Impact

Construction of the proposed project would generate greenhouse gas emissions from use of construction equipment, haul trucks, and vehicles used for construction worker transportation. Construction of the proposed project would occur over approximately 12 months.

Construction would be limited and short-term. As discussed in Section 1.6 Project Design Features, unnecessary idling of internal combustion engines would be prohibited, and electrically powered tools and facilities would be utilized wherever possible. Implementation of Project Design Features would limit the generation of GHG emissions from project construction.

Maintenance of the proposed project would be similar to that for existing conditions and require approximately one trip per month, which would not impact the level of traffic in the area. GHG emissions would be generated from energy use and testing of the emergency generator during operation of the new pump station. The new pump station would create a single pressure zone encompassing both the Bracken Brae and Forest Springs service territories. By consolidating the pressure zone and consolidating the water storage tanks, the proposed project would offset the energy that is currently used to pump water to two different water storage tank sites. The energy use for the new pump station would be roughly equivalent to the energy that is currently used to operate the two existing independent systems.

Thus, the power usage is not expected to significantly increase over current levels and would result in a no-net increase in GHG emissions relative to the current baseline. The proposed project would comply with the threshold of no-net increase in GHGs from the 2017 Scoping Plan. The impact would be less than significant.

B) No Impact

The CAAP establishes greenhouse gas reduction strategies for Santa Cruz County. There are no goals or objectives in the CAAP that would be applicable for the proposed project. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No impact would occur.

3.2.9 Hazards and Hazardous Materials

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
9. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Discussion

As used in this section, the term *hazardous material* is defined as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. As used in this section, the term *hazardous waste* generally refers to a hazardous material that has been used for its original purpose and is about to be discarded or recycled. In California, a hazardous waste is defined as a waste, or combination of wastes, that, due to its quantity, concentration, or physical, chemical, or infectious characteristics, may either:

- Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
- Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Federal and state regulations require adherence to specific guidelines regarding the use, transportation, disposal, and accidental release of hazardous materials. The EPA is responsible for administering the federal Toxic Substances Control Act and the Resource Conservation and Recovery Act (RCRA), which regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is a federal database that records the known hazardous contaminated sites and facilitates remediation actions. The management of hazardous materials and waste within California is under the jurisdiction of CalEPA, which coordinates the State's Unified Program for permitting, inspecting, and enforcing regulations related to hazards materials.

Asbestos and Lead-based Paint

SCA Environmental, Inc, conducted an assessment of asbestos and lead-based paint at the existing water storage tanks (SCA Environmental, Inc 2023); refer to Appendix B. SCA obtained and tested samples from the Forest Springs water tank. SCA performed an inspection of the Bracken Brae water tank but did not collect samples given the age and materials (i.e., prefabricated plastic water tanks and PVC piping, respectively) of the water tanks, which precluded the presence of asbestos or lead-based paint. Sampling activities were conducted per federal AHERA regulations (40 CFR Part 763). Samples of suspect materials were collected following modified AHERA sampling protocols, and sample locations were documented on the sample location diagrams. All asbestos samples collected by SCA were submitted to Reservoir's Environmental Inc. (REI) in Denver, Colorado, for analysis by polarized light microscopy with dispersion staining

(DS/PLM). SCA performed bulk lead sampling of the exterior paint to confirm the presence and extent of lead-containing paints. Samples were analyzed by REI for lead by Atomic Absorption Spectroscopy (AAS)/Inductively Coupled Plasma–Mass Spectrometry (ICP-–MS) methodology. Below is a summary of the testing results:

- **Asbestos:** Seven suspect materials were tested or visually determined to be non-asbestos. No materials were found to contain asbestos.
- **Lead-based paint**: The paint on the Forest Springs water tank was found to contain 5,860 mg/kg of lead, which would classify the paint as lead-based paint.

A) Less-than-Significant with Mitigation

Construction of the proposed project would involve the use of materials that are defined as hazardous, such as paints and other types of coatings, fuels, hydraulic fluids, and coolants for construction equipment. All of these materials are common in the construction industry and construction process, and specifications outlined by their respective manufactures for their transport, handling, use, and disposal are designed to ensure avoidance of adverse environmental effects.

Replacing the water tank would involve the transportation and disposal of the demolition material from the existing water storage tanks as the pre-construction sampling determined the presence of lead-based paint at the existing water storage tank. Furthermore, the absence of asbestos cannot be confirmed as not all suspect materials were sampled or visually identified during the pre-construction assessment. Assumed asbestos-containing items require destructive testing prior to being impacted by future renovations. Destructive testing was not possible at this time due to the water tank still being used. Mitigation Measure Haz-1 outlines the procedures to be implemented to properly test and dispose of potential lead-based paint and asbestos-containing materials during demolition of the Forest Springs water storage tanks. The construction materials and demolition waste would be properly transported and disposed of per federal and state regulations. After construction, there would be no hazardous materials transported to or from the site on a regular basis; therefore, this proposed project does not involve the routine transport, use, or disposal of hazardous material. Because demolition waste would be properly contained in compliance with Mitigation Measure Haz-1 and the project does not involve routine transport, use, or disposal of hazardous materials during operation, the impact would be less than significant with mitigation.

Mitigation Measure Haz-1: Asbestos and Lead-Based Paint

> Demolition of the Forest Springs water tank shall comply with the OSHA Standard 1926.6 related to lead abatement and all other applicable state and federal requirements for the safe handling and disposal of lead-based paint, ACM, and universal wastes. The project contractor shall implement the following measures:
>
> <u>Lead-based paint:</u>

As lead was identified in the paints and a detailed inventory of paints was not performed for the project, for the purpose of complying with the Cal/OSHA Construction Lead Standard (8 CCR § 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR section 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the detected presence of any levels of lead.

None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the contractor on the entire waste stream for verification.

Conventional demolition techniques should be employed for all painted surfaces, with the contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:

- Worker awareness training
- Exposure monitoring, as needed
- Medical examinations, which may include blood lead level testing
- Establishing a written respiratory protection program

Asbestos

Any suspect material at the Forest Springs tank site not sampled or not visually identified as negative by the Pre-Demolition Hazardous Materials Survey conducted by SCA Environmental, Inc, (2023) should be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials should be assumed to contain asbestos and disposed of in accordance with OSHA standard 1926.6.

B) Less-than-Significant Impact

Construction of the pipeline, pump station, and fire hydrants would involve the use of materials that are defined as hazardous, such as paints and other types of coatings, fuels, hydraulic fluids, and coolants for construction equipment. The project require preparation of a Stormwater Pollution Prevention Plan (SWPPP) due to disturbance of more than 1 acre of land. The SWPPP includes procedures for cleanup of any spilled hazardous materials. The impact from spills of hazardous materials during construction would therefore be less than significant.

The project would include an emergency generator to provide backup power at the pump station. The emergency generator would have a propane tank with 5 days of capacity. The propane tank would be installed with secondary containment to avoid any spills into the surrounding environment if there were an accident or upset condition. No other project components include the use of hazardous materials to operate. The impact on the public or the environment from upset or accident conditions involving the release of hazardous materials would be less than significant.

C) No Impact

The proposed project site is not located within 0.25 mile of an existing or proposed school. The closest school is the Boulder Creek Elementary School, located approximately 0.7 mile south of the proposed project site. No impact would occur.

D) No Impact

California Government Code section 65962.5, also known as the Cortese List, requires the CalEPA to develop an updated list of hazardous material sites. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. There are no known hazardous materials sites located within the proposed project area or within 0.5 mile from the proposed project area (DTSC 2023; State Water Resources Control Board 2023). No impact from location on a hazardous material site would occur.

E) No Impact

The proposed project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The closest airport is the Bonny Doon Village Airpark, approximately 3.5 miles away. No impact from conflict with an airport land use plan would occur.

F) Less-than-Significant Impact

Construction of the proposed project may necessitate the closure of at least one travel lane, depending on roadway width and the location of the pipeline alignment and trench. Complete road closures to through traffic, where the entire roadway width would be required for construction of the pipeline, are anticipated for the roadways Park Street, Oak Avenue, West Park Avenue, Acorn Way, and Hazel Brake.

Prior to and during construction, SLVWD would implement Project Design Feature – Pre-Construction Notification and Project Design Feature – Traffic Control Requirements, which requires coordination all temporary roadway closures and detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times. In emergency access or evacuation scenarios, steel plates placed alongside active trenches would quickly be used to restore vehicle access in the roadway. In addition, the steel plates would also be used to cover all trenches at the end of each construction day. All local service providers (including emergency personnel) would be contacted before roadway construction begins to schedule services around daily roadway openings and establish communication protocols with SLVWD for accommodating unscheduled access needs.

Project operation would not interfere with emergency response because the pipeline would be located entirely underground, and the aboveground infrastructure would not impede access in emergency response scenarios. The proposed water storage tank is designed to allow emergency access around the new water storage tank(s). Impacts during operation would be less than significant.

G) Less-than-Significant Impact

The proposed project is located in a State Responsibility Area (SRA) and Local Responsibility Areas (LRA). In the SRA, the proposed project site is located in the Moderate Fire Hazard Severity Zone, and small portions of Segments 4 and 5 are in the High Fire Hazard Severity Zone. In the LRA, on the west side of Big Basin Way, the project area is located in a High Fire Hazard Area (Santa Cruz County Planning Department 2022).

The proposed project would entail replacing underground pipeline within the existing ROW and constructing a pump station and water tank(s). The project also includes the installation of approximately 25 hydrants along the proposed pipeline alignment, which would meet the minimum 1,000-foot spacing, per Table C102.1 in the California Fire Code. Although operation of the proposed project would not expose people or structures to fire risk, there is a potential for construction equipment to ignite vegetation within the project area during construction.

The proposed project does not include the construction of habitable structures. The project helps achieve Policy 7.18.4 of the Santa Cruz County General Plan (1994), which states the County should support water system improvement programs for storage, treatment, and distribution facilities to meet necessary water supply and fire suppression requirements (Santa Cruz County General Plan 1994). Thus, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. This impact would be less than significant.

3.2.10 Hydrology and Water Quality

Environmental Impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
10. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Environmental Setting

The proposed project is located in the San Lorenzo Valley watershed, under the jurisdiction of the Central Coastal Regional Water Quality Control Board (California Water Resources Board, 2022). The proposed project is underlain by the Santa Margarita Groundwater Basin. A small portion of Segment 1 is mapped within a groundwater recharge area for Santa Cruz County (Santa Cruz County Planning Department 2022).

Discussion

A) Less-than-Significant Impact

Project construction activities could have a temporary impact on water quality due to ground disturbance during grading, excavation, trenching, and tree removal. The proposed project would disturb more than 1 acre of land and would be subject to the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP). Additionally, the proposed project would be subject to chapter 16.22 of the Santa Cruz County Municipal Code, which requires the preparation of an erosion control plan for all grading permit applications.

The proposed project would comply with the CGP by developing and implementing a SWPPP that would include *best management practices* (BMP) to reduce and avoid erosion and sedimentation from the proposed project construction site. Reducing and avoiding erosion or sedimentation from the proposed project would ensure that the construction would not impose any water quality issues in nearby surface water bodies, including Boulder Creek.

The proposed project would comply with the requirements published in *Design Criteria Containing Standards for the Construction of Streets, Storm Drains, Sanitary Sewers, Water Systems, Driveways Within the Unincorporated Portion of Santa Cruz County* (Santa Cruz County 2022). The proposed project would constitute a "medium" project as it would add between 500 and 5,000 square feet of impervious surface area. Medium projects are exempt from specific quantitative requirements if there is adequate on- and off-site drainage with no downstream restrictions. The design criteria contain design standards, mitigation, and requirements, including surface runoff, stormwater overflow, and drainage facilities. The expanded tank site is being designed to include adequate drainage to protect the hill slope and water tanks.

There would be no ground-disturbing activities during operation of the proposed project, and all disturbed areas from construction would be stabilized to prevent erosion and protect the proposed infrastructure. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant.

B) Less-than-Significant Impact

The proposed project is underlain by the Santa Margarita Groundwater Basin. A small portion of Segment 1 is mapped within a groundwater recharge area for Santa Cruz County (Santa Cruz County Planning Department 2022).

The overall proposed project would not substantially increase the impervious surface area as the only areas that would add additional impervious surface are 375 square feet at the pump station, the 1,540-square-foot proposed water storage tank(s), and 25 new fire hydrants, which would be 36 square feet each. The new areas of impervious surface would be spread out and would be minimal within the watershed. The pipeline installation would not add additional impervious surface as is the pipeline would be located in the existing paved roadway. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge. Impacts would be less than significant.

C (i) Less-than-Significant Impact

Project construction would involve minor excavation and grading for the pipeline replacement and demolition, grading, soil stockpiling, and other earth-moving activities for the tank replacement. Replacement of the water tanks with a larger tank(s) would increase impervious surface area at the tank site and may modify localized drainage patterns within the existing water tank site due to the expanded tank pad. The project design includes installation of new retaining walls upslope and downslope of the proposed tank(s) to avoid significant erosion on or off site and stabilize the hill slope over the long term.

The proposed project would not modify any surface waters as all pipeline construction would be conducted outside of the limits of any water resources and the proposed pipeline crossings of Boulder Creek would be attached to the existing bridges. With the implementation of a project-specific SWPPP and BMPs, construction-related erosion and siltation would be limited to the project site. Refer to impact discussion (a), above, for more information on the SWPPP

and BMPs. With implementation of the proposed retaining walls for long-term site stabilization and use of proper drainage control in the design, the proposed project would not result in substantial erosion or siltation on or off site. Impacts would be less than significant.

C (ii) Less-than-Significant Impact

Project construction, demolition, and staging activities would result in more than 1 acre of disturbed soil area. Accordingly, the project would be subject to permit requirements of the Statewide Construction General Permit administered by SWRCB. Stormwater management BMPs would be implemented during construction of the proposed project to minimize erosion, sedimentation, and pollutant transport. With the implementation of a SWPPP, construction of the proposed project would not result in a substantial increase in the rate or amount of surface runoff.

Once completed, the proposed project would increase impervious surfaces by approximately 0.07 acre. The increase in impervious surfaces would be spread out over the project area and would not significantly increase the rate or amount of surface runoff. The project impact would be less than significant.

C (iii) Less-than-Significant Impact

The majority of the proposed project site is currently paved as the existing pipeline is located under existing roadways. Construction of the proposed project would increase impervious surfaces at the pump station site, at the water tank site, and for new fire hydrants along the pipeline alignment by approximately 0.07 acre. The slight increase in impervious surface at the water storage tank site to accommodate the larger tank(s) and the retaining wall would not substantially alter the existing drainage pattern of the site. The slope direction and drainage would be in the same direction as current conditions, and the proposed tank site would include drainage controls to avoid a substantial increase in runoff and erosion. The water storage tank site would store drinking water and would not contain any materials that would generate pollution. The increase of impervious surface at the pump station would be from a new concrete slab for the 15-foot-by-25-foot pump station. The fire hydrants would require a 36-square-foot area of disturbance, and as the fire hydrants would be distributed along the roadway, they would not concentrate runoff. As discussed under above under impact discussion (a), compliance with the CGP would minimize and avoid erosion or siltation from on or off the proposed project site with the implementation of the SWPPP. As discuss under impact discussion Hazards and Hazardous Materials (b), the emergency generator would have secondary containment around the propane tank to avoid pollution discharge to waterways.

As discussed under impact discussion (a), the proposed project would comply with the *Design Criteria Containing Standards for the Construction of Streets, Storm Drains, Sanitary Sewers, Water Systems, Driveways Within the Unincorporated Portion of Santa Cruz County* (Santa Cruz County 2022). The design criteria provide design standards, mitigations, and requirements for medium projects that would have between 500 and 5,000 square feet of added impervious surface. Compliance with County's design criteria would minimize surface runoff at the proposed project site, thus avoiding a substantial increase in runoff that might otherwise cause flooding

on or off site or exceeding the capacity of existing or planned stormwater drainage systems so as to cause polluted runoff. Because the project would not create a substantial new area of impervious surface and would be designed with drainage controls, the project would not create or contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and impacts would be less than significant.

C (iv) and D) Less-than-Significant Impact

The proposed pump station and storage water tank(s) are not located in a FEMA flood zone. None of the proposed project area is located in an area subject to seiche or tsunami inundation as there are no large water bodies in the proposed project vicinity.

Less than a quarter mile of the proposed pipeline installation would be in areas with a 1-percent annual-chance flood hazard mapped by FEMA (Santa Cruz County Planning Department 2022). During the proposed project construction, those project segments would be subject to the possibility of flood inundation. Approximately 60 feet to 140 feet of pipeline would be constructed and installed per day. Construction and installation of the segments within the FEMA flood areas would take a few days, and construction would be conducted when conditions are dry so that the risk of a flood inundation event would be negligible. After construction, the pipeline would be underground and not subject to flood inundation. The proposed project area would not be subject to flood hazards, seiche, or tsunami inundation during operation of the project. Impacts would be less than significant.

E) Less-than-Significant Impact

The proposed project is underlain by the Santa Margarita Groundwater Basin and is within the Santa Margarita Groundwater Sustainability Plan area (Santa Margarita Groundwater Agency 2021). The Santa Margarita Groundwater Agency developed a Groundwater Sustainability Plan based on locally driven policy goals which include the following:

- Provide a safe and reliable groundwater supply that meets the current and future needs of beneficial users.
- Provide for operational flexibility within the Basin through a drought reserve that considers future climate change.
- Support groundwater sustainability measures which enhance groundwater supply in the Basin, utilizing integrated water management principles.
- Oversee planning and implementation of cost-effective projects and activities to achieve sustainability.

The proposed project would not increase water usage and would not affect groundwater recharge, as discussed previously. While the project would extend SLVWD service to Bracken Brae and Forest Springs, these areas are adjacent SLVWD and rely on the same water sources as SLVWD. The proposed project would therefore not affect groundwater supply and would not conflict with or obstruct the goals or implementation measures of the sustainable groundwater management plan. The impact would be less than significant.

3.2.11 Land Use and Planning

Environmental impacts	Potentially Significant Impact	Less-than-Significant with mitigation incorporated	Less than Significant Impact	No Impact
11. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Environmental Setting

The proposed project site is located in the unincorporated area of Santa Cruz County, within the community of Boulder Creek. The purpose of the proposed project is to consolidate and incorporate two small mutual water companies, Bracken Brae and Forest Springs, into the SLVWD system. The existing pipeline is located within the public ROW, and the existing Forest Springs water storage tank is located on a parcel designated as rural residential (R-R). The pump station would be within an easement also designated as rural residential (R-R).

Discussion

A) No Impact

The proposed project would not divide an established community. The proposed project would replace and upgrade existing pipelines and tanks within SLVWD ROW. The purpose of the proposed project is to connect and upgrade two small mutual water companies in order to better serve the community. No impact from physically dividing a community would occur.

B) Less-than-Significant Impact

The Santa Cruz County General Plan (1994) contains several objectives and policies that pertain to the proposed project (Santa Cruz County General Plan 1994):

- **Objective 17.18a Domestic Water Service**: To ensure a dependable supply of high-quality domestic water to meet the needs of communities that obtain water service from municipal water systems, County water districts and small water systems.
- **Policy 7.18.4 Improvement of Water Systems**: Support water system improvement programs for storage, treatment and distribution facilities to meet necessary water supply and fire suppression requirements.

The proposed project would improve SLVWD's water infrastructure, improve fire protection, and increase water storage, which would support the Santa Cruz County's goal of ensuring the reliability of domestic water supplies. In addition, the proposed project involves the construction of facilities for the storage of water and is exempt from County building and zoning ordinances under California Code section 53091. The proposed project does not cause a

significant environmental impact due to a conflict with any land use plan, policy, or regulation. Impacts would be less than significant.

3.2.12 Mineral Resources

Environmental Impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less than Significant Impact	No Impact
12. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

A and B) No Impact

The proposed project site is within mineral resource zone 4 (MRZ-4), established by the State Department of Conservation, which indicates that there are no known mineral occurrences within the proposed project site (Santa Cruz County Planning Department 2022). Furthermore, the proposed project site is surrounded by residential uses that are not compatible with mineral resource extraction activities. The site is not located within, adjacent, or near existing mining operations or known mineral resources (Department of Conservation 2016). According to the County's GIS data (Santa Cruz County Planning Department 2022), the proposed project site is not located in a mineral designation zone. No impact from loss of availability of mineral resources would occur.

3.2.13 Noise

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less than Significant Impact	No Impact
13. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting

Existing Noise Environment

Noise is defined as unwanted and objectionable sound. Sound levels usually are measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing (California Department of Transporation 2009). Noise-sensitive land uses generally include those areas of habitation where the intrusion of noise could adversely affect occupancy, use, or enjoyment of the environment. Sensitive receptors in Santa Cruz County include residences, schools, and hospitals (Santa Cruz County 1994). Multiple residences are located within 25 feet of the proposed project. There are approximately 19 residences within 50 feet of the proposed project site.

Noise Standards

Federal and State Guidance

CEQA does not specify a numerical threshold for "substantial increases" in noise, and no federal regulations that limit overall environmental noise levels are established; however, federal guidance documents address environmental noise and regulations for specific sources. The EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* in 1974, which provides information for state and local governments to use in developing their own ambient noise standards. The EPA determined that a day–night sound level of 55 dBA protects the public from indoor and outdoor activity interference.

The EPA, the Federal Highway Administration (FHWA), and the U.S. Department of Transportation (USDOT) have developed guidelines for noise. Under the authority of the Noise Control Act of 1972, the EPA established noise emission criteria and testing methods, published at 40 CFR part 204, which apply to some construction and transportation equipment (portable air compressors and medium- and heavy-duty trucks). These regulations apply to trucks that would transport equipment to the proposed project site.

Santa Cruz County Construction Noise Ordinance

Santa Cruz County has developed noise standards for offensive noise, which includes construction noise. Chapter 8.30 of the Santa Cruz County Code states, "No person shall make, cause, suffer, or permit to be made any offensive noise" (Santa Cruz County 2022). The County Code sets the following standards for Day and Evening Hours (8:00 a.m. to 10:00 p.m.) and Night Hours (10:00 p.m. to 8:00 a.m.):

(a) **Day and Evening Hours.** For purposes of this factor, a noise shall be automatically considered offensive if it occurs between the hours of 8:00 a.m. and 10:00 p.m. and it is:

(i) Clearly discernible at a distance of 150 feet from the property line of the property from which it is broadcast; or

(ii) In excess of 75 decibels at the edge of the property line of the property from which the sound is broadcast, as registered on a sound measuring instrument meeting the American National Standard Institute's Standard S1.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters, or an instrument which provides equivalent data.

A noise not reaching this intensity of volume may still be found to be offensive depending on consideration of the other factors outlined below.

(b) **Night Hours.** For purposes of this factor, a noise shall be automatically considered offensive if it occurs between the hours of 10:00 p.m. and 8:00 a.m. and it is:

(i) Made within 100 feet of any building or place regularly used for sleeping purposes;

(ii) Clearly discernible at a distance of 100 feet from the property line of the property from which it is broadcast; or

(iii) In excess of 60 decibels at the edge of the property line of the property from which the sound is broadcast, as registered on a sound measuring instrument meeting the American National Standard Institute's Standard S1.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters, or an instrument which provides equivalent data.

Groundborne Vibrations

Vibrating objects in contact with the ground radiate energy through the ground. Vibratory motion is commonly described by identifying the *peak particle velocity* (PPV). PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (Caltrans 2013). Table 6 provides the vibratory thresholds for damage to structures, depending on the type of construction. Background vibration levels on the proposed project site are low. Sources include vehicles traveling on Big Basin Highway, Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way. These sources create negligible levels of vibration.

Table 3-8 Construction Vibration Damage Criteria

Building category	PPV (inch per second [in./sec])
Reinforced-concrete, steel, or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12

Source: (FTA 2006)

The County of Santa Cruz does not have established quantitative vibration thresholds to regulate construction or operational related vibration. Caltrans recommends a vibration limit of 0.5 in./sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in./sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in./sec PPV for old buildings or buildings that are documented to be structurally weakened (Caltrans 2013).

Sensitive Noise Receptors

Noise-sensitive land uses generally include those areas of habitation where the intrusion of noise could adversely affect occupancy, use, or enjoyment of the environment. The County of Santa Cruz General Plan/Local Coastal Program Noise Element considers residences, hospitals, and schools to be sensitive receptors (Santa Cruz County 1994). Sensitive receptors in the vicinity of the proposed project site are residences. Multiple residences are located within 25 feet of the pipeline alignment. Approximately 19 residences are within 50 feet of the proposed project pipeline alignment. Residences are located 85 feet and 70 feet from the pump station and tank site, respectively.

Discussion

A) Less than Significant with Mitigation

Pursuant to section 50391 of the California Code of Regulations, building and zoning ordinances do not apply to the "location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency." The proposed project involves the storage and transmission of potable water supplies and is therefore exempt from local building and zoning ordinances, including the Santa Cruz County Noise Ordinance. Nevertheless, SLVWD as the lead agency has chosen to use the noise level limits in the Santa Cruz County Noise Ordinance as the thresholds of significance for the purposes of evaluating the proposed project's operational impacts under CEQA in accordance with CEQA Guidelines section 15064.7(c).

Construction

Ambient noise levels in the proposed project vicinity are generally low and mostly consist of natural noises and human-made noises from nearby residents. Construction would occur over 12 months. Construction of the proposed project would generate a short-term increase in noise. The proposed project would include activities such as demolition, site preparation, trenching,

grading, temporary tank placement, new tank placement, and gravel placement. Heavy machinery, including but not limited to a drill rig, pavers and paving equipment, a crane, dozers, and rollers would be required during construction. Estimated noise levels from construction equipment at 50 feet from the noise source are presented in Table 7. Construction of the proposed project would occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, as discussed in Section 1.6 Project Design Features. The proposed project would avoid "offensive" nighttime noise as defined in Santa Cruz Municipal Code section 8.30, between 10:00 p.m. and 8:00 a.m. by avoiding construction activity and associated noise during nighttime hours.

The nearest sensitive receptor is located approximately 25 feet from the proposed pipeline alignment. While construction noise would be temporary and intermittent, noise generated from proposed project construction would exceed the Santa Cruz County Code threshold of 75 dBA at the property line, as shown in Table 2-5. Construction along the pipeline alignment would occur for a few days near residences, and equipment would constantly be moving along the alignment so that noise levels would not be constant at any receptor location. In addition, the PDFs described in Section 1.6 include a number of measures to reduce construction noise levels during pipeline construction, including use of mufflers and electric tools and avoiding idling of vehicles. Because of the short duration of construction at any sensitive receptor and mobile nature of construction equipment along the pipeline alignment, the impact from noise generation during pipeline construction would be less than significant.

The pump station would require approximately 4 months to construct, and the new water storage tank would require approximately 6 months to construct. Construction at the pump station and water storage tank would generate noise levels at sensitive receptors as indicated in Table 2-5. Noise levels at sensitive receptors could exceed 75 dBA for months during construction of the water storage tank and pump station. As discussed in Section 1.6 Project Design Features, construction equipment would be shielded and muffled to reduce construction noise levels, and staging areas and stationary equipment locations would be placed as far as practical from sensitive receptors.

Implementation of the PDFs would reduce construction noise, but due to the months of construction adjacent residences, additional specifics are required to ensure noise levels would be below 75 dBA during pump station and tank construction activities. Mitigation Measure Noise-1 requires preparation of a Noise Control Plan that would include installation of a noise control barrier between the construction activities at the pump station and the nearest receptor. The noise control specified in the measure, including shielding of the noise source with properly designed noise control barriers, would reduce noise levels up to 15 dBA (Generator Source 2020), which would meet the County of Santa Cruz Municipal Code noise threshold for all construction equipment. Because SLVWD would implement Mitigation Measure Noise-1, which includes specific requirements for noise barriers that will effectively shield residential noise and avoid generation of a "nuisance," the impact would be less than significant.

Table 3-9 Construction Equipment Noise Levels

Equipment	L_{max} (dBA) at 50 feet	L_{eq} (dBA) at 25 feet	L_{eq} (dBA) at 70 feet	L_{eq} (dBA) at 85 feet
Drill rig	79	87	76	74
Concrete pump truck	81	89	78	76
Crane	81	89	78	76
Manlift	75	83	72	70
Forklift	79–84	87–92	76–81	74–79
Loader	79	87	76	74
Pavers	77	85	74	72
Rollers	80	88	77	75
Dozers	82	90	79	77
Generator	81	89	78	76

Note: Based on an estimate, not an actual measurement.

