# Draft Initial Study/Proposed Mitigated Negative Declaration

## Arastradero Creek Restoration and Pipeline Relocation

Palo Alto, California






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## List of Acronyms and Abbreviations

| | |
|---|---|
| **AB** | Assembly Bill |
| **ABAG** | Association of Bay Area Governments |
| **Air District** | Bay Area Air District |
| **APN** | Assessor's Parcel Number |
| **Basin Plan** | Water Quality Control Plan |
| **BMPs** | best management practices |
| **CAAQS** | California ambient air quality standards |
| **CAL FIRE** | California Department of Forestry and Fire Protection |
| **California Register** | California Register of Historical Resources |
| **Caltrans** | California Department of Transportation |
| **Cal/OSHA** | California Division of Occupational Safety and Health |
| **CAP** | Clean Air Plan |
| **CARB** | California Air Resources Board |
| **CCR** | California Code of Regulations |
| **CCTS** | Central California Taxonomic System |
| **CDFW** | California Department of Fish and Wildlife |
| **CDOC** | California Department of Conservation |
| **CEQA** | California Environmental Quality Act |
| **CESA** | California Endangered Species Act |
| **CFGC** | California Fish and Game Code |
| **CGS** | California Geological Survey |
| **City** | City of Palo Alto |
| **CNDDB** | California Natural Diversity Database |
| **CNEL** | Community Noise Equivalent Level |
| **CNPS** | California Native Plant Society |
| **CO** | carbon monoxide |
| **$CO_2$** | carbon dioxide |
| **$CO_2e$** | $CO_2$ equivalent |
| **CPAU** | City of Palo Alto Utilities |
| **C&D** | construction and demolition |
| **dB** | decibel |
| **dBA** | A-weighted sound level |
| **DBH** | diameter at breast height |
| **DPM** | diesel particulate matter |
| **DTSC** | Department of Toxic Substances Control |
| **EFH** | Essential Fish Habitat |
| **EPA** | Environmental Protection Agency |
| **ESA** | Endangered Species Act |
| **ESAF** | environmentally sensitive area fencing |
| **ESCP** | Erosion and Sediment Control Plan |
| **EV** | electric vehicle |
| **FEMA** | Federal Emergency Management Agency |
| **FHSZ** | Fire Hazard Severity Zone |
| **GHG** | greenhouse gas |
| **GLO** | General Land Office |
| **Hz** | Frequency |
| **in/sec** | inches per second |

| | |
|---|---|
| **Inventory** | CNPS Rare Plant Inventory |
| **IS/MND** | Initial Study/Proposed Mitigated Negative Declaration |
| **JPA** | Joint Powers Authority |
| **$L_{dn}$** | day-night average noise level |
| **$L_{eq}$** | energy-equivalent noise level |
| **$L_{max}$** | maximum noise level |
| **LRA** | Local Responsibility Area |
| **LUST** | leaking underground storage tank |
| **MBTA** | Migratory Bird Treaty Act |
| **MJHMP** | Multi-Jurisdictional Hazard Mitigation Plan |
| **MND** | Mitigated Negative Declaration |
| **MMTCO2e** | million metric tons of carbon dioxide equivalent |
| **Mph** | miles per hour |
| **NAAQS** | National Ambient Air Quality Standard |
| **NAHC** | Native American Heritage Commission |
| **National Register** | National Register of Historic Places |
| **NHPA** | National Historic Preservation Act |
| **NMFS** | National Marine Fisheries Service |
| **$NO_x$** | nitrogen oxides |
| **NPDES** | National Pollution Discharge Elimination System |
| **NPT** | Northwestern pond turtle |
| **NRCS** | Natural Resources Conservation Science |
| **NWI** | National Wetlands Inventory |
| **OEHHA** | Office of Environmental Health Hazard Assessment |
| **OES** | Office of Emergency Services |
| **OHWM** | Ordinary High Water Mark |
| **OSHA** | Occupational Safety and Health Administration |
| **PAFD** | Palo Alto Fire Department |
| **PALS** | Post-Assisted Log Structures |
| **PAMC** | Palo Alto Municipal Code |
| **PG&E** | Pacific Gas and Electric Company |
| **$PM_{2.5}$** | fine particulate matter |
| **$PM_{10}$** | respirable particulate matter |
| **PPV** | peak particle velocity |
| **PRC** | Public Resource Code |
| **Project** | Arastradero Creek Restoration and Pipeline Relocation Project |
| **Rank** | California Rare Plant Rank |
| **RCRA** | Resource Conservation and Recovery Act |
| **RMS** | Root Mean Square |
| **ROG** | reactive organic gas |
| **RWQCB** | Regional Water Quality Control Board |
| **RWQCP** | Regional Water Quality Control Plant |
| **SB** | Senate Bill |
| **S/CAP** | Sustainability and Climate Action Plan |
| **SFBAAB** | San Francisco Bay Area Air Basin |
| **SFPUC** | San Francisco Public Utilities Commission |
| **SSC** | Species of Special Concern |
| **SWPPP** | Stormwater Pollution Prevention Plan |
| **SWRCB** | State Water Resources Control Board |

| | |
|---|---|
| **TACs** | Toxic air contaminants |
| **USACE** | United States Army Corps of Engineers |
| **USDA** | United States Department of Agriculture |
| **USFWS** | United States Fish and Wildlife Service |
| **USGS** | U.S. Geological Survey |
| **VdB** | Vibration Decibel |
| **WBWG** | Western Bat Working Group |
| **WEF** | wildlife exclusion fencing |
| **WRA** | WRA, Inc. |

# 1.0 INTRODUCTON AND PURPOSE

This Initial Study/Proposed Mitigated Negative Declaration (IS/MND) is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations [CCR] 15000 et. seq.), and the regulations and policies of the City of Palo Alto (City). This IS/MND evaluates the potential environmental impacts which might reasonably be anticipated to result from implementation of the *Arastradero Creek Restoration and Pipeline Relocation Project* (proposed Project, Project).

The City is the Lead Agency under CEQA and has prepared this IS/MND to address the impacts of implementing the proposed Project. The purpose of the Project is to restore a portion of Arastradero Creek to improve stream habitat and to protect critical utility infrastructure.

# 2.0 PROJECT INFORMATION

## 2.1 Project Title

Arastradero Creek Restoration and Pipeline Relocation

## 2.2 Lead Agency Name and Address

City of Palo Alto
Utilities Department
1007 Elwell Court
Palo Alto CA 94303

## 2.3 Contact Person and Phone Number

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## 2.4 Project Location

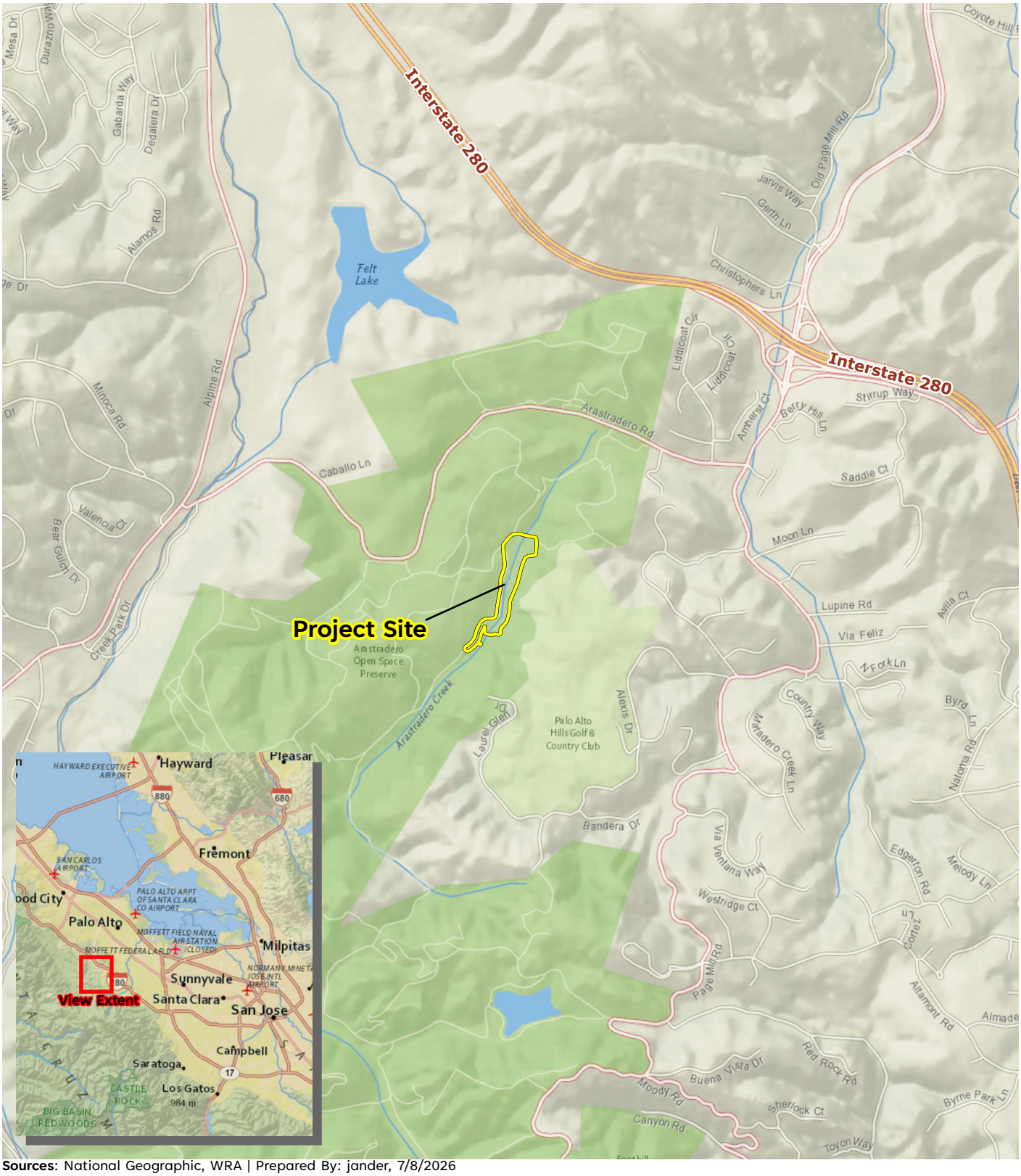
The Project is located in the City of Palo Alto in the Pearson-Arastradero Preserve (Assessor's Parcel Numbers [APN] 182-33-018, 182-35-035, and 182-35-041) (Figure 1). The 9.95-acre Project site is situated just south of the Arastradero Creek Trail approximately 1,300 linear feet upstream from Lake Arastradero. The Project parcels are owned by the City and are part of an approximately 533-acre open space preserve. The Project site is bounded by residential land uses and a private golf course to the south, Stanford University campus to the northeast, and residential uses to the north and west.

## 2.5 Existing General Plan Designation and Zoning District

**General Plan Designation:** Public Conservation Land
**Zoning District:** Public Facility (PF(D))

## 2.6 Surrounding Land Uses and Setting

Surrounding land uses include Open Space/Controlled Development, Single Family Residential, Public Conservation Land, Streamside Open Space (City of Palo Alto 2017).




Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name:Liv_Fig1_Project Site Regional Location

**Sources**: National Geographic, WRA | Prepared By: jander, 7/8/2026

# Figure 1. Project Site Regional Location

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 0.25 0.5 Miles

N

wra Environmental Consultants




Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name: Liv_Fig2_Aerial Photograph of the Project Site

**Sources**: Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

# Figure 2. Aerial Photograph of the Project Site.

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

wra Environmental Consultants




Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name: Liv_Fig2_Aerial Photograph of the Project Site

**Sources**: Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

# Figure 2. Aerial Photograph of the Project Site.

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

wra Environmental Consultants

# 3.0 PROJECT DESCRIPTION

## 3.1 Project Background and Purpose

In March 2023, the City was informed of an exposed eight-inch diameter steel gas pipeline in the Arastradero Creek in the Pearson-Arastradero Preserve. The City received approval from the United States Army Corps of Engineers (USACE) under an emergency permit, to conduct a temporary creek stabilization project to protect the gas pipeline from damage caused by future storms. As part of the project, the City installed a combination of cobbles and boulder revetments in the eroded channel bed to protect the gas pipeline and prevent the upstream potable water transmission and sewer pipelines from being exposed. The San Francisco Bay Regional Water Quality Control Board (RWQCB) is requiring the City to address a six-foot headcut that resulted in the need for the emergency repair and remove all temporary fill placed under the USACE emergency permit. Therefore, the purpose of the Project is to comply with the RWQCB's permit conditions by restoring a portion of Arastradero Creek and relocating the existing water and wastewater utilities in Arastradero Trail and the gas utility further underneath the creek. In addition, downstream of the emergency repair would be treated with woody material to encourage natural processes to deposit sediment, widen the incised sections of creek, and prevent further potential for headcut formation. The Project also proposes minor grading to Arastradero Trail, which runs along the left bank of the creek, to return functionality to an existing culvert, reducing sedimentation into the creek, and improve trail conditions.

## 3.2 Project Components

While protecting the integrity of existing stream and riparian habitat and for reducing scouring forces, restoration of the creek would rely on natural materials and geomorphic processes to the greatest extent possible to encourage sediment aggradation on the channel bottom and channel widening to restore stream equilibrium. The Project would include the construction of a series of rock and step-pools and approximately 25 Post-Assisted Log Structures (PALS) and two grade control log structures in and along the creek. A step-pool structure is a series of short weirs composed of rocks and coarse sediment that directs water to tumble into a shallow pool below the weir. PALS are hand-built, permeable structures that mimic and promote the processes of wood accumulation in natural streams. They are made of collections of logs, cobbles, and other natural debris that are held in place by wooden posts driven into the ground in and around the material. Log grade control structures consist of channel spanning logs keyed and anchored into the banks engineered to resist mobilization and to retain a minimum elevation upstream of the structure by sediment retention.

The existing gas, water, and wastewater pipelines serving the Palo Alto Foothills community currently lie parallel to one another approximately 3 to 9 feet below the bottom of the Arastradero Creek channel. The water and sewer pipelines under the creek would be relocated and the gas pipeline would be lowered to greatly reduce the potential for another erosion-related exposure event. By burying the gas pipeline to a sufficient depth and relocating the water and sewer lines to an upland area outside the creek banks, the Project would remove these three utilities from the active channel which is a beneficial outcome for the long-term restoration of Arastradero Creek.

The Project would also include minor grading along Arastradero Trail to repair slope erosion which runs along the left bank of the creek, restoring functionality to existing drainage features

along the trail, while also improving the condition of the trail itself. Additionally, willow poles harvested on-site would be placed downstream of the existing pipelines near the confluence with Arastradero Lake to encourage dispersed, multi-threaded flow and stabilize channel banks. Erosion control fabric and strategic revegetation would be incorporated to restore impacted areas and to reduce erosion risk on disturbed banks as part of construction.

Components of the Project are described in further detail in the following sections and are shown in Appendix A. Project Plans.

### 3.2.1 Step-Pool Structure

The Project would include construction of a series of approximately ten step-pool structures just downstream of the existing gas pipeline crossing. The structures would be built out of 36-inch footer boulders with well-graded native soil and gravel bedding. Rock and boulder materials installed as a part of the 2023 emergency repair would also be salvaged to construct the step-pool structures. Each step-pool would consist of an approximately two-foot drop. Each step-pool would be spaced approximately 25 feet apart and would span two-thirds of the channel starting from one bank. The center of a step-pool rock structure would act as the weir that feeds into an energy dissipating scour pool before feeding into the next downstream rock structures. These step-pools would be arranged on alternate sides of the stream to alter the flow direction from a straight line to a diagonal zigzag as the water moves between the step-pools. The structures would serve to address the steep change in elevation from the unaffected channel reach to the bottom of the headcut, provide energy dissipation to ensure channel stability, and provide a more natural and navigable structure for movement of aquatic organisms.

### 3.2.2 Post-Assisted Log Structures

The Project would include construction of approximately 25 PALS, including both bank-attached PALS and channel-spanning PALS. The bank-attached PALS would be built on the outside bank of curves in the channel and would span the bank they are built on and half the channel or less. The bank-attached PALS are intended to encourage erosion of the opposite bank and to protect the bank the PALS are installed in from scour. The channel-spanning PALS would be built in the center of the creek channel with raised edges on the banks to center flow in the channel. The intent of the channel-spanning PALS is to retain sediment in the creek to build up the creek bed from its currently incised condition.

The bank-attached and channel-spanning PALS would be built in alternating order with the intent of widening the creek in select locations. Both types of PALS would not be built higher than two feet above the existing creek bottom and would be hand-built within the creek. Channel spanning PALS would vary between 10 and 20 feet wide across the channel and approximately 2 to 6 feet long along the channel flow direction. Bank attached PALS would range between 5 and 10 feet across the channel and 2 to 6 feet along the channel flow direction. The PALS are expected to function for approximately five to ten years. All PALS would be monitored for at least five years after installation to ensure they are acting as intended. Hand tool adjustments would be made to the PALS during the five-year monitoring period if stability concerns arise. Natural materials including woody debris and cobble/gravel soils generated from City Parks maintenance activities would be utilized to ensure design intent is being met.

### 3.2.3 Log Grade Control Structures

The Project would include construction of two channel-spanning log grade control structures keyed into the existing banks. The grade control structures consist of approximately 15-foot-long seasoned eucalyptus logs 1.5 feet in diameter sourced from within the park limits. The grade control structures would be intended to serve as insurance against local scour dynamics that would affect the structural stability of the step-pool structure and prevent headcut formation over the long term. The structures would be built where heavy equipment access is already anticipated for the creek, downstream of the step-pool structure and at the eroded bank where trail and slope repair would occur. Biodegradable fabric and duck bill anchors would be included to resist buoyancy and piping. The log grade control structures would be monitored under similar criteria to the PALS with additional features implemented to minimize risk of heavy equipment mobilization for maintenance. Willow fascines would be staked into the banks along each grade control structure to center flow in the channel.

### 3.2.4 Trail Grading

The Project would include minor grading along Arastradero Trail, which runs along the left bank of the creek, with the goal of returning functionality to an existing culvert and improving the conditions of the trail. This portion of Project work would include repairing a damaged portion of the trail, currently covered with metal plates, and regrading the trailside ditch drainage features such that runoff and precipitation flow correctly towards the existing catch basin. Initial and ongoing maintenance of the catch basin system would be conducted to ensure continued effectiveness of the drainage features, reducing sediment delivery to the creek.

### 3.2.5 Utility Relocation

The existing 8-inch steel pressurized gas line would be abandoned and the 49-foot section of pipeline crossing between top-of-bank to top-of-bank at the temporary creek repair would be removed. The remaining pipe would be abandoned in place and filled with concrete slurry. To minimize disturbance to the existing riparian zone, a new 4-inch polyethylene gas line would be installed via directional boring approximately 17.5 feet below the existing channel bottom. This 17.5-foot boring depth is lower than the predicted lowest vertical adjustment for the creek, which is approximately 15 feet below the existing channel bottom (WRA 2025).

The existing 18-inch water and 10-inch sewer mains would be abandoned and the section of pipelines crossing between top-of-bank to top-of-bank would be removed at the temporary creek repair. The water and sewer pipelines and sewer manholes upstream of the temporary creek repair would be abandoned in place and filled with concrete slurry, with the exception of the cones in each manhole which would be removed. The Project would involve the removal of approximately 42 feet of water pipeline and 44 feet of sewer pipeline, totaling 86 feet at the temporary creek repair. The Project would install matching size water and sewer pipelines, via open trenching and native material backfilling, along the existing Arastradero Creek Trail alignment to entirely avoid crossing the creek. Four 48-inch manholes would be installed at 50-70 foot intervals along the proposed sewer main alignment, and a new hydrant and supporting valves and fittings would be installed with the new water main alignment.

### 3.2.6 Revegetation and Erosion Control

Coir fiber matting erosion control fabric would be installed after the completion of other work in the creek, trail grading, and utility relocation. The material would be installed on both sides of

the creek at the existing pipeline crossing, as well as downstream of the crossing at an area of scour on the left bank. The matting would be held down by wooden stakes and then seeded with an erosion control seed mix. Willow stakes would be planted throughout the channel concentrated primarily along the bank toes where wood and rock structures would be installed. Native tree planting would take place where losses occurred due to channel or slope erosion caused by the channel incision and infrastructure damage.

## 3.3 Project Construction

### 3.3.1 Construction Schedule

Construction work would begin in the summer of 2027 and would occur over two dry season work periods. Due to workspace constraints limiting completion of the work, all in-channel restoration work would be completed within the first construction season with the second season used to complete the water main and sewer main relocations, abandonments, and pipeline removals, with any remaining in-channel work consisting of hand tool work and planting. To reduce potential impacts to aquatic species and stream water quality, all work necessary below the top of the creek bank in both construction seasons would occur between June 1 to October 31 when the creek has low to no flow.

### 3.3.2 Site Access and Staging

Regional access to the Project site would be provided via Interstate 280, Page Mill Road, and Arastradero Road. A temporary creek access ramp approximately 15 feet wide and 20 feet long would be constructed on the left bank of the creek adjacent to the crossing of the existing pipelines and adjacent to the staging location. Following construction, the temporary access route would be returned to pre-construction conditions.

The construction equipment staging and material storage area would be located on the left bank of the creek, just southeast of the bend in the Arastradero Trail near the existing pipeline crossing. Access to the staging location would be via the Arastradero Creek Trail connected to the Juan Bautista de Anza Trail and Arastradero Road through an existing maintenance access gate (Gate B). This staging and stockpile location would be the same as the one used in the 2023 emergency repair. Following construction, staging areas would be returned to pre-construction conditions.

The following types of equipment would be required for Project construction:

- Excavators (e.g., backhoe, skid steer, mini excavator)
- Dump trucks
- Front end loader
- Tree removal equipment (e.g., chain saws, grip hoists)
- Directional boring machine
- Cement truck
- Earthmoving equipment (e.g., excavators, bulldozers, scrapers)

### 3.3.3 Construction Methods and Site Work

Site preparation for construction would begin by clearing the staging area for the storage of materials and select equipment. If the creek is not completely dry by the start of construction, the creek extent involving earth moving would be dewatered, with dewatering of the PALS installation locations to be determined based on accessibility and site conditions. The earthen access ramp for creek access would then be constructed.

Gas line work would commence first by digging access pits for directional boring; directional drilling a new pipeline; depressurizing the existing pipeline and connecting the new pipeline; and injecting concrete slurry fill into the existing pipeline for in-place abandonment to within 5-10 feet of the channel banks (exact distance to be determined based on field conditions). The abandoned gas pipeline section within the channel would be cut and removed for disposal. Rock from the emergency repair would then be salvaged and stockpiled on-site for use in the creation of the step-pools. Additional woody and earthen material would be imported and stockpiled on-site for use in step-pool and PALS construction. Materials for the step-pools and PALS would either be lowered into the creek from equipment on the top of bank along the Arastradero Creek Trail or brought down the temporary access ramp. Material excavated by the creation of the step-pools would be kept on-site and used if possible. Excavators and other heavy machinery would be used to build the step-pools, but the PALS would be installed without the use of any heavy machinery. Once construction in the creek has finished, all equipment and unused material would be removed from the creek and the temporary access ramp and crossing would be removed.

During the second dry season, the new sewer and water pipelines would be installed along the existing Arastradero Creek Trail alignment via open trenching and concrete slurry fill would be injected into the sewer and water pipelines including sewer manholes for in-place abandonment All trenches dug would be backfilled with native material and trail work would be backfilled with imported material per City of Palo Alto specifications. Once the majority of equipment and unused material has been moved off site, the staging and creek access areas would be returned to pre-construction conditions.

#### GENERAL PROTECTION MEASURES

General Protection Measures (GPM) would be implemented during the proposed Project to protect biological resources, sensitive habitats, and water quality. These measures are taken, where possible, from the State Water Resources Control Board (SWRCB) Statewide Restoration General Order (SRGO) and *Programmatic Biological and Conference Opinion California Statewide Programmatic Restoration Effort FWS Reference: 2022-0005149-S7* (Statewide PBO). Measures include, but are not limited to:

- Adhering to applicable construction work windows for special-status species,
- Ensuring that construction workers receive an Environmental Awareness Training prior to working on the Project,
- Construction monitoring by a Qualified Biologist,
- Protecting Environmentally Sensitive Areas via fencing, flagging, or monitoring by a Qualified Biologist,

- Implementing Best Management Practices (BMPs) to prevent the spread of invasive species and pathogen contamination,
- Enforcing work area speed limits,
- Storing and fueling equipment in designated staging and fueling areas,
- Revegetating all disturbed areas, and
- Removing trash from the Project site daily, and cleaning up all construction materials at the end of construction.

## 3.4 Project Operation

The Project design relies on restoring natural processes to achieve stability over time rather than on permanent or semi-permanent structural elements to achieve an immediate outcome. The progression of natural processes would vary based on sediment input, storm and flow events, and other variables. However, measurable improvements in channel morphology and complexity, sediment aggradation and beneficial habitat conditions are anticipated and would be monitored as part of the Project's Mitigation, Monitoring and Reporting Plan (MMRP) and Monitoring and Adaptive Management Plan. During the Monitoring and Adaptive Management Plan's five-year implementation period, adjustments and modifications to the creek design elements may be made to improve or restore Project performance. All adjustments and modifications during the five-year period would be performed only with hand tools. At the close of the five-year period, an assessment would be made to compare vegetation re-establishment throughout the Project reach, changes in channel cross section at established monitoring points, sediment accumulation, bank scour, and any notable changes to installed structures that deviate from design expectations. If the 5-year assessment shows the design largely meets the project goals, the project would be deemed complete. If design goals are not met based on the assessment, the City would consider further actions that may be taken to improve project performance.

## 3.5 Project-Related Approvals, Agreements, and Permits

The information contained in this IS/MND will be used by the City of Palo Alto (the CEQA Lead Agency) as it considers whether to approve the proposed Project. If the Project is approved, the IS/MND would be used by the City and responsible and trustee agencies in conjunction with various approvals and permits. These actions include, but may not be limited to, the following approvals by the agencies indicated:

### 3.5.1 City of Palo Alto (Lead Agency)

- Parks Improvement Ordinance

### 3.5.2 Regional Water Quality Control Boards

- 401 Water Quality Certification

### 3.5.3 California Department of Fish and Wildlife

- 1602 Lake or Streambed Alteration Agreement

### 3.5.4 U.S. Fish and Wildlife Service

- Section 7 Biological Opinion

### 3.5.5 U.S. Army Corps of Engineers

- Section 404 Nationwide Permit

## 4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

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

### 4.1 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 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 proposed project, nothing further is required.

DocuSigned by:
Claire Raybould
7F016B4B2DB74ED...

**Signature**

7/17/2026

**Date**

**Name and Title:** Claire Raybould, Manager Planning

## 4.2 Initial Study Checklist

This section describes the existing environmental conditions in and near the Project site and evaluates environmental impacts associated with the proposed Project. The environmental checklist, as recommended in Appendix G of the CEQA Guidelines, was used to identify environmental impacts that could occur if the proposed Project is implemented.

Each of the environmental categories was fully evaluated, and one of the following four determinations was made for each checklist question:

- **"No Impact"** means that no impact to the resource would occur as a result of implementing the Project.
- **"Less-than-Significant Impact"** means that implementation of the Project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
- **"Less-than-Significant Impact with Mitigation Incorporated"** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
- **"Potentially Significant Impact"** means that there is either substantial evidence that a Project-related effect may be significant, or, due to a lack of existing information, could have the potential to be significant.

### 4.2.1 Aesthetics

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |
| b) | Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☒ | ☐ |
| c) | 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 point). 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

The Project site is within the Pearson-Arastradero Preserve, a 533-acre open space area. The Project site is bounded by residential land uses and a private golf course to the south, Stanford University campus to the northeast, and residential uses to the north and west. Locally designated scenic routes in Palo Alto include University Avenue, Embarcadero Road, Oregon Expressway/Page Mill Road, Sand Hill Road, Foothill Expressway, Interstate 280, Junipero Serra Boulevard, and portions of Arastradero Road (City of Palo Alto 2017). Additionally, two officially designated state scenic highways are within four miles of the Project site (California Department of Transportation [Caltrans] 2026).

#### REGULATORY SETTING

##### *Palo Alto 2030 Comprehensive Plan*

The City of Palo Alto 2030 Comprehensive Plan contains the following relevant policies related to aesthetics:

- **Policy L-9.1.** Recognize Sand Hill Road, University Avenue between Middlefield Road and San Francisquito Creek, Embarcadero Road, Page Mill Road, Oregon Expressway, Interstate 280, Arastradero Road (west of Foothill Expressway), Junipero Serra Boulevard/Foothill Expressway and Skyline Boulevard as scenic routes and preserve their scenic qualities.

## DISCUSSION OF IMPACTS

***a) Have a substantial adverse effect on a scenic vista?***

*Less-than-Significant Impact*

The Project site is within Pearson-Arastradero Preserve and is bordered by a private golf course to the east. The Project site includes a portion of Arastradero Creek and the associated walking trail. The Project site is not visible from surrounding residences or the adjacent golf course due to the topography and tree coverage of the area. One locally designated scenic road, Arastradero Road, is approximately 0.5 miles north of the Project site. However, the Project site is not visible from the road due to local topography and vegetation. Activities associated with Project construction, such as the presence of construction equipment and materials on-site, may temporarily alter views of Arastradero Creek and surrounding habitat for trail users; however, Project implementation would not change the existing land use of the Project site or create any new structures which would permanently alter the existing views. After Project construction is finished, the visual character of the Project site would remain similar to pre-Project conditions. Therefore, the Project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

***b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

*Less-than-Significant Impact*

There are two officially designated state scenic highways within the vicinity of the Project site, including a portion of Route 280 located approximately two miles north of the Project site, and a portion of Route 35 located approximately four miles west of the Project site. Additionally, a portion of Route 280 that is eligible for state scenic highway designation is located approximately 0.9 miles north of the Project site (Caltrans 2026). Due to the topography and tree coverage, the Project site is not visible from Route 280 or Route 35. The Project would not create any new structures that would permanently alter views of the Project site from any of these scenic highways. Therefore, the Project would not substantially damage scenic resources within a state scenic highway. The impact would be less than significant.

***c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?***

*Less-than-Significant Impact*

The Project site is within an open space preserve and is situated between urbanized and non-urbanized areas. The Project site is designated as Public Facility in the Palo Alto 2030 Comprehensive Plan, and surrounding land uses include Open Space/Controlled Development, Single Family Residential, Public Conservation Land, Streamside Open Space (City of Palo Alto 2017).

During construction, the presence of construction equipment and materials on the Project site would temporarily alter existing views of the site; however, these impacts would be temporary and would not be substantial. The Project does not propose improvements that would substantially degrade the existing visual character of the site. Rather, the Project is intended to restore a portion of Arastradero Creek, make improvements to a damaged trail, and revegetate along the creek, which would have a beneficial effect on the visual character of the site. The

Project would not change the existing land use of the site or conflict with applicable zoning. Therefore, the Project would not substantially degrade the existing visual character or quality of public views of the site. The impact would be less than significant.

***d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?***

*Less-than-Significant Impact*

The Project would not create any new permanent sources of lighting on the Project site. During construction, the presence of construction equipment and materials on the Project site may cause temporary sources of glare which may be observed by people within the immediate site vicinity. Once construction has finished, all equipment and materials would be removed, and no new sources of glare would be present. Therefore, the Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. The impact would be less than significant.

### 4.2.2 Agricultural and Forestry Resources

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ |

#### ENVIRONMENTAL SETTING

The Project site is within the Public Facility zoning district and does not include any agricultural uses. The Project site is mapped as "Other Land" by the California Department of Conservation (CDOC) California Important Farmland Finder online mapping tool (CDOC 2026). Other Land includes land not included in any other Important Farmland Finder mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; and water bodies smaller than 40 acres.

#### DISCUSSION OF IMPACTS

***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?***

*No Impact*

No portion of the Project site is mapped as Grazing Land, Prime Farmland, Unique Farmland, or Farmland of Statewide Important (CDOC 2026). Therefore, the Project would not impact any

Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No impact would occur.

***b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?***

*Less-than-Significant Impact*

A portion of the Project site overlapping with APN 18235035 is enrolled in a Williamson Act contract. The contracted parcel is developed with the Palo Alto Hills Golf and Country Club and does not meet any of the criteria for classification as Prime Agricultural Land (CDOC 2026). The Project would not convert any land within the contracted parcel to a non-agricultural use and would not result in the cancellation or non-renewal of the existing Williamson Act contract. The proposed improvements would maintain the site's existing land use and would not conflict with agricultural zoning. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. The impact would be less than significant.

***c, d) 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))? Result in a loss of forest land or conversion of forest land to non-forest use?***

*No Impact*

The Project site is mapped "Other Land" by the CDOC. The Project site is zoned for xx use and does not include any forestland or timberland. Therefore, the Project would not conflict with an existing zoning for forestland or timberland. The Project would not convert any forest land to non-forest use. No impact would occur.

***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?***

*No Impact*

The Project would not change the existing land use of the Project site. Additionally, there is no Farmland or forest land on or within the vicinity of the Project site. Therefore, the Project would not cause any changes in the existing environment which would result in the conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur.

### 4.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| 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 in 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) affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

**ENVIRONMENTAL SETTING**

#### *Environmental Setting*

The Project site is located in Palo Alto, which is in the San Francisco Bay Area Air Basin (SFBAAB). The Bay Area Air District (Air District), formerly known as the Bay Area Air Quality Management District (BAAQMD) is the regional agency tasked with managing air quality in the region. The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (EPA), oversees regional air district activities and regulates air quality at the State level. The Air District has published in the CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of the Project (Air District 2022). The 2017 Clean Air Plan (CAP) is the most current air quality management plan developed and adopted by the Air District

#### *Ambient Air Quality and Climate*

The Bay Area has a Mediterranean climate characterized by wet winters and dry summers. During most summers, a high-pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly and wind flow that generally keeps storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens, resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.

### *Air Pollutants of Concern*

CARB and the U.S. EPA focus on the following air pollutants as regional indicators of ambient air quality:

- Ozone
- Coarse particulate matter ($PM_{10}$)
- Fine particulate matter ($PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide
- Sulfur dioxide
- Lead

Because these are the most prevalent air pollutants known to be harmful to human health based on extensive criteria documents, they are referred to as "criteria air pollutants." In the SFBAAB, the primary criteria air pollutants of concern are ground-level ozone formed through reactions of oxides of nitrogen oxides ($NO_x$) and reactive organic gases (ROG), $PM_{10}$, and $PM_{2.5}$. Regional air pollutants, such as ozone, $PM_{10}$, and $PM_{2.5}$, can be formed and/or transported over long distances and affect ambient air quality far from the emissions source. The magnitude and location of specific health effects from exposure to increased ozone, $PM_{10}$, and $PM_{2.5}$ concentrations are the result of emissions generated by numerous sources throughout the SFBAAB, as opposed to a single project.

Localized air pollutants generally dissipate with distance from the emission source and can pose a health risk to nearby populations. Toxic air contaminants (TACs), such as diesel particulate matter (DPM), are considered localized pollutants. $PM_{2.5}$ is also considered a localized air pollutant, in addition to being considered a regional air pollutant. Air dispersion models can be used to reliably quantify the health risks to nearby receptors associated with emissions of localized air pollutants from an individual project.

## REGULATORY SETTING

### *Federal and State Regulations*

The U.S. EPA is responsible for implementing the programs established under the Federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans to attain the NAAQS. A State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. If a state fails to enforce its implementation of approved regulations, or if the EPA determines that a State Implementation Plan is inadequate, the EPA is required to prepare and enforce a Federal Implementation Plan to promulgate comprehensive control measures for a given State Implementation Plan.

CARB is responsible for establishing and reviewing the California Ambient Air Quality Standards (CAAQS), developing and managing the California State Implementation Plans, identifying TACs, and overseeing the activities of regional air quality management districts. In California, mobile emissions sources (e.g., construction equipment, trucks, and automobiles) are regulated by CARB

and stationary emissions sources (e.g., industrial facilities) are regulated by the regional air quality management districts.

In accordance with the Federal Clean Air Act and California Clean Air Act, areas in California are classified as either in attainment, maintenance (i.e., former nonattainment), or nonattainment of the NAAQS and CAAQS for each criteria air pollutant, where attainment means the area is meeting state or federal standards for a specific pollutant. To assess the regional attainment status, the Air District collects ambient air quality data from over 30 monitoring sites within the SFBAAB (Air District 2017a). Based on current monitoring data, the SFBAAB is designated as a nonattainment area for ozone, $PM_{10}$ (CAAQS only), and $PM_{2.5}$, and is designated an attainment or unclassified area for all other pollutants. The Air District is primarily responsible for ensuring that the NAAQS and CAAQS are attained and maintained in the SFBAAB. The Air District fulfills this responsibility by adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions.

### *Air District Screening Criteria*

The Air District has established screening criteria to determine whether individual projects could result in potentially significant criteria air pollutant and precursor emissions, which are described in Section 4 of the Bay Area Air District 2022 CEQA Guidelines (Air District 2022). Preliminary screening for construction and operational criteria provides lead agencies with a conservative indication of whether a project would result in the generation of criteria air pollutants or precursors that exceed the Air District's thresholds of significance. If all screening criteria for criteria air pollutants and precursors are met by a proposed project, then the lead agency need not perform a detailed assessment of the project's criteria air pollutant and precursor emissions.

Table 4-1 of the Bay Area Air District CEQA Guidelines contains single land use construction and operational criteria air pollutant and precursor screening levels for various land use categories. For operational emissions, it is assumed that projects would result in a less-than-significant impact related to criteria air pollutants and precursor emissions if: 1) the project size is at or below the operational screening level size for the applicable land use category (contained in Table 4-1 of the Bay Area Air District CEQA Guidelines); 2) operational activities would not include stationary engines and industrial sources subject to Air District rules and regulations; and 3) operational activities would not overlap with construction activities. For construction emissions, it is assumed that projects would result in a less-than-significant impact related to criteria air pollutants and precursors if: 1) the project size is below the applicable screening level shown in Table 4-1; 2) all Air District-recommended BMPs are included in the project design and implemented during construction; 3) construction-related activities would not overlap with operational activities; and 4) construction-related activities would not include demolition, simultaneous occurrence of two or more construction phases, extensive site preparation, extensive material transport, or stationary sources subject to Air District rules and regulations.

## DISCUSSION OF IMPACTS

***a) Conflict with or obstruct implementation of the applicable air quality plan?***

*Less-than-Significant Impact*

The Air District's 2017 CAP is the applicable air quality plan for projects located in the SFBAAB (Air District 2017b). Consistency may be determined by evaluating whether the Project supports

the primary goals of the 2017 CAP, including applicable control measures contained within the plan, and would not conflict with or obstruct implementation of any of the control measures.

The primary goals of the 2017 CAP are the attainment of ambient air quality standards and reduction of population exposure to air pollutants for the protection of public health in the Bay Area. Because the Project would not result in any significant and unavoidable air quality impacts related to emissions, ambient concentrations, or public exposures (see discussions below), the Project would support the primary goals of the 2017 CAP.

The control measures from the 2017 CAP, which aim to reduce air pollution and greenhouse gases (GHGs) from stationary, area, and mobile sources, are organized into nine categories. As described in Table 1, the Project would be consistent with the applicable control measures from the 2017 CAP. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and the impact would be less than significant.

**Table 1. Project Consistency with Bay Area Air District 2017 Clean Air Plan**

| CONTROL MEASURES | PROJECT CONSISTENCY |
|---|---|
| **Stationary Sources** | **Not applicable**. The stationary source measures, which are designed to reduce emissions from stationary sources, are incorporated into rules adopted by the Air District and then enforced by the Air District's Permit and Inspection programs. Because the Project would not include new stationary sources, the stationary source control measures are not applicable to the Project. |
| **Transportation** | **Not applicable**. The transportation control measures are designed to reduce vehicle trips, use, miles traveled, idling, or traffic congestion for the purpose of reducing vehicle emissions. Operation of the Project would not generate any additional vehicle trips compared to the existing conditions. Therefore, the transportation control measures of the 2017 CAP are not applicable to the Project. |
| **Energy** | **Not applicable**. The energy control measures are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the 2017 CAP are not applicable to the Project. |
| **Buildings** | **Not applicable**. The Air District has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the building control measures focus on working with local governments that have authority over local building codes to facilitate adoption of best GHG control practices and policies. Since the Project does not include any building construction, the building control measures of the 2017 CAP are not applicable to the Project. |
| **Agriculture** | **Not applicable**. The agriculture control measures are designed primarily to reduce emissions of methane. Since the Project does not include any agricultural activities, the agriculture control measures of the 2017 CAP are not applicable to the Project. |

| CONTROL MEASURES | PROJECT CONSISTENCY |
|---|---|
| **Natural and Working Lands** | **Not applicable**. The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the Project does not include the disturbance of any rangelands or wetlands, the natural and working lands control measures of the 2017 CAP are not applicable to the Project. |
| **Waste Management** | **Consistent.** The waste management measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. As described in *Section 4.2.19, Utilities and Service Systems*, the Project would comply with local requirements for waste management. Therefore, the Project would be consistent with the waste management control measures of the 2017 CAP. |
| **Water** | **Consistent**. The water control measures to reduce emissions from the water sector will reduce emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works, and promoting the use of biogas recovery systems. The primary objective of the Project is to restore a portion of Arastradero Creek and relocate utilities underneath the creek. Because the Project would improve water quality and improve community climate resilience, the Project would be consistent with the water control measures of the 2017 CAP. |
| **Super GHGs** | **Not applicable**. The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through the Air District and local government agencies. Since these measures do not apply to individual projects, the super-GHG control measures of the 2017 CAP are not applicable to the Project. |

Source: Air District 2017b

***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?***

*Less-than-Significant Impact with Mitigation Incorporated*

The Project site is located within the SFBAAB under the jurisdiction of the Air District. The SFBAAB is designated as a nonattainment area for ozone and $PM_{2.5}$ under both NAAQS and CAAQS (Air District 2017a). The SFBAAB is also designated as nonattainment for $PM_{10}$ under CAAQS, but not NAAQS (Air District 2017b). The Air District's 2022 CEQA Air Quality Guidelines provide screening criteria for determining if an individual project could result in significant construction-related impact relative to criteria pollutants and precursor emissions. Criteria air pollutants and precursors include ROGs, nitrogen oxides, $PM_{10}$, $PM_{2.5}$, and carbon monoxide. In accordance with the Air District's 2022 CEQA Air Quality Guidelines (Air District 2022), construction activities would have a less-than-significant impact on air quality if the following screening criteria are met:

1. The project site is below the applicable screening level size shown in Table 4-1 of the Bay Area Air District 2022 CEQA Air Quality Guidelines;

2. All best management practices are included in the project design and implementation during construction; and
3. Construction-related activities would not include any of the following:
    - Demolition;
    - Simultaneous occurrence of more than two construction phases;
    - Extensive site preparation; or
    - Extensive material transport (e.g., soil import and export requiring a considerable amount of haul truck activity); or
    - Stationary resources (e.g., backup generators) subject to Air District rules and regulations.

Relative to screening criteria, the Bay Area Air District CEQA Air Quality Guidelines do not include specific screening level size for infrastructure and habitat enhancement projects; however, a general comparison can be made to other similar land uses. For example, detailed air quality assessments are not required for construction of projects such as single-family residential developments comprising less than 254 dwelling units, city parks that are less than 10 acres in size, industrial facilities that are less than 452,000 square feet, and construction of office and commercial buildings that are less than 452,000 square feet (Air District 2022). In comparison, Project construction activities would not involve a larger fleet of earthmoving equipment or substantial off-hauling than traditional land use projects would, would not include the construction of buildings, and would have a total construction disturbance area of approximately 1.8 acres, well below the screening criteria for other types of land use projects.

Project-related construction activities would not involve the simultaneous occurrence of more than two construction phases or require construction of more than one land-use type. Construction would not involve extensive site preparation or material transport. The Project would result in a short-term increase in fugitive dust emissions from vehicles accessing the sites during construction which would include $PM_{10}$ and $PM_{2.5}$. the Air District does not have a quantitative threshold of significance for fugitive dust $PM_{10}$ and $PM_{2.5}$ emissions; however, the Air District considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level. Mitigation Measure AIR-1 would be implemented, which includes Air District-recommended measures for fugitive dust control, in order to avoid significant impacts associated with fugitive dust. Measures would include covering exposed soils, limiting vehicle speeds on unpaved roadways, and watering exposed surfaces daily. Implementation of these measures would ensure that construction activities would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. The impact of Project construction would be less than significant with mitigation incorporated.

Operation of the Project would not result in any increase in emissions. Emissions from Project operation would be limited to vehicle trips and equipment use for occasional maintenance activities, and from power used to run the pipelines that are being relocated. The emissions generated from Project operation would be similar to pre-Project conditions. Therefore, no impact would occur from Project operation.

***c) Expose sensitive receptors to substantial pollutant concentrations?***

*Less-than-Significant Impact*

Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential land uses are also considered sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants, if present. The closest sensitive receptors to the Project site are single-family residences located approximately 830 feet south of the Project site on Laurel Glen Drive.

Project construction would generate DPM and $PM_{2.5}$ emissions from the exhaust of off-road diesel construction equipment and fugitive $PM_{2.5}$ emissions from construction activities. The Air District and the Office of Environmental Health Hazard Assessment (OEHHA) recommend conducting a health risk assessment to evaluate potential health risks to sensitive receptors within 1,000 feet of the Project during construction. However, OEHHA does not recommended conducting a health risk assessment for projects lasting for less than two months due to the uncertainty in assessing cancer risk from short-term exposures. Although Project construction would last for approximately ten months over two dry seasons, only a small portion of the Project site is within 1,000 feet of a residence. Because construction activities would span the entire Project site, emissions would not occur within a 1,000 foot zone of influence of any given sensitive receptor for over two months; therefore, a health risk assessment was not conducted, and the short-term Project emissions are presumed to be negligible. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant.

***d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

*Less-than-Significant Impact*

Construction activities would involve the use of gasoline-or diesel-powered equipment that emit exhaust fumes. These activities would take place intermittently throughout the workday and the associated odors are expected to dissipate within the immediate vicinity of the work area. Persons near the construction work area may find these odors objectionable; however, the Project would not include uses that have been identified as potential sources of objectionable odors, such as restaurants, manufacturing plants, landfills, and agricultural and industrial operations.

Project operation would be similar to existing conditions and would not result in an increase in other emissions, such as those leading to odors, that would affect a substantial number of people. The impact would be less than significant.

## MITIGATION MEASURES

### *Mitigation Measure AIR-1. Fugitive Dust Control Measures*

The Project shall implement BMPs as recommended by the Bay Area Air District 2022 CEQA Air Quality Guidelines, which include the following measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power seeping is prohibited.

- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

### 4.2.4 Biological Resources

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| b) | Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| c) | Have a substantial adverse effect on 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? | ☐ | ☐ | ☐ | ☒ |

A Biological Resources Technical Report (Biological Report) was prepared for the Project by WRA, Inc. (WRA) in July 2026 (Appendix A). The findings and recommendations included in the Biological Report were based on database searches, a literature review, and a field survey of the

Project site. The information in this section of the IS/MND is based on and adapted from the Biological Report.

## REGULATORY SETTING – FEDERAL AND STATE

### *Endangered and Threatened Plans, Fish, and Wildlife*

Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the Federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" and "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from USFWS or NMFS prior to take of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federal-listed plant species are only protected when removal or destruction occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must ensure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (California Fish and Game Code [CFGC] 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants and animals on private lands, as well as extending this protection to candidate species during consideration for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. California Department of Fish and Wildlife (CDFW) may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan, as long as the plan covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit.

### *Fully Protected Species and Designated Rate Plant Species*

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully Protected Species may not be taken or possessed at any time. No licenses or permits may be issued by CDFW for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under CFGC and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act, CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take,” with few exceptions, of these species.

### *Special Protections for Nesting Birds and Bats*

The Federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species (bald eagle [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act (MBTA) of 1918 and CFGC sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

### *Essential Fish Habitat*

The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass [*Zostera* spp.]), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

### *Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA*

A Species of Special Concern (SSC) is a species formally designated by the CDFW which meets one or more criteria related to a Federal ESA status (if it is not listed under CESA), including extirpation from California, documented population declines, or small population size within California and risk of declines. In addition, CDFW has developed a special animals list as “a general term that refers to all of the taxa the California Natural Diversity Database (CNDDB) is interested in tracking, regardless of their legal or protection status.” This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Conservation Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2025a) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited

habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

## REGULATORY SETTING – LOCAL

### *Palo Alto 2030 Comprehensive Plan*

The Palo Alto 2030 Comprehensive Plan contains the following relevant policies related to biological resources:

- **Policy N-1.4.** Protect special-status species and plant communities, including those listed by State and federal agencies and recognized organizations from the impacts of development and incompatible activities.
- **Policy N-1.5.** Preserve and protect the Bay, marshlands, salt ponds, sloughs, creeks, and other natural water or wetland areas as open space, functioning habitats, and elements of a larger, interconnected wildlife corridor, consistent with the Baylands Master Plan, as periodically amended, which is incorporated here by reference.
- **Policy N-1.6.** Preserve and protect the foothills and hillside areas, recognizing their unique value as natural ecosystems and interconnected wildlife corridors.
- **Policy N-1.7.** Carefully manage access and recreational use of environmentally sensitive areas, including the Baylands, foothills and riparian corridors, in order to protect habitats and wildlife from the impacts of humans and domesticated animals.
- **Policy N-2.3.** Enhance the ecological resilience of the urban forest by increasing and diversifying native species in the public right-of-way, protecting the health of soils and understory vegetation, encouraging property owners to do the same and discouraging the planning of invasive species.
- **Policy N-2.10.** Preserve and protect Regulated Trees, such as native oaks and other significant trees, on public and private property, including landscape trees approved as part of a development review process and consider strategies for expanding tree protection in Palo Alto.
- **Policy N-3.1.** All creeks are valuable resources for natural habitats, connectivity, community design, and flood control, and need different conservation and enhancement strategies. Recognize the different characteristics along creeks in Palo Alto, including natural creek segments in the city's open space and rural areas, primarily west of Foothill Expressway; creek segments in developed areas that retain some natural characteristics; and creek segments that have been channelized. Pursue opportunities to enhance riparian setbacks along urban and rural creeks as properties are improve or redeveloped.
- **Policy N-3.2.** Prevent the further channelization and degradation of Palo Alto's creeks.
- **Policy N-3.4.** Recognize that riparian corridors are valued environmental resources whose integrity provides vital habitat for fish, birds, plants, and other wildlife, and carefully monitor and preserve these corridors.
- **Policy N-3.5.** Preserve the ecological value of creek corridors by preserving native plants and replacing invasive, non-native plants with native plants.

- **Policy N-3.6.** Discourage bank instability, erosion, downstream sedimentation, and flooding by minimizing site disturbance and nearby native vegetation removal on or near creeks and by reviewing grading and drainage plans for development near creeks and elsewhere in their watersheds.
- **Policy N-3.7.** Avoid fencing, piping and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environment and habitat of the creek.
- **Policy N-3.8.** Work with the SCWVD, San Francisquito Creek Joint Powers Authority (JPA) and other relevant regional and non-governmental agencies to enhance riparian corridors, provide compatible low-impact recreation and ensure adequate flood control

### *City of Palo Alto Tree Ordinance*

The City's updated Tree Protection Ordinance went into effect in July 2022 (City of Palo Alto 2026a). The ordinance defines a protected tree as being one of seven specific native tree species with a diameter at breast height (DBH), measured 4 feet above ground level, of 11.5 inches or more. The specified native species of protected trees are big leaf maple (*Acer macrophyllum*), California incense cedar (*Calocedrus decurrens*), coast live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), California black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), and coast redwood (*Sequoia sempervirens*). The Tree Protection Ordinance also defines any mature tree with a DBH of 15 inches or more (with the exclusion of invasive and high-water use trees) as a protected mature tree.

The Tree Protection Ordinance further requires owners of private protected trees to notify the City and the public in advance of significant maintenance activities and requires a tree removal permit prior to the removal of any protected trees in the absence of development. A separate tree removal permit is not required when tree removals occur as part of development requiring planning approval; the approval of the development project serves as approval for the proposed tree removal.

The ordinance also includes a stipulation that, in the event of unauthorized tree removals, the urban forester may issue a temporary moratorium on development of the property for a period of 24-36 months.

### *City of Palo Alto Stream Corridor Protection Ordinance*

The City of Palo Alto Municipal Code Section 18.40.140 Stream Corridor Protection Ordinance provides states that:

> *(A) the purpose of the water resources protection measures [...] is to provide site planning and development standards designed to preserve riparian resources, protect improvements from damage caused by potential stream flooding and bank erosion, and minimize storm water pollution.*

This ordinance exempts "replacement of utility service laterals where location outside the protected areas is not readily available" from the streamside review area requirements and guidelines.

## ASSESSMENT METHODOLOGY

On March 19, April 9, and November 10, 2025, WRA biologists visited the Project site and the surrounding vicinity to map vegetation, aquatic features, and other land cover types; document

plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Web Soil Survey (USDA 2025)
- Palo Alto 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2021)
- Mindego Hill 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2022)
- Contemporary aerial photographs (Google Earth 2025)
- Historical aerial photographs (NETR 2025)
- National Wetlands Inventory (NWI; USFWS 2025a)
- California Aquatic Resources Inventory (SFEI 2025)
- CNDDB (CDFW 2025b)
- CNPS Inventory (CNPS 2025b)
- Consortium of California Herbaria (CCH1 2025, CCH2 2025)
- USFWS Information for Planning and Consultation (USFWS 2025b)
- eBird Online Database (eBird 2025)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2025a)
- California Natural Community List (CDFW 2025a)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Palo Alto USGS 7.5-minute quadrangle.

Following the remote assessment, WRA biologists completed a field review over the course of six hours to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.

## ENVIRONMENTAL SETTING

### *Vegetation Communities and Other Land Cover*

Thirteen land cover types were observed within the Project site, including two non-sensitive land cover types and 11 sensitive land cover types. Non-sensitive land cover types include developed and coyote brush scrub. Sensitive land cover types include needle grass grassland, coast live oak woodland and forest, riparian mixed oak forest, riparian arroyo willow thickets, intermittent stream (Arastradero Creek), lake (Arastradero Lake), ephemeral stream, forested/shrub wetland, channel wetland, perennial marsh, and seasonal wetland. Descriptions of land cover types are included below.

**Developed (no vegetation alliance). CDFW Rank: None. Not sensitive.** Developed areas are common throughout California, particularly within urban and residential areas. Within the Project site, developed areas include unpaved compacted dirt and gravel trails, and a small utility building. Developed portions of the Project site are unvegetated and therefore do not meet the membership requirements of any vegetation alliance. This land cover type is not considered sensitive by CDFW, or any other regulatory entity.

**Coyote Brush (*Baccharis pilularis*) Scrub. CDFW Rank: G5, S5. Not sensitive.** Coyote brush scrub is known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This plant community is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay (CNPS 2025a). Coyote brush scrub is present in the southeastern portion of the Project site south of Arastradero Creek, as well as above Arastradero Lake in the northern portion of the Project site. Within the Project site, this land cover type is dominated by coyote brush, with scattered poison oak (*Toxicodendron diversilobum*) and coast live oak. The understory is characterized by sparse cover of native and non-native grasses and forbs, such as silvery hairgrass (*Aira caryophyllea*), oats (*Avena* sp.), Italian thistle (*Carduus pycnocephalus*), yerba buena (*Clinopodium douglasii*), and gold back fern (*Pentagramma triangularis*). This vegetation alliance is not considered sensitive by CDFW, or any other regulatory entity.

**Needle grass grassland (*Stipa [Nasella] pulchra* Herbaceous Alliance). CDFW Rank: G3/G4, S3/S4. Sensitive.** Purple needlegrass grassland is known from the Central Valley, Coast Ranges, Transverse Ranges, and South Coast from Del Norte County south to San Diego County. This vegetation community is typically located in valleys and hillslopes on many aspects underlain by deep clay substrate in the Central Valley and shallow, rocky substrate in coastal areas (Sawyer et al. 2009). Within the Project site, needle grass grassland occurs in grassy openings in wooded areas on the hillside located above Arastradero Creek Trail. This alliance was mapped following CNPS (2025a) in areas containing purple needlegrass (*Stipa pulchra*) with greater than 10 percent relative cover. Other species observed include soft chess (*Bromus hordeaceus*), oats, Italian thistle, lupines (*Lupinus* spp.), vetches (*Vicia* spp.), and big heron bill (*Erodium botrys*). Although purple needlegrass grassland was recently merged by CDFW into the needlegrass – melic grassland alliance (S3S4), needle grass grassland within the Project site fits within the membership rules of the *Stipa* [*Nassella*] *pulchra* – *Bromus* spp. Association, which is considered sensitive by CDFW (CDFW 2025a).

**Coast live oak woodland and forest (*Quercus agrifolia* Forest and Woodland Alliance). CDFW Rank: G5, S4. Sensitive.** Coast live oak woodlands and forests are known from the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County. This vegetation community is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). Within the Project site, all non-riparian wooded areas are covered by coast live oak woodlands and forests. These woodlands are located on all aspects and occur at higher elevations within the Project site. The tree stratum is composed primarily of coast live oak, with scattered occurrences of buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), and valley oak. The composition of the understory consists of the species described in non-native grassland above, with patches of dense poison oak, common snowberry (*Symphoricarpos albus*), and poison hemlock (*Conium maculatum*). While this

vegetation alliance is not considered sensitive by CDFW, native oaks are protected under the City of Palo Alto Tree Ordinance, and therefore vegetation within this land cover type is considered sensitive.

**Riparian Mixed Oak Forest (*Quercus agrifolia, douglassii, kelloggii, lobata* Forest Alliance). CDFW Rank: G4, S4. Sensitive.** Mixed oak woodlands and forests are known from the southern North Coast Ranges southward through the Central Coast Ranges from Sonoma County to northern Santa Barbara County (Sawyer et al. 2009, Holland 1986). These forests typically are located on deep soils with a variety of hydric-thermic regimes, which are situated in valleys and gentle to steep slopes. The overstories are a relatively even mix of oak species and other broadleaf species, with no clear dominant species. Within the Project site, riparian mixed oak forest occurs in the riparian zone along the majority of Arastradero Creek and Arastradero Lake. Dominant canopy species include coast live oak, valley oak, and California black oak, with scattered blue oak, California bay, buckeye, blue elderberry (*Sambucus mexicana*), and arroyo willow (*Salix lasiolepis*). The understory was dominated by densely growing native shrubs, including stands of oso berry (*Oemleria cerasiformis*), California wild rose (*Rosa californica*), Pacific blackberry (*Rubus ursinus*), common snowberry, and poison oak. Some grassy openings, dominated by non-native species and blue wildrye (*Elymus glaucus*) were also present in the understory. While these vegetation alliances are not considered sensitive by CDFW, native oaks are protected under the City of Palo Alto Tree Ordinance, and therefore vegetation within this land cover type is considered sensitive. This land cover type is also considered sensitive as riparian habitat.

**Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance). CDFW Rank: G4, S4. Sensitive.** Arroyo willow thickets are widespread throughout most of California. This plant community is typically located in intermittently flooded sites, including stream banks and benches and slope seeps (CNPS 2025a). Within the Project site, stands of arroyo willow thickets occur in the riparian zone on the eastern side of Arastradero Lake, and in the upstream portion of Arastradero Creek. The canopy is dominated by dense arroyo willow, which is sometimes co-dominant with poison oak and/or red osier dogwood (*Cornus sericea*). The herbaceous understory is largely absent due to the high density of the tree and shrub canopy. While this vegetation alliance is not considered sensitive by CDFW, this land cover type is considered sensitive as riparian habitat.

**Intermittent Stream (Arastradero Creek) (no vegetation alliance). CDFW Rank: None. Sensitive.** Intermittent streams are drainages that contain a defined bed and bank, exhibit evidence of an ordinary high water mark (OHWM), and convey surface water during the wet season but dry down completely for at least part of the year. Within the Project site, one intermittent stream (Arastradero Creek) flows from south to north. The channel bed below the OHWM is largely unvegetated, and consists of a combination of mud, gravel, cobble, and boulders with some broken concrete present in the upper reaches. Surface water flows were present at the time of the site visits, which occurred during the wet season. Intermittent stream within the Project site likely contains surface water for the entirety of the wet season but dries down completely during the later part of the dry season.

South of Arastradero Lake, the alignment of Arastradero Creek is relatively undisturbed and sinuous. Widths below the OHWM generally range from two to nine feet, widening at the mouth of Arastradero Lake. North of Arastradero Lake, Arastradero Creek has been realigned into a straight, uniform channel approximately five to six feet wide below the OHWM. OHWM was

characterized by scour, break in bank, a change in vegetation, water staining on rocks, and a wrack line. Banks above the OHWM are steep and dominated by riparian mixed oak woodland forest and arroyo willow thickets. North of the Project site, Arastradero Creek drains to Matadero Creek through a series of culverts, the first located at the intersection of the I-280 off ramp and Page Mill Road and eventually connects to the San Francisco Bay though Mayfield Slough. Intermittent streams are considered sensitive as aquatic resources.

**Lake (Arastradero Lake) (no vegetation alliance). CDFW Rank: None. Sensitive.** Arastradero Lake occurs in the northern portion of the Project site. The lake is hydrologically connected to Arastradero Creek with no restrictions to the north and south, and it also receives surface water runoff from surrounding uplands via several culverts around the perimeter of the lake. The formation of Arastradero Lake is a result of a water control device managed by the City. Based on a review of aerial imagery (Google Earth 2025), water levels within the lake are highest during the wet season and draw down substantially over the course of the dry season. Typically, the lake contains at least some standing water at its lowest elevations throughout the duration of the dry season. The boundary of the lake was mapped based on the elevation of water levels observed during the site visits, conducted during the wet season, which generally correspond to the lake's footprint on aerial imagery collected during the wet seasons in previous years. Within the Project site, Arastradero Lake is largely unvegetated, except for stands of perennial marsh around the perimeter and an area of forested/shrub wetland at the mouth of Arastradero Creek. These wetland areas were mapped separately from Arastradero Lake and are described separately in this report. Lakes are considered sensitive as aquatic resources.

**Ephemeral Stream (no vegetation alliance). CDFW Rank: None. Sensitive.** Ephemeral streams are drainages that contain a defined bed and bank, exhibit evidence of an OHWM, and convey surface water during and for a short duration following precipitation events, but remain dry otherwise. Four ephemeral streams were observed within the Project site. A single ephemeral stream occurs within the northeastern portion of the Project site, which originates from a culvert on the eastern boundary of the Project site, and drains to Arastradero Lake. Three additional ephemeral streams occur in the southern portion of the Project site, which are hydrologically connected to Arastradero Creek. The width of the ephemeral stream below the OWHM ranges from approximately one to three feet. The OHWM was characterized by a break in slope, scour, a shift in vegetation, and water staining. Ephemeral streams are considered sensitive as aquatic resources.

**Forested/Shrub Wetland (*Salix lasiolepis* Shrubland Alliance). CDFW Rank: G4 S4. Sensitive.** Forested/shrub wetlands, dominated by arroyo willow thickets, are widespread throughout most of California. This plant community is typically located in intermittently flooded sites, including stream banks and benches and slope seeps (CNPS 2025a). One forested/shrub wetland occurs below the OHWM of Arastradero Lake, at the mouth of Arastradero Creek. Vegetation is comprised of dense arroyo willow, rooted below the elevation of the lake's surface waters. This area could not be directly accessed due to density of willow growth and presence of surface waters, but it was presumed to be a wetland due to the presence of hydrophytic vegetation and the surface waters for more than two consecutive weeks during the wet season. Within the Project site, forested/shrub wetland likely contains surface waters for the entirety of the wet season, but dries down during the dry season. While this vegetation alliance is not considered sensitive by CDFW, wetlands are considered sensitive as aquatic resources.

**Channel Wetland (no vegetation alliance). CDFW Rank: None. Sensitive.** Channel wetlands occur on linear benches located along the OHWM of intermittent and perennial streams throughout California. These wetland features are likely flooded during extreme precipitation events and receive subsurface flows from adjacent streams when surface flows are present. Within the Project site, three channel wetlands were mapped just above the OHWM of Arastradero Creek. These channel wetlands contain some dense stands of mugwort (*Artemisia douglasiana*), but are otherwise sparsely vegetated by Pacific blackberry, fringed willow herb (*Epilobium ciliatum*), and hairy bittercress (*Cardamine hirstuta*). Hydric soils and wetland hydrology indicators, including a high water table, saturation, and biotic crust, were observed, indicating the presence of a wetland. Vegetation within this land cover type does not meet the membership requirements of any vegetation alliance, but wetlands are considered sensitive as aquatic resources.

**Perennial Marsh. (*Typha* spp. Herbaceous Alliance). CDFW Rank: G5 S5. Sensitive.** Cattail (*Typha* spp.)-dominated perennial marshes are common throughout California in semi-permanently flooded marshes underlain by clay or silty soils (CNPS 2025a). Within the Project site, several stands of perennial marsh, dominated by cattail, occur around the perimeter of Arastradero Lake below the OHWM. During the site visits, perennial marsh contained relatively low cover of vegetative cattails, while the previous year's growth had already died back. This is likely a result of the lake's inundation regime, as the lake appears to dry down significantly over the course of the dry season (Google Earth 2025). Perennial marsh within the Project site is presumed to be wetland due habitat due to the presence of hydrophytic vegetation and the surface waters for more than two consecutive weeks during the wet season. Vegetation within this land cover type meets the membership requirements of the *Typha* spp. Herbaceous Alliance, which is not considered sensitive by CDFW. However, perennial marsh is considered sensitive as wetland habitat.

**Seasonal Wetland. (no vegetation alliance). CDFW Rank: None. Sensitive.** Seasonal wetlands include areas which hold water for part of the year, typically during the wet season, and which are dominated by hydrophytic vegetative cover. Three seasonal wetlands were observed within the Project site; two linear seasonal wetlands occur along a swale that runs parallel to Arastradero Creek Trail, and one small seasonal wetland was observed below a culvert outfall that drains to Arastradero Lake. Dominant plant species observed in seasonal wetlands in the Project site include tall cyperus (*Cyperus eragrostis*), Italian rye grass *(Festuca perennis*) and curly dock *(Rumex crispus*). Surface water was observed in these features during the site visits that occurred during the wet season. Seasonal wetlands within the Project site do not meet the membership requirements of any vegetation alliance but are considered sensitive as wetland habitat.

### *Special-status Plant Species*

Based upon a review of the resource databases listed above, 70 special-status plant species have been documented in the vicinity of the Project site. Most of these species documented from the greater vicinity are unlikely or have no potential to occur on-site due to a lack of suitable habitat features. Twelve of these species have moderate or high potential to occur within the Project site, including the following:

- White-rayed pentachaeta (*Pentachaeta bellidiflora)*, FE, SE, Rank 1B.1. Moderate Potential.
- Two-fork clover (*Trifolium amoenum)*, FE, Rank 1B.1. Moderate Potential.

- Franciscan onion (*Allium peninsulare* var. *franciscanum*), Rank 1B.2. Moderate Potential.
- Santa Clara red ribbons (*Clarkia concinna* ssp. *Automixa*), Rank 4.3. Moderate Potential.
- Western leatherwood (*Dirca occidentalis*), Rank 1B.2. High Potential.
- California bottle-brush grass (*Elymus californicus*), Rank 4.3. Moderate Potential.
- Fragrant fritillary (*Fritillaria liliacea*), Rank 1B.2. Moderate Potential.
- Woolly-headed lessingia (*Lessingia hololeuca*), Rank 3. Moderate Potential.
- Arcuate bushmallow (*Malacothamnus arcuatus* var. *arcuatus*), Rank 1B.2. High Potential.
- Woodland Woollythreads (*Monolopia gracilens*), Rank 1B.2. High Potential.
- Lobb's aquatic buttercup (*Ranunculus lobbii*), Rank 4.2. Moderate Potential.
- Sanford's arrowhead (*Sagittaria sanfordii*), Rank 1B.2. Moderate Potential.

### *Special-status Wildlife Species*

Of the 61 special-status wildlife species documented in the vicinity of the Project site, most have no potential to occur within the Project site based on a lack of habitable features, including vernal pools, tidal marsh areas, old growth redwood or fit forest, serpentine soils, sandy beaches or alkaline flats, presence of specific host plants, and caves or mineshafts. The absence of such habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. Given the Project site's relative proximity to sensitive habitats on the San Francisco Bay, many species documented nearby are additionally obligates to marine or tidal marsh habitats which are not present on or in the immediate vicinity of the Project site. Sixteen special-status species have potential to occur in the immediate vicinity of or in portions of the Project site, including:

- Northwestern pond turtle (*Actinemys marmorata,* NPT). Federal Proposed Threatened, SSC. High Potential.
- Crotch's bumble bee (*Bombus crotchii*). State Candidate Endangered. Moderate Potential.
- Monarch – California overwintering population (*Danaus plexippus plexippus* pop. 1). Federal Proposed Threatened. Moderate Potential.
- Bald eagle (*Haliaeetus leucocephalus*) Bald and Golden Eagle Protection Act, Federal Delisted, State Endangered, State Fully Protected. Moderate Potential.
- California red-legged frog (*Rana draytonii*). Federal Threatened, SSC. High Potential.
- Santa Cruz black salamander (*Aneides niger*). SSC. Moderate Potential.
- Pallid bat (*Antrozous pallidus*). SSC, WBWG: High Priority. Moderate Potential.
- Great egret (*Ardea alba*). Rookery Sites Protected by CDFW. Present.
- Great blue heron (*Ardea herodias*). Rookery Sites Protected by CDFW. High Potential.
- Long-eared owl (*Asio otus*). SSC, BCC. Moderate Potential.
- Snowy egret (*Egretta thula*). Rookery Sites Protected by CDFW. High Potential.
- White-tailed kite (*Elanus leucurus*). State Fully Protected. Moderate Potential.

- Hoary bat (*Lasiurus cinereus*). WBWG: Medium Priority. Moderate Potential.
- Yuma myotis (*Myotis yumanensis*). WBWG: Low-Medium Priority. Moderate Potential.
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). SSC. Present.
- American badger (*Taxidea taxus*). SSC. Moderate Potential.

### *Wildlife Corridors and Native Wildlife Nursery Sites*

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms "landscape linkage" and "wildlife corridor" are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas (Beier and Loe 1992; Soulé and Terbough 1999). It is useful to think of a "landscape linkage" as being valuable in a regional planning context, a broad scale mapping of natural habitat that functions to join two larger habitat blocks. The term "wildlife corridor" is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat (Hilty et al. 2019).

The Project site and surrounding vicinity may function as a wildlife movement corridor. This is based on the Essential Connectivity Areas geospatial dataset, which uses habitat modelling to identify areas of land with value as wildlife corridors (CDFW 2025b). The Project site is classified in this dataset as "more permeable," meaning that wildlife may use the Project site as a corridor, but it is not of the highest quality. This is consistent with the evaluation of many wildlife species described above, which may use the site for movement and therefore be present incidentally within the Project site.

No native wildlife nursery sites are present in the Project site with the potential exception of colonial roosting sites for native nesting birds such as egrets and herons.

### DISCUSSION OF IMPACTS

***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 Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?***

*Less-than-Significant Impact with Mitigation Incorporated*

The Project site has the potential to support a variety of special-status species, including twelve special-status plant species and 16 special-status wildlife species. Construction activities under the Project have the potential to cause direct and indirect impacts to special-status species and their habitats. As described in *Section 3.0, Project Description*, General Protection Measures will be implemented during the proposed Project to avoid and minimize impacts to special-status species and their habitats. These measures are taken, where possible, from the *Programmatic Biological and Conference Opinion California Statewide Programmatic Restoration Effort FWS Reference: 2022-0005149-S7* (Statewide PBO). Measures from the Statewide PBO that are not applicable have been removed and measures have been modified, where appropriate, to tailor them to the Project. Implementation of these General Protection Measures would minimize impacts to special-status species; however, additional measures apply to all species, as well as

species-specific measures are required to reduce potential impacts to less-than-significant levels, which are described further below. For species not covered by the Statewide PBO, measures have been developed using other biological opinions and from projects with similar measures. Whenever relevant, the mitigation measures described in this section are derived from SWRCB General Order WQ 2022-0048-DWQ (SWRCB 2022a) and its associated Programmatic Environmental Impact Report (SWRCB 2022b); and the Programmatic Biological and Conference Opinion – California Statewide Programmatic Restoration Effort by the USFWS (2022). These documents will heretofore be referred to in aggregate as "Programmatic Permits."

Construction activities, such as ground disturbance and vegetation clearing, have the potential to disturb plant and wildlife species in the Project site and the surrounding vicinity. To reduce potential impacts to all candidate, sensitive, and special-status plant and wildlife species, Mitigation Measure BIO-1 shall be implemented throughout Project construction. Mitigation Measure BIO-1 requires that the City implement applicable avoidance and minimization measures for covered special-status species consistent with the Statewide PBO. Measures include oversight by a Qualified Biologist and/or USFWS-approved biologist, pre-construction surveys for Covered Species, capture and relocation protocols in accordance with an approved species relocation plan, entrapment prevention measures, and noise and disturbance minimization.

Additional species-specific measures are required for certain species and are described further below. Some of the species-specific measures may supersede these general protection measures for all species.

### *Special-status Plant Species*

12 special-status plants have moderate to high potential to occur within the Project site, including white-rayed pentachaeta, two-fork clover, Franciscan onion, western leatherwood, fragrant fritillary, arcuate bushmallow, woodland woollythreads, Sanford's arrowhead, Santa Clara red ribbons, California bottle-brush grass, woolly-headed lessingia, and Lobb's aquatic buttercup. If these species are present within Project work areas, they could be destroyed by activities such as vegetation removal, grading, and excavation, which is a potentially significant impact.

To avoid and minimize potential impacts to special-status plants, Mitigation Measure BIO-2a would be implemented, which requires an USFWS-approved biologist to conduct a survey for special-status plant species with moderate to high potential to occur within the Project site within one year prior to commencement of ground disturbing activities. If special-status species are found during pre-construction surveys, an exclusion buffer establishment shall be established by an USFWS-approved biologist, and no work would occur within the buffer, except as permitted by the biologist and under the supervision of the biologist. Further, Mitigation Measure BIO-2b requires that an USFWS-approved biologist monitor all construction activities to ensure that loss of special-status plant or destruction of their habitat does not occur outside of the Project footprint. If exclusion zones and avoidance of impacts to special-status species within the Project site is not feasible, Mitigation Measure BIO-2c would be implemented, which requires that the City compensate for the loss of individual plants and that a habitat management plan be developed identifying appropriate replacement ratios prior to activities that would impact special-status species within the Project site. In addition, Mitigation Measure BIO-2d requires consultation with USFWS if impacts to federal and state-listed plants, including the white-rayed pentachaeta and two-fork clover, cannot be avoided. With implementation of these mitigation

measures, the Project would not result in a substantial adverse effect on special-status plant species. The impact would be less than significant with mitigation incorporated.

### *Special-status Wildlife Species*

**Special-status and Roosting Bats**

Three special-status bats have the potential to occur within the Project vicinity, including pallid bat, hoary bat, and Yuma myotis. Removal and trimming of trees during the local bat maternity season, ground disturbance, and other noise-generating activities could impact bat breeding, which is a potentially significant impact. To reduce potential impacts to roosting bats, Mitigation Measure BIO-3a would be implemented, which requires that tree removal be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, a bat habitat assessment and survey effort shall be performed by a Qualified Biologist prior to tree removal to determine if bats are present in the trees. If special-status bat species or bat maternity roosts are detected, roost trees shall be avoided until the end of the maternity roosting seasons. If avoidance of maternity roosts is not feasible, Mitigation Measure BAT-3b shall be implemented to determine appropriate species- and roost-specific mitigation in consultation with CDFW. With implementation of these mitigation measures, the Project would not result in a substantial adverse effect on special-status or roosting bats. The impact would be less than significant with mitigation incorporated.

**Special-status and Nesting Birds**

Six special-status birds have potential to occur within and adjacent to the Project site, including bald eagle, great egret, great blue heron, long-eared owl, snowy egret, and white-tailed kite. In addition, non-special-status native birds (e.g., passerines, raptors) may nest on the ground, in trees, and in vegetation within and immediately surrounding the Project site. The active nests of such birds are protected under the Federal MBTA as well as by the CFGC. If construction begins during the avian nesting season, generally February 1 to August 31, special-status and nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment. Due to the protected status of these species under both the MBTA and CDFW, impacts to special-status and common native nesting birds is a potentially significant impact.

Mitigation Measure BIO-4 would be implemented, which requires that Project construction activities be avoided during the nesting bird season, to the extent feasible. If Project work must occur during the nesting season, pre-construction nesting bird surveys shall be conducted within seven days of ground disturbance or tree or vegetation removal. If an active nest is located, a no disturbance buffer shall be established around the nest, and no Project-related activities or personnel may enter the buffer until the nest becomes inactive. If there is a break in Project activities of greater than seven days within the nesting bird season, a follow-up survey shall be performed to ensure no nests have been established in the interim. Implementation of Mitigation Measure BIO-4 would ensure that the Project would not have a substantial adverse effect on special-status or nesting birds. The impact would be less than significant with mitigation incorporated.

**Northwestern Pond Turtle**

NPT has the potential to occur within and immediately adjacent to the Project site. Vegetation removal, grading, and other Project construction activities have the potential to kill or injure

individuals if they are present at the time of implementation, which is a potentially result in a significant impact to NPT.

To reduce potential impacts to the NPT, Mitigation Measures BIO-5a through BIO-5f would be implemented. Mitigation Measure BIO-5a requires that a Qualified Biologist conduct preconstruction surveys for NPT within suitable aquatic and adjacent upland habitat no more than 72 hours prior to ground disturbance. Surveys would follow established visual encounter survey protocols and may be phased if construction occurs in stages. If construction activities are delayed for five days or more, the Project site would be re-inspected prior to resuming work to determine whether turtles are present.

Mitigation Measure BIO-5b establishes seasonal work windows and habitat avoidance measures to reduce disturbance during sensitive life stages. In-water or dewatering work would be avoided during the overwintering period from October 1 through March 31. Additional seasonal restrictions would apply to nesting habitat and upland aestivation habitat within 500 meters of aquatic habitat unless wildlife exclusion fencing is installed or other approved protective measures are implemented. Work windows may be modified only with approval from the local field office of the USFWS.

Mitigation Measure BIO-5c requires the establishment of environmentally sensitive areas and installation of wildlife exclusion fencing where appropriate to prevent turtles from entering active construction zones. Fencing would be inspected daily and maintained throughout construction, and directional fencing or monitoring may be used where full exclusion fencing is not feasible. These measures would be implemented under the direction of a Qualified Biologist and in coordination with agency guidance.

Mitigation Measure BIO-5d requires biological monitoring and implementation of best management practices during vegetation clearing and grubbing activities in suitable habitat. A Qualified Biologist would supervise work in sensitive areas, ensure that vegetation removal is conducted using hand tools or other low-impact methods where feasible, and retain natural materials such as leaf litter and woody debris to maintain refugia habitat. The use of rodenticides would be prohibited in areas supporting suitable turtle habitat during construction.

Mitigation Measure BIO-5e requires development of a rescue and relocation plan and establishes procedures for species observations, encounters, handling, and relocation. If turtles are encountered, construction activities would stop in the immediate area while the Qualified Biologist evaluates appropriate avoidance measures. Capture and relocation would occur only when necessary to prevent injury or mortality and would be conducted by an approved biologist in accordance with a relocation plan approved by the USFWS. Disease prevention measures and short-distance relocation to suitable nearby habitat would be required.

Mitigation Measure BIO-5f requires that Project design and habitat restoration measures maintain existing basking habitat and avoid shading of nesting areas. Existing basking structures such as logs or rocks would be retained where feasible, and replacement structures would be installed if necessary to ensure no net loss of basking habitat. Vegetation planting would be designed to maintain adequate solar exposure for basking and nesting areas.

With implementation of these mitigation measures, the Project would not result in a substantial adverse effect on NPT. The impact would be less than significant with mitigation incorporated.

**Amphibians (CRLF, Santa Cruz Black Salamander)**

The Project site and immediate vicinity include suitable breeding, foraging and dispersal habitat for two special-status amphibians: California red-legged frog (CRLF) and Santa Cruz black salamander. The creation of step-pools, log elements, and other improvements to Arastradero Creek would reduce sedimentation into Arastradero Lake which correspondingly improves water quality and potential breeding habitat for CRLF. Pool creation would also improve the condition of nonbreeding aquatic habitat for CRLF, which prefers in-channel pools to runs and riffles. Santa Cruz black salamander is associated with moist off-channel habitat; therefore, step-pools and log elements are likely to provide more expansive moisture saturation into adjacent habitats and would increase complex substrate for this species to occupy. While the Project would result in long-term beneficial impacts to amphibians, construction activities may result in mortality or injury if these species are present at the time of construction, which is a potentially significant impact.

To reduce potential impacts to special-status amphibians, including CRLF and Santa Cruz black salamander, Mitigation Measures BIO-6a and BIO-6b would be implemented. These measures require that construction activities in areas with potential amphibian habitat follow protection protocols consistent with the 2022 Programmatic Biological Opinion issued by the U.S. Fish and Wildlife Service and guidance from the California Department of Fish and Wildlife. Measures include conducting preconstruction surveys by a Qualified Biologist prior to ground disturbance; limiting work during rainfall events or other conditions when amphibians are most active; supervising vegetation clearing and grubbing to avoid harm to amphibians; and confining upland construction to the period from April 15 through October 31, outside of the primary breeding season, unless surveys demonstrate that young-of-year amphibians have dispersed. Additional measures require implementation of dewatering and materials-handling protocols to prevent amphibian injury, including screening pump intakes, following equipment decontamination procedures to prevent disease spread, avoiding the use of erosion-control materials that pose entanglement hazards, and ensuring that temporary structures such as cofferdams do not block amphibian movement. With implementation of these mitigation measures, the Project would not result in a substantial adverse effect on special-status amphibians. The impact would be less than significant with mitigation incorporated.

**Crotch's Bumble Bee**

Crotch's Bumble Bee has moderate potential to occur within and immediately adjacent to the Project site due to the presence of suitable foraging habitat in the riparian and oak woodland understory, and suitable nesting habitat throughout the Project site, particularly the steeply cut banks of Arastradero Creek. Overall, the Project would have a beneficial impact on habitat for Crotch's bumble bee via the removal of invasive plant species and the planting of a variety of native flowering plants. However, vegetation removal and ground disturbance during the construction phase may result in 'take' of Crotch's bumble bee, which is a potentially significant impact.

To reduce potential impacts to Crotch's bumble bee, Mitigation Measure BIO-7 would be implemented, which requires a Qualified Biologist to survey for Crotch's bumble bee prior to the commencement of construction activities during the colony active period (generally April 1 to October 31). If any signs of bumble bee nests are observed, and if it cannot be established that the species present is not a special-status bumble bee, construction shall not commence until

CDFW provides further guidance. Implementation of this measure would ensure that the Project would not result in a substantial adverse effect on Crotch's bumble bee. The impact would be less than significant with mitigation incorporated.

**Monarch Butterfly**

Monarch butterfly has moderate potential to occur in the Project site, due to the presence of suitable foraging habitat in the riparian and oak woodland understory, and documented larval host plants and breeding occurrences within 0.3 miles of the Project site (Xerces Society 2025). Given that this species is Federal Proposed Threatened, it may advance to Federal Candidate in the near future and therefore be afforded protections under CEQA within the Project timeline. Under this scenario, impacts to this species would be considered a potentially significant impact.

To reduce impacts to monarch butterfly, Mitigation Measures BIO-8 would be implemented in the event that monarch butterfly advances to Federal Candidate species before construction of the Project begins. This measure requires that if suitable larval host plants are detected during preconstruction plant surveys (Mitigation Measure BIO-2a), then to the extent practicable, Project activities with potential to impact grassland, riparian and oak woodland habitat shall occur during the recommended work window of November 15 – March 15. If herbicide or insecticide application is proposed as part of the Project, BMPs should be followed to minimize impacts to monarch butterfly. Implementation of this measure would ensure that the Project would not result in a substantial adverse effect on monarch butterfly. The impact would be less than significant with mitigation incorporated.

**San Francisco Dusky-Footed Woodrat**

San Francisco dusky-footed woodrat are known to nest in vegetated portions of the Project site, particularly those containing oaks and dense shrub cover. General construction activities in the Project site would include removal of vegetation, grubbing, grading, and other ground disturbing activities in wooded or scrub habitats. These activities could result in direct impacts on dusky-footed woodrat including mortality of adults or young, as well as destruction of woodrat middens, which is as potentially significant impact.

To reduce impacts to dusky-footed woodrat, Mitigation Measure BIO-9 would be implemented. This measure requires that, no more than 30 days prior to initial ground disturbance in woodland or scrub/chaparral communities, a survey shall be conducted by a Qualified Biologist to identify woodrat stick nests that could be directly impacted. Any stick nests within active work areas shall be dismantled under the supervision of a Qualified Biologist. If young are encountered during the dismantling process, material shall be placed back on the nest and remain undisturbed for two weeks in order to give the young enough time to mature and leave of their own accord. If construction does not occur within 30 days of the pre-construction survey, surveys shall be repeated. With implementation of this mitigation measure, the Project would not result in a substantial adverse effect on dusky-footed woodrats. The impact would be less than significant with mitigation incorporated.

**American Badger**

The Project site supports suitable American badger denning and foraging habitat, and has numerous occurrences documented in the vicinity. Therefore, this species has moderate potential to occur within the Project site. Project-related activities may induce mortality or injury to

American badger through crushing or entombment by heavy equipment, which is a potentially significant impact.

To reduce potential impacts to American badger, Mitigation Measure BIO-10 would be implemented. This measure requires that a Qualified Biologist conduct focused pre-construction surveys for badger dens no more than two weeks prior to construction in all suitable habitat proposed for construction, ground disturbance or staging. If no potential badger dens are present, no further measures are required. If American badger dens are determined to be present, the biologist shall monitor them for activity to determine whether the den is active. If the den is determined to be occupied by a female with young, ground disturbance and construction activity shall be avoided within 50 feet of the den until the young have matured and dispersed. If the den is determined to be active, but a female with young are not present, burrow exclusion using passive measures such as one-way doors or equivalent should be attempted for a minimum of three days to discourage their use prior to any Project-related ground disturbance. If the biologist determines that the dens have become inactive as a result of the exclusion methods, the dens shall be excavated by hand to prevent them from being reoccupied during construction. Implementation of this mitigation measure would ensure that the Project would not have a substantial adverse effect on American badger. The impact would be less than significant with mitigation incorporated.

***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 CDFW or USFWS?***

*Less-than-Significant Impact with Mitigation Incorporated*

Sensitive terrestrial natural communities within the Project site and surrounding area include needle grass grassland, coast live oak woodland and forest, riparian mixed oak forest, and riparian arroyo willow thickets. Sensitive aquatic communities within the Project site and surrounding area include channel wetland, ephemeral stream, intermittent stream (Arastradero Creek), lake (Arastradero lake), perennial marsh, seasonal wetland, and forested/scrub wetland. The impact analysis under this threshold focuses on impacts to sensitive terrestrial communities, and impacts to sensitive aquatic communities are discussed below under Threshold c).

The Project would have a long-term beneficial impact on sensitive natural communities via the incidental removal of invasive species, such as poison hemlock, and revegetation/restoration with native species in areas to be revegetated. Further, by lowering stream velocity in Arastradero Creek, conditions for riparian and/or channel wetland habitat would be improved along the streambanks. The extent and quality of riparian habitat may also be increased, via the planting of native riparian trees and installation of willow poles along the creek in currently scoured areas. Additionally, several hazard trees that currently compromise the structural integrity of Arastradero Creek would be felled to create large woody debris to stabilize and enhance the creek channel. Some tree removal may be required for the proposed utilities relocation; however, tree removal would be kept to a minimum, any trees removed would also be used for creek restoration work and would be replaced on-site at CDFW-approved tree replacement ratios. The current Project plans indicate that two coast live oak trees measuring 16-inch and 13-inch DBH, are proposed for removal and re-use during construction.

Project activities such as equipment staging and access, ground disturbance, and/or vegetation removal, may result in temporary impacts to sensitive natural communities. The placement of

new pipeline infrastructure, and rock armoring at the culvert outfall, would also result in small areas of permanent impacts to sensitive natural communities.

To reduce potential impacts to sensitive natural terrestrial communities, Mitigation Measures BIO-11 and BIO-12 would be implemented. Mitigation Measure BIO-11 requires that construction activities minimize disturbance to native vegetation and aquatic habitat in accordance with the 2022 Restoration Programmatic Biological Opinion issued by the USFWS, including limiting vegetation removal and ground disturbance to the minimum area necessary, using existing access routes where feasible, minimizing soil compaction, and managing invasive plant species to prevent their spread. Mitigation Measure BIO-12 requires preparation and implementation of a revegetation plan to restore temporarily disturbed riparian and upland areas following construction using locally appropriate native plant species and wildlife-safe erosion control materials. Restored areas shall be monitored and maintained for a minimum of two years, and corrective actions would be implemented if revegetation success criteria are not achieved. With implementation of these mitigation measures, the Project would not result in a substantial adverse effect on sensitive natural communities. The impact would be less than significant with mitigation incorporated.

***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?***

*Less-than-Significant Impact with Mitigation Incorporated*

The Project is a utilities improvement and restoration project intended to remove subsurface utility lines and improve aquatic habitat within Arastradero Creek. Project work would require permits from the USACE, RWQCB, and CDFW, which the City would apply for and obtain prior to construction. The Project would require work and fill material within wetland habitat, as well as below the OHWM and top of bank (TOB) of Arastradero Creek; however, the construction and fill materials are part of a habitat enhancement Project that is anticipated to result in a net increase in habitat values and functions within jurisdictional areas. The proposed Project does not require mitigation for permanent impacts to these jurisdictional areas as proposed activities are anticipated to improve the quality of the areas. Incorporation of elements such as step-pools and log elements would lower stream velocity and restore a more natural flow regime, improving conditions for stream and wetland habitats and species dependent on these habitats. The extent and quality of riparian habitat may also be increased via the planting of native riparian trees and installation of willow poles along the creek in currently scoured areas.

The majority of impacts to aquatic resources are temporary in nature, consisting of disturbance for temporary staging and access and installation of restoration features along the stream banks of the Arastradero Creek. Project activities such as in-water work, grading, and excavation could impact water quality and aquatic resource habitat, which is a potentially significant impact. Therefore, Mitigation measures BIO-13a, BIO-13b, and BIO-13c would be implemented to reduce erosion, water quality degradation, and protect aquatic habitats, as outlined below.

Mitigation Measure BIO-13a requires that staging, storage, and stockpile areas be located outside of suitable habitat for Covered Species, unless necessary for Project implementation and approved by the USACE and USFWS Field Office. Mitigation Measure BIO-13b requires that the City obtain a Construction General Permit under the National Pollutant Discharge Elimination System (NPDES) which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP).

The SWPPP shall include measures to reduce erosion and pollutant release into waterways, which would help reduce temporary impacts of the Project to aquatic resources. As part of the SWPPP, the City shall also prepare and implement a hazardous materials management and spill response plan, which shall comply with California Water Code requirements for hazardous materials spill response.

In-water work measures would also be implemented through Mitigation Measure BIO-14, which requires that in-water construction activities comply with the 2022 Restoration Programmatic Biological Opinion issued by the USFWS. These measures include using clean and uncontaminated habitat materials; minimizing the use of heavy equipment within streams and wetlands; implementing practices to reduce turbidity, sediment discharge, and contamination; isolating in-water work areas using cofferdams or diversion structures where necessary; conducting fish and aquatic species exclusion and relocation prior to dewatering; screening pump intakes to prevent entrainment; and removing temporary diversion structures and restoring natural flow conditions after construction. With implementation of these measures, the Project would not have a substantial adverse effect on state or federally protected wetlands. The impact would be less than significant with mitigation incorporated.

***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?***

*Less-than-Significant Impact*

The Project site and surrounding vicinity functions as a wildlife corridor due to the presence of presence of habitat features such as riparian canopy and intermittent channel. The Project site connects large blocks of open space in Foothills Nature Preserve to the southwest and Stanford Dish Preserve to the north. Wildlife species may utilize the Project site for movement preferentially compared to the surrounding area due to its habitat features and geographic setting. Project activities such as vegetation removal, ground disturbance, and revegetation would result in permanent and temporary impacts to wildlife corridor habitat features. These impacts are not expected to appreciably impact the habitat values afforded by the Project site, nor introduce any new barriers to wildlife movement. Snags and riparian trees around Arastradero Lake provide rookery habitat for great egret, great blue heron, and snowy egret. Rookery habitat for these species is protected by CFGC. Implementation of Mitigation Measure BIO-4 described above in Threshold a) would avoid any potential impacts to these rookeries. Therefore, the Project would not substantially interfere with the movement of any native resident or migratory fish or with an established migratory wildlife corridor. The impact would be less than significant.

***e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

*No Impact*

While the Project may involve the removal of trees as part of utilities relocation, removal of these trees would not require a tree permit, as the work is being conducted under contract with the City Utilities group. Written notice of any tree removal would be provided in advance to both the supervising park ranger and Urban Forestry group, along with a map and photos of trees to be removed. Any native oaks with a DBH of greater than 11.5 inches would also be replaced with

native oak plantings at the mitigation ratio approved by CDFW. Therefore, the Project would not conflict with the City of Palo Alto Tree Ordinance.

The City of Palo Alto Stream Corridor Protection Ordinance exempts "replacement of utility service laterals where location outside the protected areas is not readily available" from the streamside review area requirements and guidelines. The Project falls under this category and is therefore exempted from the provisions of this Ordinance.

Therefore, the Project would not conflict with any local policies or ordinances protecting biological resources. There would be no impact.

***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?***

*No impact*

The Pearson Arastradero Preserve falls outside of any approved local, regional or state Conservation Plan. Maintenance of in-built utility lines is covered activities under the Arastradero Preserve Management Plan, which authorizes maintenance and management actions on the Preserve (Amphion Environmental and Thomas Reid Associates 2001). Therefore, there would be no impact to the function of any Conservation Plans.

### MITIGATION MEASURES

#### *Mitigation Measure BIO-1. Implementation of Programmatic Biological Opinion Protection Measures*

Prior to and during construction, the City of Palo Alto shall implement applicable avoidance and minimization measures for covered special-status species consistent with the 2022 Programmatic Biological Opinion issued by the USFWS for restoration activities in California (USFWS 2022). Measures shall include, but are not limited to:

1. **Qualified Biologist Oversight.** A Qualified Biologist shall conduct pre-construction surveys, provide construction monitoring as necessary, and ensure implementation of species protection measures. Activities requiring species capture, handling, or relocation shall be conducted only by a biologist approved by the USFWS.
2. **Pre-Construction Surveys.** A Qualified Biologist shall conduct pre-construction surveys within five days prior to the start of ground-disturbing activities in areas of suitable habitat to identify the presence of Covered Species and implement appropriate protection measures.
3. **Species Handling and Relocation.** If Covered Species are encountered and relocation is necessary, capture and relocation shall be conducted by a USFWS-approved biologist in accordance with an approved species relocation plan.
4. **Entrapment Prevention.** Open trenches, pipes, or excavations shall be covered, fitted with escape ramps, or otherwise secured at the end of each workday to prevent wildlife entrapment and shall be inspected prior to closure.
5. **Noise and Disturbance Minimization.** Construction equipment shall be properly maintained and operated to minimize noise, and appropriate buffers shall be

implemented between construction activities and sensitive habitats to avoid disturbance to Covered Species.

***Mitigation Measure BIO-2a. Preconstruction Surveys and Avoidance of Special-status Plants***

The City of Palo Alto shall retain a Qualified Biologist to conduct a survey for special-status plant species with moderate or high potential to occur within the Project site within one year prior to commencement of ground disturbing activities on-site. Surveys should follow USFWS's General Rare Plant Survey Guidelines (USFWS 1996); and CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018) or their most recent equivalents. Any occurrences of CRPR 3 and/or 4 taxa should be evaluated to determine whether impacts to these species would be considered significant.

If special-status plant species are confirmed present on-site, a Qualified Biologist shall clearly delineate a minimum 50-foot avoidance buffer with flagging or other field markers around all special-status plants or their suitable habitat. A larger exclusion buffer may be established if determined by the Qualified Biologist to be necessary for the protection of the special-status plants. No work activity shall occur within the exclusion buffer, except as permitted by the Qualified Biologist.

If the Qualified Biologist determines that some work activities can take place within the exclusion buffer without causing any adverse direct or indirect impacts to special-status plants, workers may enter the exclusion buffer only when accompanied by a Qualified Biologist, and all work within the exclusion buffer shall be monitored by an Qualified Biologist.

***Mitigation Measure BIO-2b. Biological Monitoring in Special-Status Plant Buffers***

A Qualified Biologist shall monitor all construction activities on-site and within the buffers established under Mitigation Measure BIO-2a. Any non-disturbance exclusion zones shall be established, maintained and monitored. The biologist shall ensure that loss of special-status plants or destruction of their habitat does not occur outside of the project footprint.

***Mitigation Measure BIO-2c. Compensation for Loss of Special-Status Plant Species***

If exclusion zones and avoidance of impacts to special-status species within the Project site are not feasible, then the City of Palo Alto shall compensate for the loss of individuals or occupied habitat of special-status plants through the acquisition, protection, and subsequent management of existing occurrences. Compensation for loss of individual plants may also include transplantation and/or reseeding of special-status species, when feasible. The City shall prepare a habitat management plan identifying appropriate replacement ratios at a minimum ratio of 1:1 prior to the commencement of any activities that would impact special-status plant species that occur within the Project site. The habitat management plan shall include a monitoring plan to ensure successful establishment.

***Mitigation Measure BIO-2d. Consultation for Impacts to Federal and State-Listed Plant Species.***

If pre-construction surveys find that white-rayed pentachaeta and/or two-fork clover are present within the Project site and cannot be avoided, the City of Palo Alto shall consult with the USFWS to assess impacts to these listed species. If white-rayed pentachaeta is present, the City shall also consultat with CDFW in addition to USFWS. The City shall implement additional avoidance

and conservation measures identified in consultation with CDFW and USFWS to further reduce any effects resulting from activities at the time of construction.

### *Mitigation Measure BIO-3a. Maternity Roost Avoidance*

To the extent feasible, tree removal shall be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, a bat habitat assessment and survey effort (the latter if needed) shall be performed by a Qualified Biologist prior to tree removal to determine if bats are present in the trees. If no suitable roosting habitat for bats is found, then no further avoidance is warranted. If special-status bat species or bat maternity roosts are detected, then roost trees shall be avoided until the end of the maternity roosting season. Irrespective of time of year, all felled trees shall remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.