Source: (FTA 2006)

Operation

Operation and maintenance activities would be conducted by SLVWD employees approximately 1 day per month. The pump station would be unmanned and equipped with a remote monitoring system, which would allow SLVWD to monitor pump system operations, water flow, pressure, and water quality. Two 15 horsepower (hp) vertical multistage centrifugal pumps would be installed inside the pump station. A generator would be housed in the pump station in a room specifically designed for the generator. The generator would be a fully contained skip-mounted internal-combustion-engine-powered unit sized to meet the electrical demands of the pump station.

The generator may be used during night hours so that the generator noise is not allowed to exceed 60 decibels at the edge of the property from which the sound is broadcasted to meet the County's noise ordinance. As noted in Table 2-5, a generator at 25 feet would be approximately 89 dBA. However, the actual perceivable dBA would be below the 60 dBA threshold because the generator would be enclosed within the pump station and include noise attenuation ventilation. The distance between the generator itself and nearby residences would further muffle potential noise. It should also be noted that the generator would only be used in cases of emergency and would only be used for short periods of time. Based on the size of the equipment and generator, as well as design features, operation of the pump station would not exceed local noise standards. Impacts would be less than significant.

> **Mitigation Measure Noise-1: Construction Noise Reduction Plan**. The District would adhere to this requirement and develop a construction noise reduction plan in

compliance with local regulations to include measures to reduce construction noise impacts. These measures shall include, but not be limited to, the following:

1. Distribute to the potentially affected residences and other sensitive receptors within 200 feet of project construction boundary a "hotline" telephone number, which shall be attended during active construction working hours, for use by the public to register complaints. The distribution shall identify a noise-disturbance coordinator who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaints and institute feasible actions warranted to correct the problem. All complaints shall be logged noting date, time, complainant's name, nature of complaint, and any corrective action taken. The distribution shall also notify residents adjacent to the project area of the construction schedule.
2. All construction equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof. Further, pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof.
3. Impact tools (e.g., jack hammers) used during construction activities will be hydraulically or electrically powered where feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used.
4. Construction noise barriers such as paneled noise shields, barriers, or enclosures shall be installed adjacent to the work areas at the pump station and water tank site to deflect noise from sensitive receptors. Noise control shields shall be made featuring a solid panel and a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.

B) Less-than-Significant Impact

Groundborne vibrations would be generated during project construction because of the use of construction equipment and the presence of truck traffic. The proposed project would utilize bulldozers, rollers, and a drill rig that could generate groundborne vibration, as presented in Table 2-6. However, no construction equipment that could generate high levels of groundborne vibration (e.g., pile driving) would be utilized. The proposed project is located in an area with modern construction, where the vibration threshold for damage to structures is 0.3 PPV (in./sec). None of the equipment that would be used during construction of the project would exceed 0.3 PPV at a distance of 25 feet (nearest receptor). Operation of the proposed project would not generate groundborne vibration. Because the proposed project would not generate groundborne vibration that would exceed thresholds, the impacts from groundborne vibration would be less than significant.

Table 3-10 Vibration Velocities for Construction Equipment

Equipment	Reference PPV at 25 feet (in./sec)	PPV at 5 feet (in./sec)
Large bulldozer [a]	0.089	0.523
Small bulldozer [b]	0.003	0.018
Jackhammer	0.035	0.206
Loaded trucks	0.076	0.446
Drilling	0.089	0.523

Notes:

[a] *Large bulldozer* is used to represent vibration velocity for a medium excavator.

[b] *Small bulldozer* is used to represent vibration velocity for a small excavator.

Source: (FTA, 2006).

C) No Impact

The proposed project is not located within 2 miles of a public airport, within an existing or projected airport land use plan, or in the vicinity of a private airstrip. The closest airport is the Bonny Doon Village Airpark, approximately 3.5 miles away. No impact would occur.

3.2.14 Population and Housing

Environmental Impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
14. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

A) No Impact

The proposed project includes the construction and operation of a new water storage tank(s), pump station, and water main pipeline. The purpose of the proposed project is to consolidate and incorporate two small mutual water companies into the SLVWD system to better serve the existing community. The proposed project would provide water service to areas that already have water service. While the proposed pipeline would have greater capacity than the existing water service pipelines in the area, the increased capacity is designed to address service to the areas that are currently served by Bracken Brae and Forest Springs Water Companies. The

proposed project would not increase overall water service and would therefore not facilitate population growth.

Furthermore, the new infrastructure would be maintained by existing SLVWD employees and would not indirectly induce population growth as a result of new employment opportunities. Therefore, the proposed project would not directly or indirectly support population growth. No impact related to population growth would occur.

B) No Impact

The proposed project would not displace people or housing as no housing units exist on the proposed project site. No impact related to displacement of people or housing would occur.

3.2.15 Public Services

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
15. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion

Affected Environment

Fire protection. The nearest fire department is the Boulder Creek Fire Protection District, located approximately 0.8 mile east of the proposed project site, at 13230 Central Avenue, Boulder Creek.

Police protection. The Santa Cruz County Sheriff's Department provides police protection services in the proposed project area. The Santa Cruz County Sheriff's Department – Boulder Creek Office is located approximately 0.8 mile west of the project at 13190 CA-9, Boulder Creek, California.

Schools. No schools are located within 0.25 mile of the proposed project site. The closest school is the Boulder Creek Elementary School, located approximately 0.7 mile south of the proposed project site.

Parks. The are no parks within 0.25 mile of the proposed project site.

Other public facilities. These uses include other government and municipal buildings or facilities such as libraries, post offices, city halls, or hospitals. No other public facilities are located within 0.25 mile of the proposed project site.

A) Less-than-Significant Impact

Fire and Police Protection

Fire and emergency response would be provided by Boulder Creek Fire Protection District, and law enforcement would be provided by Santa Cruz County Sheriff's Department – Boulder Creek Office. Incidents requiring fire protection or emergency medical service could occur during construction. Equipment staging areas may require increased police patrols during construction. Overnight storage of equipment would occur at the Forest Springs tank site and pump station for safety and security purposes. Storage containers in the staging area could be used to store construction materials during non-work hours. These features would deter and reduce potential criminal activity at the proposed project site. Hot work and use of equipment that could generate a spark and potentially ignite a fire also has the potential to increase the need for fire protection services.

Any incremental increase in demand for fire and police protection services during construction would be temporary (approximately 12 months) and could be served by existing services. Once the proposed project is completed, the pump station and tank site would not need fire and police services beyond basic patrols consistent with existing conditions. Therefore, the project would not require construction of new or physically altered facilities to maintain service ratios, and impacts would be less than significant.

Schools, Parks, and Other Public Facilities

The proposed project would not result in an increase in population or facilities that would require schools, parks, and other public facilities or result in the need for physically altered facilities. The demand for schools, parks, or other public facilities would be the same under existing conditions and after construction of the proposed project. No impact would occur.

3.2.16 Recreation

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less than Significant Impact	No Impact
16. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

A and B) No Impact

No recreational facilities occur in the proposed project area, and the proposed project does not include construction or expansion of any recreational facilities. As discussed in Section 2.2.14 Population and Housing, the proposed project would not directly or indirectly support substantial population growth. Therefore, the proposed project would not increase the need for or use of neighborhood and regional parks or other recreational facilities or create demand for any recreational resources and facilities. No impacts would occur.

3.2.17 Transportation

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
17. TRANSPORTATION. Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Environmental Setting

The proposed project is located along Big Basin Highway, Park Street, Oak Avenue, West Park Avenue, Acorn Way, and Hazel Brake, in the community of Boulder Creek and unincorporated Santa Cruz County. Big Basin Highway is a two-lane road that provides regional access to the Boulder Creek community. All other roadways in the proposed project area are one-lane roads that provide access to nearby residences. There are no bicycle routes within the vicinity of the proposed project (Santa Cruz County 1994).

Discussion

A) Less-than-Significant Impact

Construction

Construction of the proposed project would occur during the working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday. Residents, emergency services (e.g., medical, fire, police), and other services (e.g., mail delivery, garbage and recycling pickup) would have coordinated access throughout the construction period. No public transportation or bicycle routes are within the vicinity of the proposed project.

Equipment and vehicle staging would occur on site for the proposed tank(s) and pump station. Staging for construction of the pipeline and fire hydrants would occur in disturbed areas within the ROW. Temporary lane and road closures would be required during pipeline construction, which would last approximately 12 months. Lane or road closures are not anticipated for the construction of the pump station or water storage tank(s). Implementation of PDFs (Street Use) requires one lane in each direction to be kept open to traffic at all times where excavation is being performed in primary streets and highways. If excavation is performed in a one-lane road and requires full road closure, approval from SLVWD is required. Per standard SLVWD practice for projects in roadways, outside the active construction hours of 8:00 a.m. to 5:00 p.m., steel roadway plates would cover open pipeline trenches, and vehicle access would be restored. In addition, during the 8:00 a.m. to 5:00 p.m. daily construction hours, the portion of the roadway under construction would be re-opened for traffic for increments of 10 minutes once every 45 minutes to one hour. In emergency access or evacuation scenarios, steel plates placed alongside active trenches would quickly be used to restore vehicle access in the roadway.

Local residents and service providers (e.g., emergency personnel, postal service, garbage and recycling pickup) would be contacted before roadway construction begins to schedule services around daily roadway openings and establish communication protocols with SLVWD for accommodating unscheduled access needs. In accordance with the PDFs, SLVWD would provide written notification of construction activities to residents within 100 feet of the proposed project site prior to construction. Implementation of PDFs (Temporary Crossings) also requires continuous, unobstructed, safe, and adequate pedestrian, bicycle, and vehicular access be provided to fire hydrants, commercial, agricultural, and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Implementation of a PDF (Street Use) would ensure that no streets would be closed to the

public without first obtaining permission of the District Engineer, and no driveway access to adjacent properties would be blocked without the consent of the affected landowner.

Project design features regarding traffic control requirements would be implemented for the proposed project, including the development of a traffic control plan. A traffic control plan would be prepared and approved by SLVWD prior to construction of the proposed project, and all road closures would comply with the Caltrans Temporary Road Closure plan. The traffic control plan would address flagger locations in relation to the work, placement of signage, spacing, and location of all traffic control devices and the width and location of any rerouted traffic lanes. The existing roadways would also be restored or repaved at the completion of construction. Because the project includes PDFs to maintain transportation conditions in the area, the proposed project construction would not conflict with policies, plans, ordinances, or programs addressing the performance of the circulation system, and impacts would be less than significant.

Operation

Operation and maintenance activities would be conducted by SLVWD employees and would require approximately one trip per month to the proposed project site. These vehicle trips would represent a negligible increase in traffic and would not impact the performance of the transportation system. Traffic through the project site would not increase after construction is completed. Operational transportation impacts would be less than significant.

B) Less-than-Significant Impact

In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote 1) reduction of GHG emissions; 2) development of multimodal transportation networks; and 3) a diversity of land uses (Governor's Office of Planning and Research 2018). The Governor's Office of Planning and Research identifies a screening threshold for identifying small land use projects those that generate or attract fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (Governor's Office of Planning and Research 2018)

During proposed project construction, vehicle miles traveled (VMT) would temporarily increase due to construction vehicles and equipment. The proposed project requires a maximum of 14 workers to be conducting construction activities on a single day. Construction would require a maximum of 24 truck trips and 16 vehicle trips daily. The daily number of vehicle trips associated with the proposed project construction would not exceed 110 trips per day. Operation of the tank site and pump station would not increase VMT as the existing maintenance visits would remain the same. The impact would be less than significant.

C) Less-than-Significant Impact

The proposed project would not include any design features that would increase circulation hazards. No new roadways or access roads would be constructed for the proposed project. Road and lane closures associated with construction of the replacement pipeline could create a

temporary hazard by creating traffic congestion as vehicles need to move around the open trench and work areas within the roads. As mentioned in impact discussion (a), above, a traffic control plan would be implemented for the proposed project. The traffic control plan would minimize any hazards to vehicles traveling on project roadways during construction by requiring signage, flaggers, and traffic control devices. The roadways in the area would be restored by repaving or restabilizing the road surface at the completion of pipeline construction so that the project does not cause road damage and associated hazards. The proposed pipeline, replacement tank(s), and pump station would not involve substantially increased traffic hazards due to implementation of a traffic control plan and restoration of the road conditions. Impacts would be less than significant.

D) Less-than-Significant Impact

Construction of the proposed project may require temporary lane or road closures on Big Basin Highway, Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way to accommodate trenching and pipeline installation activities. Implementation of a PDF (Temporary Crossings) would ensure that emergency vehicle (fire, law enforcement, ambulance, EMS) access would be provided within a maximum of 5 minutes of notification. The proposed project contractor would identify the point of contact for emergency access and provide contact information (cell phone and physical location) to the District and to the local fire district. In emergency access or evacuation scenarios, steel plates placed alongside active trenches would quickly be used to restore vehicle access in the roadway. All temporary road closures and detour plans would be coordinated with emergency service providers.

Project operation would not interfere with emergency response because the pipeline would be located underground, and aboveground infrastructure would not impede access in emergency response scenarios. Impacts to emergency response would be less than significant.

3.2.18 Tribal Cultural Resources

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
18. TRIBAL CULTURAL RESOURCES				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Discussion

For the purpose of this section, a cultural resource is any prehistoric or historic district, site, building, structure, or object, regardless of its National Register of Historic Places (NRHP) eligibility. Tribal resources are primarily Indian Trust Assets (ITA), Traditional Cultural Properties (TCP), or other resources or locations of interest. Agreements that may exist between tribes and other entities, such as land-managing agencies, may be useful in further identifying potentially undocumented tribal resources. ITAs are legal interests in property held in trust by the United States for Indian tribes or individuals. The U.S. Secretary of the Interior, acting as the trustee, holds many assets in trust. ITAs can be real property, physical assets, or intangible property rights. Examples of ITAs are lands, including reservations and public domain allotments; minerals; water rights; hunting and fishing rights; other natural resources; and money or claims. While most ITAs are on reservations, they may also be found off reservation. An ITA cannot be sold, leased, or otherwise alienated without the United States government's approval. ITAs do not include things in which a tribe, or individual, has no legal interest. For example, off-reservation sacred lands or archaeological sites in which a tribe has no legal interest are not ITAs. A TCP can be "defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community" (King 1998).

Environmental Setting

Knowledge of current environmental conditions is critical to the assessment of potential environmental impacts to TCRs because TCRs may include components of the environment that comprise sites, features, places, cultural landscapes, or sacred places with cultural value to California Native American tribes.

Local Setting

The Native American Heritage Commission (NAHC) was contacted to provide a Sacred Lands File search and provide a list of Native American tribes affiliated with the project region. The NAHC Sacred Lands File search for the proposed project was negative, indicating there are no known tribal cultural resources in the proposed project area. All Native Americans on the

NAHC list (see Table 2-7) were contacted regarding the project via letter on January 24, 2023 (see Appendix C). No Native American tribes have responded to the AB 52 consultation notices or to the informal outreach letters regarding the proposed project.

Discussion

A) (i-ii) Less-than-Significant Impact

No CRHR-eligible or listed resources are located within the proposed project site, as discussed under Cultural Resources impact discussions (a) and (b). To date, no Native American tribes have requested consultation with the SLVWD.

Implementation of the proposed project would not impact any known listed or eligible TCR as no TCRs have been identified within the proposed project area. However, previously unidentified TCRs may be inadvertently discovered during ground-disturbing activities associated with the proposed project. If resources were to represent a TCR as defined by CEQA, an impact could occur. PDF Worker Awareness Training requires a professional archaeologist and a qualified tribal monitor to conduct cultural resources sensitivity training. Project Design Feature Tribal Cultural Resources Inadvertent Discovery requires cessation of work within a 50-foot radius in the event of a cultural resource discovery and that a qualified Tribal Cultural Monitor be deployed to the site to evaluate the resource. The impact to undiscovered eligible tribal cultural resources would be less than significant with implementation of the project design features.

Table 3-11 Nearby Native American Tribes

Native American tribe	Date notified	Response
Amah Mutsun Tribal Band	January 24, 2023	Received a phone call on March 24, 2023. Requested more information on the project.
Amah Mutsun Tribal Band of Mission San Juan Bautista	January 24, 2023	No response as of March 17, 2023.
Costanoan Ohlone Rumsen-Mutsen Tribe	January 24, 2023	No response as of March 17, 2023.
Indian Canyon Mutsun Band of Costanoan	January 24, 2023	No response as of March 17, 2023.
Muwekman Ohlone Indian Tribe	January 24, 2023	No response as of March 17, 2023.
Wukasche Indian Tribe/Eschom Valley Band	January 24, 2023	No response as of March 17, 2023.

3.2.19 Utilities and Service Systems

Environmental impacts	Potentially Significant Impact	Less than Significant with mitigation incorporated	Less-than-Significant Impact	No Impact
19. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

A) Less-than-Significant Impact

The proposed project includes installation of new water pipeline, water storage tank(s), pump station, and fire hydrants to consolidate Bracken Brae and Forest Springs water companies within SLVWD. The proposed project would serve existing demand by consolidating the existing service area for Bracken Brae and Forest Springs within SLVWD and would not facilitate growth.

The proposed project does not include domestic sewage or septic facilities and as a result would not require the construction of expanded wastewater treatment or stormwater drainage. The proposed project would not utilize natural gas, therefore no construction or replacement of gas lines would be necessary. The project would use electrical power for the pump station. Electrical power would be provided through a new PG&E connection from an existing overhead electrical line adjacent the pump station. The pump station would be unmanned and equipped with a remote monitoring system, known as a SCADA system, which would allow SLVWD to monitor pump system operations, water flow, pressure, and water quality. Two 15

horsepower (hp) vertical multistage centrifugal pumps would be installed inside the pump station. The energy demand for the pump station would be provided through existing PG&E service.

The proposed project would not result in construction or relocation of new wastewater treatment, electrical power, natural gas, or telecommunication facilities. Impacts would be less than significant.

B) Less-than -Significant Impact

The proposed project is a water supply project and would consolidate Bracken Brae and Forest Springs water systems into SLVWD to improve service and reliability. Project construction would require approximately 70,000 gallons of water during the entire construction period. Water would be used for dust control, soil compaction, drinking water, and concrete curing. Water would be obtained from SLVWD. The proposed project would not expand water supply service to any areas that do not currently have water service. The project would therefore not affect water supply, and impacts would be less than significant.

C) No Impact

The proposed project would not generate sanitary wastewater and, therefore, no impacts on wastewater treatment would occur.

D and E) Less-than-Significant Impact

Six existing water storage tanks would be demolished and removed from the Bracken Brae and Forest Springs tank sites. All concrete and other debris would be removed from the project site and disposed of by the contractor at an appropriately permitted landfill. Demolition material would be transported to the Ben Lomond Santa Cruz County Transfer Station, from where it would be trucked to the Buena Vista Landfill. Buena Vista Landfill has a maximum daily throughput of 838 tons per day and a remaining capacity of 2.2 million cubic yards (California Department of Resources Recycling and Recovery 2020). Waste generation would be temporary, occurring only during project construction, and would be well below the 300 tons per day permitted capacity of the Ben Lomond Santa Cruz County Transfer Station and the remaining capacity of 2.2 million cubic yards at Buena Vista Landfill. Therefore, the proposed project would not result in significant impacts to a local landfill.

Once the proposed project is constructed, operation and maintenance activities would generate minimal solid waste. Accordingly, operation of the proposed project would not exceed permitted capacity at local landfills. Impacts would be less than significant.

3.2.20 Wildfire

Environmental impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Discussion

A through D) Less-than-Significant Impact

The proposed project site is not located in a Very High Fire Hazard Severity Zone. According to the CALFire, the proposed project site is predominantly located within the Moderate Fire Hazard Severity Zone in the State Responsibility Area, with small portions of the proposed project's Segment 4 and 5 in the High Fire Hazard Severity Zone in the State Responsibility Area. The closest Very High Fire Hazard Severity Zone is located approximately 10 miles east of the proposed project site (CAL FIRE n.d.). The portions of the proposed project located on the west side of Big Basin Way is in a High Fire Hazard Area as designated by the County of Santa Cruz (Santa Cruz County Planning Department 2022).

Construction of the proposed project may require a temporary road closure along the proposed project alignment to accommodate trenching and pipeline installation activities. Implementation of PDFs (Temporary Crossings) would ensure emergency responders would be able to use and access the roads throughout the construction period. In emergency access or evacuation scenarios, steel plates placed alongside active trenches would quickly be used to restore vehicle access in the roadway. All local service providers (including emergency personnel) would be contacted before roadway construction begins to schedule services around daily roadway openings and establish communication protocols with SLVWD for

accommodating unscheduled access needs. The proposed project would not substantially impair an adopted emergency response plan or emergency response plan.

The proposed project would not build habitable structures that could put occupants at risk or require additional infrastructure that may exacerbate fire risk in the area. The proposed project includes the installation of approximately 25 hydrants along the alignment of the proposed project, which would meet the minimum 1,000-foot spacing per Table C102.1 in the California Fire Code. Furthermore, the proposed project would improve the reliability of local water supplies and reduce water loss through leaks, thereby bolstering water supplies for firefighting efforts.

Operation of the proposed project would not interfere with emergency response because the pipeline would be located entirely underground, and the aboveground infrastructure would not impede access in emergency response scenarios. Impacts would be less than significant.

3.2.21 Mandatory Findings of Significance

Environmental impacts	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
21. MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

A) Less than Significant Impact with Mitigation Incorporated

As noted under Section 2.2.4, *Biological Resources*, there are special status plant species and animal species that have potential to occur within the proposed project area. Although impacts to special status species could occur (e.g., injury or mortality to individuals if they are present within the proposed project area during construction), Mitigation Measures Bio-1 through Bio-8 would reduce impacts to candidate, sensitive, and special status species to a less-than-significant level. Accordingly, the project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce or restrict the range of a rare or endangered plant or animal.

The project site does not contain any known archaeological or tribal cultural resources. As discussed in *Cultural Resources*, Project Design Features would be implemented during project construction in case of unanticipated discovery of cultural resources and/or human remains. As a result, the proposed project would not eliminate an important example of major periods of California history or prehistory. This impact would be less than significant.

B) Less than Significant Impact with Mitigation Incorporated

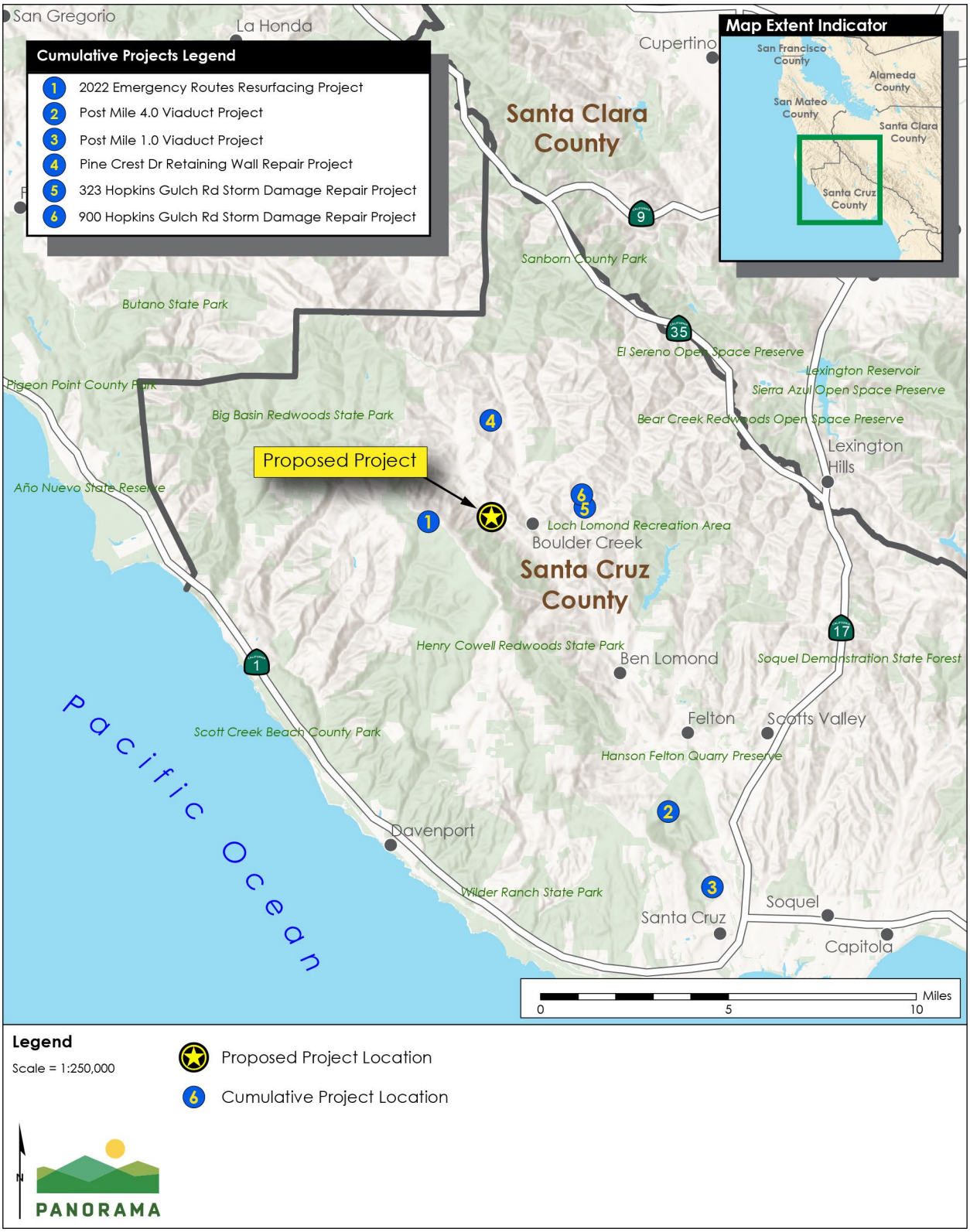
The CEQA Guidelines (Section 15130) require a discussion of the cumulative impacts of a project. There are generally two accepted methods of evaluating cumulative impacts: the plan method and the list method. These two approaches are included as part of Section 15130 and state that a cumulative impact analysis must include either 1) a list of past, present, and probable future projects that may contribute to the effects of the project, or 2) a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describe or evaluate contributions to a cumulative effect. Table 3-12 provides a list of cumulative projects that have been identified within the project region. Figure 5 provides the location of the cumulative projects.

Potential impacts associated with the cumulative projects are primarily short-term (construction-related). Although none of the cumulative projects occur in the project vicinity, the cumulative projects may use the same highways and roads to access the respective projects, such as State Route 9 and Big Basin Highway. Cumulative impacts to emergency access may occur if the projects were constructed at the same time. Construction of the proposed project may require temporary lane or road closures on Big Basin Highway, Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way to accommodate trenching and pipeline installation activities. Implementation of project design features would ensure that emergency vehicle (fire, law enforcement, ambulance, EMS) access would be provided within a maximum of 5 minutes of notification. All temporary road closures and detour plans would be coordinated with emergency service providers. Similarly, other cumulative projects would be required to implement measures to notify and coordinate with emergency service provides to ensure adequate access. The proposed project would not exceed the VMT threshold of 110 trips

Table 3-12 Cumulative Projects

	Project Name/Location	Project Type	Project Description	Construction Date
1	2022 Emergency Routes Resurfacing Project	Transportation	This project will provide construction of digouts, asphalt concrete leveling courses, rubberized cape seals, and traffic striping.	TBD
2, 3	State Route 9 Post Miles 1.0 and 4.0 Permanent Restoration Project	Transportation	Caltrans is planning to construct two sidehill viaducts along State Route 9 between the City of Santa Cruz and the community of Felton. The viaducts are proposed at post mile 1.0 just north of Santa Cruz and post mile 4.0 just south of the entrance to Henry Cowell Redwoods State Park. In these areas, landslides caused by heavy rainstorms have damaged the highway. The proposed project would restore the highway and stabilize the overly steep slopes.	Fall 2022 to Summer 2025
4	Pinecrest Drive Retaining Wall Repair Project	Infrastructure	Repair of a fire damaged soldier pile wall, replacement of damaged guardrail	TBD
5, 6	323 and 900 Hopkins Gulch Storm Damage Repair Project	Infrastructure	Construction of soldier pile walls with timber lagging, reconstructed roadway, midwest guardrail system, erosion control and revegetation	TBD

Figure 5 Cumulative Projects



per day. The cumulative projects are not expected to exceed the threshold given the size and type of the projects. As such, cumulative VMT impacts are not anticipated.