### *Mitigation Measure BIO-3b. Maternity Roost Mitigation*

If avoidance of maternity roosts is not feasible, the City of Palo Alto shall consult with CDFW to develop appropriate species- and roost-specific mitigation measures and will implement all measures agreed upon during consultation.

### *Mitigation Measure BIO-4. Preconstruction Surveys for and Avoidance of Special-status and Nesting Birds*

To the extent feasible, initial ground disturbance, vegetation removal, and other construction activities shall occur during the avian non-breeding season (September 1 to January 31). No pre-construction surveys would be required during this period.

If initial ground disturbance, vegetation removal and/or related activities occur during the breeding season (February 1 through August 31), a Qualified Biologist shall conduct a breeding bird survey no more than seven days prior to ground disturbance/vegetation removal to determine if any birds are nesting within or adjacent to project impact areas.

- If active nests of any species are found within project impact areas or close enough to these areas to affect breeding success, the Qualified Biologist shall establish an appropriate exclusion buffer around each active nest. Appropriate exclusion buffer sizes vary depending upon the bird species, legal status, nest location and setting (e.g., existing visual buffers, ambient sound levels). Buffers may be as small as 50 feet for common, disturbance-adapted species and up to 1,000 feet for more sensitive species such as bald eagle. Once all young have become independent of the nest or the nest otherwise becomes inactive (e.g., due to predation), work may take place in the former exclusion buffer.
- If initial ground disturbance is delayed or there is a break in project activities of greater than seven days within the bird nesting season, a follow-up nesting bird survey shall be performed by a Qualified Biologist to ensure no nests have been established in the interim.

### *Mitigation Measure BIO-5a. Preconstruction Survey for Northwestern Pond Turtle*

**REP-1 Pre-Construction Survey.** A Qualified Biologist shall conduct pre-construction surveys for NPT within 72 hours prior to any initial ground disturbance within all accessible suitable habitat

within or adjacent to the Project site to identify locations where special-status reptiles may be present, evaluate current activity status in the Project site, and protect the species and its habitat from avoidable construction-related disturbance. The intent of this survey is to assess current special-status reptile habitat and use locations in the Project site immediately prior to construction. Pre-construction surveys may be phased across a construction site if construction in different areas will occur at different times; only areas where disturbance is imminent need to be surveyed. The Project site shall be re-inspected by the Qualified Biologist whenever a lapse in construction activity of five days or greater has occurred.

- **NPT-1: Visual Encounter Surveys (NPT Specific).** Before construction activities occur, a Qualified Biologist shall search all suitable aquatic habitat in the Project site a minimum of three times during appropriate weather conditions (e.g., sunny periods between 8 a.m. to 12 p.m., and from 3 p.m. until an hour before dusk; air temperatures 55 to 90 degrees Fahrenheit; wind speeds less than 12 mph). Surveys shall occur when NPT are most likely to be detected in aquatic habitat:
- The highest probability of detection for NPT is from April 1 to September 30 (May 1 to August 31 at elevations above 3,500 feet). If work will occur outside of this window, a Qualified Biologist shall also search upland habitat between October 1 and March 31 (September 1 to April 30 at elevations above 3,500 feet).
- In areas where NPT are known to occur or could be present, the Qualified Biologist shall follow current guidance for visual encounter surveys in the Visual Encounter Survey Protocol for NPT developed by the Oregon Native Turtle Working Group (ODFW 2020). If surveys are not conducted or do not follow USFWS-approved methods, it should be assumed that NPT are present in suitable aquatic and upland habitat. The Qualified Biologist shall inquire with local USFWS Field Office on NPT data records and if surveys have been completed in the Project site.

### *Mitigation Measure BIO-5b. Seasonal Work Window for Northwestern Pond Turtle*

**NPT-2: Work Windows**. For Project activities that involve in-water/dewatering work, work shall be avoided from October 1 to March 31.

a. For Project activities within 500 meters (1604.4 feet) of suitable nesting habitat (i.e., sunny, open grasslands and ruderal habitat or bare soil), nesting adult females shall be avoided from May 15 to July 31 unless wildlife exclusion fencing has been installed around all suitable nesting habitat within the Project footprint prior to the start of the nesting season (i.e., prior to May 15 for the NPT.

b. For Project activities in overwintering habitat (e.g., muddy pond bottoms), work shall be avoided from October 1 to March 31 (September 1 to April 30 above 3,500 feet elevation) unless wildlife exclusion fencing has been installed around all suitable overwintering habitat within the Project footprint prior to the start of the overwintering season (i.e., prior to October 1 at elevations < 3,500 feet and prior to September 1 at elevations >3,500 feet). Alternatively, if installation of wildlife exclusion fencing around all overwintering habitat is not feasible, then all suitable overwintering cover (e.g., leaf litter layer, woody debris) shall be removed from the Project footprint before overwintering begins (i.e., prior to October 1 at elevations < 3,500 feet and prior to September 1 at elevations >3,500 feet), and shall be maintained daily free of suitable overwintering cover. A Qualified Biologist shall also search all mammal burrows for overwintering NPT and move them out of harm's way.

The Qualified Biologist then may collapse the burrows to prevent their usage by overwintering NPT.

c. For Project activities in aestivation habitat (e.g., upland habitat (e.g., leaf litter) within 500 meters (1,640.4 feet) of suitable aquatic habitat), work shall be avoided when nearby seasonal aquatic habitat is dry unless wildlife exclusion fencing has been installed around all suitable aestivation habitat within the Project footprint before nearby seasonal aquatic habitats dry up.

   Work windows may be modified via completion of the ESA Section 7(a)(2) Review Form and local Field Office approval.

***Mitigation Measure BIO-5c. Environmentally Sensitive and Wildlife Exclusion Area for Northwestern Pond Turtle***

**REP-2. Environmentally Sensitive and Wildlife Exclusion Area.** Prior to the start of construction, the following measures shall be implemented:

- Wildlife exclusion fencing shall be inspected by the Qualified Biologist before the start of each workday and maintained by the City of Palo Alto until completion of the Project. The fencing shall be removed after all construction equipment is removed from those segments of the Project site.
- Wildlife exclusion fencing for NPT shall be installed around all suitable nesting, overwintering, and/or aestivation habitat that would be disturbed within the Project site.
- **NPT-3: Environmentally Sensitive Areas and Wildlife Exclusion (NPT Specific).** Fencing and/or monitoring shall be used to protect NPT and shall be implemented in coordination with a Qualified Biologist. If the Project site is suitable for fencing, the USFWS requires an Exclusion Fencing Plan, and a Qualified Biologist shall determine where environmentally safe area fencing (ESAF) will be installed to protect NPT habitat adjacent to the proposed Project footprint.
    - If complete exclusion of the Project disturbance footprint with wildlife exclusion fencing (WEF) is not feasible in the Project site, directional fencing (fencing that is meant to guide the movement of NPT safely around a work area) may be considered to discourage NPT from entering the Project site from suitable habitat, or fencing off only portions of the larger Project site as they are being actively worked on. The local USFWS Field Office may be contacted for technical assistance on excluding NPT from a Project site where complete exclusion fencing is not feasible.
    - WEF must be opaque, non-climbable material, at least 2.0 feet (0.6 meters) high, have one-way exit funnels away from the work area, and contoured such that NPT are unable to climb over the fence. WEF shall include coverboards spaced every 50 to 100 feet on either side to provide cover to NPT that encounter the fence. If WEF is found to be compromised, a Qualified Biologist shall conduct a survey immediately preceding construction activity that occurs in NPT habitat, or in advance of any activity that may affect other species. The Qualified Biologist shall search along WEF and in pipes, culverts, and beneath equipment (e.g., vehicles or heavy equipment) before they are moved. Monitoring can be conducted in lieu of WEF at sites where installation is not practicable.

### *Mitigation Measure BIO-5d. Monitoring and Best Management Practices for Northwestern Pond Turtle*

**REP-3. Clearing and Grubbing Vegetation.** A Qualified Biologist shall be present during all vegetation clearing and grubbing activities in areas where the special-status reptiles are confirmed to occur, or where measures are being implemented based on presence of suitable habitat. Prior to vegetation removal, the Qualified Biologist shall thoroughly survey the area for these species. Vegetation in sensitive areas shall be cleared by handheld motorized tools (e.g., weed eaters, chainsaws) or hand pulling unless alternate methods are proposed by the City of Palo Alto and approved by agency(ies). Tree stumps and roots shall be left in place where possible to avoid any ground disturbance and preserve refugia habitat, with the exception of non-native invasive plants that could propagate from remaining vegetative material. Native branches, leaf litter, mulch, woody debris, and other vegetative trimmings may be retained and spread on site to enhance habitat as appropriate.

**REP-4. Prohibited Use of Rodenticides**. No rodenticides will be used at the Project site during construction in areas that support suitable habitat for special-status reptiles.

### *Mitigation Measure BIO-5e. Observations, Encounters, Handling and Relocation for Northwestern Pond Turtle*

**REP-5. Species Observations and Encounters**. Each proposed project with the potential to encounter a special-status reptile species will submit a rescue and relocation plan to agency(ies) for review and approval prior to initiating construction. General guidance to be considered during plan development is as follows: 1) leave the uninjured animal if it is not in danger, or 2) move the animal to a nearby location if it is in danger as described in *REP-6,* below. These options are further described as follows:

- When a special-status reptile is encountered in the Project site, the priority is to stop all activities in the surrounding area that have the potential to result in the harm, injury, or death of the individual. The Qualified Biologist then needs to assess the situation to select the course of project that will minimize adverse effects to the individual.
- Avoid contact with the animal and allow it to move out of the project footprint and hazardous situation on its own to a safe location. This guidance only applies to situations where an animal is encountered while moving through habitat and under conditions that will allow it to escape. This does not apply to animals that are uncovered or otherwise exposed or in areas where there is not enough adjacent habitat to support the life history of the special-status reptiles if they move outside the construction footprint.
- Avoidance is the preferred option if the animal is not moving or is within some sort of burrow or other refugia. In this case, the area will be well marked for avoidance by construction and a Qualified Biologist will be assigned to the area when work is taking place nearby. If avoidance is not practicable or safe for the special-status reptile, the project proponent will implement REP-6, below.

**REP-6. Species Handling and Relocation.** A special-status reptile will only be captured and relocated when it is the only option to prevent its death or injury, and after all attempts to avoid interaction of the species have been exhausted as described in *REP-5.* Project-specific rescue and relocation plans will be approved by the agency(ies) prior to starting construction. General guidance for handling and relocation is as follows:

- If appropriate habitat is located immediately adjacent to the capture location, then the preferred option is short distance relocation to that habitat. A snake will not be moved outside of the area where it could have traveled on its own. Captured snakes will be released in appropriate cover as close to their capture location as possible for their continued safety. Under no circumstances will an animal be relocated to another property without the owner's written permission. It is the project proponent's responsibility to arrange for that permission.
- The release locations must be pre-identified in the project-specific rescue and relocation plan approved by the agency(ies); they will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow, other suitable refugia, or suitable habitat.
- Only a USFWS-Approved Biologist for the Project can capture special-status reptiles.
- **NPT-4: Capture and Relocation.** NPT will only be captured and relocated when it is the only option to prevent injury or mortality, and after all attempts to avoid interaction with the species have been used. If necessary to avoid injury or mortality, relocation of NPT will be conducted by a Qualified Biologist in accordance with the requirements of *REP-6, Species Handling and Relocation*. NPT relocation will be conducted as described in a USFWS-approved reptile relocation plan submitted by the Project Proponent to the local USFWS Field Office concurrently with the ESA Section 7(a)(2) Review Form or at least 60 days before construction. Early submission facilitates timely USFWS review and approval and helps avoid project delays.
    - Avoid and minimize transfer of diseases (e.g., turtle-shell disease, respiratory disease). The Qualified Biologist will wear disposable nonlatex or rubber gloves when handling individual turtles to inhibit transmission of disease. Any suspected observations of disease such as respiratory or turtle-shell disease in NPT or any other species of turtle at the project site will be reported to the USFWS within 24 hours and before relocating any western pond turtle. If any western pond turtle or other turtle species in the project site test positive or are suspected of turtle-shell disease, then all turtles at the project site will be considered to be potentially infected. All equipment and clothing will be decontaminated and dried completely prior to and after use at an aquatic project site to prevent disease transmission between water bodies.
    - NPT will be released within a few hours of capture. Individuals will be kept in containers with high sides, such as 5-gallon (18.9 liter) plastic buckets or 10-gallon (37.9 liter) storage tubs. Place a lid or piece of cloth over the top to darken the container. Keep captured NPT out of direct sunlight because overheating is possible in a short time.
    - The Qualified Biologist will capture and relocate the western pond turtle the shortest distance possible to a location that contains similar suitable habitat and that will not be affected by activities associated with the project. No NPT will be relocated more than 500 meters or to a different watershed to prevent disorientation and the spread of diseases.
    - If NPT found in upland habitat is suspected of traveling to an overwintering/aestivation or nesting site and voids its bladder upon handling, then the western pond turtle will be returned to aquatic habitat.

- Nesting or gravid female NPT will be avoided to the greatest extent practicable. If an adult female western pond turtle is gravid or post-nesting, the Qualified Biologist will determine if she will be relocated to suitable undisturbed nesting habitat or suitable aquatic habitat outside of the work area. All possible precautions will be taken to allow her to continue to nest and to avoid nest failure.

Refer to the 2024 Northwestern Pond Turtle Avoidance and Minimization Measures (USFWS 2025a) and Southwestern Pond Turtle Avoidance and Minimization Measure Recommendations (USFWS 2025b) for more details on relocation of NPT.

***Mitigation Measure BIO-5f. Mitigation for Northwestern Pond Turtle.***

**NPT-5. No Net Loss of Basking Habitat.** Maintain existing basking structures (e.g., logs, rocks, shorelines, emergent vegetation, algal mats, and substrate adjacent to aquatic habitat whenever possible. Avoid planting trees and shrubs that would shade suitable basking habitat and maintain an open riparian canopy to allow sufficient solar exposure for basking. Install basking structures as necessary for any basking habitat that is removed.

**NPT-6. Avoid Excessively Shading Nesting Habitat.** Avoid planting trees and shrubs that would shade suitable nesting habitat if nesting habitat is limited near the Project site.

***Mitigation Measure BIO-6a: Amphibian Protection During Construction – Site and Timing Controls***

Prior to and during construction in areas that may support special-status amphibians, a Qualified Biologist shall implement amphibian protection measures consistent with the 2022 Programmatic Biological Opinion issued by the USFWS (USFWS 2022) and CDFW guidance. Measures shall include:

- Conducting pre-construction surveys no more than 24 hours prior to initial ground disturbance.
- Limiting construction during rainfall events or periods of high precipitation, and restricting night work when amphibians are active.
- Supervising vegetation clearing and grubbing to avoid harm to amphibians, using hand tools or directed equipment, and leaving refugia habitat intact where feasible.
- Incorporating wildlife-permeable features in fences, curbs, and drainage structures to allow amphibian movement.
- Confine upland work to April 15–October 31 and avoid aquatic breeding habitat during the breeding season unless surveys demonstrate young-of-year amphibians have dispersed.

***Mitigation Measure BIO-6b: Amphibian Protection During Equipment Use and Materials Handling***

During construction activities involving water bodies, dewatering, or material placement, the City of Palo Alto shall implement measures to prevent amphibian injury or mortality consistent with the 2022 Programmatic Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS 2022). Measures shall include:

- Following decontamination protocols to prevent disease spread between sites.
- Screening pump intakes to avoid entrainment of amphibians.
- Using erosion control and restoration materials that do not include synthetic netting or other entanglement hazards.

Ensuring that all temporary structures, cofferdams, or barriers do not block amphibian movement and are removed promptly after work completion.

***Mitigation Measure BIO-7. Crotch's Bumble Bee Mitigation Measures***

A Qualified Biologist shall survey for Crotch's bumble bee prior to the commencement of construction activities during the colony active period or the gyne flight season (generally, April 1 to October 31). The survey shall occur at least two hours after sunrise (> 60F and < 90F with no rain) or two hours before sunset and the survey area shall include the Project boundaries and a surrounding 100-foot buffer area. The survey duration shall be appropriate to the size of the Project site and buffer area based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat.

During the survey(s) the Qualified Biologists may not capture or handle bumble bees unless specifically authorized to do so for the Project by CDFW. At a minimum, survey methods shall include the following:

- Search areas with flowering plants for foraging bumble bees. Observed foraging activity may indicate a nest is nearby, and therefore, the survey duration shall be increased when foraging bees are present.
- Watch any bumble bees present and observe their flight patterns. Attempt to track their movements between foraging areas and the nest.
- Visually look for nest entrances. Observe burrow, any other underground cavities, logs, or other possible nesting habitat.
- Look for concentrated bumble bee activity.
- Listen for humming of nest colony.
- If bumble bees are observed, attempt to identify the species by taking a picture.
- If foraging bees are present and a nest has not been found, floral resources within the Project's disturbance footprint may be carefully removed with hand-held tools to minimize foraging bee presence during Project activities. The continuation of bumble bee activity once such floral resources are removed may be an indication that a nest is present.
- The biologist conducting the survey shall record when the survey was conducted, a general description of any suitable foraging habitat/floral resources present, a description of observed bumble bee activity, a description of any vegetation removed to facilitate the survey, and their determination of if the survey observations suggest a Crotch's bumble bee nest may be present or if construction activities could otherwise harm the species. The survey may be conducted immediately prior to construction granted all the above and below conditions are met.

If a special-status bumble bee is observed during the survey (not associated with a nest), or if any sign(s) of a bumble bee nest is observed and if it cannot be established the species present is not a special-status bumble bee, then construction shall not commence until CDFW provides further guidance, which may include an additional survey by a bumble bee expert, waiting until the colony active season ends, obtaining take authorization, or other actions.

### *Mitigation Measure BIO-8. Monarch Butterfly*

This Mitigation Measure shall only be implemented if monarch butterfly advances from Federal Proposed to Federal Candidate Species under the ESA.

If suitable larval host plants are detected during plant preconstruction surveys described in Mitigation Measure BIO-2a, then to the extent practicable, Project activities with potential to impact grassland, riparian and oak woodland habitat shall occur during the recommended work window of November 15 – March 15 (USFWS 2023).

If herbicide or insecticide application is proposed as part of the Project, the best practices should be followed to minimize impacts to monarch butterfly.

- Neonicotinoids or other systemic insecticides shall not be used
- Pesticides shall not be applied between November 15 – March 15.
- Insecticides that target lepidopterans shall not be used
- Strobilurin fungicides shall not be used on milkweed.
- Targeted application methods should be favored over large-scale broadcast applications. Precautions should be followed to limit off-site movement.
- Suitable monarch habitat should be protected with a pesticide-free spatial buffer of at least 40 feet from ground-based pesticide applications.

### *Mitigation Measure BIO-9. San Francisco Dusky-footed Woodrat*

No more than 30 days prior to initial ground disturbance in woodland or scrub/chaparral communities, a survey shall be conducted by a Qualified Biologist to identify woodrat stick nests that could be directly impacted by Project activities. Any stick nests within active work areas shall be dismantled by hand under the supervision of a Qualified Biologist. If young are encountered during the dismantling process, material shall be placed back on the nest and remain undisturbed for two weeks in order to give the young enough time to mature and leave of their own accord. After two weeks, the nest dismantling process may begin again.

Nest material shall be moved and distributed within adjacent areas (oak woodland, scrub, or chaparral) that will not be disturbed. If construction does not occur within 30 days of the pre-construction survey, surveys shall be repeated.

### *Mitigation Measure BIO-10. American Badger*

A Qualified Biologist shall conduct focused pre-construction surveys for badger dens no more than two weeks prior to construction in all suitable habitat proposed for construction, ground disturbance or staging. If no potential badger dens are present, no further measures are required. If potential badger dens are observed, the Qualified Biologist shall monitor them for activity to determine whether the den is active. If the den is determined to be occupied by a female with young, ground disturbance and construction activity shall be avoided within 50 feet

of the den until the young have matured and dispersed. If the den is determined to be active, but a female with young are not present, burrow exclusion using passive measures such as one-way doors or equivalent shall be attempted for a minimum of three days to discourage their use prior to any Project-related ground disturbance. If the Qualified Biologist determines that the dens have become inactive as a result of the exclusion methods, the dens shall be excavated by hand to prevent them from being re-occupied during construction.

### *Mitigation Measure BIO-11. Vegetation Protection During Construction*

The City of Palo Alto shall minimize disturbance to native vegetation and aquatic habitat during construction in accordance with applicable vegetation and habitat protection measures contained in the 2022 Restoration Programmatic Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS 2022). Measures shall include limiting vegetation removal and ground disturbance to the minimum area necessary, using existing access routes where feasible, minimizing soil compaction, and removing invasive plant species using accepted management practices and disposal methods that prevent their spread.

### *Mitigation Measure BIO-12: Riparian Revegetation and Habitat Restoration*

The City of Palo Alto shall prepare and implement a revegetation plan to restore temporarily disturbed riparian and upland vegetation following completion of construction, consistent with the revegetation and monitoring measures identified in the 2022 Restoration Programmatic Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS 2022). Disturbed areas shall be restored using locally appropriate native plant species based on nearby reference habitat. Erosion control materials used in revegetated areas shall be wildlife-safe. Revegetated areas shall be monitored and maintained for a minimum of two years, or until success criteria are achieved, and corrective actions shall be implemented if revegetation success criteria are not met.

### *Mitigation Measure BIO-13a: Staging, Storage, and Stockpile Area BMPs for Water Quality Protection*

In accordance with WQHM-1 of the 2022 Restoration Programmatic Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS 2022), all Project staging, storage, and stockpile areas shall be located outside of habitat suitable for Covered Species unless necessary for Project implementation and approved by the USACE and the USFWS Field Office. Where feasible, staging shall occur on access roads or other previously disturbed upland areas, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation, to avoid sensitive habitats and limit disturbance to surrounding habitats. Similarly, all maintenance equipment and materials (e.g., road rock and project spoil) shall be restricted to the existing service roads, paved roads, or other determined designated staging areas.

Staging areas shall be established for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants. Staging areas shall have a stabilized entrance and exit and shall be at least 100 feet from bodies of water, unless site-specific circumstances do not provide such a setback; in such cases, the maximum setback possible shall be used. If an off-road staging area is chosen and if Covered Species are potentially present, the Qualified Biologist shall survey the selected site to verify that no sensitive resources would be disturbed by staging activities.

Stockpiling of materials, portable equipment, vehicles, and supplies (e.g., chemicals), shall be restricted to the designated construction staging areas. If rain is predicted in the forecast during the dry season, and stockpiled soils shall remain exposed and unworked for more than seven days, then erosion and sediment control measures shall be used. If there is a high-wind scenario, then soils shall be covered at all times. During the wet season, no stockpiled soils shall remain exposed, unless properly installed and maintained erosion controls are in place on and around the stockpile. Temporary stockpiling of material onsite shall be minimized. Stockpiled material shall be placed in upland areas far enough away from Covered Species habitat that these materials cannot discharge to waters of the United States.

### *Mitigation Measure BIO-13b: Storm Water Pollution Prevention Plan*

The City of Palo Alto shall obtain coverage under the NPDES General Order for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Order) and shall prepare and implement a site-specific storm water pollution prevention plan (SWPPP), as required by the Construction General Order.

As part of the SWPPP, the City shall prepare and implement a hazardous materials management and spill response plan. The City shall ensure that any hazardous materials are stored at the staging area(s) with an impermeable membrane between the ground and hazardous material, and that the staging area is designed to prevent the discharge of pollutants to groundwater and runoff water. Hazardous materials, such as vehicle fuels and lubricants, shall be used in designated staging areas away from stream channels and wetlands, unless otherwise approved in the ESA Section 7(a)(2) Review Form, according to local, state, and federal regulations. The SWPPP shall require that any spill or release of hazardous materials that could affect waters of the state be immediately contained and reported in accordance with California Water Code Section 13271. Reporting procedures shall include immediate notification of local emergency responders and the California Governor's Office of Emergency Services State Warning Center, consistent with applicable state requirements. The City shall notify regulatory agencies within 24 hours of any leaks or spills and shall properly contain and dispose of any unused or leftover hazardous products off site.

### *Mitigation Measure BIO-14: In-Water Work Protection Measures*

The City of Palo Alto shall implement in-water work protection measures consistent with the 2022 Restoration Programmatic Biological Opinion (PBO) issued by the U.S. Fish and Wildlife Service (USFWS 2022) to minimize impacts to aquatic species and habitat. Specifically, the City shall comply with PBO measures IWW-1, IWW-2, IWW-3, IWW-4, IWW-5, IWW-6, and IWW-7. Measures shall include:

- Using clean, appropriately sized gravels, cobble, woody material, or other substrates for habitat restoration and ensuring that imported materials are free of contaminants, pathogens, and invasive species.
- Minimizing operation of equipment within streams and wetlands and using low-ground-pressure equipment and protective mats where necessary to reduce soil compaction and disturbance.
- Conducting in-water work in a manner that minimizes sediment discharge, turbidity, and contamination of aquatic habitats, including use of non-toxic construction materials.
- Isolating in-water work areas from flowing water using cofferdams, diversion structures, or similar methods, where necessary, and limiting the duration and extent of stream diversion and dewatering.

- Implementing fish and aquatic species exclusion and relocation procedures, if required, prior to dewatering work areas.
- Screening pump intakes and designing diversion systems to prevent fish entrainment and maintain downstream flows and water quality.
- Removing temporary diversion structures and restoring natural flow conditions following completion of construction.

### 4.2.5 Cultural Resources

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? | ☐ | ☐ | ☐ | ☒ |
| b) | Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | ☐ | ☒ | ☐ | ☐ |
| c) | Disturb any human remains, including those interred outside of dedicated cemeteries? | ☐ | ☒ | ☐ | ☐ |

Tom Origer & Associates prepared a Cultural Resources Study for the Project in November 2025 (Tom Origer & Associates 2025, Appendix B). The study was conducted to identify potential historic and archaeological resources that could be considered significant under CEQWA in the vicinity of the Project site. The study included archival research at the Northwest Information Center at Sonoma State University, a search of the Sacred Lands File from the California Native American Heritage Commission (NAHC), Native American tribal outreach, and a field survey of the Project site. Information in this section of the IS/MND is based on and adapted from the Cultural Resources Study.

#### ENVIRONMENTAL SETTING

##### *Prehistory*

The concept of prehistory refers to the period of time before events were recorded in writing and varies worldwide. Because there is no written record, our understanding of California prehistory relies on archaeological materials and oral histories passed down through generations. Early archaeological research in this area began with the work of Max Uhle and Nels Nelson. Uhle is credited with the first scientific excavation in California with his work at the Emeryville Shellmound in 1902, and Nelson spent several years (1906 to 1908) surveying the San Francisco Bay margins and California coast for archaeological sites (Nelson 1909). In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifacts from sites in the lower Sacramento Valley (Lillard et al. 1939; Heizer and Fenenga 1939). Their cultural sequence became known as the Central California Taxonomic System (CCTS), which identified three culture periods termed the Early, Middle, and Late Horizons, but without offering date ranges. Refinement of the CCTS became a chief concern of archaeologists as the century progressed, with publications by Richard Beardsley (1948, 1954) and Clement Meighan (1955) based on materials excavated by the University of California archaeological survey.

In 1973, David Fredrickson synthesized prior work, and in combination with his own research, he developed a regional chronology that is used to this day, albeit modified for locality-specific

circumstances. Fredrickson's scheme shows that native peoples have occupied the region for over 11,000 years, and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

These horizons or periods are marked by a transition from large projectile points and milling slabs, indicating a focus on hunting and gathering during the Early Period, to a marine focus during the Middle Period evidenced by the number of shellmounds in the Bay Area. The Middle Period also saw more reliance on acorns and the use of bowl-shaped mortars and pestles. Acorn exploitation increased during the Lake Period and the bow and arrow were introduced.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles' and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones.

### *History*

Historically, the APE lies within the El Corte de Madera land grant (General Land Office [GLO] 1858). Rancho el Corte de Madera consisted of two leagues of land when granted to Máximo Martinez by Governor Micheltorena in 1844 (Cowan 1977:30). Martinez had been previously granted the neighboring rancho Cañada del Corte de Madera by Governor Figueroa, jointly with José Domingo Peralta. Martínez was a soldier and later served as *regidor* in the Pueblo of San José.

The City of Palo Alto was officially established in 1894 (Hoover *et al*. 2002:445; Sawyer 1922:284). It was founded by Leland Stanford, Sr., following the death of his son. Stanford had bought land in the Palo Alto area to establish a horse ranch (Gullard and Lund 1989:82). After their son's death in 1884, Stanford and his wife Jane decided to build a university near their home to commemorate their son (Gullard and Lund 1989:82). When the nearby town of Mayfield refused to stop selling liquor and close its saloons, Stanford, through Timothy Hopkins, purchased additional land for the establishment of a city for students of Stanford University to use (Gullard and Lund 1989:59; Hoover *et al*. 2002:445.

In 1938, William Hewlett and David Packard began using Packard's one-car garage as a laboratory. Within 20 years, Hewlett-Packard Company became the leader in manufacturing electronic and computer devices, which led to the beginning of "Silicon Valley" (Hoover *et al*. 2002:446). The draw of the technology industry, combined with the post-World War II population boom in the San Francisco Bay Area, led to Palo Alto's expansion. Like much of the San Francisco Bay Area, the 1950s and 1960s were a time when many orchards and farms turned into suburbs. Eventually, the town of Mayfield was subsumed into Palo Alto. In addition to the increase in houses, infrastructure, services, and industrial buildings were constructed to service and employ the larger population.

Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

## REGULATORY SETTING

### *Cultural Resources*

As set forth in Section 5024.1(c) of the Public Resource Code (PRC), for a cultural resource to be deemed "important" under CEQA and thus eligible for listing on the California Register of Historical Resources (California Register), it must meet at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
2. Is associated with the lives of persons important in our past; or
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or
4. Has yielded or is likely to yield, information important to prehistory or history.

Historic-era structures older than 50 years are most commonly evaluated in reference to Criterion 1 (important events), Criterion 2 (important persons) or Criterion 3 (architectural value). To be considered eligible under these criteria, the property must retain sufficient integrity to convey its important qualities. Integrity is judged in relation to seven aspects including: location, design, setting, materials, workmanship, feeling, and association. Prehistoric and historic-era archaeological resources are commonly evaluated with regard to Criterion 4 (research potential).

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Section 15064.5(b) prescribes that project effects that would "cause a substantial adverse change in the significance of an historical resource" are significant effects on the environment. Substantial adverse changes include both physical changes to the historical resource, or to its immediate surroundings.

Historic properties are also protected under federal law under the National Historic Preservation Act (NHPA). The working of the criteria for inclusion on the National Register of Historic Places (National Register) is similar to the working of the California Register criteria. Under PRC Section 5024.1(d)(1), a property that is listed on the National Register is automatically listed in the California Register as well.

### *Archaeological Resources*

Section 21083.2 of the CEQA guidelines also defines "unique archaeological resources" as "any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and shows that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.

- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

This definition is equally applicable to recognizing “a unique paleontological resource or site.” CEQA Section 15064.5 (a)(3)(D), which indicates “generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history,” provides additional guidance.

### *Tribal Cultural Resources Assembly Bill 52*

Assembly Bill (AB) 52 (Chapter 532, Statutes 2014) required an update of the CEQA Guidelines to include questions related to impacts to tribal cultural resources. AB 52 establishes a consultation process with all California Native American Tribes on the NAHC List, Federal and Non-Federal Recognized Tribes. AB 52 also establishes a new class of resources: Tribal Cultural Resources. Key components of AB 52 include consideration of Tribal Cultural Values in determination of project impacts and mitigation and required Tribal notice and meaningful consultation.

PRC Section 21080.3.2(b) states that consultation ends when either 1) parties agree to mitigation measures or avoid a significant effect on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort concludes that mutual agreement cannot be reached.

Tribal consultation conducted for this Project is described in detail in Section 4.2.18, Tribal Cultural Resources.

Human Remains Procedures for the treatment of discovered human remains are outlined in California Health and Safety Code §§ 7050.5 and 7052 and PRC § 5097. In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken.

1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    a. The County coroner has been contacted and has determined that no investigation of the cause of death is required, and
    b. If the Coroner determines the remains to be Native American:
        i. The coroner shall contact the NAHC within 24 hours of discovery.
        ii. The NAHC shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
        iii. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of the human remains and associated grave goods with appropriate dignity.

## CULTURAL RESOURCES STUDY FINDINGS

### *Archival Research*

Results of the records search indicated that the Project site has been previously subjected to a cultural resources study. Two studies have been conducted within a half-mile of the Project site. One resource is documented within a half-mile of the Project site, consisting of stone terraces and stairs. The resource is recorded approximately 725 meters from the Project site and does not

have the potential to extend into it. A review of 19th and 20th-century maps showed no buildings within the Project site. There are no reported ethnographic sites within one mile of the Project site.

### *Buried Site Sensitivity Assessment*

Tom Origer & Associates estimated the sensitivity of the Project site for buried archaeological sites using a method which considers the age of the landform, slope, and proximity to water (Byrd et al. 2017). A location is considered to have highest sensitivity if the landform dates to the Holocene, has a slope of five percent or less, is within 150 meters of fresh water, and 150 meters of a confluence. A basic premise of the model is that archaeological deposits will not be buried within landforms that predate human colonization of the area. Calculating these factors using the buried site model, a location's sensitivity is classed as follows: very low; low; moderate; high; very high.

Based on the landform age and the analysis of the environmental setting, the Project site showed a high potential for buried archaeological site indicators within the creek channel and low potential in areas not within Holocene landforms.

### *Field Survey*

A field survey of the Project site was completed by Tom Origer & Associates on May 7, 2025 and November 10, 2025. Three and a half person-hours were send in the field, and field conditions were cool but sunny. Surface examination consisted of walking in 10-meter zip-zagging corridors, and a hoe was used as needed to expose the ground surface. Ground visibility ranged from fair to poor, which vegetation being the primary hindrance. In addition, the creek bank was examined for buried archaeological materials.

No archaeological site indicators were observed during the course of the survey, and no buried archaeology was observed within the creek banks. Additionally, no buildings or structures were observed within the Project site. Therefore, there are no historic structures within the Project site.

## DISCUSSION OF IMPACTS

***a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?***

*No Impact*

The results of the record search conducted for the Cultural Resources Study found no previously documented historical resources within the Project site. One historic resource is documented within a half-mile of the Project site; however, it does not have the potential to extend into the Project site. There are no built environment structures within the Project site; therefore, there are no structures with potential to be considered historic structures within the Project site. Since there are no historical resources within the Project site, the Project would not cause a substantial adverse change in the significance of a historical resource. No impact would occur.

***b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?***

*Less-than-Significant Impact with Mitigation Incorporated*

The Project site was determined to have a high potential for buried archaeological resources within the creek banks because the landform dates to the Holocene, has a slope of five percent

or less, is within 150 meters of fresh water, and is within 150 meters of a confluence. No archaeological site indicators or buried archaeology within the creek banks were observed during the course of the field survey conducted by Tom Origer & Associates; however, ground-disturbing activities during construction could result in the discovery of unknown archaeological resources within the Project site, which is a potentially significant impact.

To reduce potential impacts to archaeological resources, Mitigation Measure CUL-1 would be implemented, which requires an archaeological and cultural resource awareness training to be given to all construction personnel. Mitigation Measure CUL-2 would also be implemented, which requires a Native American monitor and a qualified archaeologist be present for all earthmoving construction activities. In the event that significant cultural materials are encountered during construction, Mitigation Measure CUL-3 would be implemented, which requires work to be halted within 100 feet of the discovery and the on-site qualified archaeologist to make recommendations regarding the significance of the find and the appropriate treatment of the resource. With the implementation of these measures, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. The impact would be less than significant with mitigation incorporated.

***c) Disturb any human remains, including those interred outside of dedicated cemeteries?***

*Less-than-Significant Impact with Mitigation Incorporated*

There are no known human remains located within the Project site. However, ground-disturbing activities during Project construction have the potential to discover and disturb unknown human remains that may be present within the Project site. To reduce potential impacts to human remains, Mitigation Measure CUL-4 would be implemented, which outlines the procedures for the treatment of accidentally discovered human remains in accordance with California Health and Safety Code §§ 7050.5 and 7052 and Public Resources Code (PRC) § 5097. With implementation of this measure, the Project would not disturb any human remains, including those interred outside of dedicated cemeteries. The impact would be less than significant with mitigation incorporated.

**MITIGATION MEASURES**

***Mitigation Measure CUL-1: Cultural Sensitivity Training***

Prior to any on-site grading work, the project applicant shall be required to submit evidence that a Cultural Awareness Training program has been provided to construction personnel. The training shall be facilitated by a qualified archaeologist in collaboration with a Native American representative registered with the Native American Heritage Commission for the City of Palo Alto and that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code Section 21080.3.

***Mitigation Measure CUL-2: Sub-Surface Monitoring***

Prior to any tree removal, grading, demolition, and/or building activities, the City shall notify the Director of Planning of grading and construction dates and activities that require a qualified archeologist and Native American monitor to be present on the project site. The City shall then notify the tribe via email correspondence 10 days prior to any grading or construction activities. If the tribe chooses not to send a monitor or does not respond within the 10 days, work shall continue without the monitor.

A qualified archaeologist and a Native American monitor, registered with the Native American Heritage Commission for the City of Palo Alto and that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code Section 21080.3, shall be present during earthmoving activities including, trenching, initial or full grading, scraping or blading, lifting of foundation, boring, drilling, or major landscaping. The qualified archaeologist and Native American monitor shall have the authority to halt construction activities in the event any cultural materials are encountered during ground-disturbing construction activities. The qualified archeologist and monitor shall keep a daily monitoring log on days that monitoring occurs documenting construction activities that were monitored, location of the monitoring, and any cultural materials identified. These daily monitoring logs shall be made available to the City upon request.

The City shall notify the Director of Planning, Native American Monitor, and Archeological Monitor, of any finds during grading or other construction activities. Any historic or prehistoric material identified in the project area during excavation activities shall be evaluated for eligibility for listing in the California Register of Historic Resources as determined by the California Office of Historic Preservation. Data recovery methods may include, but are not limited to, backhoe trenching, shovel test, hand augering, and hand-excavation. The techniques used for data recovery shall follow the protocols identified in the approved treatment plan. Data recovery shall include excavation and exposure of features, field documentation, and recordation. All documentation and recordation shall be submitted to the Northwest Information Center, and the Director of Planning. The qualified archaeologist shall be responsible for submitting all required reports and documentation to the appropriate California.

### *Mitigation Measure CUL-3. Treatment Plan*

In the event any significant cultural materials are encountered during construction, construction within a radius of 100 feet of the find shall be halted, the Director of Planning shall be notified, and the on-site qualified archaeologist shall examine the find and make appropriate recommendations regarding the significance of the find and the appropriate treatment of the resource.

The qualified archeologist in collaboration with a Native American monitor, registered with the Native American Heritage Commission for the City of Palo Alto and that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code Section 21080.3, shall prepare and implement a treatment plan that reflects permit-level detail pertaining to depths and locations of excavation activities. The treatment plan shall contain, at a minimum:

- Identification of the scope of work and range of subsurface effects (including location map and development plan), including requirements for preliminary field investigations.
- Description of the environmental setting (past and present) and the historic/prehistoric background of the parcel (potential range of what might be found).
- Monitoring schedules and individuals. While coordination will occur jointly, Native American monitors and archaeological staff shall be notified separately of all scheduling, updates, and field activities to ensure clear and direct communication.
- Development of research questions and goals to be addressed by the investigation (what is significant vs. what is redundant information).
- Detailed field strategy to record, recover, or avoid the finds and address research goals.

- Analytical methods.
- Report structure and outline of document contents.
- Disposition of the artifacts. All cultural materials and artifacts recovered during project-related activities shall remain the property of the consulting tribe and shall be returned to the Tribe for final disposition, care, and curation in accordance with Tribal protocols.
- Security approaches or protocols for finds. In the event that a significant quantity of cultural materials is encountered, the consulting tribe shall require the use of a secure, locked Conex box or equivalent storage unit, to be maintained on-site and managed by the consulting tribe's monitor. All associated costs for security measures, including procurement and maintenance of the storage unit, shall be the responsibility of the project applicant/developer. Cultural materials shall remain secured on-site under the consulting tribes oversight until the completion of ground-disturbing activities, at which point the consulting tribe shall assume full possession and responsibility for curation.
- Appendices: all site records, correspondence, and consultation with Native Americans, etc.

The treatment plan shall utilize data recovery methods to reduce impacts on subsurface resources. The treatment plan must be reviewed and approved by the Director of Planning, or the Director's designee prior to implementation of the plan.

### *Mitigation Measure CUL-4: Human Remains*

If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance.

### 4.2.6 Energy

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | Result in 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? | ☐ | ☐ | ☒ | ☐ |

#### ENVIRONMENTAL SETTING

Electricity in Palo Alto is provided by City of Palo Alto Utilities (CPAU). Palo Alto is the only City in California that owns and operates a full suite of municipal utility services. CPAU provides both carbon neutral electricity and natural gas to all customers.

#### REGULATORY SETTING

##### *City of Palo Alto 2022 Sustainability and Climate Action Plan*

The Sustainability and Climate Action Plan (S/CAP) outlines a path towards reducing local carbon emissions 80 percent below 1990 levels by 2030. The S/CAP provides an overview of the GHG emissions, identifies key goals and actions to achieve emissions reductions, and assesses financing tools for implementation of the Plan. The Plan identifies eight key issue areas: climate action, building electrification, increasing active transportation, supporting electric vehicle (EV) adoption, preparing for climate change, enhancing biodiversity, supporting zero waste, and furthering water conservation (City of Palo Alto 2022).

Actions pertaining to energy in the S/CAP are described below:

- **E1.** Reduce all or nearly all greenhouse gas emissions in single-family appliances and equipment, including water heating, space heating, cooking, clothes drying, and other appliances that use natural gas.
- **E2.** Reduce greenhouse gas emissions in non-residential equipment, including mixed-fuel rooftop packaged HVAC units, cooking equipment, and small non-residential gas appliances.
- **E3.** Partner with major facility owners to reduce gas use in major facilities by at least 20%.
- **E4.** Reduce natural gas use at City facilities.
- **E7.** Use codes and ordinances – such as the energy reach code, green building ordinance, zoning code, or other mandates – to facilitate electrification in both existing buildings and new-construction projects where feasible.

- **E8.** Develop and implement an electric grid modernization plan to increase capacity and resilience.
- **E9.** Seek additional electrification opportunities in commercial and multi-family buildings to contribute as much as possible towards achieving an additional eight percent city-wide emissions reduction below 1990 levels.

### DISCUSSION OF IMPACTS

***a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?***

*Less-than-Significant Impact*

The use of equipment and vehicles during Project construction would require the use of energy resources. The construction process would be designed to be efficient to avoid excess monetary costs. Specifically, equipment and fuel would not be used wastefully during construction due to the added expense associated with renting, maintaining, and fueling equipment. Over a five-year period, adjustments and modifications to the creek design elements may be made to improve or restore Project performance. All adjustments and modifications during the five-year period would be performed only with hand tools. As such, energy and fuel would not be wasted or used inefficiently by construction equipment and vehicles.

Project operation would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The purpose of the Project is to restore a portion of Arastradero Creek. While the installation of the step-pools and utility relocations would require the use of energy, the Project would also reduce energy associated with repairs and maintenance for issues that arise from erosion and pipeline repairs. Therefore, the Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. The impact would be less than significant.

***b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

*Less-than-Significant Impact*

The City of Palo Alto Sustainability and Climate Action Plan is the local plan for renewable energy and energy efficiency (City of Palo Alto 2022). As described above, the S/CAP contains actions intended to increase energy efficiency and electrification and reduce reliance upon fossil fuels by transitioning to renewable energy sources. The Project would not conflict with or obstruct any strategies of the S/CAP. The Project would not create any new demand for natural gas and would not directly increase energy consumption. The impact would be less than significant.

### 4.2.7 Geology and Soils

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| 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?* | ☐ | ☐ | ☐ | ☒ |
| *ii) Strong seismic ground shaking?* | ☐ | ☐ | ☒ | ☐ |
| *iii) Seismic-related ground failure, including liquefaction?* | ☐ | ☐ | ☒ | ☐ |
| *iv) Landslides?* | ☐ | ☐ | ☒ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☒ | ☐ | ☐ |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ☒ | ☐ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, 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

### *Regional Geology*

The Project site is located in Palo Alto which lies in the central portion of the Coast Range geomorphic province, which extends along the western edge of the state. The Coast Range geomorphic province is bounded by the Transverse Ranges in the south, the Klamath Mountains in the north, and the Great Valley in the east. The Coast Range province is primarily composed of thick Mesozoic and Cenozoic sedimentary strata, and are dominated by irregular, land-slide topography of the Franciscan Complex. This geomorphic province roughly parallels the San Andreas Fault, which extends for over 600 miles from Point Arena in Mendocino County to the Gulf of California (California Geological Survey [CGS] 2002).

The surficial geology of the City features unconsolidated alluvium near active and inactive stream courses. These deposits consist of Holocene gravels, silt, sand, and clay, with variable amounts of organic matter, and are typically found within drainage channels and small alluvial fans. Underlying these younger alluvial deposits are a lower Pleistocene to Upper Pliocene assemblage of moderately to well-consolidated fluvial deposits of pebble and cobble gravel associated with the Santa Clara Formation. Elsewhere in the City, localized surface exposures display friable, fossil-bearing, fine-grained sandstone of the Merced Formation. The primary underlying bedrock is part of the Franciscan Complex (City of Palo Alto 2016).

### *Geologic and Soil Units*

The topography of the site is a gentle slope with elevations ranging from approximately 420 to 360 feet above sea level.

Soils underlying the Project site include Montavista clay loam, 15 to 30 percent slopes; and Zeppelin-Mccoy complex, 15 to 30 percent slopes (United States Department of Agriculture [USDA] Natural Resources Conservation Science [NRCS] 2025). Hand-grab samples taken at the Project site during a July 2025 geotechnical investigation conducted by Crawford & Associates, Inc. identified poorly graded gravel with varying amounts of sand and clay, clayey sand, and sandy lean clay.

### *Faults*

The Project site is within the San Francisco Bay Area, which is a known seismically active region. Seismic activity can lead to various geological and seismic hazards, including fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides, and avalanches. Palo Alto has numerous faults, and both local and external faults could impact the Project site.

The nearest major fault zone to the Project site is the San Andreas Fault, located approximately 1.8 miles southwest of the Project site (CGS 2026a). The San Andreas Fault is designated as an Alquist-Priolo Earthquake Zone of Required Investigation. Other faults in the region that could induce seismic ground shaking at the Project site include the Monte Vista Fault, the Hayward Fault, the Calaveras Fault, and the San Gregorio Fault (City of Palo Alto 2016).

## DISCUSSION OF IMPACTS

***a-i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?***

*No Impact*

As described in the *Environmental Setting* section above, the Project site is not located in an Alquist-Priolo Earthquake Fault Zone. The nearest Alquist-Priolo Fault Zone is the San Andreas Fault Zone, located approximately 1.8 miles southwest of the Project site. There are no other mapped fault traces within the Project site (CGS 2026a). The Project would not include the construction of any inhabitable structures which could pose risks of loss, injury, or death involving rupture of a known earthquake fault. Therefore, the Project would not cause potential adverse effects associated with rupture of a known earthquake fault. No impact would occur.

***a-ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?***

*Less-than-Significant Impact*

The Project site has the potential to endure strong seismic ground shaking from earthquakes that could occur on active and potentially active faults in the region. The Project contractor would be required to comply with all federal Occupational Safety and Health Administration (OSHA) and California OSHA (Cal/OSHA) requirements related to construction worker safety, which would reduce risks associated with strong seismic ground shaking during construction to a less-than-significant level. Operation of the Project would not cause substantial effects associated with strong seismic ground shaking. The Project would not create any new inhabitable structures or any structures which could result in the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, the Project would not directly or indirectly cause potential substantial adverse effects associated with strong seismic ground shaking. The impact would be less than significant.

***a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?***

*Less-than-Significant Impact*

Liquefaction primarily occurs in relatively loose, saturated, cohesionless soils that lose their strength and become incapable of supporting the weight of overlying soils or structures when subject to earthquake stresses. Portions of the Project site are within a CGS Liquefaction Zone (CGS 2026a). The Project consists of improvements to Arastradero Creek to address erosion issues by installing step-pools, PALs, and log grade control structures. Additionally, minor trail grading along Arastradero Trail would ensure functional drainage. These improvements would not exacerbate the potential for soils at the site to liquefy during seismic events and would not create any new inhabitable structures or otherwise present risks to life. The utility pipelines to be relocated would be designed to be suitable for the site's geologic and soil conditions, considering any geotechnical hazards such as liquefaction. Therefore, the Project would not cause potential substantial adverse effects related to seismic-related ground failure. The impact would be less than significant.

***a-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?***

*Less-than-Significant Impact*

Portions of the Project site are within a CGS mapped landslide zone (CGS 2026a). The Project would not construct any new structures that would increase landslide risk. The Project would involve minor grading of Arastradero Trail and work along Arastradero Creek, which could cause minor ground instability. However, the Project site is located in a relatively flat area and all

graded areas would be stabilized via revegetation or permanent erosion control structures. Therefore, grading associated with the Project would not increase landslide risk in the area of the Project, and the Project would not cause potential substantial adverse effects involving landslides. The impact would be less than significant.

***b) Result in substantial soil erosion or the loss of topsoil?***

*Less-than-Significant Impact with Mitigation Incorporated*

During construction, Project activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the Project site. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. These potential erosion effects would be temporary and limited to the active construction period. Because of the Project location, ground-disturbing activities would occur in proximity to sensitive drainage features where erosion controls are particularly important. As described in Section 4.2.4, Biological Resources, Mitigation Measure BIO-13b requires the City to prepare and implement a SWPPP to comply with the NPDES Construction General Permit requirements. the SWPPP would contain measures to reduce erosion and pollutant runoff into waterways. In addition, grading work during construction would be required to comply with Palo Alto Municipal Code Chapter 16.28, which requires that an Erosion and Sediment Control Plan (ESCP) be prepared for any project where grading will occur within 100 feet from the top of bank, the mean high watermark of a body of water, or the boundary of the wetlands associated with a watercourse or water body. The ESCP may contain erosion control measures such as such as fiber rolls, silt fencing, stabilized construction entrances, soil cover, and phased grading to minimize erosion and sediment transport. Additionally, the Palo Alto Municipal Code (PAMC) requires that all land-disturbing and grading activities be undertaken in a manner designed to minimize surface runoff and erosion, and impacts to downstream waterbodies.

Following construction, disturbed areas would be restored and stabilized through backfilling, compaction, revegetation, and erosion control treatments to prevent long-term soil loss.

Therefore, with compliance with the Palo Alto Municipal Code and implementation of Mitigation Measure BIO-13b, the Project would not result in substantial erosion or loss of topsoil. The impact would be less than significant with mitigation incorporated.

***c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?***

*Less-than-Significant Impact*

As described above in Threshold a), portions of the Project site are within a liquefaction hazard zone. The Project would install step-pools, PALS, and log grade control structures. Additionally, minor trail grading would occur along Arastradero Creek Trail and coir fiber matting erosion control fabric would be installed after construction was completed. The improvements would not cause the underlying soil or geologic units to become unstable and would not result in significant hazards should liquefaction of underlying soils occur. The impact would be less than significant.

***d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?***

*Less-than-Significant Impact*

The Project site is underlain by Montavista clay loam, 15 to 30 percent slopes; and Zeppelin-Mccoy complex, 15 to 30 percent slopes. Montavista clay loam has a high clay content and is

considered expansive. However, the Project would not create any new inhabitable structures and would not create substantial direct or indirect risks to life or property. Proposed improvements would be designed in accordance with all applicable local codes and standards, including the Palo Alto Municipal Code and the Palo Alto 2030 Comprehensive Plan. Therefore, the impact would be less than significant.

***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?***

*No Impact*

The Project does not include the installation or use of septic tanks or alternative wastewater disposal systems. Wastewater service in the Project area is provided by the existing municipal sewer system, and the Project would relocate and replace existing sewer infrastructure without introducing new wastewater treatment or disposal facilities. No septic or on-site wastewater systems would be used, soil suitability for such systems is not applicable. Therefore, no impact would occur.

***f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

*Less-than-Significant Impact with Mitigation Incorporated*

The City's Comprehensive Plan notes that Palo Alto is known to contain paleontological and archaeological resources, and that there is potential for discovering additional resources during ground disturbing activities (City of Palo Alto 2017). The geology of the Project site consists of Franciscan Assemblage, which dates from the late Jurassic and Cretaceous Periods, and the Santa Clara Formation, which dates from the late Plioscene through Pleistocene Epochs. The geology of the creek channel, specifically, comprises Holocene alluvium, which is generally considered to have low paleontological sensitivity due to its recent age and depositional environment.

There are no known unique geologic features or paleontological resources within the Project site; however, project construction would involve excavation, trenching and subsurface distribution associated with utility relocation and installation, which could result in the inadvertent discovery of buried paleontological resources. Destruction of paleontological resources is a potentially significant impact; therefore, Mitigation Measure GEO-1 would be implemented to avoid potential impacts. Mitigation Measure GEO-1 requires a worker awareness training by a qualified archaeologist to inform construction personnel of the types of paleontological resources that could be discovered on-site. The training shall include procedures for evaluation and treatment of any discoveries, including immediate ceasing of work in the area of a discovery until a qualified paleontologist can evaluate the find. The qualified paleontologist shall make recommendations appropriate for treatment of the find in accordance with Society of Vertebrate Paleontology (SVP) standards. With implementation of these measures, impacts to paleontological resources and unique geologic features would be less than significant with mitigation incorporated.

## MITIGATION MEASURES

### *Mitigation Measure GEO-1. Paleontological Resources*

Prior to ground-disturbing activities at the Project site, the City shall retain a qualified paleontologist, as defined by the SVP standards, to develop and conduct a Paleontological Resources Awareness Training Program for all construction personnel involved in ground-disturbing activities (including but not limited to grading, excavation, trenching, drilling, and utility installation).

The training shall be conducted prior to the commencement of ground disturbance and shall include, at a minimum:

1. A description of the types of paleontological resources that may be encountered within the project area;
2. Photographic examples of fossils and fossil-bearing sediments;
3. A summary of applicable federal, state, and local regulations protecting paleontological resources;
4. Identification of the procedures to follow in the event of a discovery; and
5. Contact information for the designated qualified paleontologist.

All construction personnel shall be informed that if potential paleontological resources (e.g., fossilized bone, teeth, shell, leaf impressions, or unusual rock formations) are encountered during ground-disturbing activities, all ground-disturbing work within 50 feet of the discovery shall be halted immediately. The Construction Manager shall notify the City, who shall retain a qualified paleontologist to evaluate the find and recommend appropriate treatment measures consistent with SVP guidelines. Work in the vicinity of the find shall not resume until the paleontologist has determined that the resource has been appropriately assessed and any necessary mitigation has been implemented.

Documentation of the training, including attendance logs and training materials, shall be maintained by the construction contractor and made available to the City upon request.

### 4.2.8 Greenhouse Gas Emissions

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☒ | ☐ |

#### ENVIRONMENTAL SETTING

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The most common GHGs released from human activity are carbon dioxide, methane, and nitrous oxide (Governor's Office of Planning and Research 2008). The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (e.g., dairies and hog farms).

In the United States, the major sources of GHG emissions are transportation, electricity generation, and industrial activities (U.S. EPA 2022). These three sources are also the top contributors of GHG emissions in California (CARB 2022).

#### REGULATORY SETTING

##### *Global Warming Solutions Act*

AB 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce GHG emissions to 1990 levels by 2020. In 2016, Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solution Action. SB 32 and Executive Order B-30-15 require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 MMTCO2e.

##### *CEQA Air Quality Guidelines*

The Bay Area Air District CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. Palo Alto and other jurisdictions in the SFBAAB utilize the thresholds and methodology for assessing GHG impacts developed by the Air District within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, Air District rules, methods of analyzing impacts, and recommended mitigation measures.

### *City of Palo Alto 2022 Sustainability and Climate Action Plan*

The Sustainability and Climate Action Plan (S/CAP) outlines a path towards reducing local carbon emissions 80 percent below 1990 levels by 2030. The S/CAP provides an overview of the GHG emissions, identifies key goals and actions to achieve emissions reductions, and assesses financing tools for implementation of the Plan. The Plan identifies eight key issue areas: climate action, building electrification, increasing active transportation, supporting electric vehicle (EV) adoption, preparing for climate change, enhancing biodiversity, supporting zero waste, and furthering water conservation (City of Palo Alto 2022).

### *City of Palo Alto 2030 Comprehensive Plan*

The City of Palo Alto 2030 Comprehensive Plan contains the following policies related to GHG emissions:

- **Policy T-1.3.** Reduce GHG and pollutant emissions associated with transportation by reducing VMT and per-mile emissions through increasing transit options, supporting biking and walking, and the use of zero-emission vehicle technologies to meet City and state goals for GHG reductions by 2030.
- **Policy T-1.5.** Support the introduction of autonomous, shared, clean motor vehicles with the goals of improving roadway safety (especially for vulnerable road users), improving traffic operations, supporting core mass transit routes, reducing air pollution and GHG emissions, enhancing transportation opportunities for the disadvantaged and reclaiming valuable land dedicated to motor vehicle transportation and parking.
- **Policy T-1.23.** Monitor VMT per capita and citywide GHG emissions from mobile sources as a measure of progress toward the City's goal of reducing GHG 80 percent below 1990 levels by 2030.
- **Policy T-8.3.** Advocate for efforts by Caltrans and the Valley Transportation Authority to reduce congestion and improve traffic flow on existing freeway facilities consistent with Statewide GHG emissions reduction initiatives.

## DISCUSSION OF IMPACTS

***a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

*Less-than-Significant Impact*

The Air District has adopted thresholds of significance that were designed to establish the level at which GHG emissions would cause significant environmental impacts. The thresholds are included in the 2022 CEQA Air Quality Guidelines (Air District 2022). The Palo Alto 2030 Comprehensive Plan contains specific policies pertaining to GHG emissions.

The Project would result in GHG emissions from temporary construction-related activities, including operation of heavy equipment, use of trucks, and worker trips. Direct long-term operational emissions would be limited to vehicular trips during occasional maintenance activities.

The Air District does not have an adopted threshold of significance for GHG emissions. The Air District's approach to developing thresholds of significance for GHG impacts is to use a "fair share" approach to determine whether an individual project's GHG emissions would be

cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve Statewide long-term GHG reduction goals, the impact of the project's GHG emissions would be less than significant. The Air District has identified required design elements that development and transportation projects must incorporate into project plans in order for their impact to be considered less than significant. There are no design elements required for infrastructure projects; therefore, the Project must only be consistent with the local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b) (Air District 2022). The Palo Alto Sustainability and Climate Action Plan is the local GHG reduction plan. As described below in Threshold b), the Project would be consistent with GHG reduction strategies identified in the Sustainability and Climate Action Plan and therefore would not constitute a significant impact regarding GHG emissions. The impact from GHG emissions would be less than significant.

***b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?***

*Less-than-Significant Impact*

The Project site falls within the planning jurisdiction of the Air District CAP and the Palo Alto Sustainability and Climate Action Plan. As discussed in *Section 4.2.3, Air Quality*, Project construction and operation would not conflict with the Air District CAP. The Palo Alto Sustainability and Climate Action Plan contains strategies to reduce GHG emissions, including promoting renewable energy and electrification, EV vehicles, reducing VMT, reducing waste, and increasing water conservation. No specific actions outlined in the Sustainability and Climate Action Plan are directly appliable to the Project. The Project would include installing step-pools, PALS, and log grade control structures. Additionally, the Project would include minor grading along a portion of Arastradero Trail and relocation of three utility pipelines. The Project would not include the construction or installation of any new source of GHG emissions. Therefore, the Project would not conflict with the Palo Ato Sustainability and Climate Action Plan or the Air District CAP. The impact would be less than significant.

### 4.2.9 Hazards and Hazardous Materials

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b) | Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☒ | ☐ |
| c) | Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☒ |
| d) | Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 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 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? | ☐ | ☐ | ☒ | ☐ |

## ENVIRONMENTAL SETTING

A review of the State Water Resources Control Board's (SWRCB) GeoTracker database and the Department of Toxic Substances Control's (DTSC) EnviroStor database indicated that there are no listed hazardous materials sites within the Project site (DTSC 2026, SWRCB 2026). The nearest listed site is located at the Palo Alto Country Club, approximately 752 feet east of the Project site. The listing indicates a Leaking Underground Storage Tank (LUST) cleanup site that was closed in 2005 after remediation actions were taken. Residual petroleum hydrocarbon contamination remains in shallow soil at the LUST cleanup site (SWRCB 2026).

## REGULATORY SETTING

### *Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan*

The Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) was adopted in 2024 and assesses the risk of natural disasters and hazard events throughout the 18 jurisdictions and districts within the MJHMP operational area. The MJHMP provides goals and implementation strategies to protect life, property, and the environment. The MJHMP identifies drought, heavy rain, high wind, extreme heat, wildfire, and climate change as "highly likely" hazard events in the City of Palo Alto (County of Santa Clara 2024).

### *City of Palo Alto 2030 Comprehensive Plan*

The City of Palo Alto 2030 Comprehensive Plan contains the following relevant policies related to hazardous materials:

- **Policy S-3.1.** Minimize the use of toxic and hazardous materials in Palo Alto. Promote the use of alternative materials and practices that are environmentally benign.
- **Policy S-3.2.** Continue working with appropriate agencies to identify and clean up hazardous waste sites and contaminated groundwater.
- **Policy S-3.3.** Support public health by requiring as part of development review, property owners and private entities to disclose the presence of contaminated soil or groundwater, identify potential health impacts, prevent vapor intrusion and remediate contamination.
- **Policy S-3.4.** Support public agency policies, regulations, legislation and programs that implement Santa Clara County's Hazardous Materials Management Program.

## DISCUSSION OF IMPACTS

***a, b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

*Less-than-Significant Impact*

Project construction would involve the use and transport of typical construction-related hazardous materials such as fuels, lubricants, adhesives, and solvents. Heavy equipment would be staged and refueled within the Project staging areas. Construction activities would be required to comply with numerous hazardous materials regulations and implement BMPs to ensure that hazardous materials are handled properly and do not pose a threat to worker safety or the environment. Workers who are handling hazardous materials are required to adhere to all OSHA and Call/OSHA health and safety requirements. Hazardous materials must be transported

to and from the Project site in accordance with the Resource Conservation and Recovery Act (RCRA) and United States Department of Transportation regulations and disposed of in accordance with RCRA at a facility that is permitted to accept the waste. With compliance with existing regulations, the Project would not create a significant hazard to the public or the environment through the routine use, transport, or disposal of hazardous materials.

Additionally, water quality control measures, described in *Section 4.2.4, Biological Resources,* would be implemented throughout Project construction, including a hazardous materials management and spill response plan designed to prevent discharge of pollutants to groundwater and runoff water. Therefore, with compliance with existing regulations, the Project would not create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. The impact would be less than significant.

***c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

*No Impact*

There are no schools within one-quarter mile of the Project site. Therefore, no impact would occur.

***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?***

*No Impact*

As described in the *Environmental Setting* section above, the Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, no impact would occur.

***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 for people residing or working in the project area?***

*No Impact*

The Project site is not located in an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is the Palo Alto Airport, located approximately 6.34 miles northeast of the Project site. There is one heliport, the Stanford Hospital Heliport, located approximately 3.71 miles north of the Project site. Therefore, there would be no safety hazard for people residing or working in the project area within two miles of a public airport or within an airport land use plan. No impact would occur.

***f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

*No Impact*

The Project site includes a portion of Arastradero Creek, Arastradero Lake, and portions of the Arastradero Creek Trail. The Project does not include any portions of roadways and would not obstruct any driveways. Therefore, the Project would not impair implementation of any adopted emergency response plan or emergency evacuation plan. No impact would occur.

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

*Less-than-Significant Impact*

The Project site is within a Local Responsibility Area (LRA) for wildfire prevention (CAL FIRE 2026). As discussed further in *Section 4.2.20, Wildfire*, the Project site is within a Moderate Fire Hazard Severity Zone (FHSZ). The closest High FHSZ is approximately 0.36 miles west of the Project site, and the closest Very High FHSZ is approximately 1.2 miles southwest of the Project site. However, the surrounding open spaces have rarely been subject to wildfire; the most recently recorded wildfire within the vicinity of the Project site was documented approximately 3.24 miles west of the Project site in 1962. The Project would not create any new inhabitable structure that would increase wildfire risk or expose people or structures either directly or indirectly to wildfire risk. The Project would consist of erosion control improvements, utility relocations, and the installation of step-pool structures and PALS to retain sediment and prevent headcut formation. The impact would be less than significant.

### 4.2.10 Hydrology and Water Quality

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water 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 off-site;* | ☐ | ☐ | ☒ | ☐ |
| *iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water 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 Project site includes a portion of Arastradero Creek and Arastradero Lake, which are located within the Saratoga Creek-Frontal San Francisco Bay Estuaries Watershed (HUC10-1805000304) and Adobe Creek-Frontal San Francisco Bay Estuaries Sub-watershed (HUC12-180500030407) (USGS 2026). Arastradero Creek discharges into Matadero Creek, which eventually enters the San Francisco Bay at Mayfield Slough.

## REGULATORY SETTING

### *City of Palo Alto Municipal Code*

The following sections of the PAMC contain relevant policies related to hydrology and water quality:

- PAMC Chapter 16.28 requires that any Project which occurs within 100 feet by horizontal measurement from the top of the bank of a watercourse, the mean high watermark (line of vegetation) of a body of water, or the boundary of the wetlands associated with a watercourse or water body create an ESCP as a submittal requirement for obtaining a grading permit. The ESCP must address erosion and sediment control and pollution prevention during the construction phase, as well as final stabilization control measures (PAMC § 16.28).

### *Water Quality Control Plan (Basin Plan) for the San Franciso Bay Basin*

The Basin Plan sets narrative and numerical water quality objectives for the San Francisco Bay Region. Numerical objectives typically describe pollutant concentration, physical and chemical conditions of water, and the toxicity of water to aquatic organisms. The Basin Plan establishes beneficial uses for select water bodies within the planning area. Beneficial uses for Arastradero Creek include:

- Cold Freshwater Habitat,
- Preservation of Rare and Endangered Species,
- Warm Freshwater Habitat,
- Wildlife Habitat,
- Water Contact Recreation, and
- Noncontact Water Recreation (San Francisco Bay RWQCB 2017).

## DISCUSSION OF IMPACTS

***a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?***

*Less-than-Significant Impact with Mitigation Incorporated*

Water quality standards applicable to the Project site are established by the Basin Plan and implemented by the San Francisco Bay RWQCB through a variety of programs. Construction activities associated with the Project would include ground-disturbing activities which could release sediment into waterways if not controlled properly, which is a potentially significant impact. As described in *Section 4.2.4, Biological Resources*, the City would implement Mitigation Measure BIO-13b, which requires the preparation and implementation of a SWPPP during construction. The SWPPP must identify potential pollutants sources and contain BMPs for erosion control and spill prevention control to prevent pollution and sedimentation of nearby waterways via stormwater runoff. With implementation of this measure, and other water quality protection measures contained in mitigation Measure BIO-13a and BIO-13c, construction of the Project would not violate any water quality standards or waste discharge requirements or substantially degrade surface or groundwater quality during construction.

There are two waterways within the Project site, Arastradero Creek and Arastradero Lake. The Project would stabilize a six-foot headcut that has contributed to channel incision and scour, resulting in pipeline exposure. Restoration measures, including the installation of step-pools, PALS, and log grade control structures, are designed to promote controlled sediment aggradation within the channel and reduce scour. Additionally, minor grading along Arastradero Creek Trail would restore functionality to existing drainage features by ensuring runoff is properly directed to the existing catch basin, which would have a beneficial effect on water quality. Therefore, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. The impact would be less than significant with mitigation incorporated.

***b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?***

*Less-than-Significant Impact*

The Project would not use groundwater during construction or operation. Water in Palo Alto is supplied by San Francisco Public Utilities Commission (SFPUC), which consists almost entirely of high-quality Sierra Nevada snowmelt conveyed through the Hetch Hetchy Regional Water System. The Project would not result in an increase in impervious surface area on the Project site; therefore, groundwater recharge would not be impacted. Further, as discussed below in Threshold e), the Project site is not located within a groundwater basin. Therefore, the Project would not substantially decrease groundwater supplies or interfere with groundwater recharge. The impact would be less than significant.

***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;***

*Less-than-Significant Impact*

The Project would include ground disturbing activities and vegetation removal within the Project site, which could result in erosion and sedimentation of the waterway. However, as stated in *Section 4.2.8, Geology and Soils*, the Project would implement an ESCP during construction, which would contain measures to control erosion. Once work is complete, a coir fiber matting erosion control fabric would be installed on both sides of the creek at the existing pipeline crossing, as well as downstream of the crossing at an area of scour on the left bank. The matting would be held down by wooden stakes and then seeded with an erosion control seed mix. Therefore, the Project would not result in substantial erosion or siltation on or off-site. The impact would be less than significant.

***(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;***

*Less-than-Significant Impact*

The Project would relocate three utility pipelines and restore a portion of Arastradero Creek. Additionally, the Project would make minor improvements to Arastradero Creek Trail, which would consist of minor regrading of the trailside ditch drainage features such that runoff and precipitation flow correctly towards the existing catch basin, which would have a beneficial

effect on surface runoff and flood control. Therefore, the Project would not substantially increase the rate or amount of surface runoff in a manner which results in flooding on- or off-site.

***(iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?***

*Less-than-Significant Impact*

Minor trail grading along Arastradero Creek Trail would improve drainage conditions at the site, ensuring that runoff and precipitation flow correctly towards the existing catch basin, which would reduce the potential for uncontrolled or polluted runoff or flood flow. Additionally, the Project would be required to implement an ESCP, which would contain measures designed to limit pollutant release.

The Project would not impede or redirect flows. Certain Project elements, such as the step-pools and log structures, are designed to stabilize the creek channel and reduce scour, which would help ensure creek stability during a flood event. Therefore, the Project would not create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows. The impact would be less than significant.

***d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?***

*Less-than-Significant Impact with Mitigation Incorporated*

A portion of the City, the Baylands area, is located within a tsunami inundation zone (Association of Bay Area Governments [ABAG] 2026). The Project site is within Flood Zone X, which means the area is subject to inundation by the 0.2 percent annual flood event (Federal Emergency Management Agency [FEMA] 2026). Project construction work would occur during the dry season; therefore, flooding at the site during construction, which could risk release of pollutants into nearby waterways, is not anticipated to occur. Furthermore, Mitigation Measure BIO-13b would be implemented, which requires the City to prepare a SWPPP for implementation throughout construction. The SWPPP would contain measures to control sediment and pollutant release, and would contain a hazardous materials spill and response plan to ensure that any spills are addressed promptly in accordance with applicable regulations. Further, as described in Threshold a) above, the Project would be required to implement an ESCP which would include additional measures to reduce erosion and sediment runoff. such, the Project would not risk release of pollutants due to project inundation during construction. Following construction, the Project site would remain similar to existing conditions. The Project would not change the land use of the site or install any new structures which would risk release of pollutants due to Project site inundation. The impact would be less than significant with mitigation incorporated.

***e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

*No Impact*

The applicable water quality control plan for the Project site is the Basin Plan, which identifies specific beneficial uses and water quality objectives for each of the surface waters and groundwater management zones in the planning area, including Arastradero Creek. As described above in Threshold a), the Project would implement an ESCP, which would ensure that construction activities on the Project site would not violate any water quality objectives.

Additional water quality control measures are described in *Section 4.2.4, Biological Resources*, including measures regulating equipment staging, equipment use, and construction materials within the creek bank. Project implementation would improve drainage and restore aquatic habitat; therefore, it would have a long-term beneficial impact on water quality. As such, the Project would support the objectives of the Basin Plan.

The Project site is not within a groundwater basin; as such, there is no applicable sustainable groundwater management plan for the Project site (DWR 2026). Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Overall, the proposed Project would support goals and objectives of the Basin Plan by improving water quality. No impact would occur related to conflicts with water quality control plans or sustainable groundwater management plans.

### 4.2.11 Land Use and Planning

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| 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 Project site is in the City of Palo Alto within the Pearson-Arastradero Preserve. The Project site is within the Public Facility (PF(D)) zoning district. The Palo Alto 2030 Comprehensive Plan designated the Project site as Public Conservation Land (City of Palo Alto 2017).

#### DISCUSSION OF IMPACTS

***a) Physically divide an established community?***

*No Impact*

The Project would restore a portion of Arastradero Creek and relocate three utility pipelines. The operational use of the Project site would remain the same after Project construction is complete. The Project would not result in a change to the existing land use of the site or introduce any new physical barriers. Therefore, the Project would not physically divide an established community. No impact would occur.

***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?***

*No Impact*

The Project would not change the existing land use of the site; therefore, the Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As described in *Section 4.2.4, Biological Resources*, the Project would comply with all applicable policies of the Palo Alto 2030 Comprehensive Plan pertaining to biological resources. After construction is finished, the Project site would appear similar to existing conditions. No impact would occur.

### 4.2.12 Mineral Resources

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ |

#### ENVIRONMENTAL SETTING

The State has not identified any mineral resources within the Project site (CGS 2026b). Further, there are no active permitted mining land designations in the City.

#### DISCUSSION OF IMPACTS

***a, b) 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? 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?***

*No Impact*

There are no known mineral resources that are of value to the region or state within the vicinity of the Project site. The City's Comprehensive Plan does not identify any mineral resources that are of local or regional value. Therefore, the Project would not impact any mineral resources that are of local or regional value. No impact would occur.

### 4.2.13 Noise

| Would the project result in: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ |

#### BACKGROUND INFORMATION

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure but cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used, and monitoring results are reported in A-weighted decibels (dBA). Decibels and other acoustical terms are defined in Table 2.

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people:

- A 3-dBA increase is considered barely noticeable.
- A 5-dBA increase is considered clearly noticeable, but not dramatic.
- A 10-dBA increase is perceived as a doubling in loudness.

**Table 2. Definition of Acoustical Terms**

| TERM | DEFINITION |
|---|---|
| **Frequency (Hz)** | The number of complete pressure fluctuations per second above and below atmospheric pressure. |
| **Decibel (dB)** | A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect. |
| **A-Weighted Sound Level (dBA)** | The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency response of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted. |
| **Maximum Sound Levels (Lmax)** | The maximum sound level measured during a given measurement period. |
| **Equivalent Noise Level (Leq)** | The average A-weighted noise level during the measurement period. For this CEQA evaluation, Leq refers to a 1-hour period unless otherwise stated. |
| **Community Noise Equivalent Level (CNEL)** | The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m. |
| **Day/Night Noise Level (Ldn)** | The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m. |
| **Ambient Noise Level** | The existing level of environmental noise at a given location from all sources near and far. |
| **Vibration Decibel (VdB)** | A unit describing the amplitude of vibration on a logarithmic scale. |
| **Peak Particle Velocity (PPV)** | The maximum instantaneous peak of a vibration signal. |
| **Root Mean Square (RMS) Velocity** | The average of the squared amplitude of a vibration signal. |

Sources: Charles M. Salter Associates, Inc. 1998, Federal Transit Administration 2018.

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. The RMS of a signal is the average of the squared amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV is normally described in inches per second (in/sec) and RMS is often described in vibration decibels (VdB).

## ENVIRONMENTAL SETTING

### *Existing Ambient Noise Conditions*

The primary sources of noise in the Project site vicinity consist of traffic along Interstate 280, located approximately one mile north of the Project site, and noise from nearby residences, golf course and businesses. According to the City's Comprehensive Plan, the noise level associated with the Interstate 280 corridor is 75 Ldn. Therefore, ambient noise levels at the Project site are anticipated to be less than 75 LBA.

## REGULATORY SETTING

### *City of Palo Alto Comprehensive Plan*

The City's Comprehensive Plan contains the following applicable policies related to noise:

- **Policy N-6.3** Protect the overall community and especially sensitive noise receptors, including schools, hospitals, convalescent homes, senior and child care facilities and public conservation land from unacceptable noise levels from both existing and future noise sources, including construction noise.
- **Policy N-6.11** Continue to prioritize construction noise limits around sensitive receptors, including through limiting construction hours and individual and cumulative noise from construction equipment.

### *City of Palo Alto Municipal Code*

The PAMC Section 9.10.060 establishes regulations for construction noise to minimize disturbance to nearby land uses. Construction activities authorized by a valid City permit are prohibited on Sundays and holidays and are limited to the hours of 8:00 a.m. to 6:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday. The ordinance also requires that construction equipment not exceed 110 dBA at a distance of 25 feet, and that noise levels outside the project property boundary remain below this threshold. For projects located in non-residential zones, the permit holder must post signage at construction site entrances informing contractors and workers of the permitted construction hours and noise requirements. These regulations are intended to reduce potential noise impacts on surrounding sensitive receptors during construction activities.

## DISCUSSION OF IMPACTS

***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?***

*Less-than-Significant Impact*

Project construction would involve activities such as directional boring, excavation, trenching, pipeline installation, and use of construction equipment that would temporarily increase ambient noise levels in the vicinity of the Project site. Nearby sensitive receptors include residential uses located adjacent to the Pearson-Arastradero Preserve. Construction noise levels would be temporary and intermittent and would occur primarily during daytime construction hours. The City of Palo Alto Municipal Code (Chapter 9.10 – Noise) establishes allowable noise limits based on land use type and regulates construction noise. Construction equipment operating

under a valid City permit must not generate noise levels exceeding 110 dBA measured at a distance of 25 feet. The ordinance allows construction, alteration, and repair activities authorized by a valid City permit when conducted within permitted construction hours. Emergency construction or repair work necessary to protect public health or safety may also be exempt from standard noise restrictions.

The Project would not introduce new operational noise sources and therefore would not result in permanent increases in ambient noise levels. Impacts would be less than significant.

***b) Generation of excessive groundborne vibration or groundborne noise levels?***

*Less-than-Significant Impact*

Construction activities associated with the Project, including trenching, equipment operation, and directional boring, would generate temporary groundborne vibration. These activities would occur periodically during construction and could be perceptible at nearby residential receptors located adjacent to the Pearson-Arastradero Preserve. However, the Project does not include pile driving, blasting, or other high-vibration construction methods typically associated with substantial vibration impacts.

Directional boring would occur approximately 17.5 feet below the existing creek channel, which would substantially reduce vibration transmission to surrounding areas. Typical construction equipment used for trenching and pipeline installation generates vibration levels substantially lower than thresholds associated with structural damage. Based on FTA guidance, vibration levels generated by standard construction equipment at typical setback distances are well below the threshold at which structural damage to buildings could occur.

Vibration effects would be temporary and limited to the active construction period and would not be expected to cause structural damage or substantial annoyance at nearby residences. No operational sources of groundborne vibration would be introduced by the Project. Therefore, construction of the Project would not generate excessive groundborne vibration or groundborne noise levels, and impacts would be less than significant.

***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?***

*No Impact*

The Project site is not located within an airport land use plan area or within two miles of a public airport or private airstrip. The Project would not expose people to excessive airport-related noise levels. Therefore, no impact would occur.

### 4.2.14 Population and Housing

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ |

#### ENVIRONMENTAL SETTING

As of 2020, the population of the City of Palo Alto was approximately 67,585 people, which is a 1.4 percent decrease from the 2010 population of 68,572. The most recent census data shows the City to have 28,904 housing units (U.S. Census Bureau 2020).

#### DISCUSSION OF IMPACTS

***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)?***

*No Impact*

The purpose of the Project is to restore a portion of Arastradero Creek. The proposed improvements to the creek are not intended to serve population growth. Rather, they are intended to address erosion-related creek degradation and pipeline exposure. The Project would not construct any homes or construct infrastructure which would induce substantial unplanned population growth. No Impact would occur.

***b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?***

*No Impact*

The Project would not displace people or housing or necessitate the construction of replacement housing. Access to existing properties would be maintained throughout Project construction and operation. No impact would occur.

### 4.2.15 Public Services

| Would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| a) 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?* | ☐ | ☐ | ☐ | ☒ |

#### ENVIRONMENTAL SETTING

Fire protection services within the Project vicinity are provided by the Palo Alto Fire Department (PAFD), which includes six full time fire stations throughout the City, and an additional fire station in the foothills during high fire danger days. The nearest station to the Project site is Fire Station 8, which is seasonally staffed during June to November and located approximately 0.9 miles south of the Project site. The nearest full time fire station to the Project site is Fire Station 5, located approximately 3.5 miles northeast of the Project site.

Police protection services within the Project vicinity are provided by the Palo Alto Police Department, which has 150 employees across three divisions. The Police Department is located approximately 4.6 miles north of the Project site.

Four schools are within two miles of the Project site, including Corte Madera School, Woodside Priory School, Ormondale Elementary School, and Woodland School.

The Project site is within the Pearson-Arastradero Preserve. The nearest public library to the Project site is the Portola Valley Library, approximately two miles west of the Project site.

#### DISCUSSION OF IMPACTS

***a) 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?***

*No Impact*

The Project would be served by existing police, fire, school, parks, and other public facilities. The Project would not construct any new governmental facilities or alter any existing governmental facilities. As described in *Section 4.2.14, Population and Housing*, the Project would not result in population growth which would result in the need for new or physically altered governmental facilities. No impact would occur.

### 4.2.16 Recreation

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | 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) | Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☒ |

#### ENVIRONMENTAL SETTING

The Project site is within Pearson-Arastradero Preserve, a 533-acre open space area. There is one recreational walking trail, Arastradero Creek Trail, within the Project site that runs parallel to Arastradero Creek.

#### DISCUSSION OF IMPACTS

***a) 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?***

*Less-than-Significant Impact*

The Arastradero Creek Trail is used by the public as a walking trail. During Project construction, there would be brief disruptions to recreational use of the Project site which may lead to increased use of nearby trails; however this impact would only be temporary during construction. Project implementation would not substantially alter or degrade the existing recreational use of the Project site and its surroundings. Project work includes minor improvements to the existing trail to restore it to full functionality. The Project would not increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The impact would be less than significant.

***b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?***

*No Impact*

The Project would not include or require the construction or expansion of recreational facilities. No impact would occur.

### 4.2.17 Transportation

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| 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

Regional access to the Project site would be provided via Interstate 280, Page Mill Road, and Arastradero Road, which serve as the primary transportation corridors connecting the site to the broader Palo Alto and Santa Clara County roadway network. Arastradero Road provides the most direct local access to the Pearson-Arastradero Preserve and the Arastradero Creek Trail system where the Project site is located.

#### REGULATORY SETTING

##### *City of Palo Alto 2030 Comprehensive Plan*

The City of Palo Alto 2030 Comprehensive Plan contains the following applicable policies related to transportation:

- **Policy T-1.23**. Monitor VMT per capita and citywide GHG emissions from mobile sources as a measure of progress toward the City's goal of reducing GHG 80 percent below 1990 levels by 2030.
- **Policy T-2.4.** Consistent with the principles of Complete Streets adopted by the City, work to achieve and maintain acceptable levels of service for transit vehicles, bicyclists, pedestrians and automobiles on roads in Palo Alto, while maintaining the ability to customize to the Palo Alto context.

##### *VTP Plan 2040 Long Range Transportation Plan for Santa Clara County (VTA)*

Valley Transportation Authority (VTA) long-range transportation planning for Santa Clara County includes goals that emphasize transportation investments supporting quality of life and the economy and improving regional air quality by reducing auto emissions (and related climate impacts). Valley Transportation Plan (VTP) 2040 also includes financially constrained project/program lists for highways/express lanes, transit, and local system investments.

## DISCUSSION OF IMPACTS

***a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?***

*Less-than-Significant Impact*

The Project would relocate/replace existing utility infrastructure primarily along an existing corridor (e.g., the Arastradero Creek Trail alignment) and would not add new land uses, add travel lanes, or change circulation patterns. It would not conflict with the City Transportation Element policies emphasizing an integrated multi-modal system, complete streets principles, and roadway safety. Construction would require temporary traffic control and may include short-term, localized effects (e.g., temporary trail/shoulder closures, detours, or lane control near work areas). These short-term conditions would be managed through construction staging and traffic/pedestrian/bicycle safety measures and would not represent a policy-level conflict with the City's circulation framework. The impact of the Project would be less than significant impact.

***b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?***

*No-Impact*

The Project is not a land use development project that would increase long-term trip-making. It would not increase VMT, and any construction-related vehicle trips would be temporary and typical of construction activity. Therefore, the Project would not conflict with the CEQA transportation impact framework that relies on VMT to determine significance. The impact of the Project would be no impact.

***c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?***

*Less-than-Significant Impact*

The Project would not introduce new roadway geometry (e.g., new intersections, sharp curves) or new incompatible operational uses that increase long-term transportation hazards. Any potential hazards would be short-term and construction-related (e.g., equipment access, temporary reroutes, temporary trenching activity adjacent to pedestrian/bicycle routes). These would be controlled through standard construction safety practices, signage, and maintaining safe pedestrian/bicycle routing through or around work zones, consistent with Complete Streets safety intent. The impact of the Project would be less than significant.

***d) Result in inadequate emergency access?***

*Less-than-Significant Impact*

The Project would not permanently affect emergency access. During construction, the City would implement work area management and maintain emergency access/coordination as needed. This approach is consistent with the Comprehensive Plan Transportation Element's direction to consider emergency vehicle response time in street design and procedures. The impact of the Project would be less than significant impact.

### 4.2.18 Tribal Cultural Resources

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| a) | 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 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)?* | ☐ | ☒ | ☐ | ☐ |
| *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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.* | ☐ | ☒ | ☐ | ☐ |

#### ENVIRONMENTAL SETTING

A discussion of the environmental setting as it relates to Tribal Cultural Resources (TCRs) can be found under *Section 4.2.5, Cultural Resources*.

#### REGULATORY SETTING

##### *State of California Public Resources Code*

Section 21074 of the PRC defines historical resources related to tribal cultural resources.

a) "Tribal cultural resources" are either of the following:

   a. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

      A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.

      B. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

   b. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section

5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

### NATIVE AMERICAN CONSULTATION

The City sent letters to appropriate representatives of each tribe that may be culturally or geographically affiliated with the Project site area on February 10, 2026.

### DISCUSSION OF IMPACTS

***a) 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 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)?***

***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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

*Less-than-Significant Impact with Mitigation Incorporated*

On February 10, 2026, the City sent letters to tribes that may be culturally or geographically affiliated with the area, including tribes that have not formally requested to be contacted in accordance with AB 52. On March 11, 2026, the City received a request to consult in accordance with AB 52 from Tamien Nation. On April 1, 2026, the City met with Tamien Nation and sent draft conditions for the tribe's consideration following that consultation. The tribe recommended modifications to the proposed language, which were sent on April 10, 2026, and which were acceptable to the City. Therefore, tribal consultation was considered complete on April 10, 2026.

Consistent with the requests from these tribes, Mitigation Measure CUL-1 would be implemented, which requires that all construction personnel complete a Cultural Awareness Training program facilitated by a qualified archaeologist in collaboration with a Native American representative registered with the Native American Heritage Commission for the City of Palo Alto and that is traditionally and culturally affiliated with the geographic area as described in Public Resources

Code Section 21080.3. Mitigation Measure CUL-2 would also be implemented, which requires that a qualified archaeologist and a Native American monitor be present during earthmoving construction activities. In the event that significant cultural materials are encountered during construction, Mitigation Measure CUL-3 would be implemented, which requires work to be halted within 100 feet of the discovery and the on-site qualified archaeologist to make recommendations regarding the significance of the find and the appropriate treatment of the resource. Mitigation Measure CUL-4 establishes procedures in the event that human remains are discovered during construction.

### 4.2.19 Utilities and Service Systems

| Would the project: | | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ☒ | ☐ |

#### ENVIRONMENTAL SETTING

##### *Water*

The primary supplier of water to the City is the SFPUC. The City's potable water supply consists almost entirely of high-quality Sierra Nevada snowmelt conveyed through the Hetch Hetchy Regional Water System. This system delivers water from protected watershed sources through an extensive regional transmission and distribution network serving communities throughout the Bay Area. Water availability is influenced by annual precipitation and snowpack conditions, which can vary substantially from year to year. Periods of warm and dry weather may affect water supplies even following wetter seasons. As a result, efficient water use and long-term conservation practices remain important to maintain a reliable and sustainable water supply regardless of drought conditions (City of Palo Alto 2021).

### *Wastewater*

The City of Palo Alto Wastewater Engineering Section is responsible for cleaning, maintaining, operating, and ensuring regulatory compliance for the City's sanitary collection (sewer) system. Wastewater is treated at the Regional Water Quality Control Plant (RWQCP). The RWQCP is a regional treatment facility located on approximately 25 acres adjacent to the Baylands Nature Preserve that serves six partner agencies, including the Cities of East Palo Alto, Los Altos, Los Altos Hills, Mountain View, and Palo Alto, as well as Stanford University. The facility treats an average of approximately 20 million gallons of wastewater per day generated by more than 230,000 residents and businesses within its service area. Wastewater is conveyed to the treatment plant through an extensive collection system consisting of approximately 217 miles of sewer mains that transport flows from participating jurisdictions to the regional facility for treatment and disposal (City of Palo Alto 2026b).

### *Stormwater*

Stormwater infrastructure within the City is managed by the Public Works Department-Watershed Protection and Engineering Services, through implementation of the City's Stormwater Management Program. The City stormwater system includes drainage facilities, pump stations, and conveyance infrastructure designed to manage runoff and reduce localized flooding. Key facilities include the Arastradero Creek Pump Station, which supports stormwater management within the Arastradero Creek tributary area and plays an important role in maintaining system capacity during storm events. The City is continuing to implement capital improvement projects to enhance system performance, including the Arastradero Creek Tributary Project, which addresses channel erosion associated with a six-foot head cut and protects critical utility infrastructure. Stormwater operations and programs are conducted in compliance with regional, state, and federal requirements, including implementation of pollution prevention measures required under the San Francisco Bay Municipal Regional NPDES Permit.

### *Electricity and Natural Gas*

Electricity and natural gas services within the City are provided by the City of Palo Alto Utilities (CPAU), a municipally owned utility serving residential, commercial, and institutional customers. Electricity is received through an interconnection with Pacific Gas and Electric Company's (PG&E's) regional transmission system and distributed locally through approximately 470 miles of overhead and underground distribution lines supported by substations, transformers, and related infrastructure. PG&E operates the regional transmission facilities supplying electricity and provides natural gas service within the City.

## DISCUSSION OF IMPACTS

***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?***

*Less-than-Significant Impact with Mitigation Incorporated*

The Project would relocate and replace existing gas, water, and wastewater pipelines that currently cross beneath Arastradero Creek and are vulnerable to exposure from channel erosion. The existing 4-inch gas line would be abandoned in place and replaced with a new line installed by directional boring approximately 17.5 feet below the creek channel. Existing 18-inch water

and 10-inch sewer mains would also be abandoned and replaced with pipelines of matching size installed along the existing trail corridor outside the creek channel. Potential environmental impacts resulting from the relocation of these utilities are discussed throughout this IS/MND. Potential impacts to biological resources could result from work within Arastradero Creek, as well as tree and vegetation removal and grading. As described in *Section 4.2.4, Biological Resources*, these impacts would be reduced to less-than-significant levels with incorporation of mitigation measures. Cultural and tribal cultural resources, and paleontological resources could also be impacted by excavation work to replace the pipelines but would be mitigated to a less-than-significant level with incorporation Mitigation Measures CUL-1, CUL-2, CUL-3, and GEO-1. As described in *Section 4.2.21, Mandatory findings of Significance*, the Project, including relocation of utility pipelines, would not result in a significant cumulative impact on the environment. All impacts would be mitigated to a less-than-significant level with the incorporation of mitigation measures included in this IS/MND. Therefore, the Project would not result in relocation of utilities that would cause significant environmental effects. The impact would be less than significant with mitigation incorporated.

***b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?***

*Less-than-Significant Impact*

The Project would require limited amounts of water for typical construction activities, such as watering soil stockpiles and washing vehicles before entering and leaving the site. The amount of water required for these activities would be comparable to the amount needed for similar types of construction projects in the City and would not place an unexpected burden on water supply. As described in *Section 4.2.14, Population and Housing,* the Project would not create new housing or encourage new development in the area that would increase water demand. Replacement of the existing water main would maintain existing service levels to the Palo Alto Foothills community and would not increase consumption of water or require new water supply sources. The Project would therefore not affect long-term water supply availability during normal, dry, or multiple dry years. The impacts would be less than significant.

***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?***

*Less-than-Significant Impact*

As discussed in *Section 4.2.14, Population and Housing,* the Project would not construct new housing or provide services which would encourage or support growth within the area. The Project would replace an existing sewer main with a pipeline of equivalent size and function and would not increase wastewater generation or service demand. Wastewater flows would continue to be conveyed to the RWQCP, which serves existing development within the service area. Because the Project maintains existing system capacity and does not generate additional wastewater flows, it would not require expansion of treatment facilities or result in a capacity deficiency. The impact of the Project would be less than significant.

***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?***

*Less-than-Significant Impact*

The Project would generate limited construction and demolition (C&D) debris associated with removal of pipeline segments, excavation, and installation of replacement utilities. Abandoned pipelines would be filled in place with concrete slurry, minimizing the need for off-site disposal. Construction waste would be transported to licensed disposal or recycling facilities in accordance with applicable local and state requirements. As described in Threshold c) below, the Project would be required to comply with local diversion requirements for C&D waste which would ensure compliance with local and state solid waste reduction goals. The volume of waste generated would be temporary and minor relative to regional disposal capacity and would not impair attainment of solid waste reduction goals. The impact would be less than significant.

***e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

*Less-than-Significant Impact*

Project construction would generate limited C&D waste associated with pipeline abandonment, excavation, and installation of replacement utility infrastructure. City of Palo Alto Municipal Code Chapter 5.24, Deconstruction and Construction Materials Management, requires applicable construction and demolition projects to prepare and implement a debris management plan and achieve required diversion of C&D waste through reuse and recycling rather than disposal in landfills. The Project would be required to comply with these local requirements, which are in line with statewide waste management and diversion goals established by the California Integrated Waste Management Act. Therefore, the Project would comply with all federal, State, and local management and reduction statutes and regulations related to solid waste. The impact of the Project related to solid waste requirements would be less than significant.

### 4.2.20 Wildfire

| If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☒ | ☐ |

#### ENVIRONMENTAL SETTING

The Project site is located in a Local Responsibility Area (LRA) for wildfire prevention (CAL FIRE 2026), meaning that local agencies, rather than State agencies, are responsible for wildfire protection. The Project site is within a Moderate Fire Hazard Severity Zone (FHSZ). The closest High FHSZ is approximately 0.36 miles west of the Project site, and the closest Very High FHSZ is approximately 1.2 miles southwest of the Project site. However, the surrounding open spaces have rarely been subject to wildfire; the most recently recorded wildfire within the vicinity of the Project site was documented approximately 3.24 miles west of the Project site in 1962.

#### REGULATORY SETTING

##### *Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan*

The Santa Clara County MJHMP was adopted in 2024 and assesses the risk of natural disasters and hazard events throughout the 18 jurisdictions and districts within the MJHMP operational area. The MJHMP provides goals and implementation strategies to protect life, property, and the environment. The MJHMP identifies drought, heavy rain, high wind, extreme heat, wildfire, and climate change as “highly likely” hazard events in the City of Palo Alto (County of Santa Clara 2024).

### *City of Palo Alto 2030 Comprehensive Plan*

The City of Palo Alto 2030 Comprehensive Plan contains the following applicable policies related to wildfires:

- **Policy S-2.14.** Require that the planning and design of development in areas exposed to wildland fire hazards minimize the risks of wildfire and include adequate provisions for vegetation management, emergency access and firefighting.

## DISCUSSION OF IMPACTS

***a) Substantially impair an adopted emergency response plan or emergency evacuation plan?***

*No Impact*

The applicable emergency response plans to the Project are the Santa Clara County MJHMP and the City of Palo Alto Comprehensive Plan. The Project site includes portions of Arastradero Creek, Arastradero Lake, and portions of the Arastradero Creek Trail. The Project is not within or adjacent to any roadways and would not obstruct any driveways or roadway infrastructure that could be used as evacuation routes. The Project would not conflict with any policies within the Santa Clara County MJHMP or the Palo Alto Comprehensive Plan. Therefore, no impact would occur.

***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?***

*Less-than-Significant Impact*

The Project site is located within a gently sloped area within an open space preserve. The Project site is within a Moderate FHSZ in the LRA. The closest High FHSZ is approximately 0.36 miles west of the Project site, and the surrounding vicinity has not been subject to a wildfire since 1962. During construction, sparks from construction equipment have the potential to ignite nearby vegetation, which would temporarily increase wildfire risk in the Project area. However, as stated in *Section 3.3, Project Construction*, GPM-16 would be implemented as part of Project design. This measure includes keeping vehicles and construction equipment away from areas of tall, dry vegetation, as well as developing a fire prevention and suppression plan for all maintenance and repair activities that require welding or otherwise have risk of starting a wildfire. With this measure incorporated into Project design, the Project would not substantially increase risk of wildfire due to construction activities. Once operational, the Project would not change the existing land use of the site or create any new structures which would exacerbate wildfire risk. Therefore, the Project would not exacerbate wildfire risk or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The impact would be less than significant.

***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?***

*Less-than-Significant Impact*

The Project would include the relocation of three existing utility lines, minor repairs to Arastradero Creek Trail, and the installation of step-pool and PALS to retain sediment and prevent headcut formation within the creek. The repairs to Arastradero Creek Trail would consist

of regrading the trailside ditch drainage features such that runoff and precipitation flow correctly towards the existing catch basin. While construction of these components could temporarily increase wildfire risk, GPM-16 would ensure this potential impact would be less than significant. Once operational, these improvements would not exacerbate fire risk. Rather, the Project is intended to improve drainage and prevent future erosion within the creek bank. Therefore, the Project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. The impact would be less than significant.