Construction activities could also temporarily emit air pollutants and generate noise that could combine with the other projects. The cumulative projects are located in NCCAB which is in nonattainment for PM_{10}. Operation of vehicles and equipment during project construction would emit diesel particulate matter and other criteria air pollutants. As discussed above, the MBARD's *CEQA Air Quality Guidelines* states that construction projects with less than 8.1 acres per day of minimal earthmoving or 2.2 acres per day of earthmoving (e.g., grading, excavation) are assumed to be below the PM_{10} threshold of 82 pounds per day. The proposed project would not exceed the MBARD threshold and the project would not result in a cumulative considerable net increase for any pollutant that is in non-attainment. If the other cumulative projects exceed the MBARD threshold, the projects would be required to implement fugitive dust control measures to minimize fugitive dust generation during construction. With the implementation of such measures the project would not contribute to a cumulative impact for fugitive dust emissions.

Long term cumulative impacts would occur if the other cumulative projects resulted in permanent impacts to sensitive special status species or habitat. Although impacts to special status species could occur (e.g., injury or mortality to individuals if they are present within the proposed project area during construction), Mitigation Measures Bio-1 through Bio-8 would reduce impacts to candidate, sensitive, and special status species to a less-than-significant level. Other cumulative projects would be required to implement similar mitigation measures to avoid or minimize potential impacts to biological resources. With the implementation of such measures the project would not contribute to a cumulative impact for biological resources.

The proposed project would not result in a cumulatively considerable adverse environmental effect. With the implementation of the identified mitigation measures and project design features, impacts would be less than significant with mitigation incorporated.

C) Less than Significant with Mitigation Incorporated

This IS/MND identifies potentially significant impacts related to: Biological Resources and Hazards and Hazardous Materials. Mitigation measures and project design features have been identified in the resource impact discussions of this IS/MND to reduce all potentially significant impacts to a less-than-significant level. Impact determinations of “no impact” or “less-than-significant impact” were made for the following environmental issues: Aesthetics, Agriculture and Forestry Resources, Air Quality, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Noise, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems, and Wildfire. Therefore, with implementation of the mitigation measures specified this IS/MND, the proposed project would not result in substantial adverse effects, direct or indirect, on human beings.

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APPENDIX

APPENDIX A

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Biological Evaluation Report

Bracken Brae and Forest Springs Consolidation Project
San Lorenzo Valley Water District
Santa Cruz County, California

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J-568

Table of Contents

Figures, Tables, and Appendices

1.0 INTRODUCTION

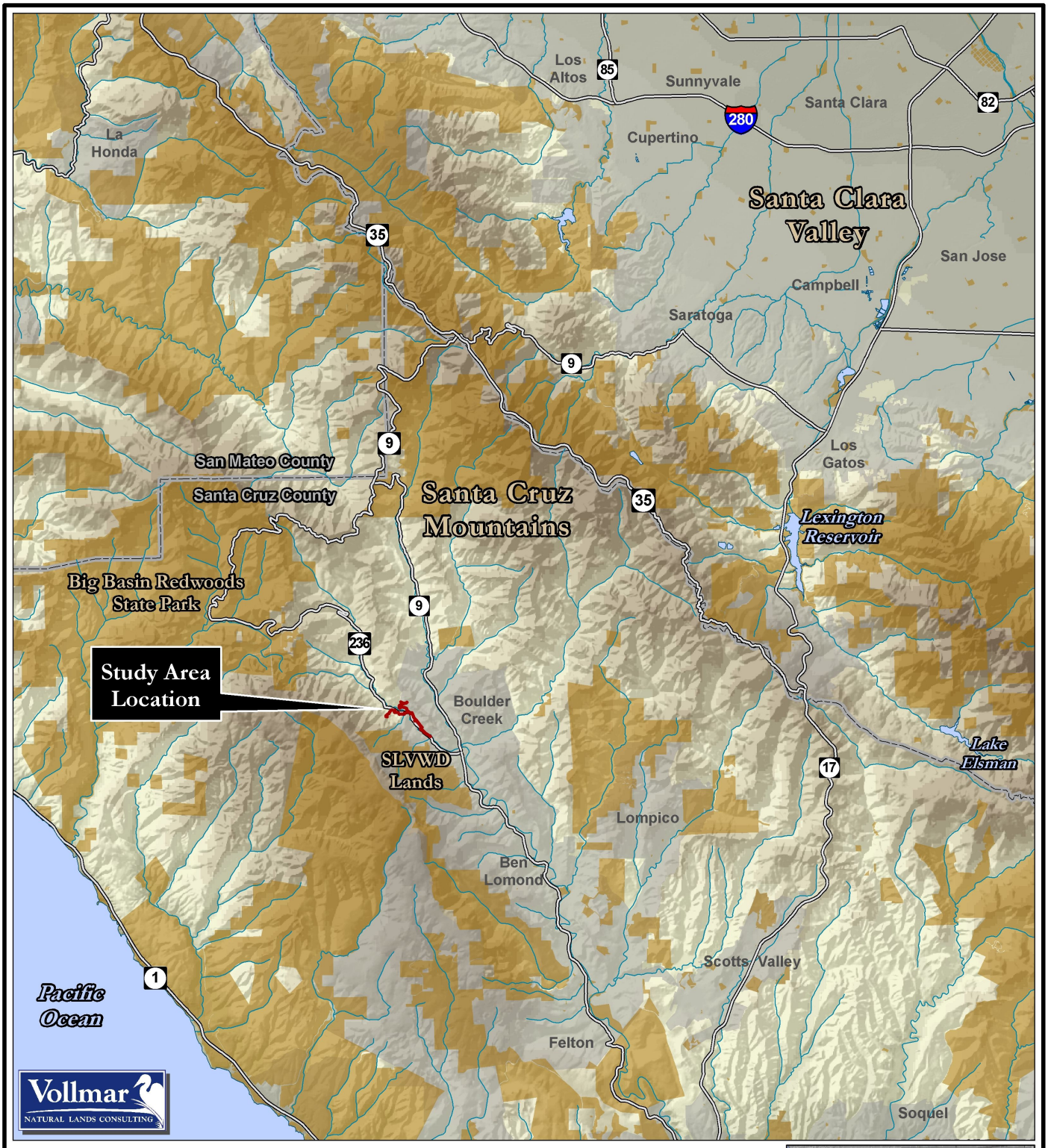
This report presents the methods and results of a biological habitat evaluation conducted by Vollmar Natural Lands Consulting, Inc. (VNLC) for the San Lorenzo Valley Water District (SLVWD) Bracken Brae and Forest Springs Consolidation Project (Project). The report is prepared on behalf of Panorama Environmental, Inc., which also contributed Project documentation. The Project is located in the community of Boulder Creek in unincorporated Santa Cruz County, California (**Figure 1**). The purpose of the proposed Project is to consolidate and incorporate two small mutual water companies, Bracken Brae and Forest Springs, into the SLVWD system. Pipeline construction would occur within the following roadways: State Highway 236 (Big Basin Highway), Oak Avenue, Hazel Brake, West Park Avenue, Park Street, and Acorn Way. The proposed project includes the following actions:

1. Installation of 8,960 linear feet (1.7 miles) of 10- and 12-inch diameter water mains in the existing SLVWD right-of-way (ROW);
2. Installation of a new pump station in SLVWD ROW;
3. Demolish the two existing 17,500-gallon existing concrete block Forest Springs water storage tanks (37,000-gallon total capacity) and four (4) 10,000-gallon (40,000-gallon total capacity) Bracken Brae temporary water storage tanks; and
4. Installation of one new 120,000-gallon water storage tank at the Forest Springs water storage tank site.

This habitat evaluation was conducted to identify and characterize existing conditions within the study area, as well as to assess the potential for special-status species, habitats, and jurisdictional features to occur in the area. The survey that was conducted in support of this document included an attempt to identify any early-season special-status plant taxa (i.e., those that bloom in March). For the purposes of habitat analyses presented in this report, the study area includes the 8,960 linear feet of proposed pipeline construction, the footprint of the new proposed pump station, the footprint of the existing water storage tanks to be demolished, the footprint of the new water storage tank to be installed (collectively 'project site'), and a buffer of at least 20 feet around the impact areas. The total study area amounts to approximately 10.2 acres.

Based on habitat requirements and occurrence distributions, there are a total of eight special-status wildlife species with some potential to occur within the immediate proximity of the study area. These include the following:

- Four federally or state listed species: foothill yellow-legged frog, Central Coast Distinct Population Segment (DPS) (*Rana boylii* pop. 4); California red-legged frog (*Rana draytonii*); Marbled Murrelet (*Brachyramphus marmoratus*); steelhead, Central California Coast DPS (*Oncorhynchus mykiss irideus* pop. 8); and
- Four non-listed special-status species: Santa Cruz black salamander (*Aneides niger*), California giant salamander (*Dicamptodon ensatus*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*).



Legend

- Highway
- River or Stream
- Public or Preserved Land
- Water Body
- Urbanized Area
- County Boundary
- Study Area Boundary

Data Sources: Panorama, 2023 | CPAD, 2019 USGS, Various | GAP, 1998 | VNLC, 2023 GAP Analysis Project, 1998 | TIGER, 2012
GIS/Cartography by: Jake Schweitzer, Mar. 2023
Map File: Vicinity_568_A-P_2023-0307.mxd

FIGURE 1
Regional Vicinity Map

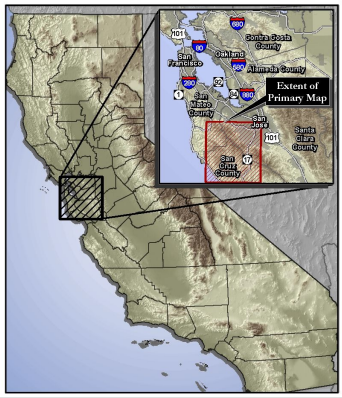
San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project, Santa Cruz County, CA

N
W E
S

1:200,000

0 2 4 Km

0 1 2 4 Miles



In addition, there are at least eight special-status plant species with some potential to occur in the study area, as discussed in **Section 4.2.4**. None of the plant species are federally listed, though two are listed at the state level. Additional information about these and all other special-status species known from the project area is provided in **Appendix B**.

1.1 Critical Habitat

Designated critical habitat for steelhead is present in Boulder Creek, which crosses through the study area in two locations. The other closest critical habitat is for California red-legged frog located approximately 1.1 miles to the west, and Marbled Murrelet located approximately 2.0 miles to the northwest.

1.2 Potential Impacts to Additional Resources

The study area encompasses potentially jurisdictional aquatic habitats in the form of multiple drainages. Habitat types include perennial and seasonal streams as well as ephemeral incised channels, swales, and roadside ditches. Among the drainage features, wetland and riparian habitats appeared to be limited to the perennial stream corridors, and these habitats are likely limited or completely absent within the study area. The field survey conducted in support of this report was conducted during the winter, such that many plant species within the habitats were not present or otherwise identifiable to species. Moreover, the survey was reconnaissance in nature and did not involve investigations into the three parameters required to classify and map wetlands and other potentially jurisdictional Waters.

The only other substantial natural habitats include Cismontane Woodland and North Coast Coniferous Forest, as classified by the California Native Plant Society (CNPS). The habitats primarily surround the highway and several roads along which the proposed pipeline would be installed. The North Coast Coniferous Forest includes sensitive coast redwood (*Sequoia sempervirens*) habitat, as described in detail in **Section 4.1.4**.

2.0 PROJECT LOCATION

The study area is located within the community of Boulder Creek, specifically along Big Basin Highway/State Route 236, Park Street, West Park Avenue, Ridge Drive, Oak Avenue, Hazel Brake, Burnside Bend, Hillside Drive, and Acorn Drive. The two closest major cities are Santa Cruz, which is approximately 10 air miles southeast of the study area, and Los Gatos, which is approximately 10 air miles northeast of the study area. The project area consists of a contiguous area along approximately 2.1 miles of roadway, and includes two bridge crossings, a new pump station, and the expansion of an existing water tank site. As noted above, the study area consists of the pipeline alignment as well as the proposed pump station and existing water storage tanks site. It is mapped within the Big Basin 7.5' U.S. Geological Survey (USGS) topographic quadrangle, within Sections 23 and 24 of Township 09 South, Range 03 West (**Figure 2**). The approximate project centroid is located at 122.1432 west and 37.1385 north.

The study area encompasses primarily anthropogenic habitats, in the form of paved and unpaved roads and adjacent roadside habitats (gravel or vegetation). However, as noted above, there are natural forest, woodland, and drainage habitats immediately adjacent to the roads within the study area. Habitats within the study area are described in detail within **Section 4.1.4** below.

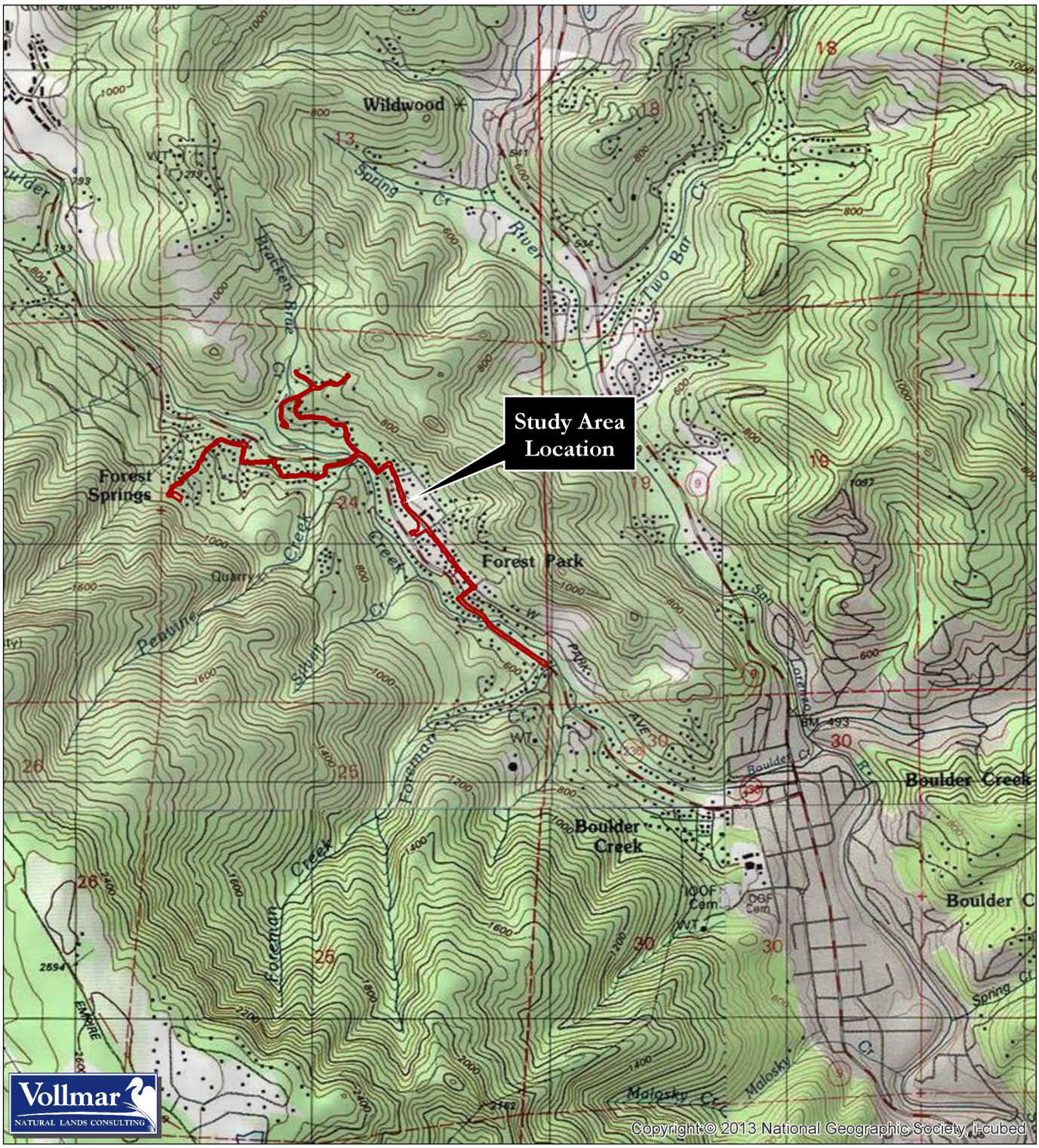


FIGURE 2
USGS Topographic Map

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project, Santa Cruz County, CA

Legend

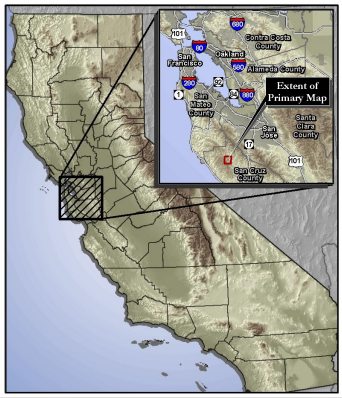
Study Area Boundary (10.2 ac.)

N
W E
S

1:24,000

0 0.5 1 Km

0 0.5 1 Miles



Data Sources: Panorama, 2023 | CPAD, 2019 USGS, Various | GAP, 1998 | VNLC, 2023 GAP Analysis Project, 1998
GIS/Cartography by: Jake Schweitzer, Mar. 2023
Map File: DRG_568_A-P_2023-0307.mxd

3.0 METHODS

3.1 Preliminary Review

Prior to the site visit, VNLC ecologists reviewed the latest version of the California Natural Diversity Database (CNDDB) to identify special-status plants and wildlife observations in the project vicinity. Additionally, ecologists compiled and reviewed the U.S. Fish and Wildlife Service (USFWS) Information Planning and Consultation System (IPaC) for the project area. A nine-quad search for rare and listed plant species was also conducted through the CNPS online "Inventory of Rare and Endangered Plants." Specifically, the search centered on The Big Basin quadrangle and included all surrounding quads. The list provides information pertaining to the special-status plants known from the area, including preferred habitats, elevation range, and blooming period. The list was used to help determine the potential for special-status plants to occur in the study area. The ecologists also reviewed site aerial imagery, project description, and general regional conditions prior to the site visit. This information guided the development of field survey strategies for those special-status species with potential to occur in the study area.

3.2 Targeted Sensitive Biological Resources

Special-status animal species targeted and analyzed in this report include those listed by the USFWS and/or California Department of Fish and Wildlife (CDFW) as threatened or endangered, as well as those proposed for listing or that are candidates for listing as threatened or endangered. The listing of "Endangered, Rare, or Threatened" is defined in Section 15380 of the *State of California Environmental Quality Act* (*CEQA*) *Guidelines*. Section 15380(b) states that a species of animal or plant is "endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A species is "rare" when either "(A) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (B) the species is likely to become endangered within the foreseeable future throughout all or a portion of its range and may be considered 'threatened' as that term is used in the Federal Endangered Species Act" (ESA).

Animal species may also be designated as "Species of Special Concern" or "Fully Protected" by the CDFW. Although these species have no legal status under the California Endangered Species Act (CESA), the CDFW recommends their protection as their populations are generally declining and they could be listed as threatened or endangered (under CESA) in the future. "Fully Protected" species generally may not be harmed ("taken") or possessed at any time. The CDFW may only authorize take for necessary scientific research and may authorize live capture and relocation of "fully protected" birds to protect livestock.

Birds may be designated by the USFWS as "Birds of Conservation Concern." Although these species have no legal status under ESA, the USFWS recommends their protection as their populations are generally declining, and they could be listed as threatened or endangered (under ESA) in the future.

Special-status plants include species that are designated rare, threatened, or endangered as well as candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the CEQA Guidelines,

such as those plant species identified by the CNPS as California Rare Plant Rank (CRPR) 1A, 1B, and 2 in the Inventory of Rare and Endangered Vascular Plants of California by the CNPS. Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included as CRPR List 3 in the CNPS Inventory.

For the purposes of this report, 'sensitive plant communities' include those designated as such by the CDFW, either in the CNDDB, the list of California Sensitive Natural Communities (CDFW 2022), or as sensitive alliances classified in the Manual of California Vegetation (MCV) (Sawyer et al. 2009, CNPS 2023a). Alliances are generally (but not entirely) the same between the Sensitive Natural Communities and the MCV, but in either case, those that are designated as global or state rank ("G" or "S") 1-3 are considered "rare or threatened" at the global and/or state level and are therefore considered sensitive.

In addition, wetland and riparian habitats, regardless of MCV status, are considered sensitive. Streams, impounded water bodies, and interconnecting or adjacent wetlands and drainages are subject to the jurisdiction of the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Federal Clean Water Act (CWA). The CDFW also generally has jurisdiction over drainages and adjacent aquatic resources, together with other aquatic features that provide an existing fish and wildlife resource pursuant to Sections 1602-1603 of the California Fish and Game Code. The CDFW asserts jurisdiction to the outer edge of vegetation (i.e., the tree dripline) associated with a riparian corridor, or to the top of the stream bank, whichever is further. The Regional Water Quality Control Board (RWQCB) also generally has jurisdiction over surface waters, including streams and wetlands. Any grading, excavation, or filling of jurisdictional drainage corridors or wetlands would require federal and/or state permits (e.g., Section 404 and/or 401 permits) and will require mitigation.

Figure 3 shows the distribution of special-status wildlife species documented within the CNDDB in the surrounding area. These and other special-status wildlife species known from the project region are identified in **Appendix B**, along with their regulatory status, habitat requirements, and an evaluation of their potential to occur within the study area.

3.3 Field Survey

VNLC Senior Ecologist Jake Schweitzer and VNLC Wildlife Biologist Linnea Neuhaus conducted a site survey on March 3, 2023. Mr. Schweitzer and Ms. Neuhaus walked the entire study area to gain visual coverage of all habitat types present. Dominant plant species within each habitat type were recorded, along with common wildlife species, general conditions (e.g., level of disturbance), and notable habitat features. A search was conducted for sensitive habitats (e.g., riparian) and habitat potential for special-status species, such as nesting potential, burrows, and aquatic features. The search also involved looking for early-blooming special-status plants known from the vicinity of the study area, such as manzanita (*Arctostaphylos*) species.

A combination of GPS points and lines was recorded along the edges of drainage features, with points recorded where satellite reception was degraded (e.g., under the densest tree canopies). Along stream corridors, these data were recorded along the tops of banks, at the inflection point of bank topography—no riparian vegetation extended beyond the bank tops within the study area. Some of the channel edges within more difficult areas to survey due to GPS reception were

FIGURE 3
Regional Biological Resources

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project
Santa Cruz County, California

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Study Area Location

arcuate bush-mallow
slender silver moss
Kings Mountain manzanita
unsilvered fritillary
western bumble bee
white-flowered rein orchid
Toren's grimmia
Santa Cruz cypress
white-rayed pentachaeta
Toren's grimmia
Choris' popcornflower
short-leaved evax
Pacific Grove clover
Santa Cruz cypress
Santa Cruz Mountains pussypaws
Dudley's lousewort
pallid bat
North American porcupine, Santa Cruz kangaroo rat
Santa Cruz Mountains beardtongue
Townsend's big-eared bat
Ohlone manzanita
(also white-rayed pentachaeta)
Santa Cruz Mountains pussypaws
Point Reyes horkelia
Santa Cruz cypress
white-flowered rein orchid
white-rayed pentachaeta
osprey
Ohlone manzanita
(also Ohlone manzanita)
Point Reyes horkelia
San Francisco popcornflower
(also San Francisco popcornflower)
Point Reyes horkelia
Choris' popcornflower
bent-flowered fiddleneck
San Francisco collinsia
bent-flowered fiddleneck
Choris' popcornflower
coho salmon - central California coast ESU, steelhead - central California coast DPS
Blasdale's bent grass
osprey
Santa Cruz Mountains pussypaws
coho salmon - central California coast ESU, steelhead - central California coast DPS
(also western bumble bee, western pond turtle, and CA giant salamander)
woodland woollythreads
Ben Lomond buckwheat
Santa Cruz kangaroo rat
northern curly-leaved monardella
slender silver moss
Kellogg's horkelia
(also Santa Cruz wallflower)
Antioch specid wasp
(also Santa Cruz wallflower)
Mount Hermon (=barbate) June beetle, Zayante band-winged grasshopper
northern curly-leaved monardella
Santa Cruz kangaroo rat
Ben Lomond buckwheat
northern curly-leaved monardella
Mount Hermon (=barbate) June beetle, Zayante band-winged grasshopper

Legend

CNDDB Special-Status Plant
- Anderson's Manzanita
- Ben Lomond Spineflower
- Bonny Doon Manzanita
- Santa Cruz Clover
- Santa Cruz Microseris
- Schreiber's Manzanita
- Other Special-Status Plant

CNDDB Special-Status Animal
- California Giant Salamander
- California Red-legged Frog
- Foothill Yellow-legged Frog
- Marbled Murrelet
- Santa Cruz Black Salamander
- Other Special-Status Animal
- Steelhead Designated Critical Habitat
- Stream
- Study Area Boundary

Designated Critical Habitat
- California Red-legged Frog
- Marbled Murrelet
- Zayante Band-winged Grasshopper

N
W E
S

1:63,360
(1 in = 1 mi at tabloid layout)

0 0.5 1 2 Km
0 0.5 1 2 Mi

Data Sources: CNDDB, 07/2022 | ESRI , 2023 GAP, 1998 | Panorama, 2023 | SFEI, 2017 USFWS, 2005 | USGS, various
GIS/Cartography by: Kristen Chinn, Feb. 2023
Map File: CNDDB_568_B-L_2023-0226.mxd

refined using 1x1 meter resolution Light Detection and Ranging (LiDAR) data. Photographs detailing representative site conditions were also recorded throughout the site, which are presented in **Appendix A**.

4.0 RESULTS

4.1 Existing Conditions

The study area is located in an unincorporated portion of Santa Cruz County, within the community of Boulder Creek. Land use in the region consists primarily of moderate- to low-density residential housing, with scattered other structures and properties. There is an education center along the eastern edge of the center of the study area. Outdoor recreation lands are present in the form of campgrounds and parks, including Big Basin State Redwoods, which is approximately two air miles northwest of the study area. Property that is owned and managed by the SLVWD is located just south (approximately 0.2 mile) of the study area (**Figure 1**).

4.1.1 Climate

The climate of the study area and surrounding vicinity is characterized by cool, wet winters and relatively moderate summers that are generally rainless but subject to fairly frequent fog. As with most of the western United States, the region is notable for featuring high inter- and intra-annual variability in weather conditions, particularly with respect to precipitation. Being within the Western Mountains, Valleys, and Coast Region (USACOE 2010), the climate may be defined for floristic analyses as "coastal Mediterranean." However, because the study area is significantly influenced by coastal maritime weather patterns, considerable moisture is available as fog through the "dry" summer season, and snow is entirely absent. In turn, the moisture serves to moderate temperatures, maintaining relatively cool average summer temperatures with minimal fluctuations. The average annual temperature in the area (from 1991 to 2020) is 58.2 degrees Fahrenheit, and average monthly temperatures range from a low of 48.8 degrees in December to a high of 68.4 degrees in August (PRISM 2023).

The average annual precipitation in the area is 48.8 inches, which is more than double the amount experienced in Santa Clara Valley, east of the crest of the Santa Cruz Mountains, and therefore sheltered from maritime moisture. Nearly 99 percent occurs during the "wet season," from October through May (PRISM 2023). The 2022-2023 wet season (October 2022 to January 2023 due to the date of this report) experienced higher than average precipitation and lower than average temperatures for the same time period (October to January average from 1991 to 2020). Specifically, precipitation was 180 percent of normal (48.6 versus 27.0 inches), and mean temperatures were 97 percent of normal (51.6 versus 53.3 degrees F) (ibid). Moreover, the timing of the precipitation was highly erratic, with October and November receiving less than average precipitation, and December and January receiving significantly higher than average precipitation (18.8 versus 9.8 inches of precipitation in December and 25.8 versus 10.3 inches of precipitation in January) (ibid).

4.1.2 Topography

The study area is situated in the central Santa Cruz Mountains, within a moderately broad valley created by Boulder Creek and its tributary streams. The elevation of the study area ranges from approximately 551 to 974 feet (168 to 297 meters) above sea level, with elevation rising

generally from southeast to northwest (USGS 1997). Slope ranges from nearly flat along some of the roads and road edges, to nearly vertical along portions of the stream banks of Boulder Creek, some of which consist of bedrock and are over 20 to 50 feet high. Moderate to steep hill slopes surround the valley to the northeast and southwest.

4.1.3 Substrates

All of the substrates within the study area consist of or are derived from sandstone rock, and all are of lower Tertiary age (as old as 66 million years). The named units include the Vaquero, Lompico, and Butano formations, with the Vaquero unit occupying the majority of the study area. All of the soil units feature surface textures of sandy loam, with the exception of Ben Lomond sandy loam, which despite its name, consists of slightly decomposed plant material, at least in the top 24 inches. As a result, the soils are generally well drained to excessively drained, indicating that they may be prone to erosion (USDA-NRCS 2023). The pH rating for the soils indicates that all of the rated units are fairly close to neutral, ranging from 5.0 to 6.7. The primary characteristics related to the soil materials and their relationship to plant growth are presented in **Table 1** below, and the units are mapped on **Figure 4**. The total percent cover of each unit within the study area is also provided. Note that the majority of the study area is mapped as a single soil series, namely Ben Lomond sandy loam, which is mapped over 67.7 percent of the area. Of significance in assessing the potential for rare plants to occur in the study area is the fact that none of the units are of the type that commonly support rare plant species. There are no units derived from unique or uncommon rocks such as serpentinite or limestone, no heavy clay soils, no extreme pH values, or other such traits.