***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?***

*Less-than-Significant Impact*

As discussed in *Section 4.2.7, Geology and Soils*, the Project would not include construction of any new structures that would increase the risk of landslides. As discussed in *Section 4.2.9, Hydrology and Water Quality*, the Project would not increase flooding or runoff. Part of the Project purpose is to reduce erosion risk by addressing a channel incision within Arastradero Creek and implementing erosion control infrastructure, which would reduce the chance of flooding or excessive runoff. These improvements would not expose people or structures to significant risks as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

### 4.2.21 Mandatory Findings of Significance

| Does the project: | *Potentially Significant Impact* | *Less-than-Significant Impact with Mitigation Incorporated* | *Less-than-Significant Impact* | *No Impact* |
|---|---|---|---|---|
| a) 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) 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) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ |

**DISCUSSION OF IMPACTS**

***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?***

*Less-than-Significant Impact with Mitigation Incorporated*

Implementation of the Project would not substantially degrade the quality of the environment, 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 reduce the range of a rare or endangered plant or animal. Implementation of mitigation measures presented in *Section 4.2.4, Biological Resources*, would mitigate potential significant impacts that could substantially degrade the quality of the environment or impact biological resources. As discussed in *Section 4.2.5, Cultural Resources*, impacts to potentially unknown resources within the Project

site would be mitigated to a less-than-significant level by Mitigation Measures CUL-1, CUL-2 and CUL-3, and CUL-4. Given the fact that potential impacts to biological and cultural resources would primarily occur during active construction (not long term) and that measures have been identified to reduce these temporary impacts, impacts would not be considered significant. Impacts would be less than significant with mitigation incorporated.

***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)?***

*Less-than-Significant Impact*

Cumulatively considerable means that the incremental effects of an individual 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. The Project is being implemented to restore a portion of Arastradero Creek and relocate existing utilities from within the channel, which would have a beneficial impact on the Project site. Therefore, the only impacts of the Project that could contribute to a cumulatively considerable impact are from construction. There are no other projects within the immediate vicinity of the Project site that are planned to undergo construction concurrently with the Project. Therefore, the Project would create a less-than-significant cumulative impact with respect to all environmental impacts analyzed in this IS/MND.

***c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?***

*Less-than-Significant Impact with Mitigation Incorporated*

Potential impacts to human beings have been addressed in this IS/MND, including impacts related to air quality, noise, and transportation. Project construction activities would cause potential temporary impacts to humans due to the generation of fugitive dust emissions. However, the Air District considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level, which the Project would implement as Mitigation Measure AIR-1.

Noise and transportation impacts resulting from the Project were found to be less than significant, and no mitigation measures are required. As such, the Project would not have environmental effects that would cause substantial adverse effects on human beings The impact would be less than significant.

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# APPENDIX A. BIOLOGICAL RESOURCES TECHNICAL REPORT

# Arastradero Creek Restoration and Pipeline Relocation Project

## Biological Resources Technical Report

Palo Alto, Santa Clara County, California




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WRA#340190

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## List of Preparers

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## List of Acronyms

| | |
|---|---|
| **APN** | Assessor's Parcel Number |
| **BCC** | USFWS Birds of Conservation Concern |
| **BGEPA** | Bald and Golden Eagle Protection Act |
| **BRTR** | Biological Resources Technical Report |
| **CARI** | California Aquatic Resources Inventory |
| **CCC** | California Coastal Commission |
| **CCH** | Consortium of California Herbarium |
| **CCR** | California Code of Regulations |
| **CDFW** | California Department of Fish and Wildlife |
| **CDFW:WL** | CDFW Watch List |
| **CDF Sensitive** | California Department of Forestry and Fire Protection Sensitive |
| **CESA** | California Endangered Species Act |
| **CEQA** | California Environmental Quality Act |
| **CFGC** | California Fish and Game Code |
| **CFP** | California Fully Protected Species |
| **CFR** | Code of Federal Regulations |
| **CNDDB** | California Natural Diversity Database |
| **CNPS** | California Native Plant Society |
| **City** | City of Palo Alto |
| **CPRC** | California Public Resources Code |
| **CRLF** | California Red Legged Frog |
| **CSRL** | California Soils Resource Lab |
| **CWA** | Clean Water Act |
| **EFH** | Essential Fish Habitat |
| **EPA** | U.S. Environmental Protection Agency |
| **ESA** | Federal Endangered Species Act |
| **ESAF** | Environmentally Sensitive Area Fencing |
| **ESHA** | Environmentally Sensitive Habitat Area |
| **FACW** | Facultative Wetland |
| **FC** | Federal Candidate |
| **FPT** | Federal Proposed Threatened |
| **FPE** | Federal Proposed Endangered |
| **FE** | Federal Endangered |
| **FS Sensitive** | Forest Service Sensitive |
| **FT** | Federal Threatened |
| **GPM** | General Protection Measures |
| **Inventory** | California Native Plant Society Rare Plant Inventory |
| **Magnuson-Stevens Act** | Magnuson-Stevens Fishery Conservation & Management Act |
| **MPH** | miles per hour |
| **NCCP** | Natural Community Conservation Plan |
| **NETR** | National Environmental Title Research |
| **NOAA** | National Oceanic and Atmospheric Administration |
| **NMFS** | National Marine Fisheries Service |
| **NPPA** | California Native Plant Protection Act |
| **NRCS** | Natural Resource Conservation Service |
| **NPT** | Northwestern pond turtle |
| **NWI** | National Wetlands Inventory |

| | |
|---|---|
| **OBL** | obligate |
| **OHWM** | Ordinary High Water Mark |
| **PALS** | Post-Assisted Log Structures |
| **PEIR** | Programmatic Environmental Impact Report |
| **Rank** | California Rare Plant Ranks |
| **RHA** | Rivers and Harbors Act |
| **RMP** | Restoration Management Permit |
| **RWQCB** | Regional Water Quality Control Board |
| **SC** | State Candidate |
| **SCE** | State Candidate Endangered |
| **SCT** | State Candidate Threatened |
| **SE** | State Endangered |
| **SFEI** | San Francisco Estuary Institute |
| **SFP** | State Fully Protected Animal |
| **SSC** | Species of Special Concern |
| **SSI** | Special-status Invertebrates |
| **ST** | State Threatened |
| **SWPPP** | Storm Water Pollution Prevention Plan |
| **SWRCB** | State Water Resource Control Board |
| **TOB** | Top of Bank |
| **USACE** | U.S. Army Corps of Engineers |
| **USC** | U.S. Code |
| **USDA** | U.S. Department of Agriculture |
| **USFWS** | U.S. Fish and Wildlife Service |
| **USGS** | U.S. Geological Survey |
| **WBWG** | Western Bat Working Group |
| **WEF** | Wildlife Exclusion Fencing |
| **WRA** | WRA, Inc. |

# 1.0 INTRODUCTION

WRA, Inc. (WRA) has prepared this Biological Resources Technical Report (BRTR) to evaluate existing biological resources, potential impacts, and mitigation measures (if required) for the Arastradero Creek Restoration and Pipeline Relocation Project located in the City of Palo Alto (City), Santa Clara County, California (Appendix B – Figure 1). The proposed project (Project) involves the restoration of Arastradero Creek following winter storms in 2023 which exposed a utility pipe running beneath the creek and required an emergency action to protect the pipe. This restoration seeks not only to more effectively restore the stream at the point of emergency repair but also to restore the stream channel to prevent headcutting and incision in future years.

## 1.1 Overview and Purpose

This BRTR provides an assessment of biological resources within the immediate vicinity of the Project (Study Area). The assessment included a reconnaissance-level biological resources assessment, an aquatic resources delineation, and a tree survey. The purpose of the assessment was to develop and gather information on sensitive land cover types and special-status plant and wildlife species to support an evaluation of the Project under the California Environmental Quality Act (CEQA). This report describes the results of the site visit, which assessed the Study Area for (1) the presence of sensitive land cover types, special-status plant species, and special-status wildlife species, (2) the potential for the site to support special-status plant and wildlife species. Based on the results of the site assessment, potential impacts to sensitive land cover types and special-status species resulting from the proposed project were evaluated. If the project has the potential to result in significant impacts to these biological resources, measures to avoid, minimize, or mitigate for those significant impacts are described.

A BRTR provides general information on the presence, or potential presence, of sensitive species and habitats. Additional focused studies be required to support regulatory permit applications or to implement mitigation measures included in this report. This assessment is based on information available at the time of the study and on-site conditions that were observed on the dates the site was visited. Conclusions are based on currently available information used in combination with the professional judgement of the biologists completing this study.

### 1.1.1 Project Title

Arastradero Creek Restoration and Pipeline Relocation

### 1.1.2 Proponent Name and Address

City of Palo Alto
Utilities Department
1007 Elwell Court
Palo Alto CA 94303

### 1.1.3 Contact Person and Phone Number

Aaron Perkins, PE
Principal Engineer
aaron.perkins@paloalto.gov
(650) 566-4521

### 1.1.4 Project Location

The Project is located in the City of Palo Alto in the Pearson-Arastradero Preserve (Assessor's Parcel Numbers [APN] 182-33-018, 182-35-035, and 182-35-041) (Figure 1). The Study Area includes 9.95 acres situated just south of the Arastradero Creek Trail approximately 1,300 linear feet upstream from Lake Arastradero. The Project parcels are owned by the City and are part of an approximately 533-acre open space preserve. The Project site is bounded by residential land uses and a private golf course to the south, Stanford University campus to the northeast, and residential uses to the north and west.

## 1.2 Project Description

### 1.2.1 Project Background and Purpose

In March 2023, the City was informed of an exposed eight-inch diameter steel gas pipeline in the Arastradero Creek in the Pearson-Arastradero Preserve. The City received approval from the United States Army Corps of Engineers (USACE) under an emergency permit, to conduct a temporary creek stabilization project to protect the gas pipeline from damage from future storms. As part of the project, the City installed a combination of cobbles and boulder revetments in the eroded channel bed to protect the gas pipeline and prevent the upstream potable water transmission and sewer pipelines from being exposed. The San Francisco Bay Regional Water Quality Control Board (RWQCB) is requiring the City to conduct a permanent creek stabilization project to address a six-foot headcut that resulted in the need for the emergency repair and remove all temporary fill placed under the USACE emergency permit. Therefore, the purpose of the Project is to comply with the RWQCB's permit conditions by restoring a portion of Arastradero Creek and relocating the existing utilities underneath the creek. In addition, the creek downstream of the emergency repair would be treated with woody material to encourage natural processes to deposit sediment, widen the incised sections of creek, and prevent further potential for headcut formation. The Project also proposes minor grading to Arastradero Trail, which runs along the left bank of the creek, to return functionality to an existing culvert, reducing sedimentation into the creek, and improve trail conditions.

### 1.2.2 Project Components

While protecting the integrity of existing stream and riparian habitat and for reducing scouring forces, restoration of the creek would rely on natural materials and geomorphic processes to the greatest extent possible to encourage sediment aggradation on the channel bottom and channel widening to restore stream equilibrium. The Project would include the construction of a series of rock and step-pools and approximately 25 Post-Assisted Log Structures (PALS) and 4 grade control log structures in and along the creek. A step-pool structure is a series of short weirs composed of rocks and coarse sediment that directs water to tumble into a shallow pool below the weir. PALS are hand-built, permeable structures that mimic and promote the processes of wood accumulation in natural streams. They are made of collections of logs, cobbles, and other natural debris that are held in place by wooden posts driven into the ground in and around the material. Log grade control structures consist of channel spanning logs keyed and anchored into the banks engineered to resist mobilization and to retain a minimum elevation upstream of the structure by sediment retention.

The existing gas, water, and wastewater pipelines serving the Palo Alto Foothills community currently lie parallel to one another approximately 3 feet below the bottom of the Arastradero

Creek channel. The water and sewer pipelines under the creek would be relocated and the gas pipeline would be lowered to greatly reduce the potential for another erosion-related exposure event. By burying the gas pipeline to a sufficient depth and relocating the water and sewer lines to an upland area outside the creek banks, the Project would remove these utilities from the active channel which is a beneficial outcome for the long-term restoration of Arastradero Creek.

The Project would also include minor grading along Arastradero Trail to repair slope erosion which runs along the left bank of the creek, restoring functionality to existing drainage features along the trail, while also improving the condition of the trail itself. Additionally, willow poles harvested on-site would be placed downstream of the existing pipelines near the confluence with Arastradero Lake to encourage dispersed, multi-threaded flow and stabilize channel banks. Erosion control fabric and strategic revegetation would be incorporated to restore impacted areas and to reduce erosion risk on disturbed banks as part of construction.

Components of the project are described in further detail in the following sections and are shown in Appendix A. 60% Project Plans.

### STEP-POOL STRUCTURE

The Project would include construction of a series of approximately five step-pool structures just downstream of the existing gas pipeline crossing. The structures would be built out of 36-inch footer boulders with well-graded native soil and gravel bedding. Rock and boulder materials installed as a part of the 2023 emergency repair would also be salvaged to construct the step-pool structures. Each step pool would be approximately two feet deep, approximately five to seven feet long, and would span two-thirds of the channel starting from one bank. The lower edge of a step pool pond would act as the weir of the following step pool and flow immediately into that next step pool. These steps pools would be arranged on alternate sides of the stream to alter the flow direction from a straight line to a diagonal zigzag as the water moves between the step pools. The structures would serve to address the steep change in elevation from the unaffected channel reach to the bottom of the headcut, provide energy dissipation to ensure channel stability, and provide a more natural and navigable structure for movement of aquatic organisms.

### POST-ASSISTED LOG STRUCTURES

The Project would include construction of approximately 25 PALS, including both bank-attached PALS and channel-spanning PALS. The bank-attached PALS would be built on the outside bank of curves in the channel and would span the bank they are built on and half the channel or less. The bank-attached PALS are intended to encourage erosion of the opposite bank and to protect the bank the PALS are installed in from scour. The channel-spanning PALS would be built in the center of the creek channel with raised edges on the banks to center flow in the channel. The intent of the channel-spanning PALS is to retain sediment in the creek to build up the creek bed from its currently incised condition.

The bank-attached and channel-spanning PALS would be built in alternating order with the intent of widening the creek in select locations. Both types of PALS would not be built higher than two feet above the existing creek bottom and would be hand-built within the creek. Channel spanning PALS will vary between 10 and 20 feet wide across the channel and approximately 2 to 6 feet long along the channel flow direction. Bank attached PALS will range between 5 and 10 feet across the channel and 2 to 6 feet along the channel flow direction. The

PALS are expected to function for approximately five to ten years. All PALS would be monitored for at least five years after installation to ensure they are acting as intended. Hand tool adjustments will be made to the PALS during the five-year monitoring period if stability concerns arise. Natural materials including woody debris and cobble/gravel soils generated from City Parks maintenance activities will be utilized to ensure design intent is being met.

### LOG GRADE CONTROL STRUCTURES

The project would include construction of 4 channel-spanning log grade control structures keyed into the existing banks. The grade control structures consist of approximately 15-foot-long seasoned eucalyptus logs 1.5 feet in diameter sourced from within the City limits. The grade control structures are intended to serve as insurance against local scour dynamics that would affect the structural stability of the step-pool structure and prevent headcut formation over the long term. The structures will be built where heavy equipment access is already anticipated for the creek, downstream of the step-pool structure and at the eroded bank where trail and slope repair will occur. Biodegradable fabric and duck bill anchors are included to resist buoyancy and piping. The log grade control structures will be monitored under similar criteria to the PALS with additional features implemented to minimize risk of heavy equipment mobilization for maintenance. Willow fascines will be staked into the banks along each grade control structure to center flow in the channel.

### TRAIL GRADING

The Project would include minor grading along Arastradero Trail, which runs along the left bank of the creek, with the goal of returning functionality to an existing culvert and improving the conditions of the trail. This portion of Project work would include repairing a damaged portion of the trail, currently covered with metal plates, and regrading the trailside ditch drainage features such that runoff and precipitation flow correctly towards the existing catch basin. Initial and ongoing maintenance of the catch basin system would be conducted to ensure continued effectiveness of the drainage features, reducing sediment delivery to the creek.

### UTILITY RELOCATION

The existing 4-inch pressurized gas line would be abandoned in place and filled with concrete slurry. To minimize disturbance to the existing riparian zone, a new 4-inch gas line would be installed via directional boring approximately 17.5 feet below the existing channel bottom. This 17.5-foot boring depth is lower than the predicted lowest vertical adjustment for the creek, which is approximately 15 feet below the existing channel bottom (WRA 2025).

The existing 18-inch water and 10-inch sewer mains would be abandoned in place and filled with concrete slurry. The Project would install matching size water and sewer lines, via open trenching and native material backfilling, along the existing Arastradero Creek Trail alignment to entirely avoid crossing the creek. Four 48-inch manholes would be installed at 50 to 70-foot intervals along the proposed sewer main alignment, and a new hydrant and supporting valves and fittings would be installed with the new water main alignment. Additionally, an existing 48-inch manhole along the existing sewer line located approximately 450 feet upstream of the creek-pipeline crossing will be removed.

#### REVEGETATION AND EROSION CONTROL

Coir fiber matting erosion control fabric would be installed after the completion of work in the creek, trail grading, and utility relocation. The material would be installed on both sides of the creek at the existing pipeline crossing, as well as downstream of the crossing at an area of scour on the left bank. The matting would be held down by wooden stakes and then seeded with an erosion control seed mix. Willow stakes will be planted throughout the channel concentrated primarily along the bank toes where wood and rock structures will be installed. Native tree planting will take place where losses occurred due to channel or slope erosion caused by the channel incision and infrastructure damage. Invasive vegetation such as poison hemlock will be removed at revegetation sites and replaced with native species appropriate to the site.

### 1.2.3 Project Construction

#### CONSTRUCTION SCHEDULE

Construction work would begin in the summer of 2027 and would occur over two dry season work periods. Due to workspace constraints limiting completion of all work within one season, all in-channel work would be completed within the first construction season with the second season used to complete the water main and sewer main relocations with any remaining in-channel work consisting of hand tool work. To reduce potential impacts to aquatic species and stream water quality, all work necessary below the top of the creek bank in both construction seasons would occur between June 15 to October 31 when the creek has low to no flow.

#### SITE ACCESS AND STAGING

Regional access to the Project site would be provided via Interstate 280, Page Mill Road, and Arastradero Road. A temporary creek access ramp approximately 15 feet wide and 20 feet long would be constructed on the left bank of the creek adjacent to the crossing of the existing pipelines and adjacent to the staging location. This temporary access would be the same as the one used in the 2023 emergency repair. Following construction, the temporary access route would be returned to pre-construction conditions.

The construction equipment staging and material storage area would be located on the left bank of the creek, just southeast of the bend in the Arastradero Trail near the existing pipeline crossing. Access to the staging location would be via the Arastradero Creek Trail connected to the Juan Bautista de Anza Trail and Arastradero Road through an existing maintenance access gate. This staging and stockpile location would be the same as the one used in the 2023 emergency repair. Following construction, staging areas would be returned to pre-construction conditions.

The following equipment would be required for Project construction:

- Excavators,
- Dump trucks
- Front end loader
- Tree removal equipment (e.g., chain saws, grip hoists)
- Directional boring machine
- Cement truck
- Earthmoving equipment (e.g., excavators, bulldozers, scrapers)

#### CONSTRUCTION METHODS AND SITE WORK

Site preparation for construction would begin by clearing the staging area for the storage of materials and select equipment. If the creek is not completely dry by the start of construction, the creek extent involving earth moving would be dewatered, with stream flow diverted through a bypass pipeline approximately 130 feet in length, and dewatering of the PALS installation locations to be determined based on accessibility and site conditions. The earthen access ramp for creek access would then be constructed.

Gas line work would commence first by digging access pits for directional boring; emptying and breaching the existing pipelines; and injecting concrete slurry fill into the existing pipelines for in-place abandonment. A temporary earthen creek crossing will be constructed to access the gas pipeline tie-in point. Rock from the emergency repair would then be salvaged and stockpiled on-site for use in the creation of the step-pools. Additional woody and earthen material would be imported and stockpiled on-site for use in step pool and PALS construction. Materials for the step-pools and PALS would either be lowered into the creek from equipment on the top of bank along the Arastradero Creek Trail or brought down the temporary access ramp. Material excavated by the creation of the step-pools and grade control log structures would be kept on-site and used if possible. Excavators and other heavy machinery would be used to build the step pools, but the PALS would be installed without the use of any heavy machinery. Once construction in the creek has finished, all equipment and unused material would be removed from the creek and the temporary access ramp and crossing would be removed.

The new sewer and water pipelines would be installed along the existing Arastradero Creek Trail alignment via open trenching during the second dry season. All trenches dug would be backfilled with native material and trail work would be backfilled with imported material. Pipeline stretches to be abandoned will be filled with low-strength slurry and existing manhole points will be used for slurry conveyance with manholes along the abandoned lines to be removed. Once a majority of equipment and unused material has been moved off site, the staging and creek access areas will be returned to pre-construction conditions.

### 1.2.4 Project Operation

The Project design relies on restoring natural processes to achieve stability over time rather than on permanent or semi-permanent structural elements to achieve an immediate outcome. The progression of natural processes is expected to vary based on sediment input, storm and flow events, and other variables. However, measurable improvements in channel morphology and complexity, sediment aggradation and beneficial habitat conditions are anticipated and would be monitored as part of the Project's Monitoring and Adaptive Management Plan. During the Plan's 5-year period, adjustments and modifications to the creek design elements may be made to improve or restore Project performance. At the close of the 5-year period, an assessment would be made to compare vegetation re-establishment throughout the Project reach, changes in channel cross section at established monitoring points, sediment accumulation, bank scour, and any notable changes to installed structures that deviate from design expectations. If the 5-year assessment shows the design largely meets the project goals, the project will be deemed complete. If design goals are not met based on the assessment, the City will consider further actions that may be taken to improve project performance.

## 1.3 Summary of Results

The Study Area contains four sensitive terrestrial communities (needle grass grassland, coast live oak woodland and forest, riparian mixed oak forest, and riparian arroyo willow thickets), and seven aquatic resource types: intermittent stream (Arastradero Creek), lake (Arastradero Lake), ephemeral stream, forested/scrub wetland, channel wetland, perennial marsh, and seasonal wetland. The project is a utilities relocation and creek restoration project, designed to enhance terrestrial and aquatic habitat via invasive species removal and planting of native species, as well as incorporation of elements such as step pools and log elements to lower stream velocity and restore a more natural flow regime, improving conditions for stream and wetland habitat. Project construction will result in temporary impacts to sensitive terrestrial and aquatic land cover types, as well as a small amount of permanent impacts to coast live oak woodland, riparian mixed oak forest, riparian arroyo willow thickets, and intermittent stream. Additionally, 12 special-status plant species, and 16 special-status wildlife species (as well as non-status birds with baseline legal protections) have the potential to occur in the Study Area. Protection measures and best management practices have been developed and provided herein to avoid impacts to these resources.

**Table 1. Summary of Biological Resources Evaluation**

| CEQA Assessment Category[1] IV – Biological Resources | Biological Resources Considered | Relevant Laws & Regulations | Responsible Regulatory Agency | Summary of Findings & Report Section[2] |
|---|---|---|---|---|
| **Question A.**<br>**Special-status Species** | Special-status Plants<br>Special-status Wildlife<br>Designated Critical Habitat | Federal Endangered Species Act<br>CA Endangered Species Act<br>CA Native Plant Protection Act<br>Migratory Bird Treaty Act<br>Bald & Golden Eagle Protection Act | U.S. Fish & Wildlife Service<br>National Marine Fisheries Service<br>CA Department of Fish & Wildlife | Potentially significant impacts were identified and protection measures are included that reduce those impacts to a level that is less than significant.<br>**See Section 5.2 for more information.** |

[1] *CEQA Questions have been summarized here, see Section 6.2 for details.*
[2] *As given in this report, see Section 5.0 subheadings.*

**Table 1. Summary of Biological Resources Evaluation**

| CEQA Assessment Category[1] IV – Biological Resources | Biological Resources Considered | Relevant Laws & Regulations | Responsible Regulatory Agency | Summary of Findings & Report Section[2] |
|---|---|---|---|---|
| **Question B.**<br>**Sensitive natural communities & riparian habitat** | Sensitive Natural Communities<br>Streams, Lakes & Riparian Habitat | CA Fish & Game Code<br>Oak Woodland Conservation Act<br>Porter-Cologne Act<br>Clean Water Act | CA Department of Fish & Wildlife<br>U.S. Army Corps of Engineers<br>U.S. Environmental Protection Agency<br>State Water Resources Control Board<br>Regional Water Quality Control Board | Potentially significant impacts were identified and avoidance and protection measures are included that reduce those impacts to a level that is less than significant.<br>**See Section 5.1 for more information.** |
| **Question C.**<br>**State and federally protected wetlands** | Wetlands<br>Unvegetated surface waters | Clean Water Act: Sections 404/401<br>Rivers & Harbors Act: Section 10<br>Porter-Cologne Act | U.S. Army Corps of Engineers<br>U.S. Environmental Protection Agency<br>State Water Resources Control Board<br>Regional Water Quality Control Board | Potentially significant impacts were identified and protection measures are included that reduce those impacts to a level that is less than significant.<br>**See Section 5.1 for more information** |
| **Question D.**<br>**Fish & Wildlife corridors** | Essential Fish Habitat<br>Wildlife Corridors | CA Fish & Game Code<br>Magnuson-Stevens Fishery Conservation & Management Act | CA Department of Fish and Wildlife<br>National Marine Fisheries Service | Potentially significant impacts were identified and protection measures are included that reduce those impacts to a level that is less than significant.<br>**See Section 5.3 for more information** |

**Table 1. Summary of Biological Resources Evaluation**

| CEQA Assessment Category[1] IV – Biological Resources | Biological Resources Considered | Relevant Laws & Regulations | Responsible Regulatory Agency | Summary of Findings & Report Section[2] |
|---|---|---|---|---|
| **Question E.**<br>**Local policies** | Protected Trees<br>Coastal zone resources<br>Other biological protections | Local Tree Ordinance<br>General Plan (e.g. Stream & Wetland Setbacks)<br>Local ordinances | Local and regional agencies<br>CA Coastal Commission<br>San Francisco Bay Conservation and Development Commission | Potentially significant impacts were not identified..<br>**See Section 2.2 for more information** |
| **Question F.**<br>**Local, state, federal conservation plans** | Habitat Conservation Plans<br>Natural Community Conservation Plans | Federal Endangered Species Act<br>Natural Community Conservation Planning Act | U.S. Fish and Wildlife Service<br>CA Department of Fish and Wildlife | Potentially significant impacts were not identified.<br>**See Section 5.2 for more information** |

# 2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts. Table 1 shows the correlation between these regulations and each Biological Resources question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines.

## 2.1 Federal and State Regulatory Setting

### 2.1.1 Special-status Species

#### ENDANGERED AND THREATENED PLANTS, FISH, AND WILDLIFE

Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the Federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" and "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to take of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federal-listed plant species are only protected when removal or destruction occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must insure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGC 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to candidate species during consideration for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit

under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit (RMP).

### FULLY PROTECTED SPECIES AND DESIGNATED RARE PLANT SPECIES

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take,” with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP. CDFW may also authorize take for voluntary restoration projects through the RMP.

### SPECIAL PROTECTIONS FOR NESTING BIRDS AND BATS

The Federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species (bald eagle [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

### ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass [*Zostera* spp.]), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

### SPECIES OF SPECIAL CONCERN, MOVEMENT CORRIDORS, AND OTHER SPECIAL-STATUS SPECIES UNDER CEQA

A Species of Special Concern (SSC) is a species formally designated by the CDFW which meets one or more criteria related to a Federal ESA status (if it is not listed under CESA), including extirpation from California, documented population declines, or small population size within California and risk of declines. In addition, CDFW has developed a special animals list as “a

general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Conservation Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2025b) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

## 2.2 Local Plans and Policies

### 2.2.1 City of Palo Alto Tree Ordinance

The City's updated Tree Protection Ordinance (Ordinance) went into effect in July 2022 (City of Palo Alto 2025). The updated Ordinance defines a protected tree as being one of 7 specific native tree species with a DBH (diameter at breast height, measured 4 feet above ground level) of 11.5 inches or more. The specified native species of protected trees are big leaf maple (*Acer macrophyllum*), California incense cedar (*Calocedrus decurrens*), coast live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), California black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), or coast redwood (*Sequioa sempervirens*). The updated Ordinance also defines any mature tree with a DBH of 15 inches or more (with the exclusion of invasive and high-water use trees) as a protected mature tree.

The updated ordinance requires owners of private protected trees to notify the City and the public in advance of significant maintenance activities and requires a tree removal permit prior to the removal of any protected trees in the absence of development. A separate tree removal permit is not required when tree removals occur as part of development requiring planning approval; the approval of the development project serves as approval for the proposed tree removal.

The updated Ordinance also includes a stipulation that, in the event of unauthorized tree removals, the urban forester may issue a temporary moratorium on development of the property for a period of 24-36 months. Chapter 8.10.050 of the Ordinance states:

> *(2) In the event a protected tree is removed pursuant to a protected tree removal permit granted under this subsection (a), a temporary moratorium on development of the subject property may be issued by the urban forester for up to twenty-four months or by, the director of planning and development services, in consultation with the urban forester, for up to thirty-six months, from the date the tree removal occurred. Completion of required mitigation measures included in the tree removal permit does not remove or shorten any such moratorium. A moratorium may be terminated early with approval of the urban forester or director of planning, and development services, as applicable, and may require additional mitigation measures. Mitigation measures included in the protected tree removal permit and any additional mitigation measures required to shorten a moratorium*

*shall be imposed as a condition of any subsequent permits for development on the subject property.*

### 2.2.2 City of Palo Alto Stream Corridor Protection

The City of Palo Alto Municipal Code Section 18.40.140 Stream Corridor Protection Ordinance provides states that:

> *(A) the purpose of the water resources protection measures [...] is to provide site planning and development standards designed to preserve riparian resources, protect improvements from damage caused by potential stream flooding and bank erosion, and minimize storm water pollution.*

The Ordinance exempts "replacement of utility service laterals where location outside the protected areas is not readily available" from the streamside review area requirements and guidelines. The Project falls under this category and is therefore exempted from the provisions of the Ordinance.

## 3.0 ASSESSMENT METHODOLOGY

On March 19, April 9, and November 10, 2025, WRA biologists visited the Study Area to map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Web Soil Survey (USDA 2025a)
- Palo Alto 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2021)
- Mindego Hill 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2022)
- Contemporary aerial photographs (Google Earth 2025)
- Historical aerial photographs (NETR 2025)
- National Wetlands Inventory (NWI; USFWS 2025a)
- California Aquatic Resources Inventory (SFEI 2025)
- CNDDB (CDFW 2025b)
- CNPS Inventory (CNPS 2025b)
- Consortium of California Herbaria (CCH1 2025, CCH2 2025)
- USFWS Information for Planning and Consultation (USFWS 2025b)
- eBird Online Database (Cornell Lab of Ornithology 2025)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)

- A Manual of California Vegetation, Online Edition (CNPS 2025a)
- California Natural Community List (CDFW 2025a)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Palo Alto USGS 7.5-minute quadrangle.

Following the remote assessment, WRA biologists completed a field review over the course of six hours to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.

## 3.1 Vegetation Communities and Other Land Cover Types

During the site visits, WRA evaluated the species composition and area occupied by distinct vegetation communities, aquatic communities, and other land cover types. Mapping of these classifications utilized a combination of aerial imagery and ground surveys. Data collected during the site visits were used to develop the land cover maps, and inform subsequent map updates. In most instances, communities are characterized and mapped based on distinct shifts in plant assemblage (vegetation) and follow the California Natural Community List (CDFW 2025a) and A Manual of California Vegetation, Online Edition (CNPS 2025a). These resources cannot anticipate every component of every potential vegetation assemblage in California, and so in some cases, it is necessary to identify other appropriate vegetative classifications based on best professional judgment of WRA biologists. When undescribed variants are used, it is noted in the description. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled [S1/G1], imperiled [S2/G2], or vulnerable [S3/G3]) (CDFW 2025a), were evaluated as sensitive as part of this evaluation.

The site was reviewed for the presence of wetlands and other aquatic resources on March 19, April 9, and November 10, 2025, according to the methods described in the USACE Manual (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* (USACE 2008), *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Regions of the United States* (Mersel and Lichvar 2014), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008). Areas meeting these indicators were mapped as aquatic resources and categorized using the vegetation community classification methods described above. Aquatic communities which are mapped in the NMFS EFH Mapper (NMFS 2025) or otherwise meet criteria for designation as EFH are indicated as such in the community description below in Section 5.1. The presence of riparian habitat was evaluated based on woody plant species meeting the definition of riparian provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994) and based on best professional judgement of biologists completing the field surveys.

## 3.2 Special-status Species

### 3.2.1 Vegetation and Aquatic Communities

CEQA provides protections for vegetation types defined as sensitive by the California Department of Fish and Wildlife (CDFW) and aquatic features protected by laws and regulations administered

by the USACE, State Water Resources Control Board (SWRCB), and RWQCB. The laws and regulations that provide protection for these resources are summarized below.

### SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2025a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2025b). Natural communities are ranked 1 through 5 in the CNDDB based on NatureServe's (2020) methodology, with those communities ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code (CPRC).

**Waters of the United States, Including Wetlands:** The USACE regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the USACE under Section 404 of the CWA.

The USACE also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA requires USACE approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

### WATERS OF THE STATE, INCLUDING WETLANDS

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The SWRCB and nine RWQCB protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and

RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

#### SECTIONS 1600-1616 OF CALIFORNIA FISH AND GAME CODE

Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream," which includes creeks and rivers, is defined in the CCR as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). The term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

### 3.2.2 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the site visit based on physical and biological conditions of the site as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDB, other reports) on the site in the recent past.

If a more thorough assessment was deemed necessary, a targeted or protocol-level assessment or survey was recommended as a future study. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2. If designated critical habitat is present for a species, the extent of critical habitat present and an evaluation of critical habitat elements is provided as part of the species discussions below.

#### 3.2.3 Special-status Plants

No protocol-level surveys for special-status plant species have been conducted to date. During the site visit on March 19, 2025, the site was assessed for potential habitat suitable to support special-status plant species.

#### 3.2.4 Special-status Wildlife

No targeted or protocol-level surveys for special-status wildlife species have been conducted to date. During the site visit on March 19, 2025, the site was assessed for potential habitat suitable to support special-status wildlife species.

### 3.3 Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (Spencer et. al 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2025c). Additionally, aerial imagery (Google Earth 2025) for the local area was referenced to assess if local core habitat areas were present within or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

The potential presence of native wildlife nursery sites is evaluated as part of the site visit and discussion of individual wildlife species below. Examples of native wildlife nursery sites include nesting sites for native bird species (particularly colonial nesting sites), marine mammal pupping sites, and colonial roosting sites for other species (such as for monarch butterfly [*Danaus plexippus*]).

## 4.0 ECOLOGICAL SETTING

The approximately 10-acre Study Area is located in Pearson-Arastradero Preserve, City of Palo Alto, Santa Clara County, California. The Study Area includes all areas affected by the Project. Additional details of the local setting are below.

### 4.1 Soils and Topography

The overall topography of the Study Area is a gentle slope with elevations ranging from approximately 420 to 360 feet above sea level. A steep riparian corridor runs south to north along the length of the Study Area. According to SoilWeb (CSRL 2025) and Web Soil Survey (USDA 2025a), the Study Area is underlain by 3 soil mapping units: *Water; Zeppelin-Mccoy complex 15 to 30 percent slopes*; and *Montavista clay loam, 15 to 30 percent slopes*. Soils within the Study Area are shown in Appendix B – Figure 3. The parent soil series of all the Study Area's mapping units are summarized below.

**Zeppelin Series:** Soils in the Zeppelin series consist of deep, well drained soils that formed in residuum from fine grained sandstone. These soils occur on hills, are used for recreation and home sites, with slow permeability. The Zeppelin-Mccoy complex, 15 to 30 percent slopes soil mapping unit is not considered hydric (USDA 2025b).

**McCoy Series:** Soils in the McCoy series consist of moderately deep, well drained soils formed in material weathered from granitic rocks. These soils occur on hilly uplands, have medium to very rapid runoff with moderately slow permeability. The Zeppelin-Mccoy complex, 15 to 30 percent slopes soil mapping unit is not considered hydric (USDA 2025b).

**Montavista Series:** Soils in the Montavista series consist of very deep, well drained soils that formed in alluvium from mixed rock sources. These soils occur on hills of remnant terraces, are used for urban development and recreation, and has slow permeability. The Montavista clay loam, 15 to 30 percent slopes soil mapping unit is not considered hydric (USDA 2025b).

## 4.2 Climate and Hydrology

The Study Area is located in the western region of Santa Clara County. The average monthly maximum temperature in the area is 69.3 degrees Fahrenheit, while the average monthly minimum temperature is 46.6 degrees Fahrenheit. Predominantly, precipitation falls as rainfall between November and March with an annual average precipitation of 15.21 inches.

The local watershed is Adobe Creek – Frontal San Francisco Bay Estuaries (HUC 12: 180500030407) and the regional watershed is Coyote (HUC 8: 18050003). The Study Area is located in the upper portion of the Adobe Creek – Frontal San Francisco Bay Estuaries watershed. There is one blue-line intermittent stream (Arastradero Creek), and one dry lake (Arastradero Lake) mapped in the Study Area (USGS 2021). There are four riverine aquatic resources mapped within the Study Area in the NWI (USFWS 2025a), and California Aquatic Resources Inventory (CARI; SFEI 2025). Aquatic resources in the Study Area were delineated in the field by WRA on March 19 and April 9, 2025. Detailed descriptions of aquatic resources are provided in Section 5.1 below.

Between 1956 and 1960, Arastradero Lake was constructed in the northern portion of the Study Area. Within the Study Area, the alignment of Arastradero Creek upstream/south of Arastradero Lake remains relatively undisturbed, while the alignment of Arastradero Creek north (downstream) of Arastradero Lake has been realigned into a man-made, earthen bottom channel.

## 4.3 Land Use

The majority of the Study Area consists of semi-natural riparian and grassland, and it is located within a matrix of preserve and open space areas. Vegetation in undeveloped areas consists of non-native grassland, needle grass grassland, coast live oak woodland and forest, riparian mixed oak forest, riparian arroyo willow thickets, forested/shrub wetland, channel wetland, seasonal wetland, perennial marsh, ephemeral stream, intermittent stream (Arastradero Creek), and lake (Arastradero Lake). Developed areas include Arastradero Creek Trail, Juan Bautista de

Anza Trail, and a public utility building. Detailed land cover type descriptions are included in Section 5.1 below, and all observed plant species are included in Appendix C.

Surrounding land uses include a golf course and residential areas to the east, and open space preserve areas to the south, north, and west (Google Earth 2025). Several pedestrian trails occur within and in the vicinity of the Study Area, as well as Arastradero Lake, which is an artificial lake actively managed by the City for public recreation. Fishing is currently permitted year-round in Arastradero Lake, which hosts largemouth bass, spotted bass, and bluegill; swimming and boating are not permitted. Historically, the Study Area consisted of an undisturbed section of Arastradero Creek (NETR 2025).

# 5.0 ASSESSMENT RESULTS

## 5.1 Vegetation Communities and Other Land Cover

WRA observed thirteen land cover types within the Study Area. All except two land cover types (non-native grassland and developed areas) are considered sensitive. Sensitive terrestrial land cover types include needle grass grassland, coast live oak woodland and forest, riparian mixed oak forest, and riparian arroyo willow thickets. Sensitive aquatic land cover types include intermittent stream (Arastradero Creek), lake (Arastradero Lake), ephemeral stream, forested/shrub wetland, channel wetland, perennial marsh, and seasonal wetland. Land cover types within the Study Area are illustrated in Appendix B – Figure 4 and summarized in Table 2 below.

**Table 2. Vegetation Communities and Other Land Cover Types**

| COMMUNITY / LAND COVERS | SENSITIVE STATUS | RARITY RANKING | ACRES WITHIN STUDY AREA |
|---|---|---|---|
| **TERRESTRIAL / COMMUNITY LAND COVER** | | | |
| **Developed** | Non-sensitive | None | 0.82 |
| **Coyote Brush Scrub** | Non-sensitive | G5, S5 | 0.15 |
| **Needle Grass Grassland** | Sensitive | G3/G4, S3/S4 | 0.37 |
| **Coast Live Oak Woodland and Forest** | Sensitive | G5, S4 | 0.96 |
| **Riparian Mixed Oak Forest** | Sensitive | G4, S4 | 4.22 |
| **Riparian Arroyo Willow Thickets** | Sensitive | G4, S4 | 0.43 |
| **AQUATIC RESOURCES** | | | |
| **Intermittent Stream (Arastradero Creek)** | Sensitive | None | 0.27 |
| **Lake (Arastradero Lake)** | Sensitive | None | 2.37 |
| **Ephemeral Stream** | Sensitive | None | 0.01 |
| **Forested/Shrub Wetland** | Sensitive | G4, S4 | 0.20 |
| **Channel Wetland** | Sensitive | None | 0.02 |
| **Perennial Marsh** | Sensitive | G5, S5 | 0.12 |
| **Seasonal Wetland** | Sensitive | None | 0.01 |

### 5.1.1 Terrestrial Land Cover



***Photo 1.*** *Photograph of typical developed area on the site.*

**Developed (no vegetation alliance). CDFW Rank: None. Not sensitive.** Developed areas are common throughout California, particularly within urban and residential areas. Within the Study Area, developed areas include unpaved compacted dirt and gravel trails, and a small utility building. Developed portions of the Study Area are unvegetated and therefore do not meet the membership requirements of any vegetation alliance. This land cover type is not considered sensitive by CDFW, or any other regulatory entity.



***Photo 2.*** *Photograph of coyote brush scrub, above Arastradero Lake, within the Study Area.*

**Coyote Brush (*Baccharis pilularis*) Scrub. CDFW Rank: G5, S5. Not sensitive.** Coyote brush scrub is known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This plant community is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay (CNPS 2025a). Coyote brush scrub is present in the southeastern portion of the Study Area south of Arastradero Creek, as well as above Arastradero Lake in the northern portion of the Study Area. Within the Study Area, this land cover type is dominated by coyote brush (*Baccharis pilularis*), with scattered poison oak (*Toxicodendron diversilobum*) and coast live oak. The understory is characterized by sparse cover of native and non-native grasses and forbs, such as silvery hairgrass (*Aira caryophyllea*), oats (*Avena* sp.), Italian thistle (*Carduus pycnocephalus*), yerba buena (*Clinopodium douglasii*), and gold back fern (*Pentagramma triangularis*). Vegetation within this land cover type meets the membership requirements of the *Baccharis pilularis* Shrubland Alliance. This vegetation alliance is not considered sensitive by CDFW, or any other regulatory entity.



***Photo 3.*** *Photograph of typical needle-grass grassland within the Study Area.*

**Needle grass grassland (*Stipa [Nasella] pulchra* Herbaceous Alliance). CDFW Rank: G3/G4, S3/S4. Sensitive.** Purple needlegrass grassland is known from the Central Valley, Coast Ranges, Transverse Ranges, and South Coast from Del Norte County south to San Diego County. This vegetation community is typically located in valleys and hillslopes on many aspects underlain by deep clay substrate in the Central Valley and shallow, rocky substrate in coastal areas (Sawyer et al. 2009). Within the Study Area, needle grass grassland occurs in grassy openings in wooded areas on the hillside located above Arastradero Creek Trail. This alliance was mapped following CNPS (2025a) in areas containing purple needlegrass (*Stipa pulchra*) with greater than 10 percent relative cover. Other species observed include soft chess (*Bromus hordeaceus*), oats, Italian thistle, lupines (*Lupinus* spp.), vetches (*Vicia* spp.), and big heron bill (*Erodium botrys*). Although purple needlegrass grassland was recently merged by CDFW into the needlegrass – melic grassland alliance (S3S4), needle

grass grassland within the Study Area fits within the membership rules of the *Stipa* [*Nassella*] *pulchra* – *Bromus* spp. Association, which is considered sensitive by CDFW (CDFW 2025a).



***Photo 3.*** *Photograph of coast live oak woodland and forest habitat within the Study Area.*

**Coast live oak woodland and forest (*Quercus agrifolia* Forest and Woodland Alliance). CDFW Rank: G5, S4. Sensitive.** Coast live oak woodlands and forests are known from the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County. This vegetation community is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). Within the Study Area, all non-riparian wooded areas are covered by coast live oak woodlands and forests. These woodlands are located on all aspects and occur at higher elevations within the Study Area. The tree stratum is composed primarily of coast live oak, with scattered occurrences of buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), and valley oak. The composition of the understory consists of the species described in non-native grassland above, with patches of dense poison oak, common snowberry (*Symphoricarpos albus*), and poison hemlock (*Conium maculatum*). Vegetation within coast live oak woodland and forest meets the membership requirements of the *Quercus agrifolia* Forest and Woodland Alliance. While this vegetation alliance is not considered sensitive by CDFW, native oaks are protected under the City of Palo Alto Tree Ordinance, and therefore vegetation within this land cover type is considered sensitive.



***Photo 4.*** *Photograph of typical riparian mixed oak forest habitat.*

**Riparian Mixed Oak Forest (*Quercus agrifolia, douglassii, kelloggii, lobata* Forest Alliance). CDFW Rank: G4, S4. Sensitive.** Mixed oak woodlands and forests are known from the southern North Coast Ranges southward through the Central Coast Ranges from Sonoma County to northern Santa Barbara County (Sawyer et al. 2009, Holland 1986). These forests typically are located on deep soils with a variety of hydric-thermic regimes, which are situated in valleys and gentle to steep slopes. The overstories are a relatively even mix of oak species and other broadleaf species, with no clear dominant species. Within the Study Area, riparian mixed oak forest occurs in the riparian zone along the majority of Arastradero Creek and Arastradero Lake. Dominant canopy species include coast live oak, valley oak, and California black oak, with scattered blue oak, California bay, buckeye, blue elderberry (*Sambucus mexicana*), and arroyo willow (*Salix lasiolepis*). The understory was dominated by densely growing native shrubs, including stands of oso berry (*Oemleria cerasiformis*), California wild rose (*Rosa californica*), Pacific blackberry (*Rubus ursinus*), common snowberry, and poison oak. Some grassy openings, dominated by non-native species and blue wildrye (*Elymus glaucus*) were also present in the understory. The majority of vegetation in this land cover type meets the membership requirements of the *Quercus agrifolia, douglassii, kelloggii, lobata* Forest Alliance. Some areas also meet the membership requirements of the *Quercus agrifolia* Forest Alliance, but these areas were too small to map separately. While these vegetation alliances are not considered sensitive by CDFW, native oaks are protected

under the City of Palo Alto Tree Ordinance, and therefore vegetation within this land cover type is considered sensitive. This land cover type is also considered sensitive as riparian habitat.



***Photo 5.*** *Photograph of arroyo willow thickets within the Study Area.*

**Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance). CDFW Rank: G4, S4. Sensitive.** Arroyo willow thickets are widespread throughout most of California. This plant community is typically located in intermittently flooded sites, including stream banks and benches and slope seeps (CNPS 2025a). In the Study Area, stands of arroyo willow thickets occur in the riparian zone on the eastern side of Arastradero Lake, and in the upstream portion of Arastradero Creek. The canopy is dominated by dense arroyo willow, which is sometimes co-dominant with poison oak and/or red osier dogwood (*Cornus sericea*). The herbaceous understory is largely absent due to the high density of the tree and shrub canopy. Vegetation within this land cover type meets the membership requirements of the *Salix lasiolepis* Shrubland Alliance. While this vegetation alliance is not considered sensitive by CDFW, this land cover type is considered sensitive as riparian habitat.

### 5.1.2 Aquatic Resources



***Photo 6.*** *Photograph of Arastradero Creek within the Study Area.*

**Intermittent Stream (Arastradero Creek) (no vegetation alliance). CDFW Rank: None. Sensitive.** Intermittent streams are drainages that contain a defined bed and bank, exhibit evidence of an OHWM, and convey surface water during the wet season but dry down completely for at least part of the year. Within the Study Area, one intermittent stream (Arastradero Creek) flows south to north. The channel bed below the OHWM is largely unvegetated, and consists of a combination of mud, gravel, cobble, and boulders with some broken concrete present in the upper reaches. Surface water flows were present at the time of the site visits, which occurred during the wet season. Intermittent stream within the Study Area likely contains surface water for the entirety of the wet season but dries down completely during the later part of the dry season.

South of Arastradero Lake, the alignment of Arastradero Creek is relatively undisturbed and sinuous. Widths below the OHWM generally range from 2 to 9 feet, widening at the mouth of Arastradero Lake. North of Arastradero Lake, Arastradero Creek has been realigned into a straight, uniform channel approximately 5 to 6 feet wide below the OHWM. OHWM was characterized by scour, break in bank, a change in vegetation, water staining on rocks, and a wrack line. Banks above the OHWM are steep and dominated by riparian mixed oak woodland forest and arroyo willow thickets. North of the Study Area, Arastradero Creek drains to Matadero Creek through a series of culverts, the first located at the intersection of the I-280 off ramp and Page Mill Road and eventually connects to the San Francisco Bay though Mayfield Slough. Intermittent streams are considered sensitive as aquatic resources.

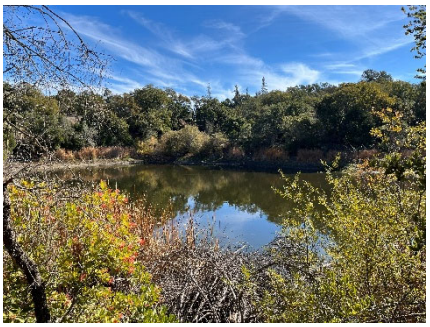

***Photo 7.*** *Photograph of Arastradero Lake within the Study Area.*

**Lake (Arastradero Lake) (no vegetation alliance). CDFW Rank: None. Sensitive.** Arastradero Lake occurs in the northern portion of the Study Area. It is hydrologically connected to Arastradero Creek with no restrictions to the north and south, and it also receives surface water runoff from surrounding uplands via several culverts around the perimeter of the lake. The formation of Arastradero Lake is a result of a water control device managed by the City. Based on a review of aerial imagery (Google Earth 2025), water levels within the lake are highest during the wet season and draw down substantially over the course of the dry season. Typically, the lake contains at least some standing water at its lowest elevations throughout the duration of the dry season. The boundary of the lake was mapped based on the elevation of water levels observed during the site visits, conducted during the wet season, which generally correspond to the lake's footprint on aerial imagery collected during the wet seasons in previous years. Within the Study Area, Arastradero Lake is largely unvegetated, except for stands of perennial marsh around the perimeter and an area of forested/shrub wetland at the mouth of Arastradero Creek. These wetland areas were mapped separately from Arastradero Lake and are described separately in this report. Lakes are considered sensitive as aquatic resources.



***Photo 8.*** *Photograph of ephemeral stream, hydrologically connected to Arastradero Creek, within the Study Area.*

**Ephemeral Stream (no vegetation alliance). CDFW Rank: None. Sensitive.** Ephemeral streams are drainages that contain a defined bed and bank, exhibit evidence of an OHWM, and convey surface water during and for a short duration following precipitation events, but remain dry otherwise. Four ephemeral streams were observed within the Study Area. A single ephemeral stream occurs within the northeastern portion of the Study Area, which originates from a culvert on the eastern boundary of the Study Area, and drains to Arastradero Lake. Three additional ephemeral streams occur in the southern portion of the Study Area, which are hydrologically connected to Arastradero Creek. The width of the ephemeral stream below the OWHM ranges from approximately 1 to 3 feet. The OHWM was characterized by a break in slope, scour, a shift in vegetation, and water staining. Ephemeral streams are considered sensitive as aquatic resources.

**Forested/Shrub Wetland (*Salix lasiolepis* Shrubland Alliance). CDFW Rank: G4 S4. Sensitive.** Forested/shrub wetlands, dominated by arroyo willow thickets, are widespread throughout most of California. This plant community is typically located in intermittently flooded sites, including stream banks and benches and slope seeps (CNPS 2025a). One forested/shrub wetland occurs below the OHWM of Arastradero Lake, at the mouth of Arastradero Creek. Vegetation is comprised of dense arroyo willow, rooted below the elevation of the lake's surface waters. This area could not be directly accessed due to density of willow growth and presence of surface waters, but it was presumed to be a wetland due to the presence of hydrophytic vegetation and the surface waters for more than two consecutive weeks during the wet season. Within the Study Area, forested/shrub wetland likely contains surface waters for the entirety of the wet season,

but dries down during the dry season. Vegetation within this land cover type meets the membership requirements of the *Salix lasiolepis* Shrubland Alliance. While this vegetation alliance is not considered sensitive by CDFW, wetlands are considered sensitive as aquatic resources.



***Photo 9.*** *Photograph of channel wetland along Arastradero Creek.*

**Channel Wetland (no vegetation alliance). CDFW Rank: None. Sensitive.** Channel wetlands occur on linear benches located along the OHWM of intermittent and perennial streams throughout California. These wetland features are likely flooded during extreme precipitation events and receive subsurface flows from adjacent streams when surface flows are present. Within the Study Area, three channel wetlands were mapped just above the OHWM of Arastradero Creek. These channel wetlands contain some dense stands of mugwort (*Artemisia douglasiana*), but are otherwise sparsely vegetated by Pacific blackberry, fringed willow herb (*Epilobium ciliatum*), and hairy bittercress (*Cardamine hirstuta*). Hydric soils and wetland hydrology indicators, including a high water table, saturation, and biotic crust, were observed, indicating the presence of a wetland. Vegetation within this land cover type does not meet the membership requirements of any vegetation alliance, but wetlands are considered sensitive as aquatic resources.



***Photo 10.*** *Photograph of Perennial Marsh habitat dominated by cattails within Arastradero Lake.*

**Perennial Marsh. (*Typha* spp. Herbaceous Alliance). CDFW Rank: G5 S5. Sensitive.** Cattail (*Typha* spp.)-dominated perennial marshes are common throughout California in semi-permanently flooded marshes underlain by clay or silty soils (CNPS 2025a). Within the Study Area, several stands of perennial marsh, dominated by cattail, occur around the perimeter of Arastradero Lake below the OHWM. During the site visits, perennial marsh contained relatively low cover of vegetative cattails, while the previous year's growth had already died back. This is likely a result of the lake's inundation regime, as the lake appears to dry down significantly over the course of the dry season (Google Earth 2025). Perennial marsh within the Study Area is presumed to be wetland due habitat due to the presence of hydrophytic vegetation and the surface waters for more than two consecutive weeks during the wet season. Vegetation within this land cover type meets the membership requirements of the *Typha* spp. Herbaceous Alliance, which is not considered sensitive by CDFW. However, perennial marsh is considered sensitive as wetland habitat.



***Photo 11.*** *Photograph of seasonal wetland within the Study Area.*

**Seasonal Wetland. (no vegetation alliance). CDFW Rank: None. Sensitive.** Seasonal wetlands include areas which hold water for part of the year, typically during the wet season, and which are dominated by hydrophytic vegetative cover. Three seasonal wetlands were observed within the Study Area; two linear seasonal wetlands occur along a swale that runs parallel to Arastradero Creek Trail, and one small seasonal wetland was observed below a culvert outfall that drains to Arastradero Lake. Dominant plant species observed in seasonal wetlands in the Study Area include tall cyperus (*Cyperus eragrostis*), Italian rye grass *(Festuca perennis*) and curly dock *(Rumex crispus*). Surface water was observed in these features during the site visits that occurred during the wet season. Seasonal wetlands within the Study Area do not meet the membership requirements of any vegetation alliance but are considered sensitive as wetland habitat.

## 5.2 Special-Status Species

### 5.2.1 Special-Status Plants

Based upon a review of the resource databases listed in Section 3.0, 70 special-status plant species have been documented in the vicinity of the Study Area. Twelve (12) of these species have moderate or high potential to occur within the Study Area. The remaining species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Study Area;
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Study Area;
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area;
- Associated natural communities (e.g., coastal dunes, tidal marsh) necessary to support the special-status plant species are not present in the Study Area;
- The Study Area is geographically isolated (e.g., below elevation, coastal environ) from the documented range of the special-status plant species;
- The historical landscape and/or habitat(s) of the Study Area were not suitable habitat prior to land/type conversion (e.g., reclaimed shoreline) to support the special-status plant species;
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

No protocol-level surveys for special-status plant species have been conducted to date. During the site visit on March 19, 2025, the site was assessed for potential habitat suitable to support

special-status plant species. Species with potential habitat in the Study Area are summarized below.

**Table 3. Potential Special-Status Plants**

| SCIENTIFIC NAME | COMMON NAME | CONSERVATION STATUS | POTENTIAL HABITAT IN THE STUDY AREA |
|---|---|---|---|
| **FORMALLY LISTED PLANTS (FESA, CESA, CNPPA)** | | | |
| ***Pentachaeta bellidiflora*** | white-rayed pentachaeta | FE, SE, Rank 1B.1 | **Moderate potential.** Suitable grassland habitat is present within Study Area. Recent occurrence documented in Edgewood Park, approximately 7.5 miles north of the Study Area (CDFW 2025b) |
| ***Trifolium amoenum*** | two-fork clover | FE, Rank 1B.1 | **Moderate potential.** Suitable grassland habitat is present within Study Area. Recent occurrence documented along San Francisquito Creek, 3 miles northwest of the Study Area (CDFW 2025b). |
| **OTHER SPECIAL-STATUS PLANTS (CEQA, OTHER)** | | | |
| ***Allium peninsulare* var. *franciscanum*** | Franciscan onion | Rank 1B.2 | **Moderate potential**. Suitable grassland habitat is present within the Study Area. Recent occurrence documented in Jasper Ridge Biological Preserve, approximately 3.6 miles northwest of the Study Area (CDFW 2025b). |
| ***Clarkia concinna* ssp. *automixa*** | Santa Clara red ribbons | Rank 4.3 | **Moderate Potential.** Suitable woodland habitat present within the Study Area. Recent occurrence documented in Foothills Open Space Preserve, approximately 1.8 miles south of the Study Area (CCH2 2025). |
| ***Dirca occidentalis*** | western leatherwood | Rank 1B.2 | **High potential.** Suitable brushy slope habitat present within the Study Area, which is within the species range. Recent occurrence documented in Foothills Nature Preserve, approximately 1.3 miles south of the Study Area (CDFW 2025b). |
| ***Elymus californicus*** | California bottle-brush grass | Rank 4.3 | **Moderate potential.** Suitable riparian woodland habitat within Study Area. Recent occurrence documented in La Honda Creek Open Space Preserve, approximately 5.6 miles southwest of the Study Area (CCH2 2025). |
| ***Fritillaria liliacea*** | fragrant fritillary | Rank 1B.2 | **Moderate potential.** Suitable habitat within Study Area. Recent occurrence in Edgewood Park, approximately 6.5 miles northwest of the Study Area (CDFW 2025b). |
| ***Lessingia hololeuca*** | woolly-headed lessingia | Rank 3 | **Moderate Potential.** Suitable broadleafed upland forest and grassland habitat is present within Study Area. Closest observations are in Woodridge, approximately 2.4 miles northwest of the Study Area (CCH2 2025). |
| ***Malacothamnus arcuatus* var. *arcuatus*** | arcuate bushmallow | Rank 1B.2 | **High Potential.** Suitable woodland and chaparral habitat is present within the Study Area. A 2014 occurrence is documented approximately 0.13 mile south (upstream) of the Study Area. (CDFW 2025b). |

| SCIENTIFIC NAME | COMMON NAME | CONSERVATION STATUS | POTENTIAL HABITAT IN THE STUDY AREA |
|---|---|---|---|
| ***Monolopia gracilens*** | woodland woollythreads | Rank 1B.2 | **High Potential.** Suitable woodland habitat is present within the Study Area. Recent occurrences documented In Palo Alto Hills, approximately 0.7 mile southeast of the Study Area (CDFW 2025b). |
| ***Ranunculus lobbii*** | Lobb's aquatic buttercup | Rank 4.2 | **Moderate potential.** Suitable freshwater habitat is present within Study Area. Recent occurrence documented in Windy Hill Open Space Preserve, approximately 2.5 miles southwest of the Study Area (CCH2 2025) |
| ***Sagittaria sanfordii*** | Sanford's arrowhead | Rank 1B.2 | **Moderate potential.** Suitable freshwater marsh habitat is present within Study Area. Recent occurrence documented in Jasper Ridge Open Space Preserve, approximately 2.1 miles northwest of the Study Area (CDFW 2025b). |

**White-rayed pentachaeta (*Pentachaeta bellidiflora*). Federal Endangered, State Endangered, CRPR 1B.1. Moderate Potential.** White-rayed pentachaeta is a 3- to 7-inch-tall annual herb in the sunflower family (Asteraceae) that blooms from March through May. It typically occurs on open dry rock slopes and grassy areas, in cismontane woodland and valley and foothill grassland, at elevations ranging from approximately 155 to 2,035 feet. This species has a serpentine affinity rank of weak indicator (2.4) (Safford and Miller 2020). Associated species California plantain (*Plantago erecta*), purple needlegrass, tidy tips (*Layia platyglossa*), brodiaeas (*Brodiaea* spp.), San Mateo Thornmint (*Acanthomintha duttonii*), and fountain thistle (*Cirsium fontinale*) (CDFW 2025b). The nearest documented occurrence of this species is located in Edgewood Park, approximately 7.5 miles north of the Study Area. White-rayed pentachaeta has moderate potential to occur within the expansion area due to the presence of grassy slopes in cismontane woodland.

**Two-fork clover (*Trifolium amoenum*). Federal Endangered, CRPR 1B.1. Moderate Potential.** Two-fork clover is an annual forb in the pea family (Fabaceae) that blooms from April to June. It typically occurs on open, sunny sites, in swales, on roadsides, and cliffs sometimes underlain by serpentine substrate in valley and foothill grassland and coastal bluff scrub habitat at elevations ranging from 15 to 1365 feet (CDFW 2025b, CNPS 2025b). This species is a facultative wetland (FACW) plant (USACE 2022) and has a serpentine affinity rank of weak indicator (1.3) (Safford et al. 2005). Associated species slender oat grass (*Avena barbata*), bromes (*Bromus* spp.), fescues (*Festuca* spp.), Italian rye grass, California oat grass (*Danthonia californica*), California brome (*Bromus carinatus*), meadow barley (*Hordeum brachyantherum*), Italian thistle, and pale flax (*Linum bienne*) (CDFW 2025b). The nearest documented occurrence of this species is along San Francquito Creek, approximately 3.6 miles northwest of the Study Area (CDFW 2025b). Two-fork clover has moderate potential to occur in areas of needle grass grassland, and coast live oak woodland in the western portion of the Study Area.

**Franciscan onion (*Allium peninsulare* var. *franciscanum*). CRPR 1B.2. Moderate Potential.** Franciscan onion is a perennial forb in the lily family (Liliaceae) that blooms from May to June. It typically occurs on dry hillsides underlain by clay substrate, often derived from serpentine, in cismontane woodland and valley and foothill grassland habitat at elevations ranging from 165 to 975 feet (CDFW 2025b, CNPS 2025b). This species has a serpentine affinity rank of weak indicator (1.8) (Safford et al. 2005). Associated species include California bay, California buckeye,

coast live oak, leather oak (*Quercus durata*), and purple needlegrass (CDFW 2025b). Needle-grass grassland habitat along the western edge of the Study Area contains potential habitat for this species, which has been recently documented in Jasper Ridge Biological Preserve, approximately 3.6 miles northwest of the Study Area (CDFW 2025b).

**Santa Clara red ribbons (*Clarkia concinna ssp. automixa)*. CRPR 4.3. Moderate Potential.** Santa Clara red ribbons is an annual forb in the evening-primrose family (Onagraceae) that blooms from May to June. It typically occurs in chaparral and cismontane woodland at elevations ranging from 295 to 4920 feet (CDFW 2025b, CNPS 2025b). Associated species include purple needlegrass, and coast live oak (CDFW 2025b). The nearest documented occurrence of this species is in Foothills Open Space Preserve, approximately 1.8 miles south of the Study Area to south (CCH2 2025). Santa Clara red ribbons has moderate potential to occur in areas of needle grass grassland, and coast live oak woodland in the western portion of the Study Area.

**Western leatherwood (*Dirca occidentalis*), CRPR 1B.2. High Potential.** Western leatherwood is a deciduous shrub in the mezereum family (Thymelaeaceae) that blooms from January to April but is typically identifiable via vegetative structures into late summer and/or early fall. It typically occurs on brushy, mesic slopes in partial shade in broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland habitat at elevations range from 165 to 1,285 feet (CDFW 2025b, CNPS 2025b, Baldwin et al. 2012). Associated species include coast live oak, California bay, Pacific madrone (*Arbutus menziesii*), California coffeeberry (*Frangula californica*), poison oak, toyon (*Heteromeles arbutifolia*), California buckeye, California hazelnut (*Corylus cornuta* var. *californica*), coyote brush, yerba buena, sword fern (*Polystichum munitum*), Pacific sanicle (*Sanicula crassicaulis*), and Douglas iris (*Iris douglasiana*) (CDFW 2025b).

Riparian woodland habitat that occurs throughout much of the Study Area contains potential habitat for this species. The nearest documented occurrence of this species is in Foothills Nature Preserve, approximately 1.8 miles south of the Study Area (CDFW 2025b).

**California bottle-brush grass (*Elymus californicus*), CRPR 4.3. Moderate Potential.** California bottle-brush grass is a perennial graminoid in the grass family (Poaceae) that blooms from May to November. It typically occurs along stream banks or other mesic sites within broadleaf upland forest, cismontane woodland, North Coast coniferous forest, and riparian woodland habitat at elevations ranging from 45 to 1,530 feet (CNPS 2025). Associated species include Douglas fir (*Pseudotsuga menziesii*), coast redwood, California bay, red alder (*Alnus rubra*), California hazelnut, California coffeeberry, California blackberry, sword fern, hedge nettle (*Stachys ajugoides*), bracken fern (*Pteridium aquilinum*) and woodland brome (*Bromus laevipes*). Riparian woodland habitat that occurs throughout much of the Study Area contains potential habitat for this species. The nearest documented occurrence of this species is in La Honda Creek Open Space Preserve, approximately 5.6 miles southwest of the Study Area (CCH2 2025).

**Fragrant fritillary (*Fritillaria liliacea*). CRPR 1B.2. Moderate Potential.** Fragrant fritillary is a low-growing, bulbiferous perennial forb in the lily family (Liliaceae) that blooms from February to April. It typically occurs in open, grassy areas in valley and foothill grassland, coastal scrub, and coastal prairie habitat at elevations ranging from 10 to 1,345 feet (CDFW 2025b, CNPS 2025b). Soil survey data at known locations suggest that this species is typically located on moderately acid (pH 5.8) to neutral (pH 6.7) clay loams to clays derived from volcanics or serpentine (CDFW 2025b, CSRL 2013). This species has a serpentine affinity rank of weak indicator (1.8) (Safford et

al. 2005). Associated species include soap plant (*Chlorogalum pomeridianum* var. *pomeridianum*), coyote brush, purple needlegrass, California oat grass, large flowered star tulip (*Calochortus uniflorus*), California buttercup (*Ranunculus californicus*), sun cups (*Camissonia ovata*), shooting stars (*Primula hendersonii*), needleleaf pincushion plant (*Navarretia intertexta*), one-sided bluegrass (*Poa secunda*), and Greene's popcornflower (*Plagiobothrys greenei*) (CDFW 2025b). Areas of needle-grass grassland and non-native grassland along the western edge of the Study Area contain potential habitat for this species. The nearest documented occurrence of this species is in in Edgewood Park, approximately 6.5 miles northwest of the Study Area (CDFW 2025b).

**Woolly-headed lessingia (*Lessingia hololeuca*). CRPR 3. Moderate Potential.** Woolly-headed lessingia is an annual herb in the sunflower family (Asteraceae) that blooms June to October. It typically occurs on clay often derived from serpentine in broadleaf upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland at elevations ranging from 45 to 1000 feet (CNPS 2025b). Associated species include Italian rye grass, ripgut brome, soft chess, California poppy (*Eschscholzia californica*), California plantain, cream cups (*Platystemon californicus*), onion (*Allium* spp.), and muilla (*Muilla maritima*). Areas of needle-grass grassland, woodland grassland, and non-native grassland along the western edge of the Study Area contain potential habitat for this species. The nearest documented occurrence of this species is in Woodridge, approximately 2.4 miles northwest of the Study Area (CCH2 2025).

**Arcuate bushmallow (*Malacothamnus arcuatus* var. *arcuatus*). CRPR 1B.2. High Potential.** Arcuate bushmallow is a perennial shrub in the mallow family (Malvaceae) that blooms April to September. It typically occurs in chaparral and cismontane woodland at elevations ranging from 50 to 1165 feet. Associated species include coyote brush. This species has high potential to occur in woodland and coyote brush scrub habitat within the Study Area, which has been documented in multiple locations in the vicinity of the Study Area. The nearest documented occurrence is approximately 0.13 miles south (upstream) of Study Area (CDFW 2025b).

**Woodland woollythreads (*Monolopia gracilens*). CRPR 1B.2. High Potential.** Woodland woollythreads is an annual forb in the aster family (Asteraceae) that blooms March to July. It typically occurs in broadleafed upland forest openings, chaparral openings, cismontane woodland, north coast coniferous forest openings, and valley and foothill grassland. It occurs at elevations ranging from 330 to 3935 feet. It has a serpentine affinity of 2.4 (Safford et al. 2020). Associated species include chamise (*Adenostoma fasciculatum*), orange bush monkeyflower (*Diplacus aurantiacus*), deerweed (*Acmispon glaber*), and blue witch (*Solanum umbelliferum*). This species has high potential to occur in woodland and coyote brush scrub habitat within the Study Area. The nearest documented occurrence is in Palo Alto Hills, approximately 0.7 miles southeast of the Study Area (CDFW 2025b)

**Lobb's aquatic buttercup (*Ranunculus lobbii*). CRPR 4.2. Moderate Potential.** Lobb's buttercup is annual aquatic forb in the buttercup family (Ranunculaceae) that blooms from February to May. It typically occurs in vernally wet areas within cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and vernal pool habitat at elevations ranging from 45 to 1,530 feet (CNPS 2025b). This species is an obligate (OBL) wetland plant (USACE 2022) and is known from vernal pool habitat in some regions of California, but is generalist in others (Keeler-Wolf et al. 1998). Associated species include mosquito fern (*Azolla filiculoides*), Northwest manna grass (*Glyceria occidentalis*), pale spike-rush (*Eleocharis macrostachya*), iris-leaf rush (*Juncus xiphioides*), common monkey flower (*Mimulus guttatus*),

calico flower (*Downingia* sp.), Italian rye grass, meadow barley, and Mediterranean barley (*Hordeum marinum*) (personal observation 2010 through 2017). Areas of perennial marsh that occur along the edge of Arastradero Lake in the southern portion of the Study Area contain potential suitable habitat for this species. The nearest documented occurrence of this species is in Windy Hill Open Space Preserve, approximately 2.5 miles southwest of the Study Area (CCH2 2025)

**Sanford's arrowhead (*Sagittaria sanfordii*). CRPR 1B.2. Moderate Potential.** Sanford's arrowhead is an aquatic rhizomatous perennial forb in the water-plantain family (Alismataceae) that blooms from May to October. It typically occurs in standing or slow-moving freshwater ponds, lakes, marshes, and ditches in marsh and swamp habitat at elevations ranging from 0 to 2115 feet (CDFW 2025b, CNPS 2025b). This species is an obligate (OBL) wetland plant (USACE 2022). Associated species include fringed willow herb, creeping spikerush, floating primrose (*Ludwigia peploides*), water grass (*Echinochloa crus-galli*), broadleaf cattail (*Typha latifolia*), northern water plantain (*Alisma triviale*), hardstem tule (*Schoenoplectus acutus*), spotted lady's-thumb (*Persicaria maculosa*), dallis grass (*Paspalum dilatatum*), Johnson grass (*Sorghum halepense*), and tall cyperus (CDFW 2025b). Areas of perennial marsh that occur along the edge of Arastradero lake in the southern portion of the Study Area contain potential suitable habitat for this species. The nearest documented occurrence of this species is in Jasper Ridge Open Space Preserve, approximately 2.1 miles northwest of the Study Area (CDFW 2025b).

### 5.2.2 Special-Status Wildlife

Of the 61 special-status wildlife species documented in the vicinity of the Study Area, most are excluded from the Study Area based on a lack of habitat features. Features not found within the Study Area that are required to support special-status wildlife species include:

- Vernal pools
- Tidal marsh areas
- Old growth redwood or fir forest
- Serpentine soils to support host plants
- Sandy beaches or alkaline flats
- Presence of specific host plants
- Caves, mine shafts, or abandoned buildings

The absence of such habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. Given the Study Area's relative proximity to sensitive habitats on the San Francisco Bay, many species documented nearby are additionally obligates to marine or tidal marsh habitats which are not present on or in the immediate vicinity of the Study Area.

Sixteen (16) special-status species have potential to occur in the immediate vicinity of or in portions of the Study Area including: Northwestern pond turtle (*Actinemys marmorata*), Crotch's bumble bee (*Bombus crotchii*), monarch – California overwintering population (*Danaus plexippus plexippus* pop. 1), bald eagle, California red-legged frog (*Rana draytonii*), Santa Cruz black salamander (*Aneides niger*), pallid bat (*Antrozous pallidus*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), long-eared owl (*Asio otus*), snowy egret (*Egretta thula*), white-tailed kite

(*Elanus leucurus*), hoary bat (*Lasiurus cinereus*), Yuma myotis (*Myotis yumanensis*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), red-bellied newt (*Taricha rivularis*), and American badger (*Taxidea taxus*).

**Table 4. Potential Special-Status Wildlife**

| SCIENTIFIC NAME | COMMON NAME | CONSERVATION STATUS | POTENTIAL HABITAT IN THE STUDY AREA |
|---|---|---|---|
| **FORMALLY LISTED WILDLIFE (FESA, CESA)** | | | |
| ***Actinemys marmorata*** | Northwestern pond turtle | Federal Proposed Threatened, SSC | **High Potential.** Within the Study Area, Arastradero Lake and adjacent areas have potential to support this species. The closest documented occurrence is located 0.8 miles northwest of the Study Area (CDFW 2025b, CNDDB Occ #1624). No turtles were observed within the Study Area during the site visit in March 2025. |
| ***Bombus crotchii*** | Crotch's bumble bee | SCE | **Moderate Potential.** The Study Area supports suitable foraging habitat in herbaceous flowering plants found in the riparian and oak woodland understory. The Study Area supports suitable nesting habitat is in woodland, riparian and steeply cut banks of Arastradero Creek. |
| ***Danaus plexippus plexippus pop. 1*** | Monarch butterfly | FPT | **Moderate Potential.** The Study Area is located within the overwintering zone of the western monarch. Monarchs are known to disperse along riparian corridors. Transient monarchs may therefore utilize riparian habitat in the spring and fall when migrating between overwintering and breeding habitat. The Study Area supports larval host plants and breeding occurrences within 0.3 miles of (Xerces Society 2025). Transient monarchs may utilize riparian habitat in the spring and fall when migrating between overwintering and breeding habitat. Reproductive adults may also breed on early-emerging milkweed during the winter and early spring. |
| ***Haliaeetus leucocephalus*** | bald eagle | BGEPA, Federal Delisted, SE, SFP | **Moderate Potential.** Large trees in the Study Area may provide suitable nesting habitat for this species. A nesting pair was documented in a eucalyptus tree in the south side of Felt Lake, approximately 0.5 miles north of the Study Area (CDFW 2025b, CNDDB Occ # 368). |
| ***Rana draytonii*** | California red-legged frog | Federal Threatened, SSC | **High Potential.** Within the Study Area, Arastradero Lake could support CRLF breeding. Arastradero Creek has potential to support CRLF dispersal in the winter and spring months when water is present. The closest known occurrence is documented in Matadero Creek, which is hydrologically connected to Arastradero Creek approximately 1.5 miles downstream (CDFW 2025b, CNDDB Occ # 230). |

| SCIENTIFIC NAME | COMMON NAME | CONSERVATION STATUS | POTENTIAL HABITAT IN THE STUDY AREA |
|---|---|---|---|
| **OTHER SPECIAL-STATUS WILDLIFE (CEQA, OTHER)** | | | |
| ***Aneides niger*** | Santa Cruz black salamander | SSC | **Moderate Potential.** The Study Area contains mixed deciduous woodlands and aquatic habitats which may provide suitable habitat for this species. The closest documented occurrence is located 3.6 miles to the east (CDFW 2025b, CNDDB Occ # 19). |
| ***Antrozous pallidus*** | pallid bat | SSC, WBWG:H | **Moderate Potential.** Tree snags and a wooden footbridge offer potential roost sites for this species. Open areas may provide suitable foraging habitat for this species. Multiple historic occurrences are documented within the vicinity of the Study Area. |
| ***Ardea alba*** | Great egret | Rookery Sites Protected by CDFW | **Present.** Multiple individuals of these species were observed roosting in mature trees around the margin of Arastradero Lake. |
| ***Ardea herodias*** | great blue heron | Rookery Sites Protected by CDFW | **High Potential.** The Study Area supports suitable rookery habitat in mature trees around the margins of Arastradero Lake. Foraging habitat is present around the lake and in Arastradero creek. No individuals of these species were observed during 2025 surveys. |
| ***Asio otus*** | long-eared owl | SSC, BCC | **Moderate Potential.** Riparian habitat in the Study Area along Arastradero Creek provides suitable nesting habitat for this species. Adjacent grassland habitat may provide suitable foraging habitat with abundant small mammal prey. The closest documented occurrence is located 4.6 miles to the south (CDFW 2025b, CNDDB Occ # 37). |
| ***Egretta thula*** | Snowy egret | Rookery Sites Protected by CDFW | **High Potential.** The Study Area supports suitable rookery habitat in mature trees around the margins of Arastradero Lake. Foraging habitat is present around the lake and in Arastradero Creek. No individuals of these species were observed during 2025 surveys. |
| ***Elanus leucurus*** | white-tailed kite | SFP | **Moderate Potential.** Large trees in the Study Area may provide suitable nesting habitat. Though not contained within the Study Area, nearby grassland may provide suitable foraging habitat. The closest documented occurrence is located 7.6 miles to the east (CDFW 2025b, CNDDB Occ # 85). |
| ***Lasiurus cinereus*** | Hoary bat | WBWG:M | **Moderate Potential.** The Study Area supports roosting habitat in medium-large trees with dense foliage, and foraging habitat in Arastradero Lake and edge habitat. Multiple occurrences are documented in the vicinity of the Study Area, the closest of which is a nonspecific location which may overlap with Study Area (CDFW 2025b, CNDDB Occ # 117). |
| ***Myotis yumanensis*** | Yuma myotis | WBWG:LM | **Moderate Potential.** The Study Area supports roosting habitat in medium-large trees with dense foliage, and in a footbridge at the outfall of Arastradero Lake. Foraging habitat occurs in and around Arastradero Lake. The closest documented occurrence is located approximately 7.4 miles to the southeast of the Study Area (CDFW 2025b, CNDDB Occ # 36). |

| SCIENTIFIC NAME | COMMON NAME | CONSERVATION STATUS | POTENTIAL HABITAT IN THE STUDY AREA |
|---|---|---|---|
| ***Neotoma fuscipes annectens*** | San Francisco dusky-footed woodrat | SSC | **Present.** The Study Area contains California bay and coast live oak woodland that provides the moderate canopy and dense understory necessary to support this species. Two woodrat nest structures were observed within the Study Area during a site visit conducted in 2023, and again in 2025. |
| ***Taxidea taxus*** | American Badger | SSC | **Moderate Potential.** The Study Area supports Numerous occurrences have been detected in adjacent open space preserves by a long-term camera trapping study. The closest documented occurrence is located 1.8 miles north (CDFW 2025b, CNDDB Occ # 641). |

**Northwestern pond turtle (*Actinemys marmorata*). Federal Proposed (Threatened), CDFW Species of Special Concern.** The northwestern pond turtle (NPT; formerly western pond turtle) is the only native freshwater turtle in California. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. NPT inhabits annual and perennial waters, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. Pond turtles also occupy man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater with suitable basking structures, including rocks, logs, algal mats, mud banks, and sand. Warm, shallow, nutrient-rich waters are ideal as they support prey items, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. Turtles require suitable aquatic habitat for most of the year; however, NPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high flow, high salinity, or prolonged dry conditions, NPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuging and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

NPT nests from late April through July. This species requires open, dry uplands with friable soils for nesting and prefers to nest on unshaded slopes within 15 to 330 feet of suitable aquatic habitat (Rathbun et al. 1992). Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Nests are well-concealed, though native mammals are occasionally able to locate and predate upon eggs. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year. The Study Area supports suitable aquatic breeding and nesting habitat in and around Arastradero Lake. The closest documented occurrence is located approximately 0.8 miles north in Felt Lake (CDFW 2025b, CNDDB Occ # 1624). This occurrence is outside of the known breeding dispersal distance of 0.3mi. The nearby population increases the chance of colonization in Arastradero Lake. No individuals of this species were detected during 2025 surveys.

**Crotch's bumble bee (*Bombus crotchii*), State candidate.** Crotch's bumble bee occurs primarily in central and southern California, from coastal areas inland to the foothills (Williams et al. 2014). This species is now largely absent from the Central Valley, although it was historically common in this region (Hatfield et al. 2015). Crotch's bumble bee occurs in grassland and scrub habitats and has also been documented in agricultural areas. Like other bumble bee species, Crotch's bumble bee is a social species with an annual life cycle. Queens emerge from hibernation in the late

winter/early spring to establish a new colony. The colony produces workers throughout the spring and summer, and reproductives (i.e., drones and queens) in the early fall. Nests are built in pre-existing cavities. They are commonly found underground, in abandoned rodent burrows, or aboveground in grass tufts, rock piles, abandoned bird nests, or tree cavities. Crotch's bumble bee feeds on pollen and nectar during all life stages; preferred host species include (but are not limited to) milkweeds (*Asclepias* spp.), chaenactis (*Chaenactis* spp.), clarkias (*Clarkia* spp.), larkspurs (*Delphinium* spp.), buckwheats (*Eriogonum* spp.), lupines, medicks (*Medicago* spp.), bladderpod (*Peritoma arborea*), phacelias (*Phacelia* spp.), poppies (*Eschscholzia* spp.), and sages (*Salvia* spp.). Queens overwinter in hibernacula; little is known about habitat requirements for hibernacula; bare ground, leaf litter and/or duff, and pre-existing cavities may provide overwintering habitat.

Major threats to Crotch's bumble bee include agricultural intensification and rapid urbanization (Hatfield et al. 2015). Additionally, Crotch's bumble bee has a narrow climatic range compared to most bumble bee species and may be threatened by increasing aridity and global climate change (NatureServe 2025). In general, bumble bees are threatened by a combination of factors including pesticide use, resource competition with non-native bees, and pathogen spillover from managed pollinators (Goulson 2010, Cameron et al. 2011). The Study Area supports suitable foraging habitat in herbaceous flowering plants found in the riparian and oak woodland understory. Suitable nesting habitat is present in the annual grassland understory of oak woodland found in the margin of the Study Area. Therefore, this species has moderate potential to occur in the Study Area.

**Monarch butterfly (*Danaus plexippus*). Federal Candidate Threatened.** This large, showy butterfly is found throughout the United States, southern Canada, and Central America. It also occurs in parts of South America and other continents. In North America, this species spends spring and summer months breeding and foraging across much of its range. The monarch butterfly generally uses milkweed (*Asclepias spp.*) for both breeding and nectaring, although nectar may also be obtained from a variety of additional plant species. From August to October, monarchs will migrate thousands of miles to winter roost sites located along the California coast and central Mexico. At roost sites, monarchs will congregate in thousands or millions on a tree or group of trees (Opler et al. 2011). Western monarchs prefer overwintering habitat comprised of a relatively dense grove of trees with some understory, located near water and nectar sources and protected from the wind by topographic landforms or trees (Sakai and Calvert 1991). Winter roost sites are often on south, southwest, or west facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015). The Study Area does not support suitable overwintering habitat, but it is located within the overwintering and early breeding zones of the western monarch. Monarchs are known to disperse along riparian corridors, and the Study Area has been documented to support larval host plants and breeding occurrences within 0.3 miles (Xerces Society 2025). Therefore, transient monarchs may utilize riparian habitat in the spring and fall when migrating between overwintering and breeding habitat. Reproductive adults may also breed on early-emerging milkweed during the winter and early spring.

**Bald eagle (*Haliaeetus leucocephalus*), Bald and Golden Eagle Protection Act, State Endangered, CDFW Fully Protected Species, USFWS Bird of Conservation Concern.** The bald eagle occurs primarily as a winter visitor but also as a year-round (breeding) resident throughout most of California. Habitat is somewhat variable, but the species is usually strongly associated with

larger bodies of water including lakes, reservoirs, major river systems, estuaries, and the ocean. Breeding occurs primarily in forested areas near water bodies; wintering habitat is more general, though water is usually present. The huge nests are typically built in in the upper portions of large, live trees that provide dominant views of surrounding areas (Buehler 2000). Bald eagles are highly opportunistic foragers; fishes and waterfowl are usually favored, but a variety of live prey and carrion are consumed. Large trees in the Study Area may provide suitable nesting habitat for this species. A nesting pair was documented in a eucalyptus tree in the south side of Felt Lake, approximately 0.5 miles north of the Study Area (CDFW 2025b, CNDDB Occ # 368).

**California red-legged frog (*Rana draytonii*). Federal Threatened, CDFW Species of Special Concern**. The California red-legged frog (CRLF) is the only native "pond frog" found throughout much of California. Suitable aquatic breeding habitat is characterized by deep and still or slow-moving water associated with emergent marsh and/or riparian vegetation, typically with at least 20 weeks of continuous inundation (USFWS 2010). Suitable features include ponds (perennial and non-), streams/creeks, seasonal wetlands, springs, seeps, man-made features (e.g. stock ponds, roadside ditches), marshes, dune ponds, and lagoons. Dependent upon local conditions, CRLF may complete its entire life cycle in a particular habitat patch (e.g., a perennial pond suitable for all life stages) or utilize multiple habitat types. In aquatic features that dry down seasonally, CRLFs often undergo aestivation (a period of inactivity) during the dry months, retreating to small mammal burrows or other substrates that provide suitable refugia (Thomson et al. 2016). Adults and sub-adults (newly metamorphosed individuals) may disperse from breeding habitats to nearby riparian and/or aestivation areas in the summer. Conversely, during the rainy season CRLFs may migrate from aestivation sites to waters suitable for breeding. During such dispersals, frogs can travel over one mile over a variety of topographic and habitat types (Bulger et al. 2003). Upland dispersal habitats are variable and typically include riparian corridors, grasslands, and oak savannas.

Within the Study Area, Arastradero Pond could support CRLF breeding. Arastradero Creek has potential to support CRLF dispersal in the winter and spring months when water is present. The closest known occurrence is documented in Matadero Creek, which is hydrologically connected to Arastradero Creek approximately 1.5 miles downstream (CDFW 2025b, CNDDB Occ # 230). Therefore, CRLF has high potential to occur in the Study Area.

**Santa Cruz black salamander (*Aneides niger*), CDFW Species of Special Concern.** Climbing salamanders of the genus *Aneides* frequent damp woodlands and are usually found hiding under various debris (i.e., bark, woodrat nests, logs). The Santa Cruz black salamander exists south of the San Francisco Bay and was only recently recognized as a separate and protected species. They are a black salamander, 2-4 inches long from snout to vent, some with pale spots (Stebbins and McGinnis 2012). Santa Cruz black salamander is highly sedentary, preferring to stay hidden under riparian debris. Prey items include millipedes, spiders, and other insects (Stebbins and McGinnis 2012). The Study Area contains mixed deciduous woodlands and aquatic habitats which may provide suitable habitat for this species. The closest documented occurrence is located 3.6 miles to the east (CDFW 2025b, CNDDB Occ # 19). Therefore, this species has moderate potential to occur in the Study Area.

**Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority.** The pallid bat is broadly distributed throughout much of western North America and typically occurs in association with open, rocky areas. Occupied habitats are highly variable and range from deserts to forests in lowland areas and include higher-elevation forests. Roosting may occur

singly or in groups of up to hundreds of individuals. Roosts must offer protection from high temperatures and are typically in rock crevices, mines, caves, or tree hollows; manmade structures are also used, including buildings (both vacant and occupied) and bridges. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight (WBWG 2018). Tree snags and a wooden footbridge offer potential roost sites for this species. Open areas may provide suitable foraging habitat for this species. Multiple historic occurrences are documented within the vicinity of the Study Area. Therefore, this species has moderate potential to occur in the Study Area.

**Great egret (*Ardea alba*),** Feeds and rests in fresh, and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures. Eats mainly fishes, amphibians, snakes, snails, crustaceans, insects, and small mammals (Palmer 1962). Nests in large trees, and roosts in trees (Grinnell and Miller 1944, Cogswell 1977). In northern California, fairly common to common year-round in coastal lowlands, inland valleys, and the Central Valley. Multiple individuals of these species were observed roosting in mature trees around the margin of Arastradero Lake.

**Great blue heron (*Ardea herodias*). No status; nesting sites (rookeries) monitored by CDFW.** The great blue heron is present year-round in California and common in many areas. Nesting occurs colonially or semi-colonially, most typically in trees and often with other heron species; nesting my also occur on man-made structures, in shrubbery, or on the ground in predator-free areas (Vennesland and Butler 2011). Nests sites usually located near water bodies where abundant forage is present. Herons prey primarily on fishes and aquatic invertebrates but utilize a variety of prey resources including smaller terrestrial vertebrates. The Study Area supports suitable rookery habitat in mature trees around the margins of Arastradero lake. Foraging habitat is present around the lake and in Arastradero creek. No individuals of these species were observed during 2025 surveys. Therefore, this species has high potential to occur.

**Long-eared owl (*Asio otus*). CDFW Species of Special Concern.** This generally uncommon species is resident throughout much of California outside of the Central Valley. Long-eared owls breed in a variety of woodland and forest habitats, including coniferous, oak and riparian, as well as planted tree groves. Nearby open habitats with small mammal populations, such as grasslands, meadows and marshes, are also required for foraging. Breeding typically relies on the presence of old nests made by similar-sized birds including hawks and crows (Shuford and Gardali 2008). Communal roosting often occurs during the winter. Riparian habitat in the Study Area along Arastradero Creek provides suitable nesting habitat for this species. Adjacent grassland habitat may provide suitable foraging habitat with abundant small mammal prey. The closest documented occurrence is located 4.6 miles to the south (CDFW 2025b, CNDDB Occ # 37). Therefore, this species has moderate potential to occur in the Study Area.

**Snowy egret (*Egretta thula)* (rookery), USFWS Bird of Conservation Concern.** The snowy egret is widespread along shores of fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and fields. This species feeds on small fish, crustaceans, and large insects. Colonial nesting occurs in low trees or wetland vegetation, sometimes in mixed colonies of wading birds. The Study Area supports suitable rookery habitat in mature trees around the margins of Arastradero lake. Foraging habitat is present around the lake and in Arastradero creek. No individuals of these species were observed during 2025 surveys. Therefore, this species has moderate potential to occur in the Study Area.

**White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species.** The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. Large trees in the Study Area may provide suitable nesting habitat. Though not contained within the Study Area, nearby grassland may provide suitable foraging habitat. The closest documented occurrence is located 7.6 miles to the east (CDFW 2025b, CNDDB Occ # 85). Therefore, this species has moderate potential to occur in the Study Area.

**Hoary bat (*Lasiurus cinereus*), WBWG Medium Priority.** Hoary bats are highly associated with forested habitats in the western United States, particularly in the Pacific Northwest. They are a solitary species and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, usually at the edge of a clearing. Roosts are typically 10 to 30 feet above the ground. They have also been documented roosting in caves, beneath rock ledges, in woodpecker holes, in grey squirrel nests, under driftwood, and clinging to the side of buildings, though this behavior is not typical. Hoary bats are thought to be highly migratory, however, wintering sites and migratory routes have not been well documented. This species tolerates a wide range of temperatures and has been captured at air temperatures between 0 and 22 degrees Celsius. Hoary bats probably mate in the fall, with delayed implantation leading to birth in May through July. They usually emerge late in the evening to forage, typically from just over one hour after sunset to after midnight. This species reportedly has a strong preference for moths, but is also known to eat beetles, flies, grasshoppers, termites, dragonflies, and wasps (WBWG 2015). The Study Area supports roosting habitat in medium-large trees with dense foliage, and foraging habitat in Arastradero Lake and edge habitat. Multiple occurrences are documented in the vicinity of the Study Area, the closest of which is a nonspecific location which may overlap with Study Area (CDFW 2025b, CNDDB Occ # 117). Therefore, this species has moderate potential to occur in the Study Area.

**Yuma myotis (*Myotis yumanensis*), WBWG Low Priority.** The Yuma myotis is found throughout most of California at lower elevations in a wide variety of habitats. Day roosts can be found in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts are usually associated with buildings, bridges or other man-made structures (Philpott 1996). The Study Area supports roosting habitat in medium-large trees with dense foliage, and in a footbridge at the outfall of Arastradero Lake. Foraging habitat occurs in and around Arastradero Lake. The closest documented occurrence is located approximately 7.4 miles to the southeast of the Study Area (CDFW 2025b, CNDDB Occ # 36). Therefore, this species has moderate potential to occur in the Study Area.

**San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), CDFW Species of Special Concern.** This subspecies of the dusky-footed woodrat occurs in the Coast Ranges between San Francisco Bay and the Salinas River (Matocq 2003). Occupied habitats are variable and include forest, woodland, riparian areas, and chaparral. Woodrats feed on woody plants, but will also consume fungi, grasses, flowers and acorns. Foraging occurs on the ground and in bushes and trees. This species constructs robust stick houses/structures in areas with moderate cover and a well-developed understory containing woody debris. Breeding takes place from December to

September. Individuals are active year-round, and generally nocturnal. The Study Area contains California bay and coast live oak woodland that provides the moderate canopy and dense understory necessary to support this species. Two woodrat nest structures were observed within the Study Area during a site visit conducted in 2023, and again in 2025.

**American badger (*Taxidea taxus*). CDFW Species of Special Concern.** The American badger is a large, semi-fossorial member of the Mustelidae (i.e., weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and become independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species tend to be large, depending on the habitat available; population density averages one badger per square mile in prime open country (Long 1973). The Study Area supports suitable forest and grassland habitat for this species. Numerous occurrences have been detected in adjacent open space preserves by a long-term camera trapping study. The closest documented occurrence is located 1.8 miles north (CDFW 2025b, CNDDB Occ # 641).

## 5.3 Wildlife Corridors and Native Wildlife Nursery Sites

No native wildlife nursery sites are present in the Study Area with the potential exception of colonial roosting sites for native nesting birds such as egrets and herons. These are addressed below with surveys to avoid nests of the individuals of the species

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms “landscape linkage” and “wildlife corridor” are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas (Beier and Loe 1992; Soulé and Terbough 1999). It is useful to think of a “landscape linkage” as being valuable in a regional planning context, a broad scale mapping of natural habitat that functions to join two larger habitat blocks. The term “wildlife corridor” is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat (Hilty et al. 2019).

The Study Area may function as a wildlife movement corridor. This is based on the Essential Connectivity Areas geospatial dataset, which uses habitat modelling to identify areas of land with value as wildlife corridors (CDFW 2025b). The Study Area is classified in this dataset as “more permeable,” meaning that wildlife may use the Study Area as a corridor, but it is not of the highest quality. This is consistent with the evaluation of many wildlife species described above, which may use the site for movement and therefore be present incidentally within the Study Area.

# 6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of potential project impacts for CEQA purposes. For the purposes of this analysis, a "substantial adverse effect" is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may be considered less than significant if those impacts are speculative, beneficial, de minimis, and/or would not affect the resiliency of a local population.

# 7.0 IMPACTS AND MITIGATION EVALUATION

Using the CEQA analysis methodology outlined in Section 6.0 above, the following section describes potential significant impacts to sensitive resources within the Study Area as well as suggested protection measures to be included with the project description, which are expected to reduce impacts to less than significant.

Whenever relevant, protection measures below are derived from SWRCB General Order WQ 2022-0048-DWQ (SWRCB 2022a) and its associated Programmatic Environmental Impact Report (PEIR; SWRCB 2022b); the Programmatic Biological and Conference Opinion – California Statewide Programmatic Restoration Effort by the USFWS (2022); and, the National Oceanic and

Atmospheric Administration (NOAA) Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects (NOAA 2017).

## 7.1 General Avoidance and Minimization Measures

General Protection Measures (GPM) that will be implemented during the proposed Project are outlined below and are taken, where possible, from the *Programmatic Biological and Conference Opinion California Statewide Programmatic Restoration Effort FWS Reference: 2022-0005149-S7* (Statewide PBO). Measures from the Statewide PBO that are not applicable have been removed and measures have been modified, where appropriate, to tailor them to the project. For species not covered by the Statewide PBO, measures have been developed using other biological opinions and from projects with similar measures. The term "Covered Species" within the measures below refers to special-status species, including those listed under federal and state species protection laws and the California Fish and Game Code. General measures to be implemented as part of the Project include:

**GPM-1, Receipt and Copies of All Permits and Authorizations.** Work will not begin until all necessary permits and authorizations have been issued (e.g., USACE, USFWS, NMFS, State and/or Regional Boards, or CDFW). The Project Proponent will ensure that a readily available copy of the applicable agency permits and authorizations (e.g., USFWS PBO, NMFS PBO, or Section 404 permit) is maintained by the construction foreperson/manager on the project site for the duration of project activities.

**GPM-2, Construction Work Windows.** Construction work windows for the Project are May 1- October 31 for clearing, grubbing and equipment mobilization work above top of bank, June 1-October 31 for construction work above top of bank, and June 15- October 31 for work below top of bank. These are derived from applicable species-specific work windows.

**GPM-3, Construction Hours.** Construction activities will generally be limited to daylight hours, to the extent practicable. If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, roadway, and construction footprint) will be selectively placed and directed onto the construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. If the work area is near surface waters, the lighting will be shielded so that it does not shine directly into the water.

**GPM-4, Environmental Awareness Training.** For projects occurring where Covered Species are likely to be present, prior to engaging existing or new personnel in construction activities, new construction personnel will participate in environmental awareness training conducted by a Qualified Biologist. Construction personnel will be informed regarding the identification, potential presence, habitat requirements, legal protections, avoidance and minimization measures, and applicable protection measures for Covered Species with the potential to occur in or immediately adjacent to the project site. Construction personnel will be informed of the procedures to follow should a Covered Species be encountered during construction activities. For projects where the Qualified Biologist is not regularly on the project site, training may be provided in an online/virtual meeting. For projects that may continue over an extended duration and require excessive training events, a training video developed under the supervision of the Qualified

Biologist may be used to train new personnel, as long as a Qualified Biologist is available by phone to answer questions about the training or to answer questions that may arise during construction.