Table 1. Characteristics of Soil Units Mapped within the Study Area

Soil Unit Name and Percent of the Study Area	Parent Material	Surface Texture*	pH*	Drainage
Ben Lomond sandy loam, 5 to 15 percent slopes (50.1%)	residuum weathered from sandstone and/or residuum weathered from granite	Slightly decomposed plant material	5.0	Well drained
Ben Lomond sandy loam, 15 to 50 percent slopes (17.6%)	residuum weathered from granite and/or residuum weathered from sandstone	Sandy loam	6.5	Well drained
Ben Lomond-Catelli-Sur complex, 30 to 75 percent slopes (12.5%)	residuum weathered from granite and/or residuum weathered from sandstone	Sandy loam	6.5	Well drained
Sur-Catelli complex, 50 to 75 percent slopes (10.2%)	residuum weathered from granite and/or residuum weathered from schist and/or residuum weathered from sandstone	Stony sandy loam	6.7	Somewhat excessively drained
Xerorthents-Rock outcrop complex, 50 to 100 percent slopes (9.6%)	residuum weathered from sandstone and shale	Loamy sand	5.8	Excessively drained

Source: U.S. Department of Agriculture Natural Resources Conservation Service, SoilWeb website, 2023.
*Dominant condition. Values for surface texture, pH, and organic matter correspond to the top 24 inches.

4.1.4 Habitats

The study area encompasses three broad habitat types, including developed areas, North Coast Coniferous Forest, and Cismontane Woodland. Of these, developed habitat is by far the most prevalent, encompassing 7.8 acres, or 76 percent of the 10.2-acre study area. The developed areas consist primarily of paved portions of Highway 236 and residential roads, as well as road

FIGURE 4
Project Area Map

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project
Santa Cruz County, California

Legend

- Stream
- Road
- Highway
- Project Pipeline Alignment
- Study Area Boundary
- Soil Unit Boundary

Note: See Figure 4-A to 4-D for detail maps

N
W E
S

1:6,000
(1 in = 500 ft at tabloid layout)

0 50 100 200 Meters

0 250 500 1,000 Feet

Data Sources: GAP, 1998 | Panorama, 2023
Santa Cruz County, 2020 (aerial image)
SFEI, 2017 | USGS, various | TIGER, 2020
GIS/Cartography by: Kristen Chinn, Feb. 2023
Map File: Site_568_B-L_2023-0226.mxd

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shoulders and localized areas of cultivated plants associated with residential housing, including escaped cultivars such as English ivy (*Hedera helix*), French broom (*Genista monspessulana*), periwinkle (*Vinca* spp.), Bermuda buttercup (*Oxalis pes-caprae*), and herb robert (*Geranium purpureum*). In some cases, these weedy species feature a canopy of native tree species, such as coast redwood, tanoak (*Notholithocarpus densiflorus*), and interior live oak (*Quercus wislizeni*). Most understories in such areas are actively managed as landscaping, though even unmanaged areas are not mapped as natural habitats within this report because they do not provide suitable habitat for special-status plants and animals—most such invasive species favor other introduced plants as well as generalist and non-native wildlife. Given the lack of suitable habitat for special-status species, this habitat type is not further discussed below. **Figures 5-A** through **5-D** show the mapped habitats throughout the study area.

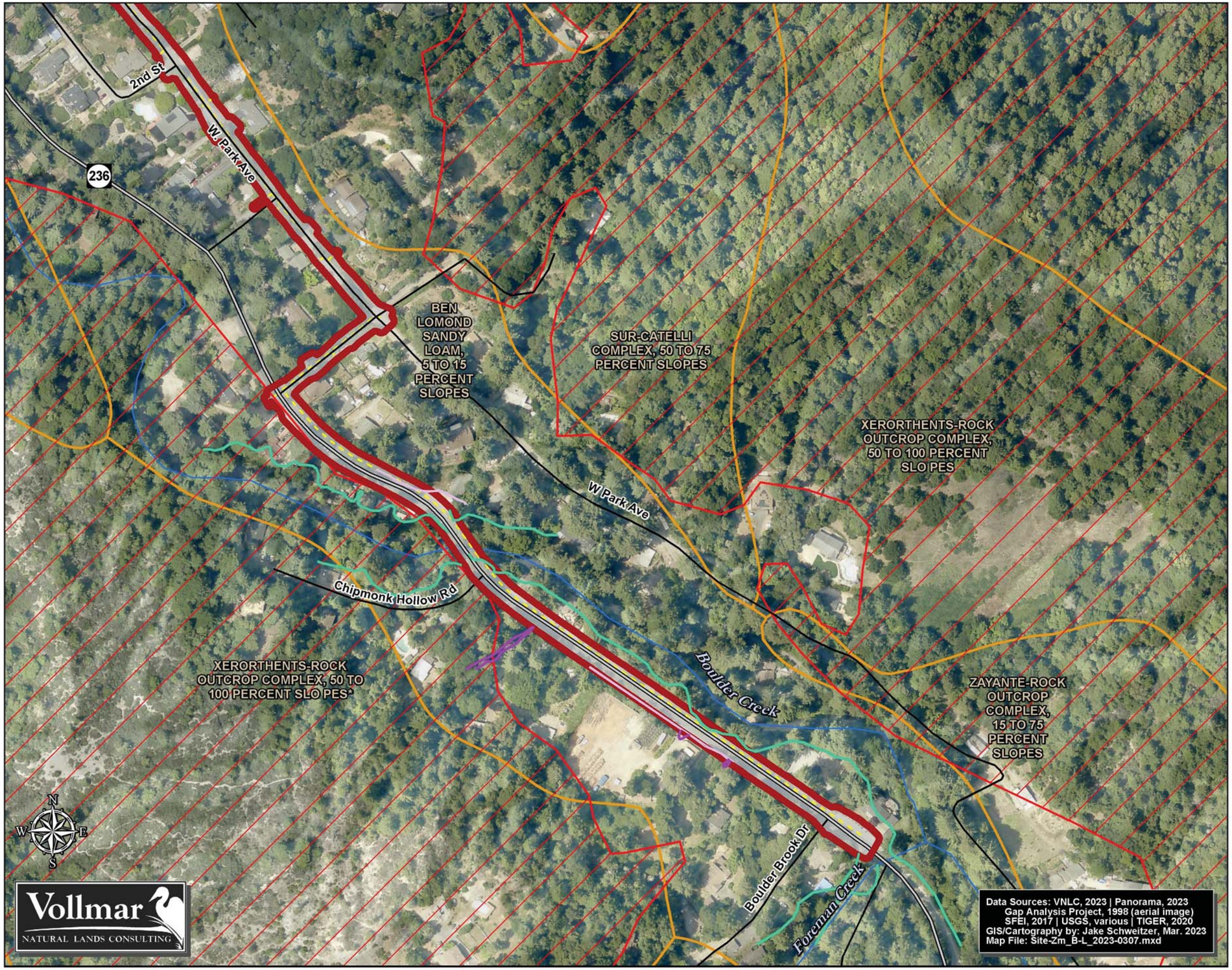
It should be noted that extensive portions of the study area were burned by the CZU Lightning Complex fire that raged throughout the central Santa Cruz Mountains in 2020. The fire altered habitat conditions by reducing canopy cover and thereby increase light and enabling the growth of species that would not otherwise germinate and persist in the natural forest and woodland environments.

North Coast Coniferous Forest

The most prevalent natural habitat along the margins of the pipeline alignment and roads is North Coast Coniferous Forest. It occupies 1.5 acres, amounting to 14 percent of the study area, primarily along northern portions of the site (**Figures 5-B, 5-C,** and **5-D**). The CNPS (2023b) describes this broadly classified habitat as "Needle-leaved evergreen trees in usually quite dense stands that may attain impressive heights. Usually on well-drained, moist sites within reach of summer fog, but not experiencing much winter snow. Occurs in the wetter parts of the North Coast Ranges." This description applies to the onsite habitat, despite the fact that the study area is not within the North Coast Ranges (it is within the Central Coast sub region). North Coast Coniferous Forest primarily includes coast redwood and Douglas fir (*Pseudotsuga menziesii*) through most of its range, but also includes other tall coniferous trees in the far northern part of the Coast Ranges. Both coast redwood and Douglas fir occur primarily north of San Luis Obispo County, and the study area is well within the region where both species are more common (Jepson eFlora 2023). Both species also occur within the study area, though coast redwoods are more common, especially lower in the valley and adjacent to the primary stream corridors, particularly Boulder Creek. Douglas fir is more common along the upper hillslopes surrounding the study area. Associated trees that form a secondary, lower-growing tree stratum, include tanoak, bigleaf maple (*Acer macrophyllum*), and the occasional interior live oak. As is typical for this habitat type, the understory is relatively sparse, largely as a result of the deep shade cast by the towering conifers. Most of the plant species occurring as the shrub, vine, and herb strata feature either highly dissected leaves or large, broad leaves that grow parallel to the forest floor, in order to maximize the potential to capture solar radiation. Common shrubs and vines observed in the study area include California huckleberry (*Vaccinium ovatum*), beaked hazelnut (*Corylus cornuta*), California blackberry (*Rubus ursinus*), and pink honeysuckle (*Lonicera hispidula*). Also present within the habitat, but to a lesser degree compared to areas mapped as Developed on **Figures 5A-5D**, are the invasive French broom, English ivy, and both Himalayan blackberry and elmleaf blackberry (*Rubus armeniacus* and *R. ulmifolius*, respectively). These exotics are generally more prevalent along the edges of the road edges versus further away. The herb

FIGURE 5-A
Site Map, Southern Area

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project
Santa Cruz County, California



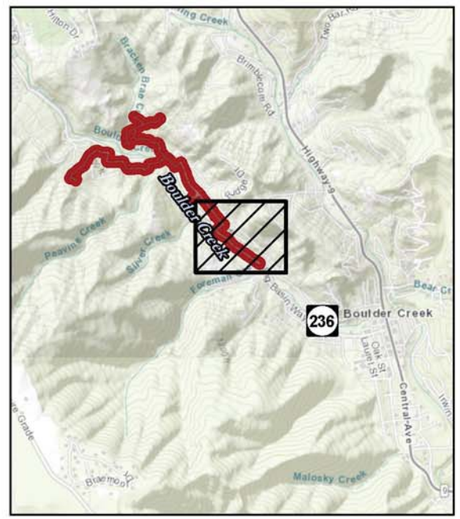
Legend

- Top of Bank, Perennial Stream
- Top of Bank, Incised Channel
- Edge of Roadside Drainage Ditch
- Project Pipeline Alignment
- Stream
- Road
- Highway
- Study Area Boundary
- Soil Unit Boundary
- CZU Lightning Fire Boundary (2020)

Habitat Type

- Developed (residential)

* Only boundaries adjacent to study area are mapped.
A formal wetland delineation was not conducted.



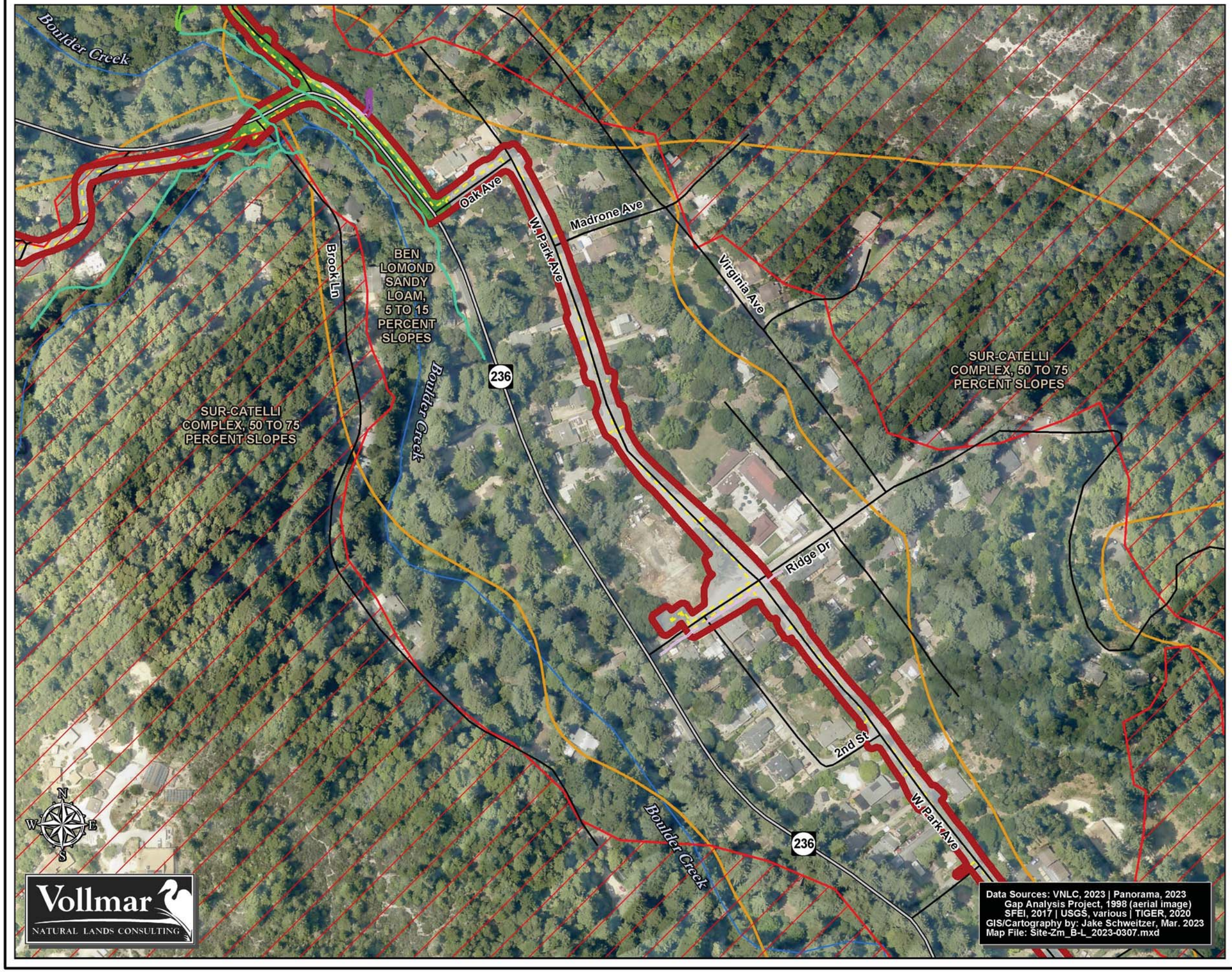
1:2,400
(1 in = 200 ft at tabloid layout)

0 25 50 100 Meters

0 100 200 400 Feet

FIGURE 5-B
Site Map, Central Area

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project
Santa Cruz County, California



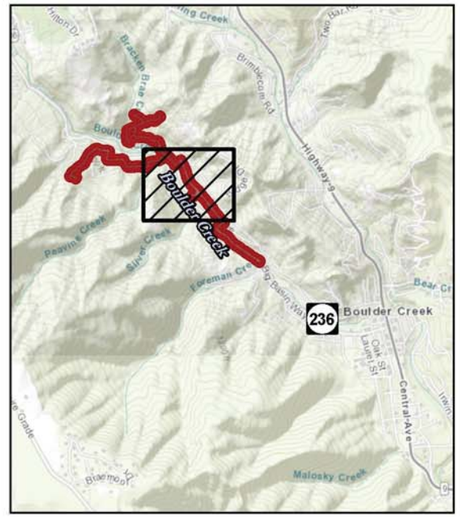
Legend

- Top of Bank, Perennial Stream
- Top of Bank, Incised Channel
- Edge of Seasonal Swale
- Edge of Roadside Drainage Ditch
- Project Pipeline Alignment
- Stream
- Road
- Highway
- Study Area Boundary
- Soil Unit Boundary
- CZU Lightning Fire Boundary (2020)

Habitat Type

- Cismontane Woodland
- North Coast Coniferous Forest (Redwood)
- Developed (residential)

* Only boundaries adjacent to study area are mapped.
A formal wetland delineation was not conducted.



Vollmar
NATURAL LANDS CONSULTING

Data Sources: VNLC, 2023 | Panorama, 2023
Gap Analysis Project, 1998 (aerial image)
SFEI, 2017 | USGS, various | TIGER, 2020
GIS/Cartography by: Jake Schweitzer, Mar. 2023
Map File: Site-Zm_B-L_2023-0307.mxd

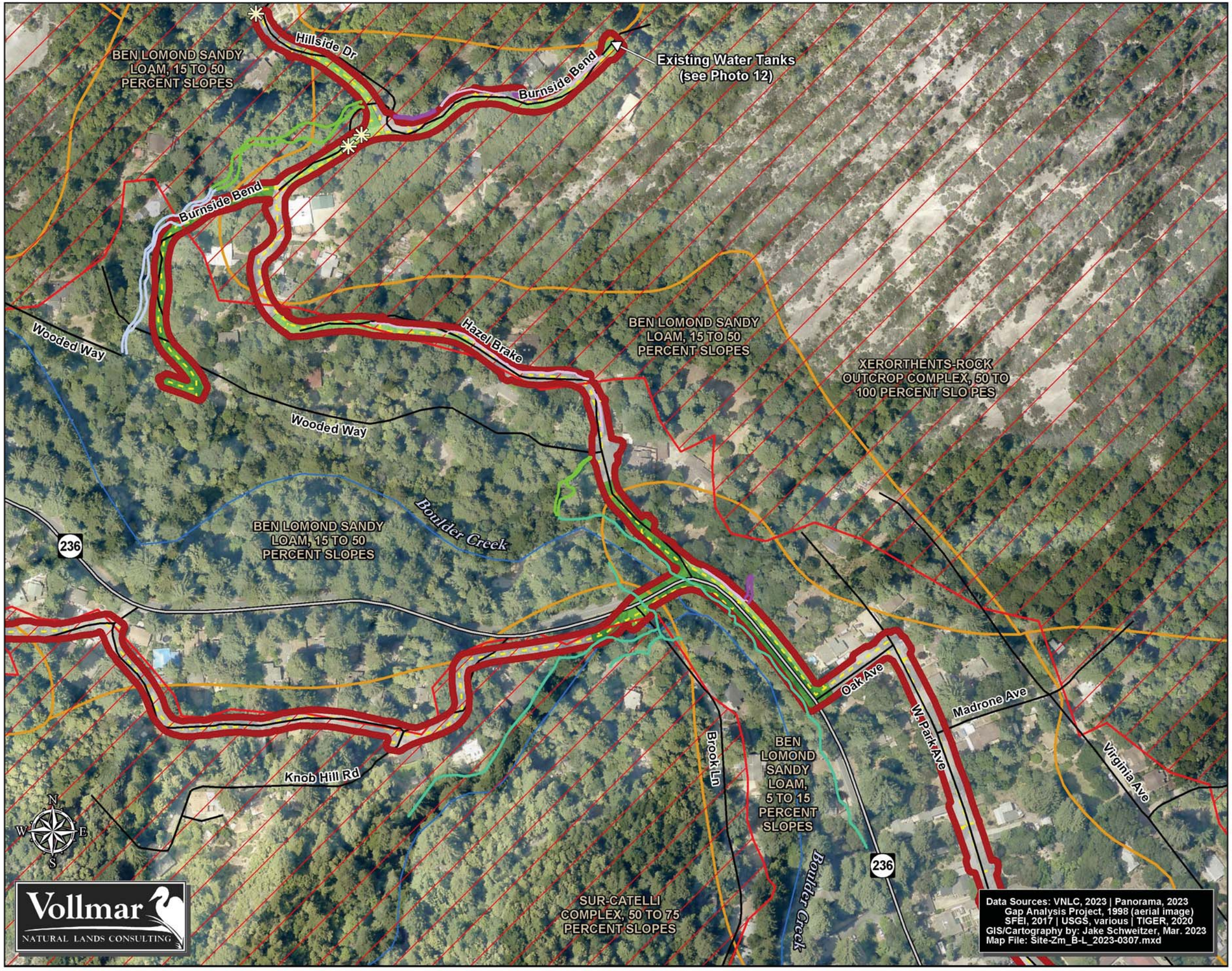
1:2,400
(1 in = 200 ft at tabloid layout)

0 25 50 100 Meters

0 100 200 400 Feet

FIGURE 5-C
Site Map, Northeastern Area

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project
Santa Cruz County, California



Vollmar
NATURAL LANDS CONSULTING

Data Sources: VNLC, 2023 | Panorama, 2023
Gap Analysis Project, 1998 (aerial image)
SFEI, 2017 | USGS, various | TIGER, 2020
GIS/Cartography by: Jake Schweitzer, Mar. 2023
Map File: Site-Zm_B-L_2023-0307.mxd

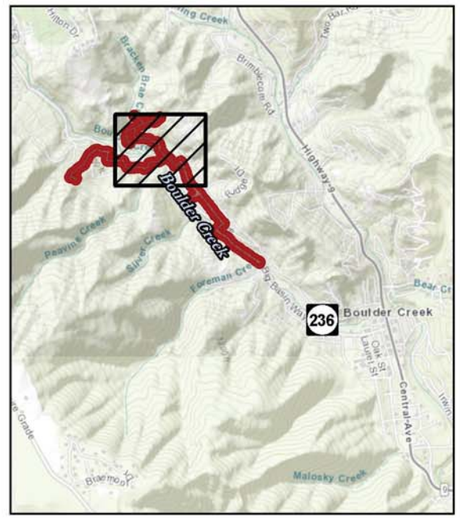
Legend

- Bird Nest (observed 03/03/2023)
- Top of Bank, Perennial Stream
- Top of Bank, Seasonal Stream
- Top of Bank, Incised Channel
- Edge of Seasonal Swale
- Edge of Roadside Drainage Ditch
- Project Pipeline Alignment
- Stream
- Road
- Highway
- Study Area Boundary
- Soil Unit Boundary
- CZU Lightning Fire Boundary (2020)

Habitat Type

- Cismontane Woodland
- North Coast Coniferous Forest (Redwood)
- Developed (residential)

* Only boundaries adjacent to study area are mapped.
A formal wetland delineation was not conducted.



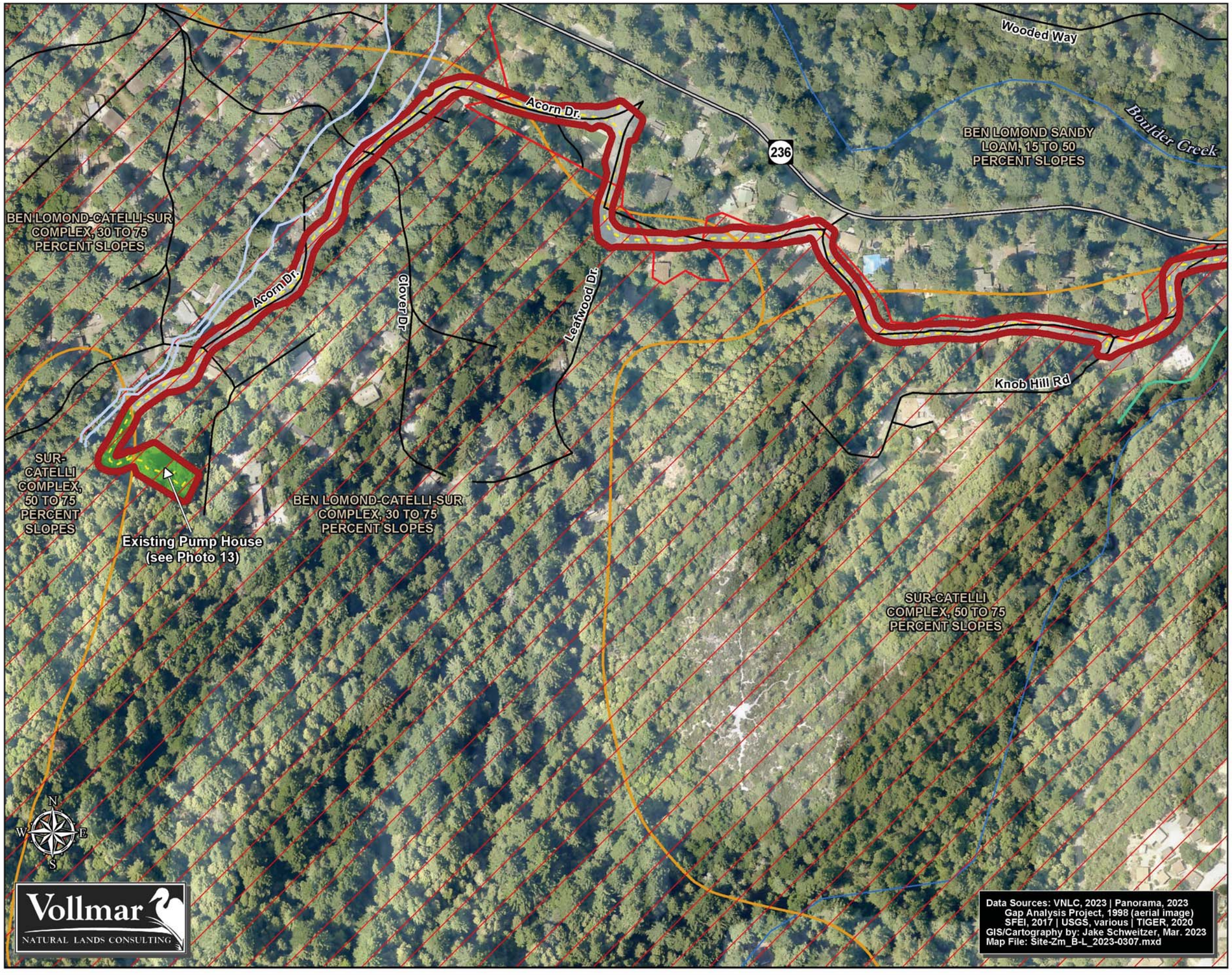
1:2,400
(1 in = 200 ft at tabloid layout)

0 25 50 100 Meters

0 100 200 400 Feet

FIGURE 5-D
Site Map, Northwestern Area

San Lorenzo Valley Water District
Bracken Brae and Forest Springs
Consolidation Project
Santa Cruz County, California



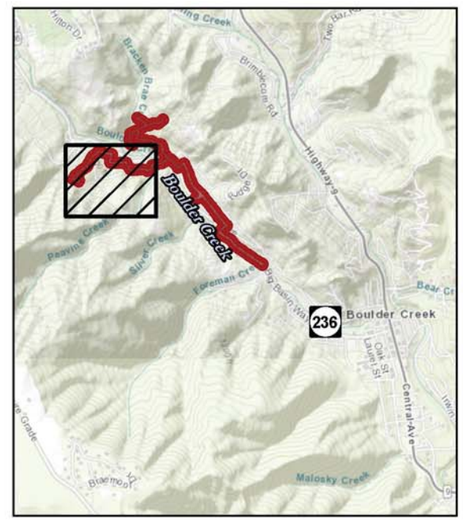
Legend

- Top of Bank, Perennial Stream
- Top of Bank, Seasonal Stream
- Project Pipeline Alignment
- Stream
- Road
- Highway
- Study Area Boundary
- Soil Unit Boundary
- CZU Lightning Fire Boundary (2020)

Habitat Type

- North Coast Coniferous Forest (Redwood)
- Developed (residential)

* Only boundaries adjacent to study area are mapped.
A formal wetland delineation was not conducted.



1:2,400
(1 in = 200 ft at tabloid layout)

0 25 50 100 Meters

0 100 200 400 Feet

Data Sources: VNLC, 2023 | Panorama, 2023
Gap Analysis Project, 1998 (aerial image)
SFEI, 2017 | USGS, various | TIGER, 2020
GIS/Cartography by: Jake Schweitzer, Mar. 2023
Map File: Site-Zm_B-L_2023-0307.mxd

stratum consisted of a similar mix of species, with a majority of native plants but commonly occurring exotic species. Examples include the native miner's lettuce (*Claytonia perfoliata*), redwood sorrel (*Oxalis oregana*), western swordfern (*Polystichum munitum*), California polypody (*Polypodium californicum*), milkmaids (*Cardamine californica*), and milkwort (*Rhinotropis californica*). These are interspersed with the introduced chickweed (*Stellaria media*), herb robert, Bermuda buttercup, forget me not (*Myosotis latifolia*), and similar shade-tolerant, moisture-associated species. Areas of this habitat that were burned in the CZU Lightning Complex fire are limited to small portions of the northwestern and northeastern limits of the study area that are farthest from the cool, moist shaded areas of Boulder Creek. The primary difference noted in the burned vegetation is the increased cover of invasive species that require more sunlight than is afforded by the tall coniferous canopy. The most common weed is French broom, which unfortunately has the potential to increase the risk of future wildfires if not managed appropriately. Associated exotic species include Bermuda buttercup, hairy bitter cress (*Cardamine hirsuta*), and members of the sunflower family chicory tribe, such as prickly wild lettuce (*Lactuca serriola*). However, a few native fire-following species were also noted, such as wartleaf ceanothus (*Ceanothus papillosus*), California phacelia (*Phacelia californica*), and coast tarplant (*Madia sativa*). None of these species are typically common within this type of forest habitat.

Cismontane Woodland

Occupying just under one acre (0.98 acre) and under 10 percent of the study area, this is the only other onsite natural habitat. It occurs only in the north-northeastern portion of the study area (**Figure 5-C**). This habitat is associated with better-drained soils of hillslope habitats farther from Boulder Creek. Its canopy is dominated by interior live oak and California bay (*Umbellularia californica*). The understory is slightly more disturbed than that of the North Coast Coniferous Forest, which is often the case in more open and dry, less shady habitats in California. Native understory plant species observed include the native California blackberry, toyon (*Heteromeles arbutifolia*), and pink honeysuckle in the shrub and vine layer, and small flowered nemophila (*Nemophila parviflora*), Pacific sanicle (*Sanicula crassicaulis*), and sweet cicely (*Osmorhiza berteroi*) in the herb layer. However, the invasive French broom, English ivy, forget me not, Italian thistle (*Carduus pycnocephalus*), and chickweed are nearly equal in cover. Although portions of this habitat are within the CZU Lightning Complex fire zone, it appears to have been mostly lightly burned and the differences between burned and unburned areas is only subtly reflected in the vegetation—as with the North Coast Coniferous Forest, the cover of invasive species is higher within the burned areas, and French broom is similarly mostly immature, suggesting it is expanding in the area.

4.2 Special-status Species

Based on habitat requirements, there are eight special-status animal species and eight special-status plant taxa with some potential to occur within the study area. These include four state or federally listed animal species and four non-listed special-status animal species, as well as multiple birds that fall under the Migratory Bird Treaty Act (MBTA). Two of the eight special-status plants are State-listed Endangered or Rare, and the remaining six are CRPR taxa with no federal or state listing. **Figure 3** shows the distribution of special-status animal and plant species that are documented in the surrounding region, and all special-status taxa are listed in **Appendix**

B, along with their regulatory status, habitat requirements, and an evaluation of their potential to occur in the study area. These animal and plant taxa are described in more detail below.

4.2.1 Listed Animal Species

Foothill yellow-legged frog (*Rana boylii*) Central Coast DPS – Federal Proposed Threatened, State Endangered

The foothill yellow-legged frog (FYLF) Central Coast DPS is listed as Federal Proposed Threatened and State Endangered. The FYLF is a True Frog belonging to the family Ranidae. They are medium-sized frogs with mottled gray, brown or olive coloring above. Yellow extends from the underside of the hind legs to the lower abdomen. The throat and chest are often dark-spotted. Unlike the California red-legged frog, FYLF has indistinct dorsolateral folds (Stebbins and McGinnis 2012).

This species' aquatic habitat includes partly shaded, low-gradient ephemeral and permanent streams, rivers, and adjacent moist terrestrial habitats (Hayes et al. 2016). FYLF prefer partly shaded, shallow streams and riffles with a rocky substrate that is at least cobble-sized. They occur in streams and rivers in woodland, chaparral, and forest habitats. Breeding occurs between mid-March to early June after high water of streams subsides (Stebbins and McGinnis 2012).

Historically, FYLF ranged from Oregon south along the coast ranges down to the San Gabriel Mountains, and south along the foothills of the western side of the Sierra Nevada to the Tehachapi Mountains. FYLF has disappeared from up to 45 percent of its overall range in California, and 66 percent of its range in the California Sierra. The healthiest FYLF populations in California are located along the north coast and in the northern Sierra Nevada. The few remaining populations in the southern Sierra Nevada, specifically those south of I-80, are nearly extinct (Stebbins and McGinnis 2012). Frogs in this area have been largely affected by poorly timed reservoir water release, which can wash away eggs and larvae or retard their development (Kupferberg et al. 2012). Additionally, changes to flow regimes and downstream habitat alteration resulting from hydroelectric power generation and other water management projects have greatly impacted FYLF's dependence on riverine environments (ibid). FYLF are also susceptible to other environmental impacts including loss of habitat, predation by non-native species such as American bullfrogs and crayfish, and air-borne pesticides (Davidson et al. 2002, Ashton et al. 1998).

Foothill yellow-legged frog has been documented in the watershed within 1 mile of the project site. Boulder Creek and some of its tributaries provide suitable habitat for foothill yellow-legged frog, particularly during periods of low flow. As the foothill yellow-legged frog is known to be present in the watershed and suitable habitat is present along Boulder Creek, it is assumed that foothill yellow-legged frog could occur within Boulder Creek and adjacent riparian habitat. While the project would avoid construction within Boulder Creek, there is a possibility that foothill yellow-legged frog could move into and aestivate in upland areas adjacent to Boulder Creek. If the project were to stage materials or excavate a trench for a fire hydrant in areas adjacent to Boulder Creek, there is a possibility that foothill yellow-legged frog could be encountered and impacted by the project. Mitigation Measure Bio-2 requires either avoidance of any ground disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid periods when foothill yellow-legged frog are most active

(i.e., rainy season) and pre-construction surveys and installation of temporary exclusion fencing under the supervision of a USFWS-approved biologist to avoid impacts on the species.

California red-legged frog (*Rana draytonii*) – Federal Threatened, Species of Special Concern
California red-legged frog (CRF) is federally Threatened and a CDFW Species of Special Concern. CRF is a True Frog belonging to the family Ranidae. CRF are large frogs with reddish-brown, gray or olive coloring and blackish spots or bars on the back and sides. The undersides of the hind legs are a reddish color (Stebbins and McGinnis 2012). CRF is easily distinguished from American bullfrog and FYLF by the presence of a distinctive dorsolateral fold, and the lack of a large, obvious tympanic membrane.

The species occurs from sea level to elevations of approximately 5,200 feet (1,500 meters). Breeding occurs in streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, lagoons, and stock ponds. Breeding adults are often associated with deep (greater than 2 feet [0.7 meter]) still or slow-moving water and dense, shrubby riparian or emergent vegetation (Hayes and Jennings 1988), but frogs have been observed in shallow sections of streams and ponds that are devoid of vegetative cover. The species is known to rest and feed within riparian vegetation and it is believed that the moisture and cover of the riparian zone provides foraging habitat and facilitates dispersal. The species has also been documented dispersing through areas with sparse vegetative cover and dispersal patterns are considered to be dependent on habitat availability and environmental conditions (N. Scott and G. Rathbun *in lit.* 1998).

CRF formerly ranged from Northern California well into Baja California, occupying the coast range and Sierra Nevada foothills as well as the Central Valley. It has been eliminated from approximately 70 percent of its historical range, and is now largely restricted to coastal drainages and coast-range ponds (USFWS 2015). A few isolated populations exist in the Sierra Nevada foothills (Barry and Fellers 2013). Non-native predators such as American bullfrog and various introduced fish species have contributed to this decline, along with significant habitat loss due to development and agriculture (Stebbins and McGinnis 2012).

California red-legged frog have been documented along the lower San Lorenzo River watershed approximately 6.5 air miles south of the project. In addition, critical habitat for California red-legged frog has been designated 1 mile to the west of the project. Boulder Creek and some of its tributaries provide suitable habitat for California red-legged frog, particularly during periods of low flow. It is therefore assumed that California red-legged frog could occur within Boulder Creek. California red-legged frog are also known to aestivate in upland habitat and can occur up to 300 feet from ponds, streams, and other suitable habitat. Project construction activities within 300 feet of Boulder Creek have the potential to encounter and impact California red-legged frog. Mitigation Measure Bio-2 requires either avoidance of any ground disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid periods when California red-legged frog are active (i.e., rainy season) and pre-construction surveys and installation of temporary exclusion fencing under the supervision of a USFWS-approved biologist to avoid impacts on the species.

Marbled Murrelet (*Brachyramphus marmoratus*) – Federal Threatened, State Endangered
Marbled Murrelet is listed as a Federal Threatened and State Endangered species when nesting. Marbled Murrelet is a small, stocky seabird that forages in marine waters but nests in coastal forests (Sanders 1988). For the nonbreeding season (summer), birds are mottled in brown, but change to white and black for the winter breeding season.

This species occurs year-round in marine subtidal and pelagic habitats (Sanders 1988). Foraging habitat is mainly within 1-2 miles of the shore, where they dive and hunt small fish and zooplankton. Marbled Murrelet roosts and nests in coast redwood and Douglas fir forests, though little is known about nesting behavior as few nests have been found (ibid). The species possibly requires mature and dense coniferous forests within nearby coastal waters, and prefers to nest in tall trees (ibid). Preferred nesting tree species include Douglas fir, western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), mountain hemlock (*Tsuga mertensiana*), Sitka spruce (*Picea sitchensis*), and coast redwood (TCLO 2023). Nests consist of a shallow moss or lichen-lined depression on a branch or the ground. During breeding season, this species visits inland nesting habitat only at night, and leaves at dawn to spend each day fishing at sea (Sanders 1988).

Marbled Murrelet's range extends from the coast of southern Alaska down to the coast of southern California. Population numbers remain healthy in Alaska, but are in decline in California, Washington, and Oregon (TCLO 2023). Threats to Marbled Murrelet include predation from peregrine falcons (*Falco peregrinus*), habitat loss from logging, and coastal oil spills (Sanders 1988).

Habitat quality for Marbled Murrelet in and adjacent to the project is marginal due to recent fires and lack of old growth forest. However, Marbled Murrelet have been documented within 3 miles of the project and could nest within large coniferous trees in and adjacent to the project area. While the project would not remove any large coniferous trees or old growth forest, noise generated during project construction activities could impact nesting Marbled Murrelets and result in nest abandonment or take of eggs or nestlings. The project would reduce potential impacts to Marbled Murrelet through the implementation of Mitigation Measure Bio-3 which requires timing of activities to avoid the nesting season to the extent feasible, pre-construction surveys for murrelet during the nesting season, and implementation of avoidance buffers for nests should any occur in the area.

Steelhead, Central California Coast DPS (*Oncorhynchus mykiss irideus* pop. 8) – Federal Threatened
Central California Coast Steelhead are listed as a Federal Threatened species. This DPS includes coastal populations of winter steelhead within Santa Cruz County. Steelhead are highly variable in color and size, but in general are a silvery fish with black spots on the tail, fins, and back.

Steelhead are found in streams, rivers, lakes, estuaries, and ocean habitats. Steelhead are an anadromous fish, and winter steelhead enter freshwater in the winter when rains produce large flows of cold water, typically in January and February (Moyle 2002). Steelhead migrate and spawn in tributaries and mainstem rivers, and return to the ocean after spawning. Steelhead spawn in loose gravels at pool tails, typically during late spring. Juveniles spend the first year or

two of life in cool, clear, fast-flowing streams where abundant riparian vegetation provides cover. Steelhead have strong homing abilities, meaning they usually spawn in the stream and area where they grew up (ibid).

The Central California Coast DPS includes all populations below natural and manmade barriers in California streams in the Russian River and south to Aptos Creek (Moyle et al. 2008). There are two dominant populations located in the Russian River and San Francisco Bay, although independent populations are found elsewhere (Spence et al. 2007). The Central Coast DPS experienced an estimated 85% decline between 1960 and 1997, though numbers in Santa Cruz County streams appear to be mostly stable (but low) in recent years. Steelhead populations are threatened by dams, water diversions, urbanization, and flood control projects. Siltation is a major issue for steelhead in the San Lorenzo Watershed specifically.

Steelhead presence is monitored by a Santa Cruz County program called the Juvenile Steelhead and Stream Habitat Monitoring Program, which surveys for steelhead at several locations throughout the San Lorenzo watershed on an annual basis. This monitoring program has documented steelhead in Boulder Creek within the study area in recent years. The project will involve installation of the new pipeline on the existing bridges over Boulder Creek and would not involve work within Boulder Creek. While the project would involve activities in proximity to Boulder Creek, the project would not affect habitat for steelhead. In addition, the project would avoid indirect impacts on steelhead habitat by implementing erosion and sediment control BMPs in compliance with the State of California Construction General Permit and project-specific Stormwater Pollution Prevention Plan (SWPPP).

4.2.2 Non-listed Special-status Animal Species

Santa Cruz black salamander (*Aneides niger*) – Species of Special Concern

The Santa Cruz black salamander is a CDFW Species of Special Concern. This species is a moderately sized, robust salamander in the family Plethodontidae. Adults measure up to 5.5 inches (14 cm) in total length and are nearly completely black in coloration (Stebbins and McGinnis 2012). Santa Cruz black salamanders have long, squared toes and a rounded prehensile tail but are largely terrestrial (ibid).

The Santa Cruz black salamander requires habitats with a high degree of moisture, such as well shaded, rocky streams and creeks. They are typically found underneath damp rocks or logs in woodlands, forests and coastal grasslands from sea level to approximately 2,400 feet (800 meters) in elevation (AmphibiaWeb 2023). Females lay approximately 8-25 eggs in moist cavities below ground between July and August (Stebbins and McGinnis 2012).

The Santa Cruz black salamander is endemic to California and its range is limited to the Santa Cruz Mountains in San Mateo County, northern Santa Cruz County, and western Santa Clara County (Stebbins and McGinnis 2012). Threats to this species include habitat disturbance and climate change (habitat becoming hotter and drier) (AmphibiaWeb 2023).

Santa Cruz black salamander and salamanders have been documented within 1.25 miles of the project and are assumed to occur within Boulder Creek in the project area due to the presence of suitable habitat. Santa Cruz black salamanders prefer wet habitat and are unlikely to occur within

upland areas in the project area. However, there is a possibility that Santa Cruz black salamanders could enter the construction area in areas immediately adjacent to Boulder Creek. Mitigation Measure Bio-2 requires either avoidance of any ground disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid the rainy season and pre-construction surveys and installation of temporary exclusion fencing to avoid impacts on the species.

California giant salamander (*Dicamptodon ensatus*) – Species of Special Concern

California giant salamander is a CDFW Species of Special Concern. This species is a large terrestrial salamander with a large head and stout legs, usually with reddish brown coloring and copper-colored mottling.

They are found primarily in damp coastal forests in Douglas fir, redwood, and riparian habitats (Stebbins 1972). They live near or in rocky, cool, shaded streams and springs and occasionally in lakes or ponds (Nussbaum & Clothier 1973). Adults and larvae are typically found hiding in spaces between rocks in the streambed. Adults breed from March to May, and lay their eggs in cold, flowing water, typically beneath rocks or woody debris on the stream bottom (Stebbins 1985).

The range of the California giant salamander is from southern Santa Cruz County to southern Mendocino and Lake counties. Threats to this species include habitat alteration such as forest removal and road building near streams.

California giant salamander have been observed within 1/3-mile of the project and are assumed to occupy the habitat within Boulder Creek. California giant salamanders are known to travel up to 50 meters from creeks. There is a possibility that Santa Cruz black salamanders could enter the construction area in areas within 50 meters of Boulder Creek. Mitigation Measure Bio-2 requires either avoidance of any ground disturbing activities outside of the paved roadway within 300 feet of Boulder Creek or timing of work activities to avoid the rainy season, and pre-construction surveys and installation of temporary exclusion fencing to avoid impacts on the species.

Pallid bat (*Antrozous pallidus*) – Species of Special Concern, WBWG High Priority

Pallid bat is a CDFW Species of Special Concern, and is listed as "high" priority by the Western Bat Working Group (WBWG). Pallid bat is a large, light-colored bat with a simple face, prominent ears and a blunt snout. They can be distinguished from other long-eared bats by their light fur, long forearm, and lack of projecting flaps at the base of their ears.

This species is found in low elevations throughout California in a wide variety of habitats including grasslands, shrublands, woodlands, and forests, and in high elevation coniferous forests (>7,000 feet) (Harris 1998a). Pallid bat is commonly found in open dry habitats with rocky areas for roosting (Weber 2009). They roost in caves, crevices, mines, cliffs, and hollow trees. This species forages for insects and arachnids over grassland, oak savannah, ponderosa pine forests, and orchards/vineyards. Pallid bats mate from late October to February, with young born from April to July.

Pallid bats range from southern British Columbia through the western U.S. to Mexico (Weber 2009). Pallid bat is very sensitive to disturbance of their roosting sites, which are important for conserving energy and juvenile growth (Harris 1998a). Main threats include loss of foraging habitat due to fire, development, agricultural expansion and pesticide use.

Bridges, large trees and buildings within the study area provide suitable day and night roosts for pallid bats. The coniferous forest and cismontane woodland may also provide foraging habitat. The project may require removal of trees adjacent to the proposed water storage tank to allow for construction of the larger water storage tanks. The project also involves installation of the proposed water pipeline on existing bridges. Removal of trees containing a pallid bat roost or construction noise activities in proximity to a pallid bat maternal roost could significantly impact pallid bats. Mitigation Measure Bio-4 requires a qualified biologist to conduct a daytime and night time preconstruction bat survey to verify potential use of bridges and nearby buildings and trees by bats, within two weeks prior to initiation of construction activities. If bats are observed roosting on the nearby structures the bat roost shall be protected by using a buffer of at least 50 feet to avoid noise impacts on the roost or use of one-way doors to exclude the bats if the roost must be removed to avoid potential mortality.

Townsend's big-eared bat (*Corynorhinus townsendii*) – Species of Special Concern, WBWG High Priority

Townsend's big-eared bat is a CDFW Species of Special Concern, and is listed as "high" priority by the WBWG. This bat, similar to pallid bat, has a simple face with relatively small eyes and large ears. It can be distinguished from other bats in the family Vespertilionidae by its extra large, rabbit-like ears, and bilateral nose lumps.

This bat is found in nearly all habitats except subalpine and alpine habitats throughout California (Harris 1988b). They are generally found in dry uplands, but also occur in mesic habitats such as coniferous and deciduous forest (Kunz and Martin 1982). They roost in large cavities such as caves, mines, tunnels, buildings, or other human-made structures, and sometimes large hollows of trees (Gruver and Keinath 2006). Breeding occurs in the fall or winter seasons.

Townsend's big-eared bats range throughout western North America and Mexico, from southern British Columbia to central Mexico. They are primarily threatened by the disturbance or destruction of their roosting sites (Gruver and Keinath 2006).

Bridges, large trees and buildings within the study area provide suitable day and night roosts for Townsend's big-eared bats. The coniferous forest and cismontane woodland may also provide foraging habitat. The project may require removal of trees adjacent to the proposed water storage tank to allow for construction of the larger water storage tanks. The project also involves installation of the proposed water pipeline on existing bridges. Removal of trees containing a bat roost or construction noise activities in proximity to a bat maternal roost could significantly impact Townsend's big-eared bats. Mitigation Measure Bio-4 requires a qualified biologist to conduct a daytime and night time preconstruction bat survey to verify potential use of bridges and nearby buildings and trees by bats, within two weeks prior to initiation of construction activities. If bats are observed roosting on the nearby structures the bat roost shall be protected

by using a buffer of at least 50 feet to avoid noise impacts on the roost or use of one-way doors to exclude the bats if the roost must be removed to avoid potential mortality.

4.2.3 Migratory and Nesting Birds

The Migratory Bird Treaty Act (16 U.S.C. 704) and the California Fish and Game Code (Section 3503) prohibits the take of migratory birds or disturbance to the active nests of most native birds. In addition to the special-status birds listed in **Section 4.2.1**, a number of additional migratory birds have potential to occur within the immediate vicinity of the project area. These include Allen's Hummingbird (*Selasphorus sasin*), Black Swift (*Cypseloides niger*), Lawrence's Goldfinch (*Carduelis lawrencei*), Nuttall's Woodpecker (*Picoides nuttalli*), Oak Titmouse (*Baeolophus inornatus*), and Olive-sided Flycatcher (*Contopus cooperi*).

Many bird species were observed within or adjacent to the study area during the field visit, including Turkey Vulture (*Cathartes aura*), California Quail (*Callipepla californica*), Spotted Towhee (*Pipilo maculatus*), Chestnut-backed Chickadee (*Poecile rufescens*), American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), Anna's Hummingbird (*Calypte anna*), California Towhee (*Melozone crissalis*), Brown Creeper (*Certhia americana*), Hermit Thrust (*Catharus guttatus*), Pygmy Nuthatch (*Sitta pygmaea*), American Robin (*Turdus migratorius*), Red-shouldered Hawk (*Buteo lineatus*), Dark-eyed Junco (*Junco hyemalis*), Acorn Woodpecker (*Melanerpes formicivorus*), Golden-crowned Kinglet (*Regulus satrapa*), Yellow-rumped Warbler (*Setophaga coronata*), Steller's Jay (*Cyanocitta steller*) and California Scrub-Jay (*Aphelocoma californica*). Bird habitat within or immediately adjacent to the study area includes large trees, snags, riparian vegetation, and artificial perches (power poles, fences, houses and other buildings). To avoid impacts to migratory or nesting birds, the project should avoid or mitigate the removal of large trees and mature riparian vegetation. The project should also avoid heightened levels of noise disturbance during the general nesting season (February through August). Avoidance and minimization measures are detailed in **Section 5.0**.

4.2.4 Special-status Plant Species

While the project site itself consists primarily of existing paved roads, road shoulders, and leveled and/or developed areas, the study area (i.e., the project site buffer) encompasses natural habitats as well as residential landscaped habitats. Where not developed as residential housing or landscaping, natural soils adjacent to the developed areas support plant communities that in some areas include a significant cover of native plant species, particularly in the tree and shrub strata. As such, there is potential for special-status plants to be present within the study area, within these more natural habitats. Specifically, as **Table 2** in **Appendix B** shows, there are eight plant taxa known from the vicinity of the study area that occur within habitat types present in the study area, and that occur within the elevation range of the study area (550 to 975 feet). These are shaded in gray in **Table 2** (**Appendix B**), indicating that they are the most likely to occur. There are additional special-status plant taxa known from the nine USGS quadrangles that surround the study area and that also occur within the onsite habitat types and elevation range, but these are considered less likely to occur in the study area because they are not documented within the local vicinity—they have not been found within approximately five to ten air miles of the study area. Additionally, early blooming special-status plants that were not observed during the field survey were ruled out as having potential to occur because they were confirmed to be absent. Among the eight taxa with the highest potential to occur, none are listed at the federal level, though two

are listed at the state level—the remaining six are only listed as CRPR plants. Two of the taxa are associated with North Coast Coniferous Forest and seven are associated with Cismontane Woodland. One plant is associated with both of the onsite habitats. As indicated above, most of the natural habitats are at least somewhat to moderately disturbed, largely as a result of their proximity to road edges and residential/landscaped areas. As such, the habitats must be presumed to have relatively low potential to support special-status plants, but none of the eight plants identified as having potential to occur can be completely ruled out.

4.3 Protected Habitats

4.3.1 Wetlands or Waters of the U.S. and State of California

While a formal wetland delineation of potential Waters was not conducted as part of this project, an attempt was made to identify the boundaries of potentially jurisdictional habitats. As indicated above, professional-grade GPS units were used in combination with LiDAR topographic data to map onsite drainage features, which were the only potentially jurisdictional habitats in the area. The margins of potentially jurisdictional incised drainage channels, seasonal wetland swales, and roadside drainage ditches were all mapped along their topographic and/or wetted boundaries. For perennial and seasonal streams, the tops of banks were mapped, representing the outer boundaries of habitats presumed to be jurisdictional under the CDFW—although localized riparian vegetation was found to be present within the perennial streams, no such vegetation was found beyond the tops of banks along the stream corridors. Likewise, only limited wetland vegetation was observed within the drainages, as most features would be classified as other Waters, and little to no wetland vegetation was observed outside of the drainages. A formal wetland delineation survey would be required to classify any of the features as potential jurisdictional waters (based on the three parameters of a predominance of hydrophytic vegetation and the presence of wetland hydrology and hydric soils), as well as to identify the ordinary high water mark along the stream corridors. Additional investigation should be conducted to identify the connectivity of drainages to jurisdictional stream corridors, as many roadside drainage ditches would not be considered jurisdictional unless they convey water directly into the streams.

4.3.2 Sensitive Plant Communities

Aside from the potentially jurisdictional drainage habitats, one plant community is ranked as sensitive in the MCV: Redwood Forest and Woodland Alliance (*Sequoia sempervirens* Forest & Woodland Alliance), which is the dominant plant community within the mapped North Coast Coniferous Forest and Woodland. The MCV membership rule for this habitat stipulates that coast redwood "accounts for greater than 50 percent relative cover in the tree canopy, or greater than 30 percent relative cover with other conifers…or with a lower tier of hardwood trees such as *Notholithocarpus densiflorus*" (CNPS 2023a). Most of the areas mapped as North Coast Coniferous Forest and Woodland within the study area appeared to conform to this membership rule. As defined, the habitat is ranked as S3.2 and G3 and is therefore considered sensitive. The "3" designation indicates that the habitat is "vulnerable—at moderate risk of extirpation in the jurisdiction [globally—'G' or statewide—'S'] due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors" (ibid). The ".2" indicates that the habitat is "Threatened," as opposed to ".1" ("Very threatened") or .3 ("No current threat known"). While coast redwood trees and their habitats are relatively common along coastal California, only a fraction of them are old growth (have never been logged). Only

three percent of redwood stands in California are considered to be old growth (Barbour et al. 2007), and such trees are known to provide uniquely important habitat for a host of wildlife, including special-status species such as Marbled Murrelet. In addition, the County of Santa Cruz has an ordinance (County Code section 16.34.030) that requires a permit to remove "significant" trees, which include all such trees located within sensitive habitats, as defined in Chapter 16.32 of the Code (Santa Cruz County Planning Department 2023).

5.0 AVOIDANCE AND MINIMIZATION MEASURES

In addition to avoidance and minimization measures listed below, all construction personnel involved in the project shall attend environmental awareness training prior to the commencement of potential project disturbance activities. The training shall be conducted by a qualified biologist and shall involve the presentation of sensitive species and habitats documented or potentially occurring in the study area. The training should include handouts that describe each resource with respect to listing status, habitat preferences, distinguishing physical characteristics, causes of its decline, and potential protection and avoidance measures. Information should be documented within a paper handout to be distributed among construction personnel, and should include photographs of the resources in order to facilitate identification by the personnel.

The following avoidance and minimization measures are recommended, as follows:

Mitigation Measure Bio-1: Special-Status Plant Pre-Construction Surveys and Mitigation

Prior to the date of initial ground disturbance at the project site, preconstruction surveys for special-status plant species shall be conducted by a qualified botanist during the appropriate blooming period for special-status plants that could occur in the project area. The special-status plant surveys shall conform to protocols established by the California Native Plant Society (CNPS) and the California Department of Fish and Wildlife (CDFW) for rare plant surveys.

All occurrences of special-status plants shall be documented by the botanist and flagged for avoidance. In the event that the special-status plant(s) cannot be avoided during construction, the following measures shall be implemented:

<u>Special-status Perennial Plant Taxa:</u>

- Where feasible, the individual or population may be safely extracted and relocated to appropriate habitat outside the work area.
- Alternatively, a nursery with experience growing special-status plants can be employed to grow seedlings of the species that shall be planted in appropriate habitat outside the work area or in the work area following completion of work. The selected relocation site shall be within the same watershed as the impact area, and shall be approved by CDFW botanical staff.

<u>Special-status Annual Plant Taxa:</u>

- Seeds of the annuals shall be collected from existing onsite populations or from the same watershed (to maintain local genetic stock) and distributed in appropriate habitat outside the work area (within the same watershed) or in the work area following completion of work.

- Alternatively, a nursery with experience growing special-status plants can be employed to grow seedlings of the species (from seeds collected locally in the same watershed) that shall be planted in appropriate habitat outside the work area or in the work area following completion of work. It should be noted that seeds derived from plants in the same watershed as the impact area may be available from local nurseries, and local nurseries may also be able to propagate seeds from adults grown from collected seeds. In this case, seeds do not need to be collected from a specific impact area site.

Monitoring:

- Seeded or replanted locations within the study area shall be monitored for a minimum of 3 years and up to 5 years, based on monitoring results. The new population shall match typical populations for the species as available from rare plant inventories (e.g., from CNDDB, USFWS data, or from local mitigation banks). Due to the variations in population from year to year as a result of weather fluctuations, average population data for annual taxa can be calculated from several years (at least three) of data collected from known populations in the region.