**GPM-5, Environmental Monitoring.** Where appropriate and based on project-specific requirements, a Qualified Biologist(s) will perform site clearance at the beginning of each day and will monitor construction activities throughout the day in, or immediately adjacent to, sensitive resources and/or Covered Species habitat (including critical habitat as applicable), as necessary. The Qualified Biologist will confirm that all applicable protection measures are implemented during project construction. The Qualified Biologist will have the authority to stop any work if they determine that any permit requirement is not fully implemented or if it is necessary to protect Covered Species. The Qualified Biologist will prepare and maintain a biological monitoring log of construction site conditions and observations, which will be kept on file.

**GPM-6, Work Area and Speed Limits.** Construction work and materials staging will be restricted to the smallest area practicable in designated work areas, routes, staging areas, temporary interior roads, or the limits of existing roadways. Prior to initiating construction or grading activities, brightly colored fencing or flagging or other practical means will be erected to demarcate the limits of the Project activities, including the boundaries of designated staging areas; ingress and egress corridors; stockpile areas for spoils disposal, soil, and materials; and equipment exclusion zones. Flagging or fencing will be maintained in good repair for the duration of project activities. Speeds will be limited to 10 miles per hour (MPH) in the Study Area on unpaved surfaces and unpaved roads (to reduce dust and soil erosion), or in areas where Covered Species have the potential to occur. Speeds greater than 10 mph may be permitted in the Study Area where Covered Species are not expected to occur (e.g., in areas where Covered Species have been excluded) and there is no risk of generating excessive dust (e.g., surfaces are paved, saturated, or have been treated with other measures to prevent dust).

**GPM-7, Environmentally Sensitive Areas and/or Wildlife Exclusion.** Where appropriate, fencing, flagging, or biological monitoring will be used to minimize disturbance to environmentally sensitive areas and Covered Species habitat. If the project site is suitable for fencing, prior to the start of construction, environmentally sensitive area fencing (ESAF) and/or Wildlife Exclusion Fencing (WEF) will be installed between the active work area(s) and any suitable terrestrial habitat where Covered Species could enter the site. When fencing is not practicable due to project size, topography, soils, or other factors, monitoring by a Qualified Biologist during construction activities can be used to minimize impacts (see GPM-5, Environmental Monitoring).

The Qualified Biologist will determine the location of the ESAF and/or WEF prior to the start of construction. WEF specifications (e.g., height, installation requirement, or materials) will be determined based on the species the fencing is intended to exclude. ESAF does not require such specifications and may include flagging or monitoring (see GPM-5, Environmental Monitoring).

The ESAF and/or WEF will remain in place throughout the duration of the construction activities and will be inspected and maintained regularly by the Qualified Biologist until completion of the project. Repairs to the ESAF and/or WEF will be made within 24 hours

of discovery. The fencing will be removed only when all construction equipment is removed from the site, the area is cleared of debris and trash, and the area is returned to natural conditions.

**GPM-8, Prevent Spread of Invasive Species.** The spread or introduction of nonnative, invasive plant and animal species will be avoided. When practicable, nonnative invasive plants in the Study Areas will be removed and properly disposed of in a manner that will not promote their spread. Equipment will be cleaned of any sediment or vegetation at designated wash stations before entering or leaving the Study Area, to avoid spreading pathogens or nonnative invasive species. Activities that create new habitat for nonnative invasive species will be avoided. Isolated infestations of nonnative invasive species identified in the Study Area will be treated with weed management methods at an appropriate time, to prevent further formation of seed and destroy viable plant parts and seed. Wash sites must be in confined areas that limit runoff to any surrounding habitat, and on a flat grade. Upland areas will use rice straw or invasive species-free local slash/mulch for erosion control; the remainder of the Study Area will use certified, weed free erosion control materials. Mulch must be certified weed-free. The Project Proponent will follow the guidelines in the CDFW's California Aquatic Invasive Species Management Plan (CDFG 2008) and Aquatic Invasive Species Disinfection/Decontamination Protocols (CDFW 2016). Construction supervisors and managers will be educated on weed identification and the importance of controlling and preventing the spread of invasive weeds.

**GPM-9, Practices to Prevent Pathogen Contamination.** The Project Proponent will review and implement restoration design considerations and best management practices (BMPs) to help prevent pathogen contamination, as published by the "Working Group for Phytophthoras in Native Habitats" (www.calphytos.org), when there is a risk of introduction and spread of plant pathogens in site plantings. The Project Proponent will review and implement decontamination protocols to prevent the spread of pathogens among amphibians or other aquatic animals when working in aquatic habitats that may support native amphibians. Gear and equipment that may contact water will be cleaned and decontaminated to prevent the spread of chytrid fungus, following protocols in Aquatic Invasive Species Disinfection/Decontamination Protocols (CDFW 2016, or latest version). For additional guidance related to amphibians and chytrid fungus, see AMP-4 and AMP-11.

**GPM-10, Equipment Maintenance and Materials Storage.** Vehicle traffic will be confined to existing roads and the proposed access route(s). All machinery must be in good working condition, showing no signs of fuel or oil leaks. Oil, grease, or other fluids will be washed off at designated wash stations prior to entering the construction site. Inspection and evaluation for the potential for fluid leakage will be performed daily during construction. All fuel and chemical storage, servicing, and refueling will be done in an upland staging area or other suitable location (e.g., barges) with secondary containment to prevent spills from traveling to surface water or drains. Project Proponents will establish staging areas for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants in coordination with resource agencies. Staging areas will have a stabilized entrance and exit and will be at least 100 feet from waterbodies, unless site-specific circumstances do not provide such a setback; in such cases, the maximum setback possible will be used. Fluids will be stored in

appropriate containers with covers and will be properly recycled or disposed of off-site. Machinery stored on site will have pans or absorbent mats placed underneath potential leak areas.

**GPM-11, Material Disposal.** All refuse, debris, unused materials, and supplies that cannot reasonably be secured will be removed daily from the project work area and deposited at an appropriate disposal or storage site. All construction debris will be removed from the work area immediately on project completion. The Water Quality and Hazardous Materials measures described later in this document will be implemented to ensure proper handling and disposal of hazardous materials.

**GPM-12, Fugitive Dust Reduction.** To reduce dust, construction vehicles will be speed restricted as described in *GPM-6, Work Area and Speed Limits*, when traveling on nonpaved surfaces. Stockpiled materials susceptible to wind-blown dispersal will be covered with plastic sheeting or other suitable material to prevent movement of the material. During construction, water (e.g., trucks, and portable pumps with hoses) or other approved methods will be used to control fugitive dust. Dust suppression activities must not result in a discharge to waterbodies.

**GPM-13, Trash Removed Daily.** During project activities all trash, especially food-related refuse that may attract potential predators or scavengers, will be properly contained in sealed containers, removed from the work site, and disposed of daily.

**GPM-14, Project Cleanup after Completion.** Work pads, temporary falsework, and other construction items will be removed by the end of the construction window. Removal of materials must not result in discharge to waterbodies.

**GPM-15, Revegetate Disturbed Areas.** All temporarily disturbed areas will be decompacted and seeded/planted with an assemblage of native riparian, wetland, and/or upland plant species suitable for the area. The Project Proponent will develop a revegetation plan. Plants for revegetation will come primarily from active seeding and planting, or from natural recruitment where applicable. Plants imported to the restoration areas will come from local stock. Only native plants (genera) will be used for restoration efforts. Certified weed-free native mixes and mulch will be used for any restoration planting or seeding. Revegetation activities in and adjacent to waterbodies and other aquatic habitat suitable for Covered Species will commence after construction activities at a site are complete.

**GPM-16**, **Wildfire Prevention.** With the exception of vegetation-clearing equipment, no vehicles or construction equipment will be operated in areas of tall, dry vegetation. A fire prevention and suppression plan will be developed and implemented for all maintenance and repair activities that require welding or otherwise have a risk of starting a wildfire.

## 7.2 Special-Status Species

This section analyzes the Project's potential impacts and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

*Does the project have the potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service?*

Avoidance and minimization measures, as well as potential impacts and mitigation for potentially significant impacts are discussed below.

### 7.2.1 Avoidance and Minimization Measures for All Species

**ASP-1, Qualifications of the Qualified Biologist and USFWS-Approved Biologist.** Biological monitoring and construction oversight will be provided by biologists at two different experience levels, depending on the activity. These two levels are described in this measure, below. In general, the Qualified Biologist will complete many tasks across species for a Proposed Restoration Project, and the USFWS-Approved Biologist will only be required for specific tasks that require additional species expertise. In some cases, the Qualified Biologist(s) may work under the guidance, direction, or supervision of the USFWS-Approved Biologist. General site surveys and biological monitoring can be conducted by a Qualified Biologist. Because the qualifications for the USFWS-Approved Biologist exceed those for the Qualified Biologist, any activity indicated as appropriate for the Qualified Biologist may also be completed by a USFWS-Approved Biologist.

**Qualified Biologist:** The Qualified Biologist is required to meet certain qualifications, as confirmed by the Project Proponent. Résumé review by the USFWS is not required for the Qualified Biologist. Minimum qualifications for the Qualified Biologist include a bachelor's degree in biological or environmental science, natural resources management, or related discipline; field experience in the habitat types that may occur at the project site; familiarity with the Covered Species (or closely related species) that may occur at the project site; and prior pre-construction survey, construction monitoring, or construction oversight experience (if and as relevant to the activity to be conducted).

**USFWS-Approved Biologist:** For some Covered Species, additional qualifications may be required for biologists who would be responsible for species handling or relocation, or other activities. These activities would be completed by the USFWS-Approved Biologist when required by the protection measures. Resumé(s) for the USFWS-Approved Biologist(s) with experience in the identification of all life stages and ecology of the applicable Covered Species (or closely related species) and their critical habitat will be submitted to the USFWS Field Office for review and approval at least 30 days prior to any activity for which the protection measures indicate that a USFWS-Approved Biologist is required. Because species handling and relocation of some species for proposed restoration projects would be authorized by USFWS through issuance of the PBO and associated ITS, it may not be a requirement for the USFWS-Approved Biologist to hold a federal Section 10(a)(1)(A) Recovery Permit to implement this role on an approved project under this program.

**ASP-2, Pre-construction Surveys.** If Covered Species and/or their habitat is present, where appropriate and based on project-specific requirements, a Qualified Biologist will conduct visual pre-construction surveys and implement additional protection measures within 5 days prior to beginning work to protect the species and habitat from avoidable construction-related

disturbance. The intent of the survey is to assess current species habitat and species use locations in the Study Area immediately prior to construction. The pre-construction survey is not intended to be a presence/absence or protocol-level survey; the potential for species presence would have already been evaluated prior to project approval. Pre-construction surveys may be phased across a construction site if construction in different areas will occur at different times; only areas where disturbance is imminent need be surveyed. If construction activities at a given location cease for more than 5 consecutive days, and there is potential for Covered Species to reoccupy habitat at that site, the Qualified Biologist will resurvey the Study Area prior to resuming construction and implement applicable protection measures. Additional guild- and species-specific pre-construction requirements are provided in *Species-Specific Protection Measures,* below, and may supersede this more general protection measure, as applicable.

**ASP-3, Species Capture, Handling, and Translocation.** Covered Species capture, handling, and translocation will only be conducted by a USFWS-Approved Biologist(s). The Project Proponent will prepare a Covered Species translocation plan to be reviewed and approved by the USFWS Field Office as part of the ESA Section 7(a)(2) Review Form. The plan will include capture and translocation methods, translocation site, and post translocation monitoring. Additional guild- and species-specific capture, handling, and translocation requirements are described in *guild- and species-specific protection measures,* and may supersede this more GPM, as applicable.

**ASP-4, Covered Species Entrapment Prevention.** To prevent the accidental entrapment of Covered Species during construction, all excavated, steep-walled holes or trenches will be covered with appropriate covers (e.g., plywood, thick metal sheets, or similar materials) at the end of each workday. Covers will be placed so that trench edges are fully sealed with rock bags, sand, or other appropriate material. Alternatively, one or more escape ramps (e.g., fill dirt or wood planking) will be installed at an angle no greater than 30 degrees, to allow wildlife to escape. Before holes or trenches are filled, sealed, or collapsed, the holes or trenches will be thoroughly inspected for trapped animals. If pipes are stored on site or in associated staging areas, they will be capped when not in use or stored above ground level at an appropriate height to minimize species entrapment and will be inspected before being moved. Any animals discovered will be allowed to escape voluntarily or will be relocated by a USFWS-Approved Biologist. Additional guild- and species-specific entrapment prevention requirements are described in later measures.

**ASP-5, Airborne Noise Reduction.** Equipment (including the noise abatement systems) will be maintained in good working order. If construction noise has the potential to adversely affect Covered Species, the Project Proponent will include site-specific protection measures for construction activities in the Project ESA Section 7(a)(2) Review Form to minimize impacts. Muffler (or spark arrester) damage must be promptly remedied. Potential adverse effects from project-related noise should be avoided or minimized to the maximum extent practicable by implementing sufficient disturbance buffers between noise generating project activities and covered species habitat. When applicable, species-specific noise buffer distances are provided in Section 2.1.5.3 (Statewide PBO), *Guild and Species-Specific Protection Measures*. Noise buffer distances are distinct from other indicated buffer distances in Section 2.1.5.3, which may relate to an area involving dispersal, visual disturbance, or other considerations; however, incorporating the larger of two buffer distances will provide buffer for both purposes. Noise buffer distances may be modified in coordination with the USFWS Field Office based on project specific characteristics or a Project Proponent/Action Agency may choose to submit their own analysis and buffer recommendations for the USFWS's consideration. If sufficient buffers cannot be

implemented, the proposed activities may lead to adverse effects, including possible incidental take.

### 7.2.2 Special-Status Plants

As discussed in Section 5.2.1, 12 special-status plant species have moderate or high potential to occur within the Study Area:

- White-rayed pentachaeata (Federal Endangered, State Endangered, CRPR 1B.1)
- Two-fork clover Federal Endangered, CRPR 1B.1)
- Franciscan onion (CRPR 1B.2)
- Santa Clara red ribbons (CRPR 4.3.)
- Western leatherwood (CRPR 1B.2)
- California bottle-brush grass (CRPR 4.3)
- Fragrant fritillary (CRPR 1B.2)
- Woolly-headed lessingia (CRPR 3)
- Arcuate bushmallow (CRPR 1B.2)
- Woodland woollythreads (CRPR 1B.2)
- Lobb's aquatic buttercup (CRPR 4.2) l
- Sanford's arrowhead (CRPR 1B.2)

Two species, white-rayed pentachaeta and two-fork clover, are formally listed under FESA and/or CESA. An additional six species (Franciscan onion, western leatherwood, fragrant fritillary, arcuate bushmallow, woodland woollythreads, and Sanford's arrowhead) have a CRPR of 1 and therefore impacts to these species must also be considered under CEQA. Four species (Santa Clara red ribbons, California bottle-brush grass, woolly-headed lessingia, and Lobb's aquatic buttercup) have a CRPR of 3 or 4. CRPR 3 and 4 taxa do not clearly meet CEQA standards and thresholds for impact considerations; however, some CEQA review is justified for CRPR 3 and/or 4 taxa to determine if they can meet the criteria for endangered, rare, or threatened status under Section 15380(d) or that can be shown to be regionally rare or unique, as defined under Section 15380(c). Some circumstances, such as local rarity, having occurrences peripheral to the taxon's distribution, or having occurrences on unusual substrates or rare and declining habitats provide justification for treating some CRPR 3 and/or 4 taxa occurrences as regionally rare or unique. Because no protocol-level rare plant surveys were conducted as part of this biological assessment, pre-construction surveys for rare plants and recommendations to reduce impacts to special-status plant species to a less than significant level are discussed below.

> **Potential Impact PLANT-1:** Project construction activities such as vegetation removal and/or ground disturbance could result in direct mortality of special-status plant species.

To reduce potential impacts to special-status plants to a **less-than-significant** level, the following measures shall be implemented:

- **PLANT-1: Habitat Assessment and Surveys.** An agency-approved biologist will conduct a survey for special-status plant species with moderate or high potential to occur within the Study Area within 1 year prior to commencement of ground disturbing activities. Surveys should follow USFWS's General Rare Plant Survey Guidelines (USFWS 1996); and CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018) or their most recent equivalents.

WRA recommends that any occurrences of CRPR 3 and/or 4 taxa should be evaluated to determine whether impacts to these species would be considered significant under CEQA.

- **PLANT-2: Seasonal Avoidance of Annual Species:** When feasible, schedule work to occur after annual plants have set seed and senesced, avoid soil disturbance, and avoid actions that have potential to reduce habitat quality.
- **PLANT-3: Exclusion Buffer Establishment.** An agency-approved biologist will clearly delineate with flagging or other field markers a minimum 50-foot avoidance buffer around all special-status plants or their suitable habitat. A larger exclusion buffer may be established if determined by the agency-approved biologist to be necessary for the protection of the special-status plants. No work activity will occur within the exclusion buffer, except as permitted under Measure *PLANT-4, Work Restrictions in the Exclusion Buffer.*
- **PLANT-4: Work Restrictions in the Exclusion Buffer.** If agency-approved biologist determines that some work activities can take place within the exclusion buffer described in Measure PLANT-3 without causing any adverse direct or indirect impacts to special-status plants identified for avoidance, those approved work activities may be conducted within the exclusion buffer. Workers may only enter the exclusion buffer when accompanied by an agency approved biologist, and all work within the exclusion buffer will be monitored by an agency-approved biologist.
- **PLANT-5: Biological Monitoring.** An agency-approved biologist will monitor all construction activities, and also within the buffers established under PLANT-3, *Exclusion Buffer Establishment*. Any non-disturbance exclusion zones will be established, maintained and monitored. The biologist will ensure that loss of special-status plants or destruction of their habitat does not occur outside of the project footprint.
- **PLANT-6: Compensation for Loss of Individual Plants.** If exclusion zones and avoidance of impacts to special-status species within the Study Area are not feasible, then the loss of individuals or occupied habitat of special-status plants shall be compensated for through the acquisition, protection, and subsequent management of existing occurrences. Compensation for loss of individual plants may also include transplantation and/or reseeding of special-status species, when feasible. A habitat management plan identifying appropriate replacement ratios at a minimum ratio of 1:1 shall be developed prior to the commencement of any activities that would impact special-status plant species that occur within the Study Area. The habitat management plan shall include a monitoring plan to ensure successful establishment.
- **PLANT-7: Consultation for Impacts to Federal and State-Listed Plants.** If pre-construction surveys find that white-rayed pentachaeta and/or two-fork clover are present within the Study Area and cannot be avoided, consultation may be required with the USFWS to assess impacts to these listed species. The presence of white-rayed pentachaeta will also require consultation with CDFW in addition to USFWS. Consultation may result in additional conservation measures to further reduce any effects resulting from activities at the time of construction.

Implementation of these measures will reduce potential impacts to special-status plants to a level that is less than significant.

### 7.2.3 Special-Status Wildlife

Sixteen special-status wildlife have the potential to occur in the Study Area and may be impacted by the project if avoidance and/or mitigation measures are not incorporated. Avoidance and mitigation measures are provided for special-status wildlife in the sections below.

#### BATS

Four special-status bats have the potential to occur within the Study Area. Removal and trimming of trees during the local bat maternity season (generally, April through August) could impact bat breeding and potentially result in significant impact to bats. Because a targeted bat habitat assessment was not conducted as part of this biological assessment, pre-construction surveys for bat habitat and recommendations for tree removal to avoid impacts to bat species are provided below.

> **Potential Impact BATS-1:** Project construction activities could directly or indirectly impact roosting bats during vegetation removal, ground disturbance, or other noise-generating activities.

To reduce potential impacts to roosting bats to a **less-than-significant** level, the following measures shall be implemented:

> **BATS-1: Maternity Roost Avoidance.** WRA recommends that any tree removal be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, it is recommended that a bat habitat assessment and survey effort (the latter if needed) be performed by a qualified biologist prior to tree removal to determine if bats are present in the trees. If no suitable roosting habitat for bats is found, then no further avoidance is warranted. If special-status bat species or bat maternity roosts are detected, then roost trees should be avoided until the end of the maternity roosting season. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.
>
> **BATS-2: Maternity Roost Mitigation.** If avoidance of maternity roosts is not feasible, appropriate species- and roost-specific mitigation will be developed in consultation with CDFW.

Implementation of this measure will reduce potential impacts to roosting bats to a level that is less than significant.

#### SPECIAL-STATUS AND OTHER NESTING BIRDS

Six special-status birds have potential to occur in the Study Area. Additionally, a variety of other native bird species with baseline protections under the Migratory Bird Treaty Act and CFGC presumably regularly utilize the Study Area, including for nesting. Because adult birds can readily flee the bulk of disturbances (including ground disturbance, vegetation removal, and construction activities), general impacts to non-listed birds are typically focused on impacts to nesting activities and nests themselves (including eggs and young). As feasible, performing vegetation removal during the non-breeding season (September 1 – January 31) would substantially reduce the potential for constraints related to bird nests during the subsequent breeding season.

**Potential Impact BIRDS-1:** Project construction activities have the potential to result in direct impacts or indirect disturbance to special-status nesting birds and other native nesting birds protected by the CFGC. Construction could directly destroy active nests or cause disturbance that results in nest abandonment.

To reduce potential impacts to nesting birds to a **less-than-significant** level, the following measures shall be implemented:

- **BIRDS-1: Vegetation Removal.** To the extent feasible, initial ground disturbance, vegetation removal and other construction activities should occur during the avian non-breeding season (September 1 to January 31). No pre-construction surveys would be required during this period.
- **BIRDS-2: Preconstruction Surveys.** If initial ground disturbance, vegetation removal and/or related activities occur during the breeding season (February 1 through August 31), a qualified biologist will conduct a breeding bird survey no more than 7 days prior to ground disturbance/vegetation removal to determine if any birds are nesting within or adjacent to project impact areas.
- If active nests of any species are found within project impact areas or close enough to these areas to affect breeding success, the biologist will establish an appropriate exclusion buffer around each active nest. Appropriate exclusion buffer sizes vary depending upon the bird species, legal status, nest location and setting (e.g., existing visual buffers, ambient sound levels). Buffers may be as small as 50 feet for common, disturbance-adapted species and up to 1,000 feet for more sensitive species such as bald eagle. Once all young have become independent of the nest or the nest otherwise becomes inactive (e.g., due to predation), work may take place in the former exclusion buffer.
- If initial ground disturbance is delayed or there is a break in project activities of greater than 7 days within the bird nesting season, a follow-up nesting bird survey will be performed to ensure no nests have been established in the interim.

Implementation of this measure will reduce potential impacts to nesting birds to a level that is less than significant.

#### NORTHWESTERN POND TURTLE

One special-status reptile, the NPT has potential to occur within the Study Area. Vegetation removal, grading and other project related activities have the potential to kill or injure individuals if they are present at the time of implementation.

**Potential Impact NPT-1:** Project construction activities have the potential to result in direct mortality or injury of northwestern pond turtle.

The following measures will be implemented to reduce impacts to western pond turtle to a **less-than-significant** level.

- **REP-1: Pre-Construction Survey.** A qualified biologist will conduct pre-construction surveys for NPT within 72 hours prior to any initial ground disturbance within all suitable habitat within or adjacent to the project site and accessible to the project proponent, to identify locations where special-status reptiles may be present, evaluate current activity status in the Study Area, and protect the species and its habitat from avoidable

construction-related disturbance. The intent of this survey is to assess current special-status reptile habitat and use locations in the Study Area immediately prior to construction. Pre-construction surveys may be phased across a construction site if construction in different areas will occur at different times; only areas where disturbance is imminent need be surveyed. The Study Area will be re-inspected by the qualified biologist whenever a lapse in construction activity of 5 days or greater has occurred.

- **REP-2: Environmentally Sensitive and Wildlife Exclusion Area.** Prior to the start of construction, GPM-7, *Environmentally Sensitive and Wildlife Exclusion* will be implemented. In addition, the following applies:
    - If fencing is used the fencing will be inspected by the qualified biologist before the start of each workday and maintained by the project proponent until completion of the project. The fencing will be removed after all construction equipment is removed from those segments of the project. To prevent reptiles from becoming entangled, trapped, or injured, fencing materials that use plastic or synthetic monofilament netting will not be used. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers.
    - For the northwestern pond turtle and southwestern pond turtle, WEF will be installed around all suitable nesting, overwintering, and/or aestivation habitat that would be disturbed within the Study Area.

      The fencing will be inspected by a Qualified Biologist before the start of each workday and maintained by the Project Proponent until completion of the project. The fencing will be removed after all construction equipment is removed from the project site. To prevent reptiles from becoming entangled, trapped, or injured, fencing materials that include plastic or synthetic monofilament netting will not be used. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers.
- **REP-3: Clearing and Grubbing Vegetation.** A qualified biologist will be present during all vegetation clearing and grubbing activities in areas where the special-status reptiles are confirmed to occur, or where measures are being implemented based on presence of suitable habitat. Prior to vegetation removal, the qualified biologist will thoroughly survey the area for these species. Vegetation in sensitive areas will be cleared by handheld motorized tools (e.g., weed eaters, chainsaws) or hand pulling unless alternate methods are proposed by the project proponent and approved by agency(ies). Tree stumps and roots will be left in place where possible to avoid any ground disturbance and preserve refugia habitat, with the exception of non-native invasive plants that could propagate from remaining vegetative material. Native branches, leaf litter, mulch, woody debris, and other vegetative trimmings may be retained and spread on site to enhance habitat as appropriate.
- **REP-4: Prohibited Use of Rodenticides**. No rodenticides will be used at the project site during construction in areas that support suitable habitat for special-status reptiles.
- **REP-5: Species Observations and Encounters**. Each proposed project with the potential to encounter a special-status reptile species will submit a rescue and relocation plan to agency(ies) for review and approval prior to initiating construction. General guidance to be considered during plan development is as follows: 1) leave the uninjured animal if it is

not in danger, or 2) move the animal to a nearby location if it is in danger as described in *REP-6,* below. These options are further described as follows:

  - When a special-status reptile is encountered in the Study Area, the priority is to stop all activities in the surrounding area that have the potential to result in the harm, injury, or death of the individual. The qualified biologist then needs to assess the situation to select the course of project that will minimize adverse effects to the individual.
  - Avoid contact with the animal and allow it to move out of the project footprint and hazardous situation on its own to a safe location. This guidance only applies to situations where an animal is encountered while moving through habitat and under conditions that will allow it to escape. This does not apply to animals that are uncovered or otherwise exposed or in areas where there is not enough adjacent habitat to support the life history of the special-status reptiles if they move outside the construction footprint.
  - Avoidance is the preferred option if the animal is not moving or is within some sort of burrow or other refugia. In this case, the area will be well marked for avoidance by construction and a qualified biologist will be assigned to the area when work is taking place nearby. If avoidance is not practicable or safe for the special-status reptile, the project proponent will implement REP-6, below.

- **REP-6: Species Handling and Relocation.** A special-status reptile will only be captured and relocated when it is the only option to prevent its death or injury, and after all attempts to avoid interaction of the species have been exhausted as described in *REP-5.* Project-specific rescue and relocation plans will be approved by the agency(ies) prior to starting construction. General guidance for handling and relocation is as follows:
  - If appropriate habitat is located immediately adjacent to the capture location, then the preferred option is short distance relocation to that habitat. A snake will not be moved outside of the area where it could have traveled on its own. Captured snakes will be released in appropriate cover as close to their capture location as possible for their continued safety. Under no circumstances will an animal be relocated to another property without the owner's written permission. It is the project proponent's responsibility to arrange for that permission.
  - The release locations must be pre-identified in the project-specific rescue and relocation plan approved by the agency(ies); they will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow, other suitable refugia, or suitable habitat.

- Only a qualified biologist for the project can capture special-status reptiles.

- **REP-7: Habitat Avoidance.** A qualified Biologist will survey and flag the work area for suitable overwintering habitat (e.g. leaf litter layer under trees and shrubs) or nesting habitat to avoid. Any flagging used must be removed after work is completed. Project personnel will be advised to avoid disturbance in these areas unless site-specific conservation measures allow work to be conducted in these areas to minimize or avoid disturbance.

To the extent feasible, logs or rocks will not be moved or otherwise disturbed to avoid impacts to turtles utilizing these objects as cover. If such features must be moved, the biologist will visually inspect these features prior to and during moving to ensure turtles are not present. The biologist will also ensure any work materials do not create dispersal barriers to pond turtle. If a pond turtle is found in the work area during construction, work will stop until the individual(s) leave the area on their own volition. Workers should be vigilant to avoid turtles on roadways and be made aware of the potential for hatchling dispersal. Workers must also visually check for turtles (particularly hatchlings) under vehicles and equipment prior to moving them and allow the turtles to leave the area on their own volition before moving vehicles or equipment. Vehicles should stay on designated roads where feasible and if overland travel is needed in suitable habitat where there is a possibility of dispersing hatchlings, a monitor may be required.

- **NPT-1: Visual Encounter Surveys.** Before construction activities occur, a Qualified Biologist will search all suitable aquatic habitat in the Study Area a minimum of three times during appropriate weather conditions (e.g., sunny periods between 8am to 12pm, and from 3pm until an hour before dusk; air temperatures 55.0-90.0 degrees Fahrenheit; wind speeds less than 12.0 mph). Surveys will occur when western pond turtles are most likely to be detected in aquatic habitat:

  a. For the northwestern pond turtle, the highest probability of detection is from April 1 to September 30 (May 1 to August 31 at elevations above 3,500 feet). If work will occur outside of this window, a Qualified Biologist will also search upland habitat between October 1 and March 31 (September 1 to April 30 at elevations above 3,500 feet).

  b. In areas where western pond turtles are known to occur or could be present, follow current guidance for visual encounter surveys in the Visual Encounter Survey Protocol for Western Pond Turtles developed by the Oregon Native Turtle Working Group (ODFW 2020). If surveys are not conducted or do not follow USFWS-approved methods, assume western pond turtles are present in suitable aquatic and upland habitat. Inquire with local USFWS Field Office on western pond turtle data records and if surveys have been completed in the Study Area.

**NPT-2: Work Windows**. For project activities that involve in-water/dewatering work, work will be avoided from October 1 to March 31.

  a. For project activities within 500 meters (1604.4 feet) of suitable nesting habitat (i.e., sunny, open grasslands and ruderal habitat or bare soil), avoid disturbing nesting adult females from May 15 to July 31 for the northwestern pond turtle unless wildlife exclusion fencing has been installed around all suitable nesting habitat within the proposed project footprint prior to the start of the nesting season (i.e., prior to May 15 for the northwestern pond turtle.

b. For project activities in overwintering habitat (e.g., muddy pond bottoms), work will be avoided from October 1 to March 31 (September 1 to April 30 above 3,500 feet elevation) unless wildlife exclusion fencing has been installed around all suitable overwintering habitat within the proposed project footprint prior to the start of the overwintering season (i.e., prior to October 1 at elevations < 3,500 feet and prior to September 1 at elevations >3,500 feet). Alternatively, if installation of wildlife exclusion fencing around all overwintering habitat is not feasible, then all suitable overwintering cover (e.g., leaf litter layer, woody debris) will be removed from the project footprint before overwintering begins (i.e., prior to October 1 at elevations < 3,500 feet and prior to September 1 at elevations >3,500 feet), and will be maintained daily free of suitable overwintering cover. A qualified biologist will also search all mammal burrows for overwintering western pond turtles and move them out of harm's way. The qualified biologist then may collapse the burrows to prevent their usage by overwintering western pond turtles.

c. For project activities in aestivation habitat (e.g., upland habitat (e.g., leaf litter) within 500 meters (1,640.4 feet) of suitable aquatic habitat), work will be avoided when nearby seasonal aquatic habitat is dry unless wildlife exclusion fencing has been installed around all suitable aestivation habitat within the proposed project footprint before nearby seasonal aquatic habitats dry up.

   Work windows may be modified via completion of the ESA Section 7(a)(2) Review Form and local Field Office approval.

- **NPT-3*:* Environmentally Sensitive Areas and Wildlife Exclusion.** Fencing and/or monitoring will be used to protect western pond turtles and will be implemented in coordination with a Qualified Biologist. If the project site is suitable for fencing, the USFWS requires an Exclusion Fencing Plan, and a Qualified Biologist will determine where ESAF will be installed to protect western pond turtle habitat adjacent to the proposed project footprint.

  If complete exclusion of the project disturbance footprint with wildlife exclusion fencing (WEF) is not feasible in the Study Area, projects may consider directional fencing (fencing that is meant to guide the movement of western pond turtles safely around a work area) to discourage western pond turtles from entering the Study Area from suitable habitat, or fencing off only portions of the larger Study Area as they are being actively worked on. The local USFWS Field Office may be contacted for technical assistance on excluding western pond turtles from a Study Area where complete exclusion fencing is not feasible.

  WEF must be opaque, non-climbable material, at least 2.0 feet (0.6 meters) high, have one-way exit funnels away from the work area, and contoured such that western pond turtles are unable to climb over the fence. WEF will include coverboards spaced every 50 to 100 feet on either side to provide cover to western pond turtles that encounter the fence. If WEF is found to be compromised, a Qualified Biologist will conduct a survey immediately preceding construction activity that occurs in western pond turtle habitat, or in advance of any activity that may affect other species. The Qualified Biologist will search along WEF and in pipes, culverts, and beneath equipment (e.g., vehicles or heavy equipment) before they are moved (see ASP-4*, Entrapment)*. Monitoring can be conducted in lieu of WEF at sites where installation is not practicable (see GPM-5*,*

*Environmental Monitoring;* and GPM-7, *Environmentally Sensitive Areas and/or Wildlife Exclusion*).

- **NPT-4: Capture and Relocation.** Western pond turtles will only be captured and relocated when it is the only option to prevent injury or mortality, and after all attempts to avoid interaction with the species have been used. If necessary to avoid injury or mortality, relocation of western pond turtles will be conducted by a Qualified Biologist in accordance with the requirements of *REP-6, Species Handling and Relocation*. Western pond turtle relocation will be conducted as described in a USFWS-approved reptile relocation plan submitted by the Project Proponent to the local USFWS Field Office concurrently with the ESA Section 7(a)(2) Review Form or at least 60 days before construction. Early submission facilitates timely USFWS review and approval and helps avoid project delays.
    - Avoid and minimize transfer of diseases (e.g., turtle-shell disease, respiratory disease). The Qualified Biologist will wear disposable nonlatex or rubber gloves when handling individual turtles to inhibit transmission of disease. Any suspected observations of disease such as respiratory or turtle-shell disease in western pond turtles or any other species of turtle at the project site will be reported to the USFWS within 24 hours and before relocating any western pond turtle. If any western pond turtle or other turtle species in the project site test positive or are suspected of turtle-shell disease, then all turtles at the project site will be considered to be potentially infected. All equipment and clothing will be decontaminated and dried completely prior to and after use at an aquatic project site to prevent disease transmission between water bodies.
    - Western pond turtles will be released within a few hours of capture. Individuals will be kept in containers with high sides, such as 5-gallon (18.9 liter) plastic buckets or 10-gallon (37.9 liter) storage tubs. Place a lid or piece of cloth over the top to darken the container. Keep captured western pond turtles out of direct sunlight because overheating is possible in a short time.
    - The Qualified Biologist will capture and relocate the western pond turtle the shortest distance possible to a location that contains similar suitable habitat and that will not be affected by activities associated with the project. No western pond turtles will be relocated more than 500 meters or to a different watershed to prevent disorientation and the spread of diseases.
    - If a western pond turtle found in upland habitat is suspected of traveling to an overwintering/aestivation or nesting site and voids its bladder upon handling, then the western pond turtle will be returned to aquatic habitat.
    - Nesting or gravid female western pond turtles will be avoided to the greatest extent practicable. If an adult female western pond turtle is gravid or post-nesting, the Qualified Biologist will determine if she will be relocated to suitable undisturbed nesting habitat or suitable aquatic habitat outside of the work area. All possible precautions will be taken to allow her to continue to nest and to avoid nest failure.

Refer to the 2024 Northwestern Pond Turtle Avoidance and Minimization Measures (USFWS 2025a) and Southwestern Pond Turtle Avoidance and Minimization Measure Recommendations (USFWS 2025b) for more details on relocation of western pond turtles.

- **NPT-6: No Net Loss of Basking Habitat.** Maintain existing basking structures (e.g., logs, rocks, shorelines, emergent vegetation, algal mats, and substrate adjacent to aquatic habitat whenever possible. Avoid planting trees and shrubs that would shade suitable basking habitat and maintain an open riparian canopy to allow sufficient solar exposure for basking. Install basking structures as necessary for any basking habitat that is removed.
- **NPT-7: Avoid Excessively Shading Nesting Habitat.** Avoid planting trees and shrubs that would shade suitable nesting habitat if nesting habitat is limited near the Study Area.

Implementation of these measures will reduce potential impacts to northwestern pond turtle to a level that is less than significant.

### SAN FRANCISCO DUSKY-FOOTED WOODRAT

San Francisco dusky-footed woodrat are known to nest in vegetated portions of the Study Area, particularly those containing oaks and dense shrub cover. General construction activities in the Study Area may need to remove vegetation, conduct grubbing, grading, or other ground disturbance activities in wooded or scrub habitats. These could result in direct impacts on dusky-footed woodrat including mortality of adults or young, as well as destruction of woodrat middens. Other impacts could include additional predation from the attraction of predators or urban animals such as raccoons, feral cats and coyotes.

**Potential Impact RAT-1:** Project activities could directly or indirectly impact San Francisco dusky-footed woodrat during vegetation removal, ground disturbance, or other activities.

With implementation of **Mitigation Measure RAT-1** effects to woodrat would be reduced to **less-than-significant** levels.

**Mitigation Measure RAT-1: San Francisco Dusky-footed Woodrat.**

1. No more than 30 days prior to initial ground disturbance in woodland or scrub/chaparral communities, a survey shall be conducted by a qualified biologist to identify woodrat stick nests that could be directly impacted. Any stick nests within active work areas will be dismantled under the supervision of a qualified biologist. If young are encountered during the dismantling process, material will be placed back on the nest and remain undisturbed for two weeks in order to give the young enough time to mature and leave of their own accord. After two weeks, the nest dismantling process may begin again.

   Nest material shall be moved and distributed within adjacent areas (oak woodland, scrub, or chaparral) that will not be disturbed. If construction does not occur within 30 days of the pre-construction survey, surveys shall be repeated.

2. To reduce indirect impacts on San Francisco dusky-footed woodrat by attracting urban-adapted predators, trash and food waste should be disposed of in proper waste receptacles and emptied on a regular basis. Additionally, all personnel working on the site should be prohibited from feeding wildlife.

With incorporation of **Mitigation Measure RAT-1**, impacts on San Francisco Dusky-footed woodrat would be reduced to a **less-than-significant** level.

### AMPHIBIANS (CRLF, SANTA CRUZ BLACK SALAMANDER)

The Study Area includes suitable breeding, foraging and dispersal habitat for two special-status amphibians: California red-legged frog and Santa Cruz black salamander.

The creation of step pools, log elements, and other improvements to Arastradero Creek will reduce sedimentation into Arastradero Lake which correspondingly improves water quality and potential breeding habitat for CRLF. Pool creation would also improve the condition of nonbreeding aquatic habitat for CRLF, which prefers in-channel pools to runs and riffles. Santa Cruz black salamander is associated with moist off-channel habitat; therefore, step pools and log elements are likely to provide more expansive moisture saturation into adjacent and would increase complex substrate for this species to occupy. While the ultimate end of the Project will improve conditions, construction activities may result in mortality or injury if these species are present at the time of construction. Mortality or injury of individuals is a potentially significant impact under CEQA.

> **Potential Impact AMP-01:** Project construction activities have the potential to result in direct mortality or injury California red-legged frog or Santa Cruz black salamander.

The following measures will be implemented to reduce impacts to California red-legged frog and Santa Cruz black salamander to a **less-than-significant** level.

- **AMP-1*:* Wildlife Passage Design.** If the Project includes installation, repair, or replacement of permanent or temporary fencing not used for exclusion (e.g., security, landscape, or privacy fencing) fencing will be designed to allow for permeability; it will incorporate a minimum 6-inch gap at regular intervals to allow for amphibians to disperse between upland and aquatic habitat. This measure is not applicable to ESAF or WEF specified as part of construction activities to protect habitats or exclude wildlife from the work areas. Facilities such as curbs, drainages, culverts, and fence "footers" will be designed with gradually sloped sides or intermittent gaps to facilitate wildlife movement.
- **AMP-2*:* Rain Event Limitations.** To the maximum extent practicable, construction activities will be restricted to periods of low rainfall (less than 0.5 inch per 24-hour period) and periods of dry weather (with less than a 50% chance of rain). During these restricted periods, no construction activities will occur between 30 minutes prior to sunset and 30 minutes after sunrise (no night work during rain events). If rain exceeds 0.5 inch during a 24-hour period, work will cease until no further rain is forecast. Construction activities halted due to precipitation may resume when precipitation ceases and the National Weather Service 72-hour weather forecast indicates less than a 50% chance of 0.5 inch of rain or less during a 24-hour period. Before construction activities resume, a Qualified Biologist will inspect the Study Area and all equipment/materials for the presence of special-status amphibians.
- **AMP-3*:* Pre-construction Survey.** No more than 24 hours prior to the date of initial ground disturbance and vegetation clearing, a qualified biologist will walk in the project site to investigate all potential areas that could be used by special-status amphibians for

feeding, breeding, sheltering, movement, and other essential behaviors. If a special-status amphibian species is encountered during the survey, the Project Proponent will refer to and follow procedures described below in AMP-9, *Encounters with Species*; and AMP-10, *Species Observations and Handling Protocol*, for passively allowing the species to move out of the work area or actively relocating the species out of harm's way. Proposed restoration projects that may need to actively relocate amphibians out of harm's way will require the Project Proponent to submit a project specific species relocation plan for CDFW review and approval, as described in AMP-10.

- **AMP-4*:* Disease Prevention and Decontamination.** To prevent disease conveyance among work sites during project implementation, the qualified biologist will ensure that the decontamination protocols described in CDFW, Aquatic Invasive Species Disinfection/ Decontamination Protocols (CDFW 2016) will be implemented prior to gear and equipment arriving at or moving between work sites and will be followed at all times. A copy of the code of practice must be available at the project site.
- **AMP-6*:* Clearing and Grubbing Vegetation.** A qualified biologist will be present during all vegetation clearing and grubbing activities in areas where suitable habitat is present. Before vegetation removal, the qualified biologist will thoroughly survey the area for these species (see AMP-3, *Pre-construction Survey)*. Vegetation in sensitive areas will be cleared either with handheld motorized tools (e.g., weed eaters or chainsaws) or by hand pulling; or a qualified biologist will walk in front of vegetation-clearing equipment. Where dense brush occurs the biologist may direct an equipment operator to lift and shake dense vegetation with an excavator or backhoe so that the biologist can look underneath and search for amphibians. Tree stumps and roots will be left in place where feasible to avoid any ground disturbance and preserve refugia habitat, with the exception of nonnative invasive plants that could propagate from remaining vegetative material. Native branches, leaf litter, mulch, woody debris, and other vegetative trimmings may be retained and spread on site to enhance habitat, as appropriate.
- **AMP-7: Pump Screens.** If a waterbody or portion thereof is to be temporarily dewatered by pumping, intakes will be completely screened, consistent with NMFS (NMFS 1997) and CDFW (CDFW 2001) screening guidelines or latest updates to those guidelines to avoid entrainment or impingement of larval amphibians. The intake will be placed in a perforated bucket or another method to attenuate suction, to prevent special-status amphibians from entering the pump system. Water will be returned to the water body when diversions or cofferdams are removed and flow is restored (consistent with measures in *Dewatering Activities and Aquatic Species Relocation,* FISH-8). If no diversion or cofferdams are used during dewatering, the waterbody will be allowed to refill naturally from precipitation, runoff, or hydrological processes.

- **AMP-9*:* Placement of Suitable Erosion Control Material.** To prevent amphibians from becoming entangled, trapped, or injured, erosion control materials that use plastic or synthetic monofilament netting will not be used. Silt fencing can be used because it is not considered a netting and does not entangle species. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers. Following site restoration, erosion control materials such as straw wattles will not block the movement of special-status amphibians.
- **AMP-12: Work Windows.** Project activities in uplands will be confined to April 15 through October 31, unless there is a rainfall event forecast likely to generate measurable rainfall of 1 inch or greater, at which time work will cease for the fall season. For project activities in occupied aquatic breeding habitat, grading and other disturbance will avoid the breeding season and will be limited to between July 1 and October 31, unless pre-construction surveys and monitoring demonstrate that young-of-year (recently metamorphosed) amphibians have dispersed from the breeding habitat. In that case, based on the recommendation of the qualified biologist, and with written approval from the CDFW (e.g., email), the Project Proponent may proceed with work in aquatic breeding habitat prior to July 1. Work in a pool or wetland may also begin before July 1 if the pool or wetland has been dry for a minimum of 30 days before initiating work. Implementation of the project is not to exceed the self-imposed take limit of 60 individuals of any life stage.

Implementation of these measures will reduce potential impacts to California red-legged frog and Santa Cruz black salamander to a level that is less than significant.

#### CROTCH'S BUMBLE BEE

Crotch's bumble bee has moderate potential to occur in the Study Area, due to the presence of suitable foraging habitat in the riparian and oak woodland understory, and suitable nesting habitat throughout the Study Area. Steeply cut banks of Arastradero Creek are especially relevant for this reason. Overall, the Project will have a beneficial impact on habitat for Crotch's bumble bee via the removal of invasive plant species and the planting of a variety of native flowering plants. The revegetation palette includes a variety of nectar species, with bloom times staggered throughout the active flight season, to support this species, including (but not limited to): arroyo willow, coyote bush, sticky monkeyflower, California wild rose, California blackberry, blue elderberry, lupines, and Pacific aster (*Sympyotrichum chilense*). Arroyo willow, in particular, may provide a crucial source of pollen during colony establishment in the early spring, when few flowering resources are available. However, vegetation removal and ground disturbance during the construction phase may result in 'take' of Crotch's bumble bee. Given that this species is a state Candidate, impacts to these species would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BEE-1:** If special-status bumble bees are present, grading activities within grassland, riparian and oak woodland habitat may result in the mortality of individuals and their nests.

To reduce potential impacts to special-status bumble bee to a less-than-significant level, the following measure shall be implemented:

**BEE-1: Pre-construction Survey.** A qualified bumble bee biologist shall survey for Crotch's bumble bee prior to the commencement of construction activities during the colony active period or the gyne flight season (generally, April 1 to October 31). The survey shall occur at least two hours after sunrise (> 60F and < 90F with no rain) or two hours before sunset and the survey area shall include the Project boundaries and a surrounding 100-foot buffer area. The survey duration shall be appropriate to the size of the Project site and buffer area based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat.

During the survey(s) the qualified biologists may not capture or handle bumble bees unless specifically authorized to do so for the Project by CDFW. At a minimum, survey methods shall include the following:

- Search areas with flowering plants for foraging bumble bees. Observed foraging activity may indicate a nest is nearby, and therefore, the survey duration shall be increased when foraging bees are present.
- Watch any bumble bees present and observe their flight patterns. Attempt to track their movements between foraging areas and the nest.
- Visually look for nest entrances. Observe burrow, any other underground cavities, logs, or other possible nesting habitat.
- Look for concentrated bumble bee activity.
- Listen for humming of nest colony.
- If bumble bees are observed, attempt to identify the species by taking a picture.
- If foraging bees are present and a nest has not been found, floral resources within the Project's disturbance footprint may be carefully removed with hand-held tools to minimize foraging bee presence during Project activities. The continuation of bumble bee activity once such floral resources are removed may be an indication that a nest is present.
- The biologist conducting the survey shall record when the survey was conducted, a general description of any suitable foraging habitat/floral resources present, a description of observed bumble bee activity, a description of any vegetation removed to facilitate the survey, and their determination of if the survey observations suggest a Crotch's bumble bee nest may be present or if construction activities could otherwise harm the species. The survey may be conducted immediately prior to construction granted all the above and below conditions are met.

If a special-status bumble bee is observed during the survey (not associated with a nest), or if any sign(s) of a bumble bee nest is observed and if it cannot be established the species present is not a special-status bumble bee, then construction shall not commence until CDFW provides further guidance, which may include an additional survey by a bumble bee expert, waiting until the colony active season ends, obtaining take authorization, or other actions.

Implementation of this measure will reduce potential impacts to special-status bumble bees to a **less-than-significant** level.

### MONARCH BUTTERFLY

Monarch butterfly has moderate potential to occur in the Study Area, due to the presence of suitable foraging habitat in the riparian and oak woodland understory, and documented larval host plants and breeding occurrences within 0.3 miles of the Study Area (Xerces Society 2025). Given that this species is Federal Proposed Threatened, it may advance to Federal Candidate in the near future and therefore be afforded protections under CEQA within the Project timeline. Under this scenario, impacts to this species would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BUTTERFLY-1:** If special-status butterflies are present, grading activities within grassland, riparian and oak woodland habitat may result in the mortality of individuals. Pesticide drift from project activities may cause mortality, injury or reproductive failure of special-status butterflies.

To reduce potential impacts to special-status butterflies to a less-than-significant level, the following measure shall be implemented:

> **Mitigation Measure BUTTERFLY-1:** If suitable larval host plants are detected, then to the extent practicable, Project activities with potential to impact grassland, riparian and oak woodland habitat should occur during the recommended work window of November 15 – March 15 (USFWS 2023).
>
> **Mitigation Measure BUTTERFLY-2:** If herbicide or insecticide application is proposed as part of the Project, the best practices should be followed to minimize impacts to monarch butterfly.
>
> - Neonicotinoids or other systemic insecticides should be avoided.
> - Pesticides should not be applied during the recommended work window of November 15 – March 15.
> - Insecticides that target lepidopterans should be avoided
> - Strobilurin fungicides should be avoided on milkweeded.
> - Targeted application methods should be favored over lage-scale broadcast applications. Precautions should be followed to limit off-site movement.
> - Suitable monarch habitat should be protected with a pesticide-free spatial buffer of at least 40 feet from ground-based pesticide applications.