Mitigation Measure Bio-2: Avoidance of Foothill Yellow-legged Frog, California Red-legged Frog, Santa Cruz Black Salamander, and California Giant Salamander

The project shall be designed to avoid construction activities outside of the paved roadway within 300 feet of Boulder Creek to the extent feasible. Where it is not feasible to avoid construction in undeveloped areas within 300 feet of Boulder Creek, the work shall be timed to avoid the period between November 1 and March 31 and any period of rain or 48 hours following rain events. In addition, a qualified biologist(s) shall conduct an investigation for special-status amphibians within 24 hours prior to activities in undeveloped areas within 300 feet of Boulder Creek. The designated biologist shall investigate all potential areas that could be used by the species for feeding, sheltering, movement, and other essential behaviors. If any California red-legged frogs or foothill yellow-legged frogs or burrows that could contain either species are found, the designated biologist shall ensure the area is fully avoided and the species can leave the area on its own. Temporary exclusion fencing would then be installed under the supervision of the qualified biologist to avoid any special-status amphibian from entering the work area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence should be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed within suitable habitat for special-status species.

Mitigation Measure Bio-3: Marbled Murrelet Avoidance

If project activities are to occur within nesting/breeding season of Marbled Murrelet (March 24 to September 15), a targeted habitat assessment shall be conducted by a qualified biologist within the project site and a 0.25-mile buffer. Prior to the start of project activities, in areas where Marbled Murrelet nesting habitat may be present, a qualified biologist shall conduct a visual inspection for marbled murrelet in suitable habitat within 0.25 mile of the

project to identify and flag for avoidance suitable habitat features. Suitable habitat features include the presence of platforms, small patches of old growth forest, or remnant large trees. Platforms are defined as a relatively flat surface at least 10 cm in diameter and 10 meters high, in the live crown of a coniferous tree. Platforms can be created by a wide branch, moss, lichen, mistletoe, tree deformities, or squirrel nests. If any suitable habitat features are observed within 0.25 mile of the project site, the activities within 0.25 mile of the habitat features shall either be timed to avoid the marbled murrelet nesting season or protocol-level surveys shall be conducted to verify absence of the species at the time of construction.

Mitigation Measure Bio-4: Avoidance of Sensitive Bat Species (Pallid Bat and Townsend's Big- Eared Bat)

A qualified biologist shall conduct a daytime and nighttime preconstruction bat survey to verify potential use of bridges and nearby buildings and trees by bats, within two weeks prior to initiation of construction activities.

If bats are observed roosting on the bridges, nearby buildings, or trees, an avoidance buffer shall be installed within 50-feet of the active roost, or appropriate exclusion measures (such as one- way doors, expandable foam, or steel wool) shall be implemented under the direction of a qualified biologist to avoid potential bat mortality.

Mitigation Measure Bio-5: Impacts to Redwood Forest and Woodland Habitats and Individual Trees

In order to avoid incidental impacts to coast redwood habitats or individual coast redwood trees, the following measure shall be carried out:

- All workers shall be made aware of the importance of avoiding harmful impacts to redwood forest and woodland habitat or individual trees within the habitat.
- Brightly colored silt fencing shall be installed along the edges of the construction areas (such as the pump station), to prevent sedimentation into any nearby drainages as well as to clearly mark the boundaries of the disturbance area.
- In the event that one or more redwood trees or other trees within redwood habitats needs to be removed or is inadvertently killed or severely damaged, seedlings of the same species shall be planted in suitable habitat within the same habitat and within accessible habitat nearby (i.e., within Redwood Forest and Woodland and not on unauthorized private property). One sapling (1-3 inches in diameter at approximately 4.5 feet above the roots) shall be planted for every removed sapling, and three saplings shall be planted for every tree greater than five inches diameter at 4.5 feet above the roots.

Mitigation Measure Bio-6: Avoidance and Minimization of Impacts to Waters and Aquatic Habitats

A minimum of 14 days prior to construction, a wetland delineation study shall be conducted to define the limits of wetlands in areas directly adjacent to the roadway/construction area. The limits of all wetlands shall be flagged using brightly colored pin flags for avoidance.

As part of the worker environmental awareness training, workers shall be trained on the legal protections for wetlands, where wetlands occur on the project site, and procedures to avoid impacts on wetlands during construction

If any temporary impacts on wetlands are necessary, the wetland shall be regraded to match the existing togopraphy/condition and native wetland seed shall be applied to revegetate the soil. If any permanent impacts are required, the impact shall be mitigated through enhancement or creation of wetland habitats commensurate with the degree of impact at a minimum 1:1 ratio. In addition, the District shall consult with U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife to obtain any required permits prior to conducting any work within wetlands or other jurisdictional waters.

Mitigation Measure Bio-7: Migratory Birds

A pre-construction survey for nesting birds shall be conducted by a qualified biologist within 14 days prior to initiation of construction activities, if activities are to occur within nesting/breeding season of native bird species (February- September). The pre-construction survey shall include all areas of construction and a 500-foot buffer from construction. If any active nests are observed the biologist shall establish no disturbance buffers from the nests at the following distances: 50-foot buffer for passerine (songbirds), 200 feet for raptor nests, and 500 feet for rookery nests. The no disturbance buffer must be maintained until the young have fledged and left the nest, as determined by a qualified biologist.

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APPENDIX A

Representative Photographs of the Study Area (March 3, 2023)

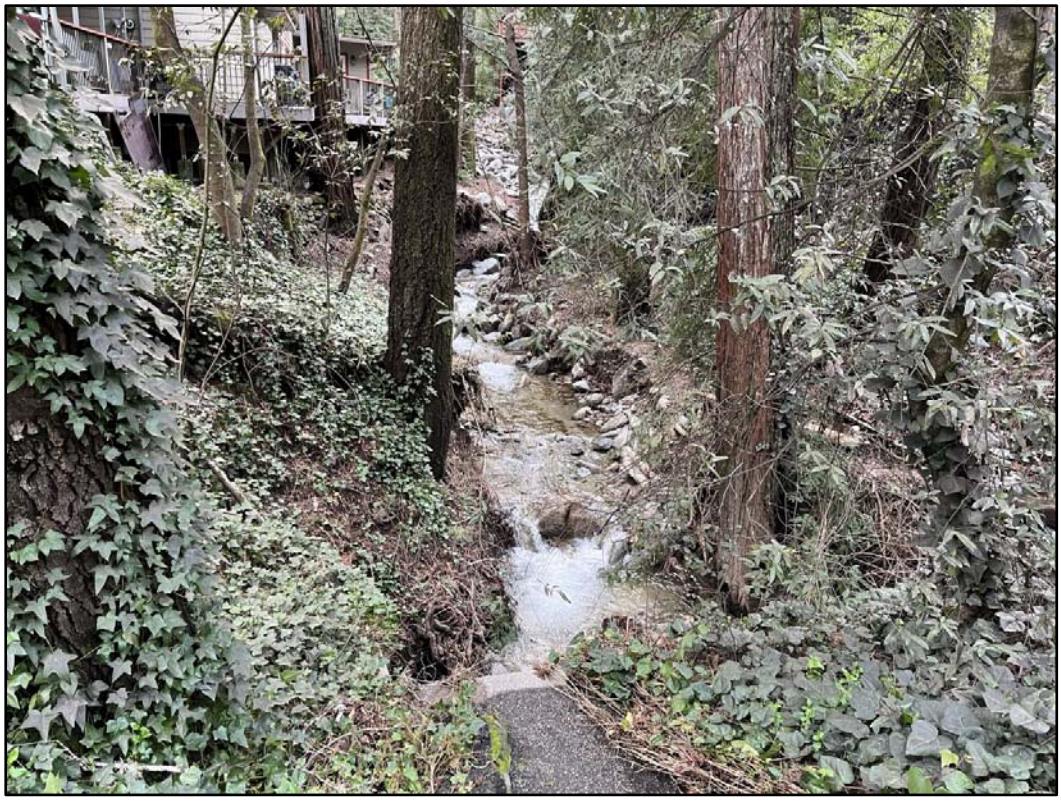

Photo 1. View of Foreman Creek with coast redwoods and English ivy Adjacent to (southeast of) the study area. Facing southwest

Photo 2. Unvegetated roadside drainage ditch northwest of Boulder Brook Drive Southeastern portion of the study area. Facing northwest

Photo 3. Incised drainage channel and culvert southeast of Chipmunk Hollow Rd Southeastern portion of the study area. Facing southwest

Photo 4. View of bridge over Boulder Creek north of Chipmunk Hollow Rd Southeastern portion of the study area. Facing southeast

Photo 5. View of Boulder Creek and white alder trees (riparian vegetation) North of Chipmunk Hollow Rd. Facing northwest

Photo 6. View of residential neighborhood "habitat" along W. Park Ave Central portion of the study area. Facing southeast

Photo 7. Incised channel within Cismontane Woodland north of Oak Ave Facing northeast

Photo 8. Redwood Forest near top of bank (North Coast Coniferous Forest) South of Highway 236 bridge over Boulder Creek. Facing southeast toward Oak Ave

Photo 9. Highway 236 bridge over Boulder Creek, northwest of Oak Ave
Central portion of the study area. Facing southwest

Photo 10. Representative Cismontane Woodland along Hazel Brake
Northeastern portion of the study area. Facing east

Photo 11. Seasonal stream habitat adjacent to Burnside Bend
Northeastern portion of the study area. Facing west

Photo 12. Old water tanks (see Figure 5-C)
Northeastern edge of the study area. Facing northwest

Photo 13. Dilapidated pump station (see Figure 5-D)
Northeastern edge of the study area. Facing west

Photo 14. Burned Redwood Forest and seasonal stream adjacent to Acorn Dr
Northeastern portion of the study area. Facing southwest

APPENDIX B

Special-Status Animal and Plant Species Documented within the Project Region

Table 1. Special-status Animal Taxa Documented in the Vicinity of the San Lorenzo Valley Water District Bracken Brae and Forest Springs Consolidation Project, Santa Cruz County, California. Compiled by Vollmar Natural Lands Consulting, 2023.

Species highlighted in gray have potential to occur within the Study Area.

Common Name *Scientific Name*	Status[1]	Description of Habitat Requirements	Potential to Occur in Study Area
Amphibians			
California tiger salamander *Ambystoma californiense*	FT, ST	Grassland, scrub, and oak savanna habitats in Central California. Live in upland mammal burrows during warm, dry summer months and migrate during rainy nights to vernal pools, seasonal ponds, or stock ponds for breeding.	**Not Expected**. There is no suitable breeding or upland habitat present within the study area.
Santa Cruz black salamander *Aneides niger*	SSC	Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects.	**Potential**. Boulder Creek and tributaries provide suitable habitat for this species, and there are CNDDB documentations within 1.25 miles of the study area.
California giant salamander *Dicamptodon ensatus*	SSC	Occurs in wet coastal forests in or near clear, cold, permanent or semipermanent streams, often with shelter such as rocks, logs, or stones.	**Potential**. Boulder Creek and tributaries provide suitable habitat for this species, and there are CNDDB documentations within 1/3 mile of the study area.
Foothill yellow-legged frog – Central Coast DPS *Rana boylii* pop. 4	FPT; SE	Generally occurs in partially shaded and shallow streams with a rocky substrate. Requires aestivation habitat and enough permanent water for larval development.	**Potential**. Boulder Creek and tributaries provide suitable habitat for this species and they are known to be present in the watershed. The closest CNDDB documentations are mostly historical and the area needs further study, but their presence should not be ruled out.
California red-legged frog *Rana draytonii*	FT, SSC	Breeds in perennial and seasonal ponds and slow-moving streams; shelters in adjacent uplands, and shrubby or emergent riparian vegetation.	**Potential**. Boulder Creek and tributaries provide suitable habitat (primarily during periods of low flow) for this species and they are known to be present in the watershed. There is critical habitat for California red-legged frog within one mile of the study area.
Birds			
Marbled Murrelet (nesting) *Brachyramphus marmoratus*	FT, SE	Nests in moist, coastal coniferous forests, preferring old-growth forests. Nests on large moss or lichen-covered branches over 40 feet above the ground, or less commonly on the ground in a depression within a rocky area.	**Low Potential**. Suitable habitat is of marginal quality within the study area (no old-growth forests) but there is critical habitat and known occurrences within 3 miles of the site.

Common Name *Scientific Name*	Status[1]	Description of Habitat Requirements	Potential to Occur in Study Area
Western Yellow-billed Cuckoo (nesting) *Coccyzus americanus occidentalis*	FT, SE	Large, contiguous blocks of riparian habitat with dense, deciduous vegetation needed for nesting. Typical suitable nesting habitat in California include willow-cottonwood forest that spans over 200 acres.	**Not Expected**. Suitable habitat (dense riparian vegetation) is not present within the study area.
Southwestern Willow Flycatcher (nesting) *Empidonax traillii extimus*	FE, SE	Breeds in dense riparian vegetation near surface water or saturated soils. Commonly uses patches of riparian habitat during migration, but may be smaller in size, with shorter, sparser vegetation structure than those used for nesting. In the winter, uses a variety of habitats, but appear to prefer semi-open brushy areas that are near water.	**Not Expected**. Outside of known range of species and suitable habitat (dense riparian vegetation) is not present within the study area.
California Condor *Gymnogyps californianus*	FE, SE, FP	Nesting habitats range from scrubby chaparral to forested mountain regions up to about 6,000 feet elevation. Nest mainly in natural cavities or caves in cliffs, though they sometimes also use cavities in old growth trees. Foraging areas are in open grasslands and can be far from primary nesting sites, requiring travel over long distances.	**Not Expected**. Nesting habitat and foraging habitat are not present within the study area. No cliff or caves are present and no suitable large or old growth trees were observed during the field survey.
Least Bell's Vireo (nesting) *Vireo bellii pusillus*	FE, SE	Breeds primarily in willow-dominated riparian woodlands, but also forages and sometimes nests in neighboring mulefat scrub, oak woodlands, and chaparral.	**Not Expected**. Suitable habitat is not present within the study area (no willow-dominated riparian habitat, mulefat scrub, or chaparral).
Fish			
tidewater goby *Eucyclogobius newberryi*	FE	Inhabits brackish water habitats along the California coast from San Diego to the Smith River. Found in shallow lagoons and lower stream reaches with fairly still, but not stagnant, water and high oxygen levels.	**Not Expected**. Suitable habitat (brackish water) is not present within the study area.
coho salmon - central California coast ESU *Oncorhynchus kisutch* pop. 4	FE, SE	Small coastal streams as well as larger rivers. The Central California Coast ESU occurs from Mendocino County south to the Monterey Bay.	**Not Expected**. The study area is outside of the known range of the species.
Steelhead - central California coast DPS *Oncorhynchus mykiss irideus* pop. 8	FT	Streams, rivers, lakes, estuaries, ocean from Russian River south to Soquel Creek and to, but not including, the Pajaro River. Also includes San Francisco and San Pablo Bay Basins.	**Potential**. The study area is within designated critical habitat for steelhead, and there is suitable habitat present.

Common Name *Scientific Name*	Status[1]	Description of Habitat Requirements	Potential to Occur in Study Area
Insects			
Monarch butterfly – California overwintering population *Danaus plexippus plexippus* pop. 1	FC	Roosts in wind-protected tree groves with nectar and water nearby. Overwinters in tall trees in large groups during migration. Overwintering sites are generally at low elevations (below 300 feet) and are sheltered from storms and wind. Forages on showy nectar source flowers. Breeds on milkweed (*Asclepias* sp.) vegetation.	**Not Expected**. The study area does not provide suitable overwintering habitat. The elevation of the site is too high (over 500 feet) and exposure to wind, rain, and freezing temperatures makes the site unsuitable for overwintering monarchs.
Mount Hermon (=barbate) June beetle *Polyphylla barbata*	FE	Known only from the Zayante Sand Hills formation (sandy soils derived from sedimentary rock) and adjacent transitional soils in the Santa Cruz Mountains. Found in open, sandy areas within ponderosa pine-chaparral habitat. Emerge from burrows to mate from May to mid-September.	**Not Expected**. Zayante soils are present in the vicinity of the study area but ponderosa pine-chaparral habitat and open, sandy areas are not present. The closest CNDDB documentation is 5 miles from the study area.
Western bumble bee *Bombus occidentalis*	SCE	Nests generally occur on open slopes bordered by trees, in underground cavities such as animal burrows, or rarely in above ground locations such as in cavities in logs. Requires blooming plants that supply adequate nectar and pollen from February through November.	**Not Expected.** Open slopes are not present in the study area, and suitable underground cavities were not observed during the field survey.
Zayante band-winged grasshopper *Trimerotropis infantilis*	FE	Known only from the Zayante Sand Hills formation (sandy soils derived from sedimentary rock) and adjacent transitional soils in the Santa Cruz Mountains. Found in open sandy ridges with sparse annual and perennial herbs and ponderosa pine habitat. Females lay eggs directly into loose, sandy soil. Usually found directly on sandy soil or on silver bush lupine (*Lupinus albifrons*), which makes up the majority of its diet.	**Not Expected**. Zayante soils are present in the vicinity of the study area; however there are no open, sandy ridges with sparse vegetation. The closest CNDDB documentation is 5 miles from the study area.
Mammals			
Pallid bat *Antrozous pallidus*	SSC, WBWG:H	Forages in a variety of habitats including shrub-steppe grasslands, oak savannah grasslands, open Ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, porches, bat boxes, and buildings.	**Potential**. Trees and buildings may provide suitable day and night roosts, and forest within the study area provides suitable foraging habitat. No obvious roost locations were observed during the field survey, but they may still be present.

Common Name ***Scientific Name***	**Status**[1]	**Description of Habitat Requirements**	**Potential to Occur in Study Area**
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, WBWG:H	Roosts in caves, cliffs, rock ledges, and man-made structures. Found in a wide variety of habitats, except subalpine and alpine habitats, including grasslands, shrublands, oak woodlands and forests.	**Potential**. Trees and buildings may provide suitable day and night roosts, and forest within the study area provides suitable foraging habitat. No obvious roost locations were observed during the field survey, but they may still be present.
Reptiles			
western pond turtle *Emys marmorata*	SSC	Perennial ponds, deep slow-moving streams, marshes and lakes are habitat for this species at 6,000 ft and below in elevation. Eggs are laid in loose soil on land in oak woodlands, mixed coniferous forests, broadleaf forests and grasslands, usually within 400 ft of ponds, lakes, slow streams and marshes with vegetated borders, rocks, or logs. Logs, rocks, cattail mats, and exposed banks are required for basking.	**Not Expected**. Suitable habitat is not present within the study area. Creek habitats are likely too high gradient to support this species. The closest CNDDB documentation is from a pond more than 4 miles downstream.
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	FE, SE, FP	Occurs in grasslands and shrublands near freshwater marshes, ponds, and slow- moving streams in San Mateo and extreme northern Santa Cruz counties. Prefers lentic habitat during the spring through fall that supports frog or fish prey with nearby uplands that consist of a mosaic of grassland, scrub, and woodland.	**Not Expected**. Suitable habitat is not present within the study area. No grasslands, shrublands, freshwater marshes or ponds are present in the study area.

[1] Status: FT – Federal Threatened; FE – Federal Endangered; FC – Federal Candidate; FPT – Federal Proposed Threatened; ST – State Threatened; SE – State Endangered; SCE – State Candidate Endangered; FP – CDFW Fully Protected; SSC – CDFW Species of Special Concern; WBWG: Western Bat Working Group High ('H') Priority

Table 2. Special-status Plant Taxa Documented in the Vicinity of the San Lorenzo Valley Water District Bracken Brae and Forest Springs Consolidation Project, Santa Cruz County, California. Compiled by Vollmar Natural Lands Consulting, 2023.

Species highlighted in gray have the highest potential to occur within the Study Area, based on the habitat and distribution of taxon.

Scientific Name Common Name (Family)	Status[1] Federal/ State/CRPR	Habitat, Elevation, and Blooming Period[2]	Potential for Occurrence within the Study Area
Agrostis blasdalei Blasdale's bent grass (Poaceae)	--/--/1B.2	Coastal bluff scrub, Coastal dunes, Coastal prairie; Microhabitat: none; 0-490 feet; May-July	No suitable habitat is present
Amsinckia lunaris bent-flowered fiddleneck (Boraginaceae)	--/--/1B.2	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland; Microhabitat: none; 10-1,640 feet; March-June	Marginal suitable is present (no grassland or grassy openings in wooded habitats)
Anomobryum julaceum slender silver moss (Bryaceae)	--/--/4.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; Microhabitat: damp rock and soil on outcrops, usually on roadcuts, Roadsides (usually); 330-3,280 feet; no bloom period listed	Marginal suitable is present (no grassland or grassy openings in wooded habitats)
Arabis blepharophylla coast rockcress (Brassicaceae)	--/--/4.3	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; Microhabitat: Rocky; 10-3,610 feet; February-May	No suitable habitat is present
Arctostaphylos andersonii Anderson's manzanita (Ericaceae)	--/--/1B.2	Broadleafed upland forest, Chaparral, North Coast coniferous forest; Microhabitat: Edges, Openings; 195-2,495 feet; November-May	Suitable habitat is present but not observed during March 2023 survey
Arctostaphylos glutinosa Schreiber's manzanita (Ericaceae)	--/--/1B.2	Chaparral, Closed-cone coniferous forest; Microhabitat: diatomaceous shale; 560-2,245 feet; March-April (November)	Marginal suitable is present (no diatomaceous shale)
Arctostaphylos ohloneana Ohlone manzanita (Ericaceae)	--/--/1B.1	Closed-cone coniferous forest, Coastal scrub; Microhabitat: siliceous shale; 1,475-1,740 feet; February-March	No suitable habitat is present
Arctostaphylos regismontana Kings Mountain manzanita (Ericaceae)	--/--/1B.2	Broadleafed upland forest, Chaparral, North Coast coniferous forest; Microhabitat: Granitic, Sandstone; 1,000-2,395 feet; December-April	Suitable habitat is present but study area is below species elevation range
Arctostaphylos silvicola Bonny Doon manzanita (Ericaceae)	--/--/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest; Microhabitat: inland marine sands; 395-1,970 feet; January-March	No suitable habitat is present
Arenaria paludicola marsh sandwort (Caryophyllaceae)	FE/CE/1B.1	Marshes and swamps (brackish, freshwater); Microhabitat: Openings, Sandy; 10-560 feet; May-August	No suitable habitat is present

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Astragalus agnicidus Humboldt County milk-vetch (Fabaceae)	--/CE/1B.1	Broadleafed upland forest, North Coast coniferous forest; Microhabitat: Disturbed areas, Openings, Roadsides (sometimes); 395-2,625 feet; April-September	Suitable habitat is present
Astragalus pycnostachyus var. *pycnostachyus* coastal marsh milk-vetch (Fabaceae)	--/--/1B.2	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides); Microhabitat: none; 0-180 feet; (April) June-October	No suitable habitat is present
Azolla microphylla Mexican mosquito fern (Azollaceae)	--/--/4.2	Marshes and swamps (ponds, slow water); Microhabitat: none; 100-330 feet; August	No suitable habitat is present
Calandrinia breweri Brewer's calandrinia (Montiaceae)	--/--/4.2	Chaparral, Coastal scrub; Microhabitat: Burned areas, Disturbed areas, Loam (sometimes), Sandy (sometimes); 35-4,005 feet; (January) March-June	No suitable habitat is present
Calochortus uniflorus pink star-tulip (Liliaceae)	--/--/4.2	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest; Microhabitat: none; 35-3,510 feet; April-June	Suitable habitat is present but not documented in the vicinity
Calyptridium parryi var. *hesseae* Santa Cruz Mountains pussypaws (Montiaceae)	--/--/1B.1	Chaparral, Cismontane woodland; Microhabitat: Gravelly (sometimes), Openings, Sandy (sometimes); 1,000-5,020 feet; May-August	Suitable habitat is present but study area is below species elevation range
Carex comosa bristly sedge (Cyperaceae)	--/--/2B.1	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland; Microhabitat: none; 0-2,050 feet; May-September	No suitable habitat is present
Carex saliniformis deceiving sedge (Cyperaceae)	--/--/1B.2	Coastal prairie, Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps; Microhabitat: Mesic; 10-755 feet; (May) June (July)	Marginal suitable is present (no open wetland habitats)
Castilleja latifolia Monterey Coast paintbrush (Orobanchaceae)	--/--/4.3	Cismontane woodland (openings), Closed-cone coniferous forest, Coastal dunes, Coastal scrub; Microhabitat: Sandy; 0-605 feet; February-September	Marginal suitable is present (known primarily closer to the coast and within scrub)
Chorizanthe pungens var. *hartwegiana* Ben Lomond spineflower (Polygonaceae)	FE/--/1B.1	Lower montane coniferous forest (maritime ponderosa pine sandhills); Microhabitat: none; 295-2,000 feet; April-July	No suitable habitat is present
Chorizanthe robusta var. *hartwegii* Scotts Valley spineflower (Polygonaceae)	FE/--/1B.1	Meadows and seeps (sandy), Valley and foothill grassland (mudstone, Purisima outcrops); Microhabitat: none; 755-805 feet; April-July	No suitable habitat is present
Chorizanthe robusta var. *robusta* robust spineflower (Polygonaceae)	FE/--/1B.1	Chaparral (maritime), Cismontane woodland (openings), Coastal dunes, Coastal scrub; Microhabitat: Gravelly (sometimes), Sandy (sometimes); 10-985 feet; April-September	Marginal suitable habitat is present (limited cismontane woodlands and most openings are from 2020 fire. No sandy habitat)

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Cirsium andrewsii Franciscan thistle (Asteraceae)	--/--/1B.2	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; Microhabitat: Mesic, Serpentinite (sometimes); 0-490 feet; March-July	No suitable habitat is present
Clarkia concinna ssp. *automixa* Santa Clara red ribbons (Onagraceae)	--/--/4.3	Chaparral, Cismontane woodland; Microhabitat: none; 295-4,920 feet; (April) May-June (July)	Suitable habitat is present
Collinsia multicolor San Francisco collinsia (Plantaginaceae)	--/--/1B.2	Closed-cone coniferous forest, Coastal scrub; Microhabitat: Serpentinite (sometimes); 100-900 feet; (February) March-May	No suitable habitat is present
Cypripedium fasciculatum clustered lady's-slipper (Orchidaceae)	--/--/4.2	Lower montane coniferous forest, North Coast coniferous forest; Microhabitat: Seeps (usually), Serpentinite (usually), Streambanks; 330-7,990 feet; March-August	Marginal suitable habitat is present (no serpentinite)
Cypripedium montanum mountain lady's-slipper (Orchidaceae)	--/--/4.2	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest; Microhabitat: none; 605-7,300 feet; March-August	Suitable habitat is present but not documented in the vicinity
Dacryophyllum falcifolium tear drop moss (Hypnaceae)	--/--/1B.3	North Coast coniferous forest; Microhabitat: Carbonate; 165-900 feet; no bloom period listed	Marginal suitable habitat is present (no carbonate)
Dirca occidentalis western leatherwood (Thymelaeaceae)	--/--/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North Coast coniferous forest, Riparian forest, Riparian woodland; Microhabitat: Mesic; 80-1,395 feet; January-March (April)	Suitable habitat is present but not documented in the vicinity
Eastwoodiella californica swamp harebell (Campanulaceae)	--/--/1B.2	Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (freshwater), Meadows and seeps, North Coast coniferous forest; Microhabitat: Mesic; 5-1,330 feet; June-October	Suitable habitat is present but not documented in the vicinity
Elymus californicus California bottle-brush grass (Poaceae)	--/--/4.3	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest, Riparian woodland; Microhabitat: none; 50-1,540 feet; May-August (November)	Suitable habitat is present but not documented in the vicinity
Eriogonum nudum var. *decurrens* Ben Lomond buckwheat (Polygonaceae)	--/--/1B.1	Chaparral, Cismontane woodland, Lower montane coniferous forest (maritime ponderosa pine sandhills); Microhabitat: Sandy; 165-2,625 feet; June-October	Marginal suitable habitat is present (no notably sandy soils)
Eriophyllum latilobum San Mateo woolly sunflower (Asteraceae)	FE/CE/1B.1	Cismontane woodland (often serpentinite, roadcuts), Coastal scrub, Lower montane coniferous forest; Microhabitat: none; 150-1,085 feet; May-June	No suitable habitat is present
Erysimum ammophilum sand-loving wallflower (Brassicaceae)	--/--/1B.2	Chaparral (maritime), Coastal dunes, Coastal scrub; Microhabitat: Openings, Sandy; 0-195 feet; February-June (July-August)	No suitable habitat is present

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Erysimum franciscanum San Francisco wallflower (Brassicaceae)	--/--/4.2	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland; Microhabitat: Granitic (often), Roadsides (sometimes), Serpentinite (often); 0-1,805 feet; March-June	No suitable habitat is present
Erysimum teretifolium Santa Cruz wallflower (Brassicaceae)	FE/CE/1B.1	Chaparral, Lower montane coniferous forest; Microhabitat: inland marine sands; 395-2,000 feet; March-July	No suitable habitat is present
Eschscholzia hypecoides San Benito poppy (Papaveraceae)	--/--/4.3	Chaparral, Cismontane woodland, Valley and foothill grassland; Microhabitat: Clay, Serpentinite; 655-4,920 feet; March-June	No suitable habitat is present
Fissidens pauperculus minute pocket moss (Fissidentaceae)	--/--/1B.2	North Coast coniferous forest (damp coastal soil); Microhabitat: none; 35-3,360 feet; no bloom period listed	Suitable habitat is present but not documented in the vicinity
Fritillaria agrestis stinkbells (Liliaceae)	--/--/4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland; Microhabitat: Clay, Serpentinite (sometimes); 35-5,100 feet; March-June	No suitable habitat is present
Fritillaria liliacea fragrant fritillary (Liliaceae)	--/--/1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: Serpentinite (often); 10-1,345 feet; February-April	No suitable habitat is present
Grimmia torenii Toren's grimmia (Grimmiaceae)	--/--/1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest; Microhabitat: boulder and rock walls, Carbonate, Openings, Rocky, Volcanic; 1,065-3,805 feet; no bloom period listed	No suitable habitat is present
Grimmia vaginulata vaginulate grimmia (Grimmiaceae)	--/--/1B.1	Chaparral (openings); Microhabitat: boulder and rock walls, Carbonate, Rocky; 2,245-2,245 feet; no bloom period listed	No suitable habitat is present
Hesperevax sparsiflora var. *brevifolia* short-leaved evax (Asteraceae)	--/--/1B.2	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie; Microhabitat: none; 0-705 feet; March-June	No suitable habitat is present
Hesperocyparis abramsiana var. *abramsiana* Santa Cruz cypress (Cupressaceae)	FT/CE/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest; Microhabitat: Granitic (sometimes), Sandstone (sometimes); 920-2,625 feet; no bloom period listed	No suitable habitat is present
Hesperocyparis abramsiana var. *butanoensis* Butano Ridge cypress (Cupressaceae)	FT/CE/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest; Microhabitat: Sandstone; 1,310-1,610 feet; October	No suitable habitat is present

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Hoita strobilina Loma Prieta hoita (Fabaceae)	--/--/1B.1	Chaparral, Cismontane woodland, Riparian woodland; Microhabitat: Mesic, Serpentinite (usually); 100-2,820 feet; May-July (August-October)	Marginal suitable habitat is present (no serpentinite)
Holocarpha macradenia Santa Cruz tarplant (Asteraceae)	FT/CE/1B.1	Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: Clay (often), Sandy; 35-720 feet; June-October	No suitable habitat is present
Horkelia cuneata var. *sericea* Kellogg's horkelia (Rosaceae)	--/--/1B.1	Chaparral (maritime), Closed-cone coniferous forest, Coastal dunes, Coastal scrub; Microhabitat: Gravelly (sometimes), Openings, Sandy (sometimes); 35-655 feet; April-September	No suitable habitat is present
Horkelia marinensis Point Reyes horkelia (Rosaceae)	--/--/1B.2	Coastal dunes, Coastal prairie, Coastal scrub; Microhabitat: Sandy; 15-2,475 feet; May-September	No suitable habitat is present
Hosackia gracilis harlequin lotus (Fabaceae)	--/--/4.2	Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland; Microhabitat: wetlands, Roadsides; 0-2,295 feet; March-July	Suitable habitat is present but not documented in the vicinity
Iris longipetala coast iris (Iridaceae)	--/--/4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps; Microhabitat: Mesic; 0-1,970 feet; March-May (June)	No suitable habitat is present
Legenere limosa legenere (Campanulaceae)	--/--/1B.1	Vernal pools; Microhabitat: none; 5-2,885 feet; April-June	No suitable habitat is present
Leptosiphon ambiguus serpentine leptosiphon (Polemoniaceae)	--/--/4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland; Microhabitat: Serpentinite (usually); 395-3,710 feet; March-June	Marginal suitable habitat is present (no serpentinite)
Leptosiphon aureus bristly leptosiphon (Polemoniaceae)	--/--/4.2	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland; Microhabitat: none; 180-4,920 feet; April-July	Suitable habitat is present but not documented in the vicinity
Leptosiphon grandiflorus large-flowered leptosiphon (Polemoniaceae)	--/--/4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: Sandy (usually); 15-4,005 feet; April-August	Suitable habitat is present but not documented in the vicinity

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Lessingia hololeuca woolly-headed lessingia (Asteraceae)	--/--/3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Microhabitat: Clay, Serpentinite; 50-1,000 feet; June-October	No suitable habitat is present
Lessingia tenuis spring lessingia (Asteraceae)	--/--/4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest; Microhabitat: Openings; 985-7,055 feet; May-July	Suitable habitat is present but not documented in the vicinity
Limnanthes douglasii ssp. *sulphurea* Point Reyes meadowfoam (Limnanthaceae)	--/CE/1B.2	Coastal prairie, Marshes and swamps (freshwater), Meadows and seeps (mesic), Vernal pools; Microhabitat: none; 0-460 feet; March-May	No suitable habitat is present
Malacothamnus arcuatus arcuate bush-mallow (Malvaceae)	--/--/1B.2	Chaparral, Cismontane woodland; Microhabitat: none; 50-1,165 feet; April-September	Suitable habitat is present
Micropus amphibolus Mt. Diablo cottonweed (Asteraceae)	--/--/3.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; Microhabitat: Rocky; 150-2,705 feet; March-May	Suitable habitat is present but not documented in the vicinity
Microseris paludosa marsh microseris (Asteraceae)	--/--/1B.2	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley and foothill grassland; Microhabitat: none; 15-1,165 feet; April-June (July)	Suitable habitat is present
Mielichhoferia elongata elongate copper moss (Mielichhoferiaceae)	--/--/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest; Microhabitat: Acidic (usually), Carbonate (sometimes), Metamorphic, Roadsides (often), Vernally Mesic (usually); 0-6,430 feet; no bloom period listed	Suitable habitat is present
Mimulus rattanii ssp. *decurtatus* Santa Cruz County monkeyflower (Phrymaceae)	--/--/4.2	Chaparral, Lower montane coniferous forest; Microhabitat: margins, Gravelly, Lake Margins; 1,310-1,640 feet; May-July	No suitable habitat is present
Monardella sinuata ssp. *nigrescens* northern curly-leaved monardella (Lamiaceae)	--/--/1B.2	Chaparral (SCR Co.), Coastal dunes, Coastal scrub, Lower montane coniferous forest (SCR Co., ponderosa pine sandhills); Microhabitat: Sandy; 0-985 feet; (April) May-July (August-September)	No suitable habitat is present
Monolopia gracilens woodland woollythreads (Asteraceae)	--/--/1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland; Microhabitat: Serpentinite; 330-3,935 feet; (February) March-July	Suitable habitat is present but not observed during March 2023 survey.

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Orthotrichum kellmanii Kellman's bristle moss (Orthotrichaceae)	--/--/1B.2	Chaparral, Cismontane woodland; Microhabitat: Carbonate, Sandstone; 1,125-2,245 feet; January-February	Marginal suitable habitat is present (no carbonate)
Pedicularis dudleyi Dudley's lousewort (Orobanchaceae)	--/CR/1B.2	Chaparral (maritime), Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland; Microhabitat: none; 195-2,955 feet; April-June	Suitable habitat is present
Penstemon rattanii var. *kleei* Santa Cruz Mountains beardtongue (Plantaginaceae)	--/--/1B.2	Chaparral, Lower montane coniferous forest, North Coast coniferous forest; Microhabitat: none; 1,310-3,610 feet; May-June	Suitable habitat is present but study area is below species elevation range
Pentachaeta bellidiflora white-rayed pentachaeta (Asteraceae)	FE/CE/1B.1	Cismontane woodland, Valley and foothill grassland (often serpentinite); Microhabitat: none; 115-2,035 feet; March-May	Suitable habitat is present but not observed during March 2023 survey.
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah (Apiaceae)	--/--/4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools; Microhabitat: Vernally Mesic; 0-2,000 feet; June-October	No suitable habitat is present
Pinus radiata Monterey pine (Pinaceae)	--/--/1B.1	Cismontane woodland, Closed-cone coniferous forest; Microhabitat: none; 80-605 feet; no bloom period listed	Suitable habitat is present but study area is outside the historical range of the species
Piperia candida white-flowered rein orchid (Orchidaceae)	--/--/1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; Microhabitat: Serpentinite (sometimes); 100-4,300 feet; (March-April) May-September	Suitable habitat is present but not observed during March 2023 survey.
Piperia michaelii Michael's rein orchid (Orchidaceae)	--/--/4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest; Microhabitat: none; 10-3,000 feet; April-August	Suitable habitat is present but not documented in the vicinity
Plagiobothrys chorisianus var. *chorisianus* Choris' popcornflower (Boraginaceae)	--/--/1B.2	Chaparral, Coastal prairie, Coastal scrub; Microhabitat: Mesic; 10-525 feet; March-June	No suitable habitat is present
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcornflower (Boraginaceae)	--/--/4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Vernal pools; Microhabitat: none; 50-1,280 feet; April-June	No suitable habitat is present
Plagiobothrys diffusus San Francisco popcornflower (Boraginaceae)	--/CE/1B.1	Coastal prairie, Valley and foothill grassland; Microhabitat: none; 195-1,180 feet; March-June	No suitable habitat is present

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Polygonum hickmanii Scotts Valley polygonum (Polygonaceae)	FE/CE/1B.1	Valley and foothill grassland (mudstone, sandstone); Microhabitat: none; 690-820 feet; May-August	No suitable habitat is present
Ranunculus lobbii Lobb's aquatic buttercup (Ranunculaceae)	--/--/4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; Microhabitat: Mesic; 50-1,540 feet; February-May	Suitable habitat is present but not documented in the vicinity
Rosa pinetorum pine rose (Rosaceae)	--/--/1B.2	Cismontane woodland, Closed-cone coniferous forest; Microhabitat: none; 5-3,100 feet; May-July	Suitable habitat is present
Sanicula hoffmannii Hoffmann's sanicle (Apiaceae)	--/--/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest; Microhabitat: Clay (often), Serpentinite (often); 100-985 feet; March-May	No suitable habitat is present
Senecio aphanactis chaparral ragwort (Asteraceae)	--/--/2B.2	Chaparral, Cismontane woodland, Coastal scrub; Microhabitat: Alkaline (sometimes); 50-2,625 feet; January-April (May)	Suitable habitat is present
Silene scouleri ssp. *scouleri* Scouler's catchfly (Caryophyllaceae)	--/--/2B.2	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland; Microhabitat: none; 0-1,970 feet; (March-May) June-August (September)	No suitable habitat is present
Silene verecunda ssp. *verecunda* San Francisco campion (Caryophyllaceae)	--/--/1B.2	Chaparral, Coastal bluff scrub, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: Sandy; 100-2,115 feet; (February) March-July (August)	No suitable habitat is present
Stebbinsoseris decipiens Santa Cruz microseris (Asteraceae)	--/--/1B.2	Broadleafed upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: Openings, Serpentinite (sometimes); 35-1,640 feet; April-May	No suitable habitat is present
Stuckenia filiformis ssp. *alpina* northern slender pondweed (Potamogetonaceae)	--/--/2B.2	Marshes and swamps (shallow freshwater); Microhabitat: none; 985-7,055 feet; May-July	No suitable habitat is present
Toxicoscordion fontanum marsh zigadenus (Melanthiaceae)	--/--/4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps; Microhabitat: Serpentinite (often), Vernally Mesic; 50-3,280 feet; April-July	Suitable habitat is present but not documented in the vicinity
Trifolium buckwestiorum Santa Cruz clover (Fabaceae)	--/--/1B.1	Broadleafed upland forest, Cismontane woodland, Coastal prairie; Microhabitat: margins, Gravelly; 115-2,000 feet; April-October	Suitable habitat is present but not documented in the vicinity

Scientific Name **Common Name (Family)**	**Status[1] Federal/ State/CRPR**	**Habitat, Elevation, and Blooming Period[2]**	**Potential for Occurrence within the Study Area**
Trifolium polyodon Pacific Grove clover (Fabaceae)	--/CR/1B.1	Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Valley and foothill grassland; Microhabitat: Granitic (sometimes), Mesic; 15-1,395 feet; April-June (July)	No suitable habitat is present
Usnea longissima Methuselah's beard lichen (Parmeliaceae)	--/--/4.2	Broadleafed upland forest, North Coast coniferous forest; Microhabitat: On tree branches; usually on old growth hardwoods and conifers; 165-4,790 feet; no bloom period listed	Suitable habitat is present but not documented in the vicinity

Note: nomenclature corresponds to the CNPS (2023).

1. State or federal listing: F = Federal; C = California; E = endangered; T = threatened; R = rare
   CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere; CRPR List 1B = Plants rare, threatened or endangered in CA and elsewhere; CRPR 2B = Plants rare, threatened or endangered in California but more common elsewhere; CRPR 3 = More information is needed about plant; CRPR 4 = Plants of limited distribution, a watch list
   CRPR: '.1' = Seriously threatened in CA; '.2' = Fairly threatened in CA; '.3' = Not very threatened in CA
2. Elevation range within the study area is 550 to 975 set.

APPENDIX C

USFWS Information, Planning, and Consultation (IPaC) Search Results

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

We are experiencing issues with the national wetlands layer map. Some areas with wetlands may not appropriately show them. Please be aware of this for project planning purposes and verify any results with your local Corps office.

This [illegible]cal habitat [illegible]'s (US[illegible]nced bel[illegible]t that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Santa Cruz County, California

Local office

Ventura Fish And Wildlife Office

(805) 644-1766
(805) 644-3958
FW8VenturaSection7@FWS.Gov

2493 Portola Road, Suite B
Ventura, CA 93003-7726

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Marbled Murrelet Brachyramphus marmoratus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4467	Threatened
Southwestern Willow Flycatcher Empidonax traillii extimus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
San Francisco Garter Snake Thamnophis sirtalis tetrataenia Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Foothill Yellow-legged Frog Rana boylii No critical habitat has been designated for this species.	Proposed Threatened

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Mount Hermon June Beetle Polyphylla barbata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3982	Endangered

Zayante Band-winged Grasshopper Trimerotropis infantilis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1036	Endangered

Flowering Plants

NAME	STATUS
Ben Lomond Spineflower Chorizanthe pungens var. hartwegiana Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7498	Endangered
Ben Lomond Wallflower Erysimum teretifolium Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7429	Endangered
Marsh Sandwort Arenaria paludicola Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2229	Endangered

Conifers and Cycads

NAME	STATUS
Santa Cruz Cypress Cupressus abramsiana Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1678	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

California Gull Larus californicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum

probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

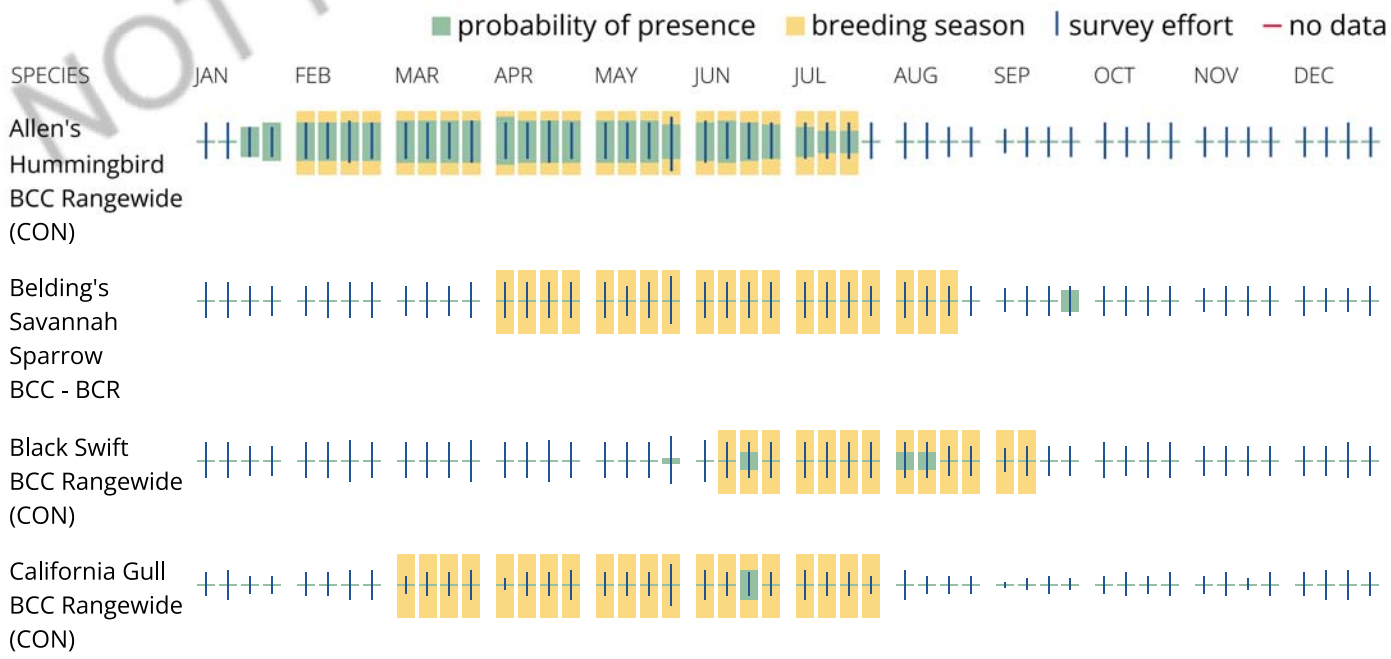
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

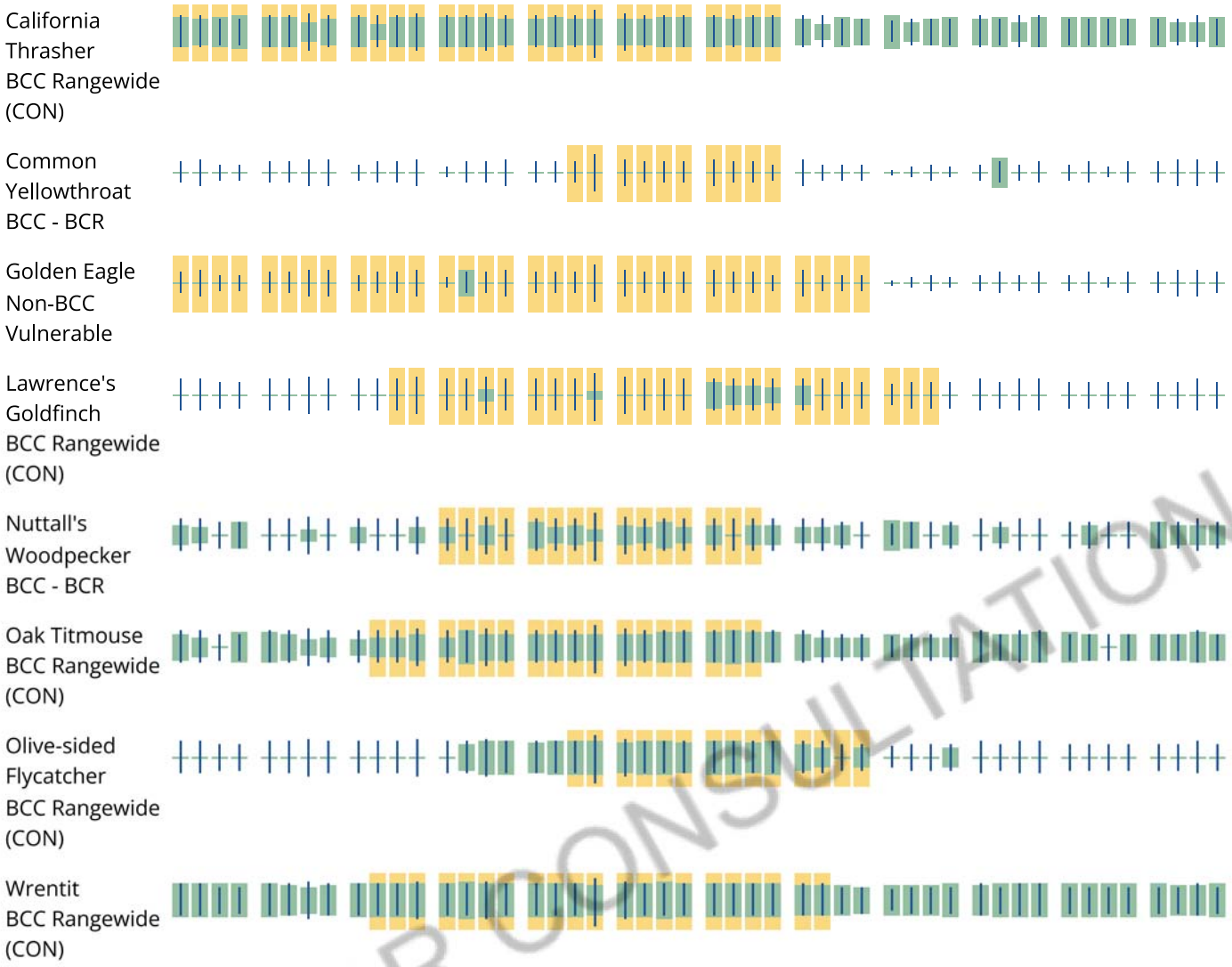
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to

you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX

APPENDIX B
PRE-DEMOLITION HAZARDOUS MATERIALS SURVEY

SCA
ENVIRONMENTAL, INC.

March 20, 2023

Garett Peterson
Panorama Environmental, Inc.
717 Market Street, Suite 400
San Francisco, CA 94103
susanne.heim@panoramaenv.com

RE: Pre-Demolition Hazardous Materials Survey
Forest Springs Water Tank, Santa Cruz County, CA
SCA Project No.: F-13801

This report summarizes the results of a limited pre-demolition hazardous materials survey of the Forest Springs Water Tank. SCA understands that this water tank will be demolished and replaced with a larger tank. The Forest Springs Water Tank consists of a west tank, an east tank, and a small structure in the middle connecting the two. SCA also completed an inspection of the Bracken Brae Water Tank, which was found to not have any suspect materials for asbestos and lead, as it is constructed with pre-fabricated plastic water tanks and PVC piping. Photos of the tanks are included in **Attachment C**.

All inspections and sampling were completed by Tucker Kalman, CAC, CDPH, REPA, QSP/D of SCA (CAC #15-5384) on March 7, 2023.

The following sections summarize the results of the sampling.

Asbestos

Sampling activities were conducted per Federal AHERA regulations (40 CFR Part 763). Samples of suspect materials were collected following modified AHERA sampling protocols, and sample locations were documented on the sample location diagrams (**Figure 1**). All asbestos samples collected by SCA were submitted to Reservoir's Environmental Inc. (REI) in Denver, CO for analysis by polarized light microscopy with dispersion staining (DS/PLM).

SCA has entered the sampling data into **Table 1: Materials Matrix Report (MMR)** which present the detailed sample results, locations, and quantity estimates, as well as a summary of identified asbestos containing materials. Sample locations are included on the sample location diagrams in **Figure 1,** and Laboratory results in **Attachment A.** Note the following:

1. No materials were found to contain asbestos.

2. The MMR (**Table 1**) lists all assumed (AAA) materials, the locations where each material is present or assumed present, and the quantity estimates within the renovation areas. Any suspect material not sampled or not visually identified as negative is listed as assumed (AAA) in the MMRs. Assumed asbestos-containing items require destructive testing prior to being impacted by future renovations. Destructive testing was not possible at this time due to the water tank still being used.

3. Non-asbestos materials – Seven (7) suspect materials were tested or visually determined to be non-asbestos. All non-asbestos containing materials are tabulated in **Table 1.**

SCA assumes that this survey report may be referenced by Abatement Contractors providing bids for abatement of materials prior to renovation at the surveyed work areas. SCA requests that this text portion of the report be provided to bidding contractors for review. Bidding Contractors are hereby notified that the quantities included herein are estimates only, and all quantities should be field verified by the Contractor for any budgeting, planning or bidding decisions.

Lead

SCA performed bulk lead sampling of the exterior paint to confirm the presence and extent of lead-containing paints. Samples were analyzed by REI for lead by Atomic Absorption Spectroscopy (AAS) / Inductively Coupled Plasma – Mass Spectrometry (ICP-MS) methodology.

The paint on the Forest Springs Water Tank was found to contain 5,860 mg/kg of lead, which would classify the paint as lead-based paint.

The MMR (**Table 1**) shows detailed lead sample results and locations of the sampled materials. Sample locations are included on the sample location diagrams in **Figure 1** and laboratory reports in **Attachment B.**

None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed, as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the Contractor on the entire waste stream for verification.

Conventional demolition techniques should be employed for all painted surfaces with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding:

- Worker awareness training;
- Exposure monitoring, as needed;
- Medical examinations, which may include blood lead level testing; and
- Establishing a written respiratory protection program.

As lead was identified in the paints and a detailed inventory of paints was not performed for the project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of any detected levels of lead.

If you have any questions or would like more information, please contact us.

Sincerely,
SCA ENVIRONMENTAL, INC.

Tucker Kalman, QSP/D, CPESC, CAC, CDPH
Sr. Project Manager
415-723-0962
tkalman@sca-enviro.com

Dan Leung, CIH, CSP, CAC, CDPH
Vice President, Certified Industrial Hygienist
415-867-9544
dleung@sca-enviro.com

Tables 1. Materials Matrix Report

Figures 1 Sample Location Diagram

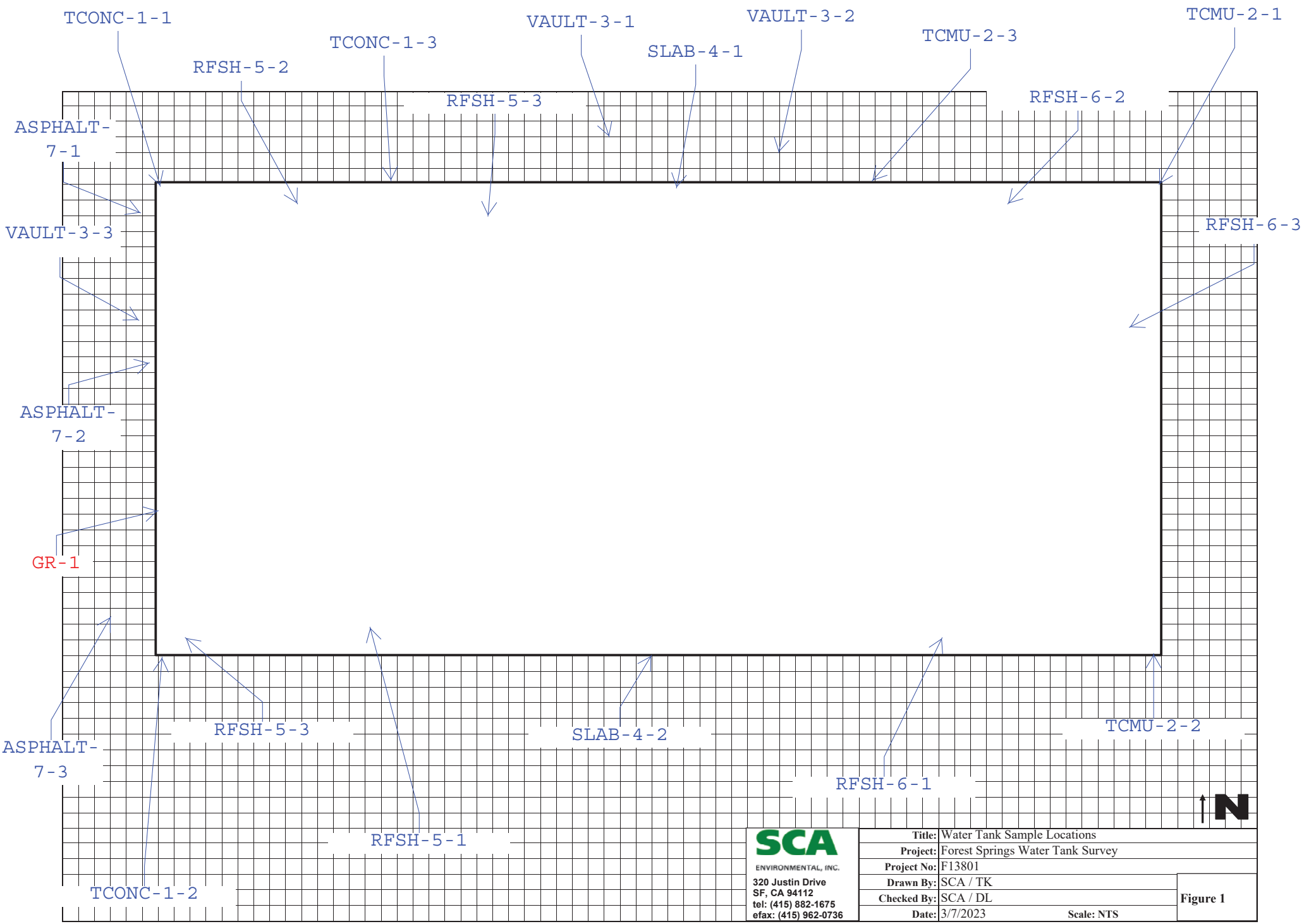
Attachments:

Attachment A: Asbestos Laboratory Reports
Attachment B: Lead Laboratory Reports
Attachment C: Site Photos

Table 1: Materials Matrix Report- Forest Springs Water Tank, 700-798 Reservoir Rd, Boulder Creek, CA 95006

Material ID	Material Description	Sub-sample # 1	2	3	Asbestos: Positive, Assumed, Trace, Negative.	UNITS (LF, SF, EA)	Water Tanks and Central Connecting Structure	TOTAL (+/-15%)
ASSUMED ASBESTOS (Destructive Testing Required to Confirm)								
VAPBAR-AAA1	Waterproofing membrane assumed present on the tanks where they are partially subgrade				Assumed	SF	1000	1000
INTERIOR-AAA2	Interior finishes not accessible due to locked door					SF	PNQ	PNQ
EQUIP-AAA3	Equipment gaskets concealed inside of the tanks or behind locked door were not accessible for sampling					SF	PNQ	PNQ
NON-ASBESTOS								
TCONC-1	Concrete (-) of the west tank	ND	ND	ND	Negative	SF	600	600
TCMU-2	CMU blocks (-) with mortar (-) of the east tank	ND	ND	ND		SF	600	600
VAULT-3	Concrete vaults (-) on site around the tanks	ND	ND			SF	300	300
SLAB-4	Concrete slab (-) of the central wooden structure between the tanks	ND	ND			SF	200	200
RFSH-5	Green and black roof shingles (-) with tar (-) on the west tank wooden roof under tarps	ND	ND	ND		SF	600	600
RFSH-6	Green and orange black shingles (-) on east tank wooden roof	ND	ND	ND		SF	600	600
ASPHALT-7	Limited asphalt tar paving (-) around tanks	ND	ND	ND		SF	800	800
WALLS-NNN	Nonsuspect wooden walls where built up above concrete tanks				Not Suspect	SF	PNQ	PNQ
CEILING-NNN	Nonsuspect wooden roof over the concrete tanks					SF	PNQ	PNQ
LEAD					**PPM**			
GR-1	Exterior green paint on wooden walls and roof trim. Paint was intact at time of inspection				5860	SF	PNQ	PNQ
Lead in paints	Lead Containing Paints / Coatings (assumed >1000ppm)				Assumed, >1000	SF	PNQ	PNQ

Notes:
PNQ = Present, not quantified; CH = Chrysotile; ND = Not detected; NA = Not analyzed



SCA
ENVIRONMENTAL, INC.
320 Justin Drive
SF, CA 94112
tel: (415) 882-1675
efax: (415) 962-0736

Title:	Water Tank Sample Locations
Project:	Forest Springs Water Tank Survey
Project No:	F13801
Drawn By:	SCA / TK
Checked By:	SCA / DL
Date:	3/7/2023 **Scale: NTS**

Figure 1

Attachment A

Asbestos Laboratory Results

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Reservoirs

March 14, 2023

Subcontractor Number:
Laboratory Report: **RES 553921-1**
Project #/P.O. #: **F13801**
Project Description: **Panorama Forest Springs Tank Survey**

Tucker Kalman
SCA Environmental, Inc.
320 Justin Drive
San Francisco CA 94112

Dear Tucker,

Eurofins Reservoirs is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA LAP, LLC), Lab ID 101533 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Eurofins Reservoirs has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 553921-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Eurofins Reservoirs will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed, as received by the customer. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Eurofins Reservoirs Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer
by Tyler Hutchinson

Jeanne Spencer
President

DATA QA
03/14/2023

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 553921-1**
Client: **SCA Environmental, Inc.**
Client Project/P.O.: **F13801**
Client Project Description: **Panorama Forest Springs Tank Survey**
Date Samples Received: **March 09, 2023**
Analysis Type: **EPA 600/R-93/116 - Short Report, Bulk**
Turnaround: **Standard 3**
Date Samples Analyzed: **March 14, 2023**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
553921 - TCONC-1-1	A	Gray granular cementitious material	100		ND	0	100
553921 - TCONC-1-2	A	Gray granular cementitious material	100		ND	0	100
553921 - TCONC-1-3	A	Gray granular cementitious material	100		ND	0	100
553921 - TCMU-2-1	A	Gray granular cementitious material	40		ND	0	100
	B	Gray cinder block	60		ND	0	100
553921 - TCMU-2-2	A	Gray granular cementitious material	25		ND	0	100
	B	Gray cinder block	75		ND	0	100
553921 - TCMU-2-3	A	Gray granular cementitious material	40		ND	0	100
	B	Gray cinder block	60		ND	0	100
553921 - VAULT-3-1	A	Gray granular cementitious material	100		ND	0	100
553921 - VAULT-3-2	A	Gray granular cementitious material	100		ND	0	100
553921 - SLAB-4-1	A	Gray granular cementitious material	100		ND	0	100
553921 - SLAB-4-2	A	Gray granular cementitious material	100		ND	0	100
553921 - RFSH-5-1	A	Black tar	40		ND	0	100
	B	Tan/multi-colored shingle	60		ND	10	90

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 553921-1**
Client: **SCA Environmental, Inc.**
Client Project/P.O.: **F13801**
Client Project Description: **Panorama Forest Springs Tank Survey**
Date Samples Received: **March 09, 2023**
Analysis Type: **EPA 600/R-93/116 - Short Report, Bulk**
Turnaround: **Standard 3**
Date Samples Analyzed: **March 14, 2023**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
553921 - RFSH-5-2	A	Black tar	25		ND	0	100
	B	Tan/multi-colored shingle	75		ND	12	88
553921 - RFSH-5-3	A	Black tar	30		ND	0	100
	B	Tan/multi-colored shingle	70		ND	0	100
553921 - RFSH-6-1	A	Brown/multi-colored shingle	50		ND	8	92
	B	Green/multi-colored shingle	50		ND	8	92
553921 - RFSH-6-2	A	Brown/multi-colored shingle	33		ND	8	92
	B	Green/multi-colored shingle	67		ND	8	92
553921 - RFSH-6-3	A	Brown/multi-colored shingle	40		ND	8	92
	B	Green/multi-colored shingle	60		ND	8	92
553921 - ASPHALT-7-1	A	Black granular tar	100		ND	0	100
553921 - ASPHALT-7-2	A	Black granular tar	100		ND	0	100
553921 - ASPHALT-7-3	A	Black granular tar	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

Tyler Hutchinson
Analyst

eurofins | Built Environment Testing Reservoirs

RES Job #: 553921

SUBMITTED BY		INVOICE TO		CONTACT INFORMATION		SERIES
Company:	SCA Environmental, Inc.	Company:	SCA Environmental, Inc.	Contact:	Tucker Kalman	-1 PLM Standard 3
Address:	320 Justin Drive	Address:	320 Justin Drive	Phone:	(415) 723-0962	-2 Chem Standard 3
				Fax:		
	San Francisco, CA 94112		San Francisco, CA 94112	Cell:		
Project Number and/or P.O. #:	F13801			Final Data Deliverable Email Address:		
Project Description/Location:	Panorama Forest Springs Tank Survey			tkalman@sca-enviro.com (+ 16 ADDNL. CONTACTS)		

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm

PLM / PCM / TEM DTL RUSH PRIORITY STANDARD

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Dust RUSH PRIORITY STANDARD

Metals RUSH PRIORITY STANDARD *PRIOR NOTICE REQUIRED FOR SAME DAY TAT

Organics* SAME DAY RUSH PRIORITY STANDARD

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm

Viable Analysis** PRIORITY STANDARD

**TAT DEPENDENT ON SPEED OF MICROBIAL GROWTH

Medical Device Analysis RUSH STANDARD

Mold Analysis RUSH PRIORITY STANDARD

****Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.****

Special Instructions:

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

Client Sample ID Number (Sample ID's must be unique)	PLM - PLM Short Report (EPA/600/R-93/116)	TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/- .CARB Modified Ahera	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Pb Multi Metals by ICP/MS (USEPA SW846 3050B/6020A)	ORGANICS - Methamphetamine, TSS	VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MEDICAL - Bioburden, LAL	MOLD - Spore Trap, Bulk Mold, Particulate Identification	ICO	Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
	ASBESTOS			CHEMISTRY			MICROBIOLOGY										
1 TCONC-1-1	X												B		03/07/23		
2 TCONC-1-2	X												B		03/07/23		
3 TCONC-1-3	X												B		03/07/23		
4 TCMU-2-1	X												B		03/07/23		
5 TCMU-2-2	X												B		03/07/23		
6 TCMU-2-3	X												B		03/07/23		
7 VAULT-3-1	X												B		03/07/23		
8 VAULT-3-2	X												B		03/07/23		
9 SLAB-4-1	X												B		03/07/23		
10 SLAB-4-2	X												B		03/07/23		
11 RFSH-5-1	X												B		03/07/23		
12 RFSH-5-2	X												B		03/07/23		
13 RFSH-5-3	X												B		03/07/23		

EREI establishes a unique Lab Sample ID, for each sample, by preceding each unique Client Sample ID with the laboratory RES Job Number.
EREI will analyze incoming samples based on information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing, client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall consitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By:		Tucker Kalman	Date/Time: 03/08/2023 13:00:47	Sample Condition: Acceptable
Received By:		Camryn Baumgartner	Date/Time: 03/09/2023 10:43:06	Carrier: UPS

eurofins | Built Environment Testing Reservoirs

Res Job#: **553921**

Submitted By: **SCA Environmental, Inc.**

		REQUESTED ANALYSIS											VALID MATRIX CODES						LAB NOTES
													Air = A			Bulk = B			
													Dust = D			Food = F			
													Paint = P			Soil = S			
													Surface = SU			Swab = SW			
													Tape = T			Wipe = W			
													Drinking Water = DW						
													Waste Water = WW						
													ASTM E1792 approved wipe media only						
		PLM - PLM Short Report (EPA/600/R-93/116)	**TEM** - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	**PCM** - 7400A, 7400B, OSHA	**DUST** - Total, Respirable	**METALS - Analyte(s) Pb Multi Metals by ICP/MS (USEPA SW846 3050B/6020A)**	**ORGANICS** - Methamphetamine, TSS	**VIABLES** - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	**MEDICAL** - Bioburden, LAL	**MOLD** - Spore Trap, Bulk Mold, Particulate Identification		Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquo	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	**Laboratory Analysis Instructions**
Client Sample ID Number	(Sample ID's must be unique)	**ASBESTOS**			**CHEMISTRY**			**MICROBIOLOGY**			**ICO**								
14	**RFSH-6-1**	X												B		03/07/23			
15	**RFSH-6-2**	X												B		03/07/23			
16	**RFSH-6-3**	X												B		03/07/23			
17	**ASPHALT-7-1**	X												B		03/07/23			
18	**ASPHALT-7-2**	X												B		03/07/23			
19	**ASPHALT-7-3**	X												B		03/07/23			
20	**GR-1**					X								B		03/07/23			

Attachment B

Lead Laboratory Reports

eurofins | Built Environment Testing
Reservoirs

March 10, 2023

Subcontractor Number:
Laboratory Report: **RES 553921-2**
Project #/P.O. #: **F13801**
Project Description: **Panorama Forest Springs Tank Survey**

Tucker Kalman
SCA Environmental, Inc.
320 Justin Drive
San Francisco CA 94112

Dear Tucker,

Eurofins Reservoirs is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the American Industrial Hygiene Association (AIHA LAP, LLC), Lab ID 101533. The laboratory is currently proficient in both IHPAT & ELPAT programs respectively.

Eurofins Reservoirs has analyzed the following sample(s) using Atomic Absorption Spectroscopy (AAS) / Inductively Coupled Plasma - Mass Spectrometry (ICP-MS) per your request. Reported sample results were not blank corrected. The analysis has been completed in general accordance with the appropriate methodology as stated in the analysis table. Results have been sent to your office.

RES 553921-2 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Eurofins Reservoirs will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed, as received by the customer. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Eurofins Reservoirs Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Robin S Klover
by Samuel Shields

Robin Klover
Vice President

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: LEAD IN BULK

RES Job Number:	**RES 553921-2**
Client:	**SCA Environmental, Inc.**
Client Project/P.O.:	**F13801**
Client Project Description:	**Panorama Forest Springs Tank Survey**
Date Samples Received:	**March 09, 2023**
Analysis Type:	**REI CHEMISTRY SOP / USEPA SW846 3050B/6020A-M**
Turnaround:	**Standard 3**
Date Samples Analyzed:	**March 10, 2023**

NA = Not Analyzed
NR = Not Received
ND = None Detected
BAS = Below Analytical Sensitivity
BRL = Below Reporting Limit

Laboratory Sample ID	Client ID Number	Reporting Limit (mg/kg)	LEAD CONCENTRATION (mg/kg)
553921 -	GR-1	3020	5860

Unless otherwise noted on the QC table, all quality control samples performed within specifications established by the laboratory

Unless otherwise noted sample analyses have not been blank corrected

1000X dilution was required on sample: GR-1 for analytes Pb;

For all samples requiring increased dilutions, the reporting limit has been adjusted accordingly.

Samuel Shields
Analyst

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: LEAD IN BULK

RES Job Number:	**RES 553921-2**
Client:	**SCA Environmental, Inc.**
Client Project/P.O.:	**F13801**
Client Project Description:	**Panorama Forest Springs Tank Survey**
Date Samples Received:	**March 09, 2023**
Analysis Type:	**REI CHEMISTRY SOP / USEPA SW846 3050B/6020A-M**
Turnaround:	**Standard 3**
Date Samples Analyzed:	**March 10, 2023**

NA = Not Analyzed
NR = Not Received
ND = None Detected
BAS = Below Analytical Sensitivity
BRL = Below Reporting Limit

Quality Control Batch	Analyte	Matrix Blank (µg)	Matrix Duplicate (%RPD)	Matrix Spike (% Recovery)	Laboratory Control Sample (% Recovery)
030923-5	Ag	BRL	1	105	103
030923-5	As	BRL	6	63	101
030923-5	Ba	BRL	4	106	105
030923-5	Cd	BRL	1	105	106
030923-5	Cr	BRL	0	105	103
030923-5	Hg	BRL	3	98	120
030923-5	Pb	BRL	2	102	102
030923-5	Se	BRL	13	90	114

The MS (As) recoveries fell outside the acceptance/rejection criteria for the laboratory. The effect of this QC performance on the reported sample results can not be defined by the laboratory. If there is sufficient sample, the laboratory can re-prep and re-analyze the samples at the request of the client.

Unless otherwise noted sample analyses have not been blank corrected

Analyst

eurofins | Built Environment Testing Reservoirs

RES Job #: 553921

SUBMITTED BY		INVOICE TO		CONTACT INFORMATION		SERIES
Company:	SCA Environmental, Inc.	Company:	SCA Environmental, Inc.	Contact:	Tucker Kalman	-1 PLM Standard 3
Address:	320 Justin Drive	Address:	320 Justin Drive	Phone:	(415) 723-0962	-2 Chem Standard 3
				Fax:		
	San Francisco, CA 94112		San Francisco, CA 94112	Cell:		
Project Number and/or P.O. #:	F13801			Final Data Deliverable Email Address:		
Project Description/Location:	Panorama Forest Springs Tank Survey			tkalman@sca-enviro.com (+ 16 ADDNL. CONTACTS)		

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm

PLM / PCM / TEM DTL RUSH PRIORITY STANDARD

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Dust RUSH PRIORITY STANDARD

Metals RUSH PRIORITY STANDARD *PRIOR NOTICE REQUIRED FOR SAME DAY TAT

Organics* SAME DAY RUSH PRIORITY STANDARD

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm

Viable Analysis** PRIORITY STANDARD

**TAT DEPENDENT ON SPEED OF MICROBIAL GROWTH

Medical Device Analysis RUSH STANDARD

Mold Analysis RUSH PRIORITY STANDARD

****Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.****

Special Instructions:

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

Client Sample ID Number (Sample ID's must be unique)	PLM - PLM Short Report (EPA/600/R-93/116)	TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/- .CARB Modified Ahera	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Pb Multi Metals by ICP/MS (USEPA SW846 3050B/6020A)	ORGANICS - Methamphetamine, TSS	VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MEDICAL - Bioburden, LAL	MOLD - Spore Trap, Bulk Mold, Particulate Identification	ICO	Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
	ASBESTOS			CHEMISTRY			MICROBIOLOGY										
1 TCONC-1-1	X												B		03/07/23		
2 TCONC-1-2	X												B		03/07/23		
3 TCONC-1-3	X												B		03/07/23		
4 TCMU-2-1	X												B		03/07/23		
5 TCMU-2-2	X												B		03/07/23		
6 TCMU-2-3	X												B		03/07/23		
7 VAULT-3-1	X												B		03/07/23		
8 VAULT-3-2	X												B		03/07/23		
9 SLAB-4-1	X												B		03/07/23		
10 SLAB-4-2	X												B		03/07/23		
11 RFSH-5-1	X												B		03/07/23		
12 RFSH-5-2	X												B		03/07/23		
13 RFSH-5-3	X												B		03/07/23		

EREI establishes a unique Lab Sample ID, for each sample, by preceding each unique Client Sample ID with the laboratory RES Job Number.
EREI will analyze incoming samples based on information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing, client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall consitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By:		Tucker Kalman	Date/Time: 03/08/2023 13:00:47	Sample Condition: Acceptable
Received By:		Camryn Baumgartner	Date/Time: 03/09/2023 10:43:06	Carrier: UPS

eurofins | Built Environment Testing Reservoirs

Res Job#: **553921**

Submitted By: **SCA Environmental, Inc.**

		REQUESTED ANALYSIS											VALID MATRIX CODES						LAB NOTES
													Air = A			Bulk = B			
													Dust = D			Food = F			
													Paint = P			Soil = S			
													Surface = SU			Swab = SW			
													Tape = T			Wipe = W			
													Drinking Water = DW						
													Waste Water = WW						
													ASTM E1792 approved wipe media only						
		PLM - PLM Short Report (EPA/600/R-93/116)	**TEM** - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	**PCM** - 7400A, 7400B, OSHA	**DUST** - Total, Respirable	**METALS - Analyte(s) Pb Multi Metals by ICP/MS (USEPA SW846 3050B/6020A)**	**ORGANICS** - Methamphetamine, TSS	**VIABLES** - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	**MEDICAL** - Bioburden, LAL	**MOLD** - Spore Trap, Bulk Mold, Particulate Identification		Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquo	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	**Laboratory Analysis Instructions**
Client Sample ID Number	(Sample ID's must be unique)	**ASBESTOS**			**CHEMISTRY**			**MICROBIOLOGY**			**ICO**								
14	**RFSH-6-1**	X												B		03/07/23			
15	**RFSH-6-2**	X												B		03/07/23			
16	**RFSH-6-3**	X												B		03/07/23			
17	**ASPHALT-7-1**	X												B		03/07/23			
18	**ASPHALT-7-2**	X												B		03/07/23			
19	**ASPHALT-7-3**	X												B		03/07/23			
20	**GR-1**					X								B		03/07/23			

Attachment C

Site Photos

FOREST SPRINGS TANK -
WEST TANK

FOREST SPRINGS TANK -
CENTRAL STRUCTURE

FOREST SPRINGS TANK -
EAST TANK

FOREST SPRINGS TANK -
EAST TANK ALTERNATE VIEW

BRACKEN BRAE TANKS

BRACKEN BRAE TANKS

APPENDIX

APPENDIX C

AB 52 LETTERS AND NATIVE AMERICAN OUTREACH LOG

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1556 Harbor Boulevard, STE 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek

County: Santa Cruz County

USGS Quadrangle Name: USGS Big Basin, CA 1997; Castle Rock Ridge, CA 1997; Davenport, CA 1997; Felton, CA 1991

Address: Various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road.

Township: 9 South **Range**:3 West, Section 24

Company/Firm/Agency: Basin Research Associates

Contact Person: Colin I. Busby, PhD, RPA

Street Address: 1933 Davis Street, STE 214

City/Zip: San Leandro, CA 94577

Phone: (510) 430-8441 x101

Email: Please send response to basinres1@gmail.com

Project Description:

The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

- Replacement of 3,870 lineal feet of existing undersized water main in the San Lorenzo Valley Water District, increased in size for additional domestic and fire flow to the two mutual; this including two bridge crossings.
- Construction of 2,090 lineal feet of water main to provide an interconnection to Bracken Brae, providing domestic and fire flow water supply.
- Construction of 3,000 lineal feet of water line to provide an interconnection to Forest Springs, providing domestic and fire flow water supply.
- Installation of a new duplex booster pump station will be required to pump water to the two mutuals. Both mutuals' service elevation is higher than SLVWD supplying pressure zone elevation. This booster station could be located at an elevation of ~640', per the Santa Cruz County GIS contour

Date: 12/22/2022

Figure 1: Project Location - T9S R3W Section 24 (ESRI World Street Map)

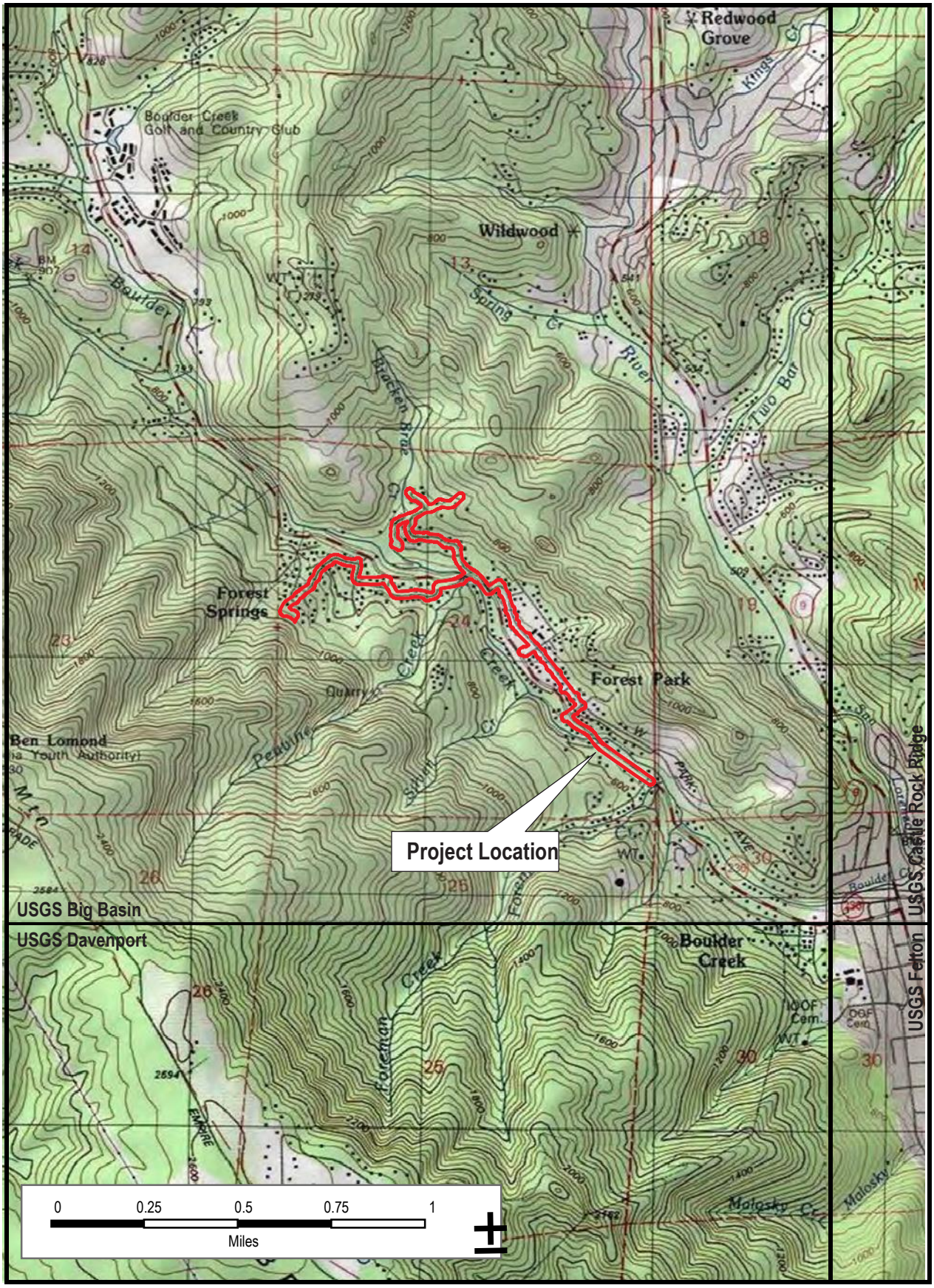

Figure 1: Project Location - T9S R3W Section 24 (USGS Big Basin, CA 1997; Castle Rock Ridge, CA 1997; Davenport, CA 1997; Felton, CA 1991)

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

December 27, 2022

Colin I. Busby, PhD, RPA
Basin Research Associates

Via Email to: basinres1@gmail.com

Re: San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek Project, Santa Cruz County

Dear Dr. Busby:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Santa Cruz County
12/27/2022

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley Yokut

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan

Costanoan Ohlone Rumsen-Mutsen Tribe
Patrick Orozco, Chairman
644 Peartree Drive
Watsonville, CA, 95076
Phone: (831) 728 - 8471
yanapvoic97@gmail.com

Ohlone

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Costanoan

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyons.org

Costanoan

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano, Vice Chairwoman
20885 Redwood Road, Suite 232
Castro Valley, CA, 94546
Phone: (408) 205 - 9714
monicavarellano@gmail.com

Costanoan

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906
Phone: (831) 443 - 9702
kwood8934@aol.com

Foothill Yokut
Mono

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek Project, Santa Cruz County.

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA 95632

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Val,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

The District's cultural resources consultant is a conducting literature review for the project to determine potential cultural resources in the area. The results of the review can be provided confidentially, upon request. The proposed project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. Your input is important to the SLVWD's planning process.

Under AB 52, contacts are afforded 30 days to respond. We look forward to hearing from you. I can be reached at (831) 338-2153 or via email at cblanchard@slvwd.com. Thanking you in advance for any assistance.

SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Amah Mutsun Tribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA 95453

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Irenne,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

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SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Costanoan Ohlone Rumsen-Mutsen Tribe
Patrick Orozco, Chairman
644 Peartree Drive
Watsonville, CA 95076

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Chairman Orozco,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

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SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods
1615 Pearson Court
San Jose, CA 95122

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Ms. Sayers-Roods,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

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SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA 95024

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Ann Marie,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

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SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano
20885 Redwood Road, Suite 232
Castro Valley, CA 94546

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Monica,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

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SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard

San Lorenzo Valley
WATER DISTRICT

January 24, 2023

Wuksache Indian Tribe/Eshom Valley Band
Mr. Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

RE: Request for Information – San Lorenzo Water District Bracken Brae Water System Improvements, Boulder Creek, Santa Cruz County

Dear Chairperson Woodrow,

The San Lorenzo Valley Water District (SLVWD) is preparing an Initial Study – Mitigated Negative Declaration for San Lorenzo Water District Bracken Brae Water System Improvements. The project consists of various alignments in Boulder Creek: (1) Acorn Drive from tank at termination to intersection with Big Basin Highway (County Road 236); (2) alignment from Big Basin Highway termination with Acorn Drive trending northwest along Wooded Way and Hazel Brake to terminations of both roads; and, (3) from intersection of Acorn Drive and Big Basin Highway trending southeast along West Park Avenue to intersection with Park Avenue, following Park Avenue southwest to intersection with Big Basin Highway then following Big Basin Highway southeast to termination at Chipmunk Hollow Road. The San Lorenzo Valley Water District (SLVWD) will upgrade/install a total of 8,960 +/- lineal feet of water main and install a new duplex booster pump station in order to consolidate two small mutual water companies, Forest Springs and Bracken Brae, into the SLVWD's system.

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SAN LORENZO VALLEY WATER DISTRICT

Carly Blanchard