Implementation of this measure will reduce potential impacts to monarch butterfly to a **less-than-significant** level.

### AMERICAN BADGER

The Study Area supports suitable American Badger denning and foraging habitat, and has numerous occurrences documented in the vicinity. Therefore, this species has moderate potential to occur. Project-related activities may induce mortality or injury to American Badger through crushing or entombment by heavy equipment. Given that this species is a state candidate, impacts to these species would be considered a **potentially significant impact** under CEQA.

> **Impact BADGER-1: If** American badger are present, ground disturbing activities within suitable habitat may result in the mortality of individuals.

To reduce potential impacts to American badger to a less-than-significant level, the following measure shall be implemented:

> **Mitigation Measure BADGER-1**: A qualified biologist shall conduct focused pre-construction surveys for badger dens no more than two weeks prior to construction in all suitable habitat proposed for construction, ground disturbance or staging. If no potential badger dens are present, no further measures are required. If potential badger dens are observed, the following measure is required to avoid potential significant impacts to American Badger.
>
> - If American badger dens are determined to be present, the biologist should monitor them for activity to determine whether the den is active. If the den is determined to be occupied by a female with young, ground disturbance and construction activity should be avoided within 50 feet of the den until the young have matured and dispersed. If the den is determined to be active, but a female with young are not present, burrow exclusion using passive measures such as one-way doors or equivalent should be attempted for a minimum of three days to discourage their use prior to any project-related ground disturbance. If the biologist determines that the dens have become inactive as a result of the exclusion methods, the dens should be excavated by hand to prevent them from being re-occupied during construction.

Implementation of this measure will reduce potential impacts to American Badger to a **less-than-significant level**.

## 7.3 Sensitive Natural Communities and Vegetation

This section addresses the question:

> *b) Does the Project 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 CDFW or U.S. Fish and Wildlife Service;*

Sensitive terrestrial natural communities within the Study Area include needle grass grassland, coast live oak woodland and forest, riparian mixed oak forest, and riparian arroyo willow thickets. Sensitive aquatic communities within the Study Area include channel wetland, ephemeral stream, intermittent stream (Arastradero Creek), lake (Arastradero lake), perennial marsh, seasonal wetland, and forested/scrub wetland; potential impacts to these aquatic communities are analyzed separately in Section 7.4.

Ultimately, the Project will have a beneficial impact on sensitive natural communities via the incidental removal of invasive species, such as poison hemlock, and revegetation/restoration with native species in areas to be revegetated. The restoration plant palette includes native trees endemic to the region, including native oaks, willows, and California bay, as well as a native understory consisting of shrubs and herbaceous species, as appropriate by community. Further, by lowering stream velocity in Arastradero Creek, conditions for riparian and/or channel wetland habitat will be improved along the streambanks. The extent and quality of riparian habitat may also be increased, via the planting of native riparian trees and installation of willow poles along the creek in currently scoured areas.

Additionally, several hazard trees that currently compromise the structural integrity of Arastradero Creek will be felled to create large woody debris to stabilize/enhance the creek

channel. Some tree removal may be associated with utilities relocation; however, tree removal will be kept to a minimum, any trees removed will also be used for creek restoration work and will be replaced on-site at CDFW-approved tree replacement ratios. Two coast live oak trees measuring 16” dbh and 13” dbh, are proposed for removal and re-use during construction.

Project activities such as equipment staging and access, ground disturbance, and/or vegetation removal, may result in temporary impacts to sensitive natural communities. The placement of new pipeline infrastructure, and rock armoring at the culvert outfall, will also result in small areas of permanent impacts to sensitive natural communities. Temporary and permanent impacts to sensitive communities are depicted in Appendix B – Figure 5 and summarized in Table 5, below.

**Table 5. Temporary and Permanent Impacts to Sensitive Terrestrial Natural Communities**

| TEMPORARY IMPACTS (LIMIT OF DISTURBANCE) | | |
|---|---|---|
| **LAND COVER TYPE** | **ACRES** | **SQUARE FEET** |
| **Coast Live Oak Woodland** | 0.13 | 5,663 |
| **Needle Grass Grassland** | 0.06 | 2,479 |
| **Riparian Arroyo Willow** | 0.03 | 1,195 |
| **Riparian Mixed Oak Forest** | 1.24 | 54,014 |
| **PERMANENT IMPACTS (NEW PIPELINE INFRASTRUCTURE AND ROCK ARMORING AT CULVERT OUTFALL)** | | |
| **Coast Live Oak Woodland** | < 0.01 | 27 |
| **Riparian Arroyo Willow** | < 0.01 | 90 |
| **Riparian Mixed Oak Forest** | 0.04 | 1,709 |

To reduce potential impacts to sensitive terrestrial natural communities to a **less-than-significant** level, the following measures shall be implemented:

- **VHDR-1, Avoidance of Vegetation Disturbance.** The Project Proponent will minimize the amount of soil, terrestrial vegetation, emergent vegetation, and submerged vegetation (e.g., eelgrass and kelp in marine areas, or submerged aquatic vegetation in freshwater areas) disturbed during project construction and completion by using methods creating the least disturbance to vegetation. Disturbance to existing grades and native vegetation, the number of access routes, the size of staging areas, and the total area disturbed by the project will be limited to the extent of all temporary and permanent impacts, as defined by the final project design. All roads, staging areas, and other facilities will be placed to avoid and limit disturbance to aquatic habitat suitable for Covered Species (e.g., streambank or stream channel, and riparian habitat). Existing ingress or egress points will be used and/or work will be performed either from the top of the banks, from barges on the waterside of the stream or levee bank, or from dry gravel beds. Existing native vegetation will be retained as practicable, emphasizing the retention of shade-producing and bank-stabilizing trees and brush with greater than 6-inch-diameter branches or trunks. Vegetation disturbance and soil compaction will be minimized by using low-ground-pressure equipment that has a greater reach than or exerts less pressure per square inch on the ground than other equipment.
- **VHDR-2, Native and Invasive Vegetation Removal Materials and Methods.** All invasive plant species (e.g., those rated as invasive by the Cal-IPC, or local problem species) will

be removed from the project site as practicable, using locally and routinely accepted management practices. Invasive plant material will be destroyed using approved protocols and disposed of at an appropriate upland disposal or compost area. Invasive plant materials stockpiled at sites known to experience flash flooding outside the flood season will be removed within 15 days of the initial creation of the stockpile, to contain the potential spread of invasive plant material. Stockpiling of invasive plant materials is prohibited during the flood season (typically November to April).

1. When practicable, nonnative plants will be removed when flowers or seeds are not present. If flowers or seeds are present and have the potential for seed to be widely dispersed during removal, the flowering head will be removed and placed in a container for disposal prior to removal.
2. Whenever practicable, nontarget vegetation will be protected in order to minimize the creation of exposed ground and potential for re-colonization of nonnative plants. A botanist will be consulted prior to any restoration implementation and during preparation of restoration plans.
3. Where appropriate, barriers will be installed to limit illegal off-highway vehicle activity following removal of nonnative vegetation along roadways. Examples of barriers are large rocks, soil berms, and cut vegetation. To the extent practicable, crews in known or assumed occupied habitat for Covered Species will minimize multiple stream crossings for nonnative plant removal from both streambanks simultaneously (e.g., during a work period, an individual will conduct activities along one streambank for the entire stretch before initiating activities on the opposing bank). Stream crossings will use existing features such as bridges and boulders to avoid boots in the water, as much as feasible.

- **VHDR-3, Revegetation Materials and Methods.** On completion of work, site contours will be returned to pre-construction conditions or designed to provide increased biological and hydrological functions. Where disturbed, topsoil will be conserved for reuse during restoration, to the extent practicable. Native plant species comprising a diverse community structure (plantings of both woody and herbaceous species, if both are present) that follow a plant species palette approved through the ESA Section 7(a)(2) Review Form process will be used for revegetation of disturbed and compacted areas, as appropriate. See also **GPM-15: Revegetate Disturbed Areas**.
    - Any area barren of vegetation as a result of project implementation will be restored to a natural state by mulching, seeding, planting, or other means, with native trees, shrubs, willow stakes, erosion control native grass seed mixes, or herbaceous plant species, following completion of project construction. Restoration planning for these areas should include steps to prevent colonization by nonnative species, including recolonization by any nonnative plant species that occupied the site prior to project implementation. Irrigation may also be required to ensure survival of containerized shrubs or trees or other vegetation, depending on rainfall. If irrigation is used, all irrigation materials will be removed once no longer needed. Soils that have been compacted by heavy equipment will be decompacted by shallow or deep ripping, if necessary to allow for revegetation at project completion as heavy equipment exits the construction area.
- **VHDR-4, Revegetation Erosion Control Materials and Methods.** If erosion control fabrics are used in revegetated areas, they will be slit in appropriate locations to allow for plant

root growth. Only non-monofilament, wildlife-safe fabrics will be used. All exclusion netting/caging placed around plantings will be removed after 2 years or sooner.

- **VHDR-5, Revegetation Monitoring and Reporting.** All revegetated areas will be maintained and monitored for a minimum of 2 years after replanting is complete, or until success criteria are met, to ensure that the revegetation effort is successful. The standard for success is 60% cover compared to pre-project conditions at the project site or at least 60% cover compared to an intact, local reference site. If an appropriate reference site or pre-project conditions cannot be identified, success criteria will be developed for review and approval on a project-by-project basis, based on the specific habitat impacted and known recovery times for that habitat and geography. The Project Proponent will prepare a summary report of the monitoring results and recommendations on December 1 each year. The report will be provided to the respective USFWS Field Office (copy the Lead Action Agency).
- **SNC-1: Revegetation Plan.** The Project Proponent will prepare and implement a revegetation plan to mitigate the loss of native riparian vegetation. Recontoured banks will be seeded and revegetated. Erosion control measures will be implemented to prevent erosion. Plant species selected for revegetation will be based upon surveys of riparian habitat along Arastradero Creek upstream and downstream of the Project site. Planting requirements in the revegetation plan will be based upon species composition and density recommendations associated with the overall habitat enhancement design for the project. The final revegetation plan will include details regarding planting, implementation, maintenance, and monitoring. GPM-15, VHDR-3, VHDR-4, and VHDR-5 provide additional details on revegetation.

Implementation of these measures will reduce impacts to sensitive terrestrial natural communities to a less than significant level.

## 7.4 Aquatic Resources

This section analyzes the Project's potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the USACE or RWQCB in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

> *c) Does the Project have the potential to have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;*

The proposed Project is a utilities improvement and restoration project intended to remove subsurface utility lines and improve aquatic habitat within the Arastradero Creek. The Project proponent will apply for permits from the USACE, RWQCB, and CDFW. The project will require work and fill material within wetland habitat, as well as below the OHWM and TOB; however, the construction and fill materials are part of a habitat enhancement project that is anticipated to result in a net increase in habitat values and functions within jurisdictional areas. The proposed Project does not require mitigation for impacts to these jurisdictional areas as proposed activities are anticipated to improve the quality of such areas. Incorporation of elements such as step pools and log elements will lower stream velocity and restore a more natural flow regime, improving conditions for stream and wetland habitats and species dependent on these habitats. The extent and quality of riparian habitat may also be increased,

via the planting of native riparian trees and installation of willow poles along the creek in currently scoured areas.

The majority of impacts to aquatic resources are temporary in nature, consisting of disturbance for temporary staging and access and installation of restoration features along the stream banks of the Arastradero Creek. Aquatic impacts are detailed in Table 6 and Appendix B – Figure 5.

**Table 6. Temporary and Permanent Impacts to Aquatic Resources**

| TEMPORARY IMPACTS (LIMIT OF DISTURBANCE) | | | |
|---|---|---|---|
| **SENSITIVE LAND COVER TYPE** | **ACRES** | **SQUARE FEET** | **LINEAR FEET** |
| **Channel Wetland** | 0.02 | 702 | N/A |
| **Ephemeral Stream** | < 0.01 | 82 | 36 |
| **Forested/Scrub Wetland** | 0.15 | 6,497 | N/A |
| **Intermittent Stream (Arastradero Creek)** | 0.20 | 8,741 | 730 |
| **Lake (Arastradero Lake)** | 0.14 | 6,063 | N/A |
| **Perennial Marsh** | 0.01 | 358 | N/A |
| **Seasonal Wetland** | < 0.01 | 145 | N/A |
| **PERMANENT IMPACTS (NEW PIPELINE INFRASTRUCTURE AND ROCK ARMORING AT CULVERT OUTFALL)** | | | |
| **Ephemeral Stream** | < 0.01 | 24 | 10 |
| **Intermittent Stream (Arastradero Creek)** | 0.03 | 1,288 | 215 |

Project activities will incorporate protection measures for erosion, water quality degradation, and habitat protection, as outlined in this report below. No substantial adverse effects to aquatic resources are anticipated to result from the proposed project.

### 7.4.1 Water Quality and Hazardous Materials

The following protection measures for water quality and hazardous materials should be considered for projects that meet the activity criteria identified in each measure, and appropriate protection measures should be proposed as part of the ESA Section 7(a)(2) Review Form. The following sections include protection measures to address staging and stockpiling materials, erosion and sedimentation, potentially hazardous materials, in-water work, dewatering and species relocation, pile driving and pile replacement, and dredging operations (including dredging material reuse).

#### STAGING AND STOCKPILING OF MATERIALS

**WQHM-1, Staging Areas and Stockpiling of Materials and Equipment.** Staging, storage, and stockpile areas must be outside of habitat suitable for Covered Species unless necessary for project implementation and approved by the USACE and the USFWS Field Office. Where feasible, staging will occur on access roads or other previously disturbed upland areas, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation, to avoid sensitive habitats and limit disturbance to surrounding habitats. Similarly, all maintenance equipment and materials (e.g., road rock and project spoil) will be restricted to the existing service roads, paved roads, or other determined designated staging areas. See GPM-10, *Equipment Maintenance and Materials Storage*, for more details regarding protection measures for materials storage.

Staging areas will be established for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants. Staging areas will have a stabilized entrance and exit and will be at least 100 feet from bodies of water, unless site-specific circumstances do not provide such a setback; in such cases, the maximum setback possible will be used. See also IWW-2, *In-Water Vehicle Selection and Work Access*. If an off-road staging area is chosen and if Covered Species are potentially present, the Qualified Biologist will survey the selected site to verify that no sensitive resources would be disturbed by staging activities.

Stockpiling of materials, portable equipment, vehicles, and supplies (e.g., chemicals), will be restricted to the designated construction staging areas. If rain is predicted in the forecast during the dry season, and stockpiled soils will remain exposed and unworked for more than 7 days, then erosion and sediment control measures must be used. If there is a high-wind scenario, then soils will be covered at all times. During the wet season, no stockpiled soils will remain exposed, unless properly installed and maintained erosion controls are in place on and around the stockpile. Temporary stockpiling of material onsite will be minimized. Stockpiled material will be placed in upland areas far enough away from Covered Species habitat that these materials cannot discharge to waters of the United States. Additional species-specific erosion control measures may also be necessary because of the potential for listed species at the project site.

### EROSION AND SEDIMENTATION CONTROL MEASURES

**WQHM-2: Storm Water Pollution Prevention Plan.** All projects that are required to obtain coverage under the NPDES General Order for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Order) will prepare and implement a site-specific storm water pollution prevention plan (SWPPP), as required by the Construction General Order.

**WQHM-3, Erosion Control Plan.** For projects that do not require coverage under an NPDES permit per WQHM-2, the Project Proponent will include an erosion control plan that will identify appropriate BMPs, and a rain event action plan if seasonal rain during the construction period might occur, to reduce the potential release of water quality pollutants to receiving waters. BMPs may include the following measures:

- Install erosion control measures, such as straw bales, silt fences, fiber rolls, or equally effective measures, at riparian areas adjacent to stream channels, drainage canals, and wetlands, as needed. Erosion control measures will be monitored during and after each storm event for effectiveness. Modifications, repairs, and improvements to erosion control measures will be made as needed to protect water quality.
- Erosion control products that include synthetic or plastic monofilament or cross-joints in the netting that are bound/stitched (e.g., straw wattles, fiber rolls, or erosion control blankets) and could trap snakes, amphibians, and other wildlife will not be used.

### OTHER WATER QUALITY MEASURES

**WQHM-4, Hazardous Materials Management and Spill Response.** As part of the SWPPP or Erosion Control Plan (see WQHM-2 and WQHM-3), the Project Proponent will prepare and implement a hazardous materials management and spill response plan. The Project Proponent will ensure that any hazardous materials are stored at the staging area(s) with an impermeable

membrane between the ground and hazardous material, and that the staging area is designed to prevent the discharge of pollutants to groundwater and runoff water. The Project Proponent will use and store hazardous materials, such as vehicle fuels and lubricants, in designated staging areas away from stream channels and wetlands, unless otherwise approved in the ESA Section 7(a)(2) Review Form, according to local, state, and federal regulations. The Project Proponent will notify regulatory agencies within 24 hours of any leaks or spills and will properly contain and dispose of any unused or leftover hazardous products off site. Also see GPM-10, *Equipment Maintenance and Materials Storage,* for more detail on spill prevention.

**WQHM-6. Accidental Discharge of Hazardous Materials.** Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Wat. Code, § 13271):

As soon as (A) discharger has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:

- Call – 911 (to notify local response agency)
- Call – Office of Emergency Services (OES) State Warning Center at: (800) 852-7550 or (916) 845-8911
- Lastly, follow the required OES procedures as set forth in: http://www.caloes.ca.gov/FireRescueSite/Documents/CalOESSpill_Booklet_Feb2014_FINAL_BW_Acc.pdf.

Following notification to OES, discharger will notify RWQCB (and other agencies requiring notification in their respective permits) as soon as practicable (ideally within 24 hours). Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.

#### GENERAL IN-WATER MEASURES

**IWW-1, Appropriate In-Water Materials.** Selection and use of gravels, cobble, boulders, and instream woody materials in streams, and other materials (e.g., oyster shells, other substrates) for reef/bed restoration will be performed to avoid and/or minimize adverse impacts to aquatic Covered Species and their habitats. On-site gravels will be screened and sorted; Gravels imported from a commercial source will be clean-washed and of appropriate size. As necessary to protect Covered Species, placement will be overseen by a Qualified Biologist; implementation timing will be determined based on the least amount of overlap (or impact on) all sensitive biological resources that may be affected, and the timing of their use of the receiving area. Imported gravel from outside the project watershed will not be from a source known to contain historical hydraulic gold mine tailings, dredger tailings, or mercury mine waste or tailings. Materials that may foul or degrade spawning gravels (e.g., sand or soil eroding from sandbag or earthen dams) will be managed to avoid release and exposure in salmonid streams. Oyster shells or other substrates for reef/bed restoration will be cured and inspected to be free of pathogens and/or nonnative species.

**IWW-2, In-Water Vehicle Selection and Work Access.** If work requires that equipment enter wetlands or below the banks of a Water of the US, equipment with low ground pressure will be used to minimize soil compaction. Low-ground-pressure heavy equipment mats will be used, if needed to lessen soil compaction. Hydraulic fluids in mechanical equipment working in the waters of the United States or any other aquatic habitat suitable for Covered Species will not

contain organophosphate esters. The amount of time this equipment is stationed, working, or traveling in the waters of the United States or other aquatic habitat suitable for Covered Species will be minimized. All equipment will be removed from the aquatic feature during nonwork hours or returned to the approved staging area.

**IWW3, In-Water Placement of Materials, Structures, and Operation of Equipment.** Material used for bank stabilization or in-water restoration will minimize discharge sediment or other forms of waste to waters of the United States or other aquatic habitat suitable for Covered Species. Construction will occur from the top of the stream bank, on a ground protection mat underlain with filter fabric, or a barge. All materials placed in streams, rivers, or other waters will be nontoxic. Any combination of wood, plastic, cured concrete, steel pilings, or other materials used for in-channel structures will not contain coatings or treatments, or consist of substances toxic to aquatic organisms (e.g., zinc, arsenic, creosote, copper, other metals, pesticides, or petroleum-based products) that may leach into the surrounding environment in amounts harmful to aquatic organisms. Except for the following conditions, equipment must not be operated in standing or flowing waters without site-specific approval from the USFWS Field Office:

- All construction activities must be effectively isolated from water flows, to minimize the potential for runoff. This may be accomplished by working in the dry season or dewatering the work area in the wet season.
- When work in standing or flowing water is required, structures for isolating the in-water work area and/or diverting the water flow must not be removed until all disturbed areas are cleaned and stabilized. The diverted water flow must not be contaminated by construction activities.
- All open-flow temporary diversion channels must be lined with filter fabric or other appropriate liner material to prevent erosion. Structures used to isolate the in-water work area and/or divert the water flow (e.g., cofferdam or geotextile silt curtain) must not be removed until all disturbed areas are stabilized.

**IWW-5, Cofferdam Construction (if needed).** Cofferdams may be installed both upstream and downstream, and along portions of the cross section of a channel or other waterway, if necessary to isolate the extent of the work areas. Construction of cofferdams will begin in the upstream area and continue in a downstream direction, enabling water to drain and allowing fish and aquatic wildlife species to leave (under their own volition) the area being isolated by the cofferdam, prior to closure. The flow will then be diverted only when construction of the upstream dam (if necessary) is completed and the work area has been naturally drained of flow; at this point, the downstream dam (if necessary) would be completed, and flow would be diverted around the work area. Cofferdams and stream diversion systems will remain in place and fully functional throughout the construction period. To minimize adverse effects to Covered Species, stream diversions will be limited to the shortest duration necessary to complete in-water work. In-water cofferdams will only be built from materials such as sandbags, clean gravel, rubber bladders, vinyl, steel, or earthen fill, and will be built in a manner that minimizes siltation and/or turbidity. Cofferdams will be pushed into place. If pile driving (sheet piles) is required, vibratory hammers will be used, and impact hammers will be avoided. If necessary, the footing of the cofferdam will be keyed into the channel bed at an appropriate depth to capture the majority of subsurface flow needed to dewater the streambed. When cofferdams with bypass pipes are installed, debris racks will be placed at the bypass pipe inlet in a manner that minimizes the potential for fish impingement and/or entrapment. Bypass pipes will be monitored for accumulation of debris, and accumulated debris will be removed. When appropriate,

cofferdams will be removed so that surface elevations of water impounded above the cofferdam will not be reduced at a rate greater than 1 inch per hour. Cofferdams in tidal waters will be removed during the lowest possible tide and in slack water to minimize disturbance and turbidity. This will minimize the probability of fish and other aquatic species stranding as the area upstream becomes dewatered. All dewatering/diversion facilities will be installed so that natural flow is maintained upstream and downstream of Study Areas. An area may need to be dewatered long enough to allow Covered Species to leave on their own before final clearance surveys and construction can begin.

**IWW-6, Dewatering/Diversion (if needed).** The area to be dewatered will encompass the minimum area necessary to perform construction activities. The Project Proponent will provide a dewatering plan with a description of the proposed dewatering structures and appropriate BMPs for the installation, operation, maintenance, and removal of those structures. The period of dewatering/diversion will extend only for the minimum amount of time needed to perform the restoration activity and to allow Covered Species time to leave on their own before final clearance surveys and construction can begin. Dewatering/diversion will occur via gravity-driven systems, where feasible and except as specified below. Dewatering/diversion will be designed to avoid direct and preventable indirect mortality of fish and other aquatic species. If Covered Fish Species may be present in the area to be dewatered, a fish capture and relocation plan will be developed and implemented for review and approval by the appropriate agencies. All fish capture and relocation plans will be submitted to the local USFWS Field Office concurrently with the ESA Section 7(a)(2) Review Form or at least 60 days before construction. Early submission facilitates timely USFWS review and approval and helps avoid project delays. Stream flows will be allowed to gravity flow around or through the work site, using temporary bypass pipes or culverts. Bypass pipes will be sized to accommodate a minimum of twice the expected construction-period flow and not increase stream velocity and will be placed at stream grade. Conveyance pipe outlet energy dissipaters will be installed to prevent scour and turbidity at the discharge location.

When gravity-fed dewatering is not feasible and pumping is necessary to dewater a work site, a temporary siltation basin and/or silt bags may be required to prevent sediment from reentering the wetted channel. Silt fences or mechanisms to avoid sediment input to the flowing channel will be installed adjacent to flowing water. Water pumped or removed from dewatered areas will be conducted in a manner that does not contribute turbidity to nearby receiving waters. Pumps will be refueled in an area well away from the stream channel. Fuel-absorbent mats will be placed under the pumps while refueling. Equipment working in the stream channel or within 25 feet of a wetted channel will have a double (i.e., primary and secondary) containment system for diesel and oil fluids.

All work will comply with the CDFW Fish Screening Criteria (CDFW 2001) or NMFS Fish Screening Criteria for Anadromous Salmonids (NMFS 1997). Pump intakes will be covered with mesh, in accordance with the requirements of current fish screening criteria, to prevent potential entrainment of fish or other aquatic species that could not be removed from the area to be dewatered. The pump intake will be checked periodically for impingement of fish or other aquatic species. Diverted flows must be of sufficient quality and quantity, and of appropriate temperature, to support existing fish and other aquatic life both above and below the diversion. Pre-project flows must be restored to the affected surface waterbody on completion of work at that location. Where diversions are planned, contingency plans will be developed that include oversight for breakdowns, fueling, maintenance, leaks, etc.

**IWW-7, Fish and Aquatic Species Exclusion While Installing Diversion Structures (if needed).** Fish and other aquatic species will be excluded from occupying the area to be dewatered by blocking the stream channel above and below with fine-meshed block nets or screens, based on the site conditions, while cofferdams and other diversion structures are being installed. Block net mesh will be sized to ensure that aquatic species upstream or downstream do not enter the areas proposed for dewatering. Mesh will be no greater than 1/8-inch diameter. The bottom of the net must be completely secured to the channel bed. Block nets or screens must be checked at least twice daily at the beginning and end of the workday and cleaned of debris to permit free flow of water. Block nets or screens will be placed and maintained throughout the dewatering period at the upper and lower extent of the areas where aquatic species will be removed. Net placement is temporary and will be removed once dewatering has been accomplished, or construction work is complete for the day.

Pump intakes will be covered with mesh, in accordance with the requirements of current NMFS fish screening criteria, to prevent potential entrainment of fish or other aquatic species that could not be removed from the area to be dewatered. The pump intake will be checked periodically for impingement of fish or other aquatic species. All work will comply with the CDFW Fish Screening Criteria (CDFW 2001) or NMFS Fish Screening Criteria for Anadromous Salmonids (NMFS 1997).

**IWW-8, Removal of Diversion and Barriers to Flow (if needed).** On completion of construction activities, any diversions or barriers to flow will be removed in a manner that will allow flow to resume with the least disturbance to the substrate. Alteration of creek beds will be minimized; any imported material that is not part of the project design will be removed from stream beds on completion of the project.

## 7.5 Wildlife Corridors and Native Wildlife Nursery Sites

This section analyzes the Project's potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

> *d) Does the Project have the potential to 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;*

As noted in Section 5.3, the Study Area functions as a wildlife corridor due to the presence of presence of habitat features such as riparian canopy and intermittent channel. The Study Area connects large blocks of open space in Foothills Nature Preserve to the southwest, and Stanford Dish Preserve to the north. Wildlife species may utilize the site for movement preferentially compared to the surrounding area due to its habitat features and geographic setting. Project activities of vegetation removal, ground disturbance and revegetation will result in permanent and temporary impacts to wildlife corridor habitat features. These impacts are not expected to appreciably impact the habitat values afforded by the Study Area, nor introduce any new barriers to wildlife movement. Snags and riparian trees around Arastradero Lake provide rookery habitat for great egret (*Adrea alba*), great blue heron (*Ardea herodias*) and snowy egret (*Egretta thula*). Rookery habitat for these species is protected by CFGC. Implementation of nesting bird protections described above in **Section 7.1** will avoid any potential impacts to these rookeries.

Based on these factors, the Project will result in a **less than significant impact** to migratory corridors and habitat linkages.

## 7.6 Local Policies and Ordinances

This section analyzes the Project's potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

> *e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*

**City of Palo Alto Tree Removal Ordinance:** While the Project may involve the removal of trees as part of utilities relocation, removal of these trees would not require a tree permit, as the work is being conducted under contract with the City Utilities group. Written notice of any tree removal will be provided in advance to both the supervising park ranger and Urban Forestry group, along with a map and photos of trees to be removed. Any native oaks with a DBH of greater than 11.5 inches will also be replaced with native oak plantings at the mitigation ratio approved by CDFW. Therefore, the Project would not conflict with the City of Palo Alto Tree Ordinance.

**City of Palo Alto Stream Corridor Protection Ordinance:** The City of Palo Alto Stream Corridor Protection Ordinance exempts "replacement of utility service laterals where location outside the protected areas is not readily available" from the streamside review area requirements and guidelines. The Project falls under this category and is therefore exempted from the provisions of this Ordinance.

The Project would therefore not conflict with any of the local plans or policies related to biological resources examined in this analysis. Therefore, there is **no impact** to local policies and ordinances.

## 7.7 Habitat Conservation Plans

This section analyzes the Project's potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

> *f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The Pearson Arastradero Preserve falls outside of any approved local, regional or state Conservation Plan. Maintenance of in-built utility lines are covered activities under the Arastradero Preserve Management Plan, which authorizes maintenance and management actions on the Preserve (Amphion Environmental and Thomas Reid Associates 2001). Therefore, there is **no impact** to the function of any Conservation Plans.

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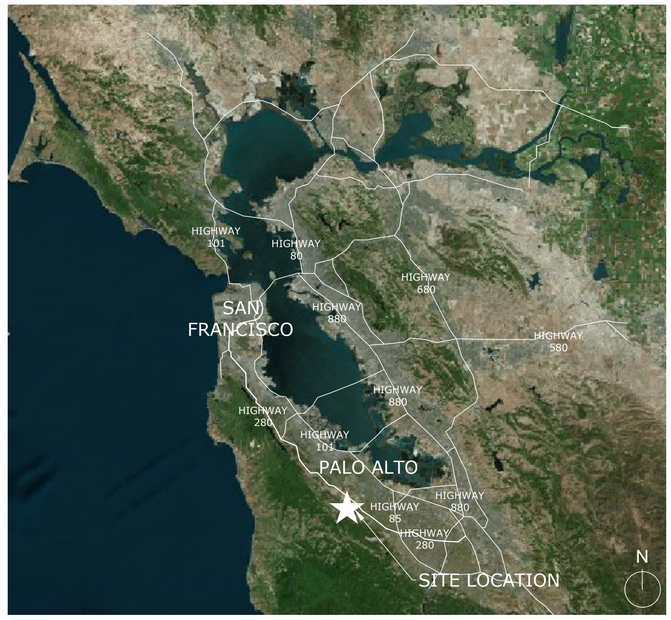
# APPENDIX A. PROJECT PLANS

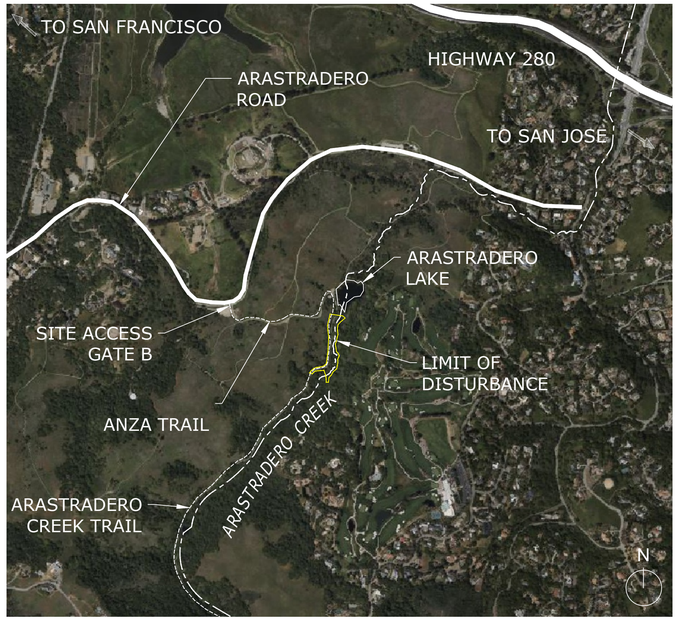
# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

## 90% DESIGN
## PALO ALTO, CALIFORNIA




A VICINITY MAP

SCALE: 1" = 50,000'




B SITE MAP

SCALE: 1" = 1000'

**SHEET INDEX**

| SHEET NUMBER | SHEET DESCRIPTION |
|---|---|
| G-1.0 | COVER SHEET |
| G-1.1 | NOTES & ABBREVIATIONS |
| V-1.0 | EXISTING CONDITIONS |
| V-2.0 | CONSTRUCTION ACCESS AND STAGING |
| C-1.0 | GRADING PLAN AND PROFILE |
| C-1.1 | GRADING PLAN AND PROFILE |
| C-2.0 | SECTIONS |
| C-3.0 | DETAILS |
| C-3.1 | DETAILS |
| U-1.0 | UTILITIES SITE PLAN |
| U-2.0 | UTILITIES, DEMO PLAN, PLAN VIEW, PROFILE (GAS) |
| U-3.0 | UTILITIES DEMO PLAN (WATER/SEWER) |
| U-3.1 | UTILITIES PLAN VIEW (WATER/SEWER) |
| U-3.2 | UTILITIES PROFILE VIEW (WATER/SEWER) |

**SHEET INDEX**

| SHEET NUMBER | SHEET DESCRIPTION |
|---|---|
| L-1.0 | REVEGETATION AND EROSION CONTROL PLAN |
| L-1.1 | REVEGETATION AND EROSION CONTROL PLAN |
| L-2.0 | REVEGETATION DETAILS, LEGEND, AND NOTES |
| EC-1.0 | EROSION CONTROL DETAILS AND NOTES |


PROPERTY OWNER
CITY OF PALO ALTO
250 HAMILTON AVENUE
PALO ALTO, CA 94301
CONTACT: AARON PERKINS
(650)665-1690
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CITY OF PALO ALTO UTILITIES


**ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION**
**PALO ALTO, CALIFORNIA**

**NOT FOR CONSTRUCTION**

**REVISED 60% DESIGN**

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF FINAL REVIEW UNDER THE AUTHORITY OF CHRISTOPHER FENG, PE #C-94524

| DATE | ISSUES AND REVISIONS | NO. |
|---|---|---|
| 12/31/25 | 60% PLAN SET | 0 |
| 06/08/26 | REVISED 60% PLAN SET | 1 |

PROJECT #340190
DRAWN BY: BMM, MSD, EWR
CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

COVER SHEET



G-1.0

I:\acad 2000 files\340000\340190\cad\90% design\plot sheet dwgs\title-sheet.dwg

## GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUTS IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) NORTH AT USANORTH811.ORG AT LEAST 48 HOURS IN ADVANCE OF WORK.
3. CONTRACTOR IS RESPONSIBLE FOR COMPLETING THE PROJECT IN ACCORDANCE WITH THE PLANS CONTAINED HEREIN AND THE SPECIFICATIONS PROVIDED.
4. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A COPY OF THE APPROVED GRADING AND EROSION CONTROL PLANS AND ALL APPLICABLE REGULATORY PERMITS ON SITE AT ALL TIMES.
5. ALL EQUIPMENT MAINTENANCE, STAGING, AND DISPENSING OF FUEL, OIL, COOLANT, OR OTHER SUCH ACTIVITIES SHALL OCCUR WITHIN THE DESIGNATED STAGING AREA ON THE PLANS. IN ADDITION, THESE ACTIVITIES SHALL OCCUR GREATER THAN 100 FEET FROM EXISTING WETLANDS, CREEKS, AND SWALES. CONTRACTOR EQUIPMENT SHALL BE CHECKED FOR LEAKS PRIOR TO OPERATION AND REPAIRED AS NECESSARY. ALL CONSTRUCTION EQUIPMENT SHALL BE STORED OVERNIGHT WITHIN THE STAGING AREA. SEE PROJECT SWPPP FOR ADDITIONAL REQUIREMENTS.
6. ANY PROJECT-RELATED SPILLS OR HAZARDOUS MATERIALS SHALL BE REPORTED TO APPROPRIATE ENTITIES INCLUDING BUT NOT LIMITED TO THE MARIN COUNTY, USFWS, CDFW, AND REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) AND SHALL BE CLEANED UP IMMEDIATELY AND CONTAMINATED SOILS REMOVED FROM DISPOSAL AREAS.

## ABBREVIATIONS

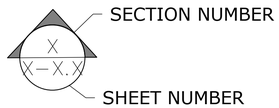
| | |
|---|---|
| AC | ACRES |
| AF | ACRE-FEET |
| BWP | BLACK WRAPPED PIPE |
| CCP | CONCRETE CYLINDER PIPE |
| CY | CUBIC YARDS |
| CDFW | CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE |
| CRTL | CONTROL |
| DIP | DUCTILE IRON PIPE |
| D/S | DOWNSTREAM |
| ELL | ELBOW |
| (E) | EXISTING |
| FEMA | FEDERAL EMERGENCY MANAGEMENT AUTHORITY |
| FT | FEET |
| HDPE | HIGH DENSITY POLYETHYLENE |
| INV | INVERT |
| LOB | LEFT OVERBANK |
| LOD | LIMIT OF DISTURBANCE |
| LOG | LIMIT OF GRADE |
| MN | MANHOLE |
| NTS | NOT TO SCALE |
| PALS | POST ASSISTED LOG STRUCTURE |
| PE | POLYETHYLENE |
| (P) | PROPOSED |
| PG | PROPOSED GRADE |
| PLS | PROFESSIONAL LAND SURVEYOR |
| RED | REDUCER |
| ROB | RIGHT OVERBANK |
| RWQCB | REGIONAL WATER QUALITY CONTROL BOARD |
| TOB | TOP OF BANK |
| SAV | SAVER VALVE |
| SCA | STREAM CONSERVATION AREA |
| SW | STRAW WATTLE FIBER ROLL |
| SWPPP | STORMWATER POLLUTION PREVENTION PLAN |
| TYP | TYPICAL |
| U/S | UPSTREAM |
| UG | UNDERGROUND |
| USFWS | US FISH AND WILDLIFE SERVICE |
| VCP | VITRIFIED CLAY PIPE |
| WRA | WRA, INC. |
| WSE | WATER SURFACE ELEVATION |

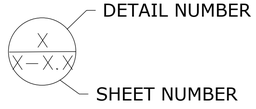
## SITE PREPARATION NOTES

1. THE CONTRACTOR SHALL STORE SALVAGED TOPSOIL WITHIN THE LIMIT OF DISTURBANCE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL OF THE WETLANDS SHOWN ON THESE DRAWINGS AND INDICATED IN THE REGULATORY PERMITS. THESE AREAS ARE OFF LIMITS FROM ANY DISTURBANCE.
3. THE CONTRACTOR SHALL LIMIT THE NUMBER AND EXTENT OF INTERNAL HAUL ROADS AND STOCKPILES WITHIN THE LIMIT OF DISTURBANCE TO THE GREATEST EXTENT POSSIBLE TO MINIMIZE SOIL COMPACTION ON SITE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TREE PROTECTION MEASURES FOR ALL TREES TO REMAIN WITHIN 15 FEET OF LIMITS OF DISTURBANCE.
5. THE CONTRACTOR SHALL LAY OUT CONSTRUCTION ENTRANCE/EXIT, HAUL ROUTES, STAGING AREAS, CONSTRUCTION FENCE, AND STAKES BASED UPON THE DRAWINGS. STAKED AND FENCED OFF LOCATIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT BEFORE THE CONTRACTOR MOBILIZES HEAVY EQUIPMENT.
6. THE CONTRACTOR SHALL MAINTAIN THE FENCING AND STAKES THROUGHOUT THE CONSTRUCTION WORK.
7. NO VEHICULAR ACCESS SHALL BE PERMITTED IN AREAS OF FINISHED GRADING.
8. SEE GRADING AND EROSION CONTROL PLANS FOR DETAILED INFORMATION ON FENCING AND BOUNDARY MARKINGS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WRITTEN NOTICE TO CITY ALONG WITH A MAP AND PHOTOS FOR TREES TO BE REMOVED DURING MOBILIZATION.

## TOPOGRAPHICAL DATA

1. HORIZONTAL COORDINATE SYSTEM: NAD83 STATE PLANE CALIFORNIA ZONE 3, EPOCH 1991.35
2. VERTICAL CONTROL SYSTEM: NAVD 88
3. TOPOGRAPHIC DATA SOURCE: LiDAR PRODUCED BY CITY OF PALO ALTO FLOWN IN 2022 AUGMENTED WITH TOPOGRAPHIC SURVEY CONDUCTED ON 27 FEBRUARY 2025 BY HOGAN SURVEYING.
4. THE CONTRACTOR SHALL UTILIZE A LICENSED SURVEYOR TO ESTABLISH AND MAINTAIN HORIZONTAL AND VERTICAL CONTROL ON SITE. THE CONTRACTOR SHALL CONFIRM THAT THE EXISTING GRADES COMPLY WITH THE ESTABLISHED VERTICAL CONTROL AND REPORT ANY MATERIAL DISCREPANCIES TO THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING WORK.




## DEMOBILIZATION NOTES

1. AFTER COMPLETION OF CONSTRUCTION ACTIVITIES, TEMPORARY FILL AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND DISTURBED AREAS SHALL BE RESTORED TO PRE-PROJECT CONDITIONS.
2. EXCAVATED SOIL WILL BE RELOCATED TO THE SOIL DISPOSAL AREAS UNLESS OTHERWISE NOTED.
3. DO NOT REMOVE FLAGS MARKING THE LOCATION OF UNDERGROUND UTILITIES.
4. ALL T-POSTS AND ORANGE CONSTRUCTION FENCING SHALL BE REMOVED WHEN CONSTRUCTION IS COMPLETED.
5. THE CONTRACTOR SHALL REMOVE THE TEMPORARY CONSTRUCTION ACCESS AND RESTORE THE STAGING AREAS AND HAUL ROADS TO EXISTING CONDITIONS BY PERFORMING THE FOLLOWING MINIMUM ACTIONS:
   a. DECONSOLIDATE THE AREA BY DISCING OR RIPPING TO A MINIMUM DEPTH OF 8";
   b. RESEED WITH THE UPLAND SEED MIX AT THE SEEDING RATES THAT ARE INDICATED IN THE EROSION CONTROL AND SEED PLAN;
   c. INSTALL NECESSARY EROSION CONTROL BMP'S
5. UPON STABILIZATION OF SITE WITH ESTABLISHED VEGETATION AND WITH PERMISSION OF THE COUNTY INSPECTOR OR QSP, REMOVE SEDIMENT CONTROL MEASURES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS.

## PROJECT LIMITS

THE PROJECT HAS SPECIFIC WORK BOUNDARIES WITHIN THE PROPERTY BOUNDARY. THESE WERE CREATED TO LIMIT PROJECT DISTURBANCES AND PROTECT EXISTING SENSITIVE WETLAND AND UPLAND HABITATS. THESE BOUNDARIES INCLUDE THE FOLLOWING:

- LIMIT OF GRADE - DEFINES THE BOUNDARY OF GRADING OPERATIONS INCLUDING EXCAVATION AND FILL PLACEMENT.
- LIMIT OF DISTURBANCE - DEFINES THE BOUNDARY OF PROJECT DISTURBANCES INCLUDING ACCESS, STAGING, SOIL STOCKPILE, AND HAUL ROUTES. THE LIMIT OF DISTURBANCE WILL BE MARKED WITH ORANGE CONSTRUCTION FENCING, SILT FENCING OR BRIGHTLY COLORED FLAGGING. THE FENCING AND FLAGGING WILL BE MAINTAINED THROUGHOUT THE PROJECT CONSTRUCTION PERIOD.

wra Environmental Consultants

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CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**

**NOT FOR CONSTRUCTION**

**REVISED 60% DESIGN**

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF FINAL REVIEW UNDER THE AUTHORITY OF CHRISTOPHER FENG, PE #C-94524

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|---|---|---|
| 12/31/25 | 60% PLAN SET | 0 |
| 06/08/26 | REVISED 60% PLAN SET | 1 |

PROJECT #340190
DRAWN BY: BMM, MSD, EWR
CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

## NOTES AND ABBREVIATIONS

SHEET 2 OF 19

G-1.1

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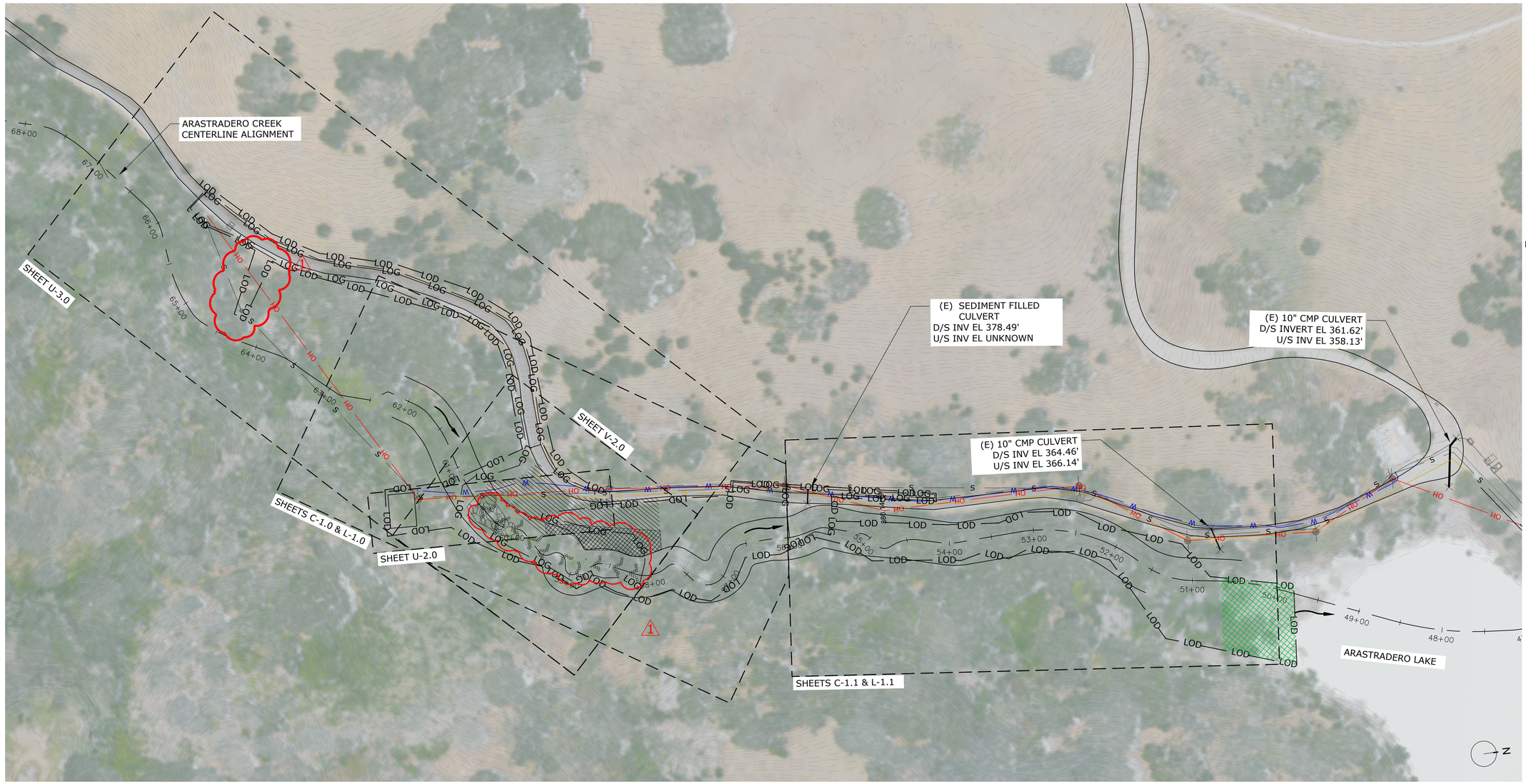


# A SITE PLAN

SCALE: 1" = 60'

| SYMBOL | DESCRIPTION |
|---|---|
| LOD | LIMIT OF DISTURBANCE |
| LOG | LIMIT OF GRADING |
| | FLOW DIRECTION |
| | UTILITY POLE |
| | OVERHEAD UTILITIES |
| | ELECTRIC LINE |
| | SEWER LINE |
| | WATER LINE |
| | GAS LINE |
| | STAGING AREA |
| | STOCKPILE AREA |
| | EXISTING TRAIL |
| | CULVERT |
| | EXISTING ROCK |
| | WILLOW HARVEST AREA |

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CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**

**NOT FOR CONSTRUCTION**

**REVISED 60% DESIGN**

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF FINAL REVIEW UNDER THE AUTHORITY OF CHRISTOPHER FENG, PE #C-94524

| DATE | ISSUES AND REVISIONS | NO. |
|---|---|---|
| 12/31/25 | 60% PLAN SET | 0 |
| 06/08/26 | REVISED 60% PLAN SET | 1 |

PROJECT #340190
DRAWN BY: BMM, MSD, EWR
CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

## EXISTING CONDITIONS

SHEET 3 OF 19

V-1.0

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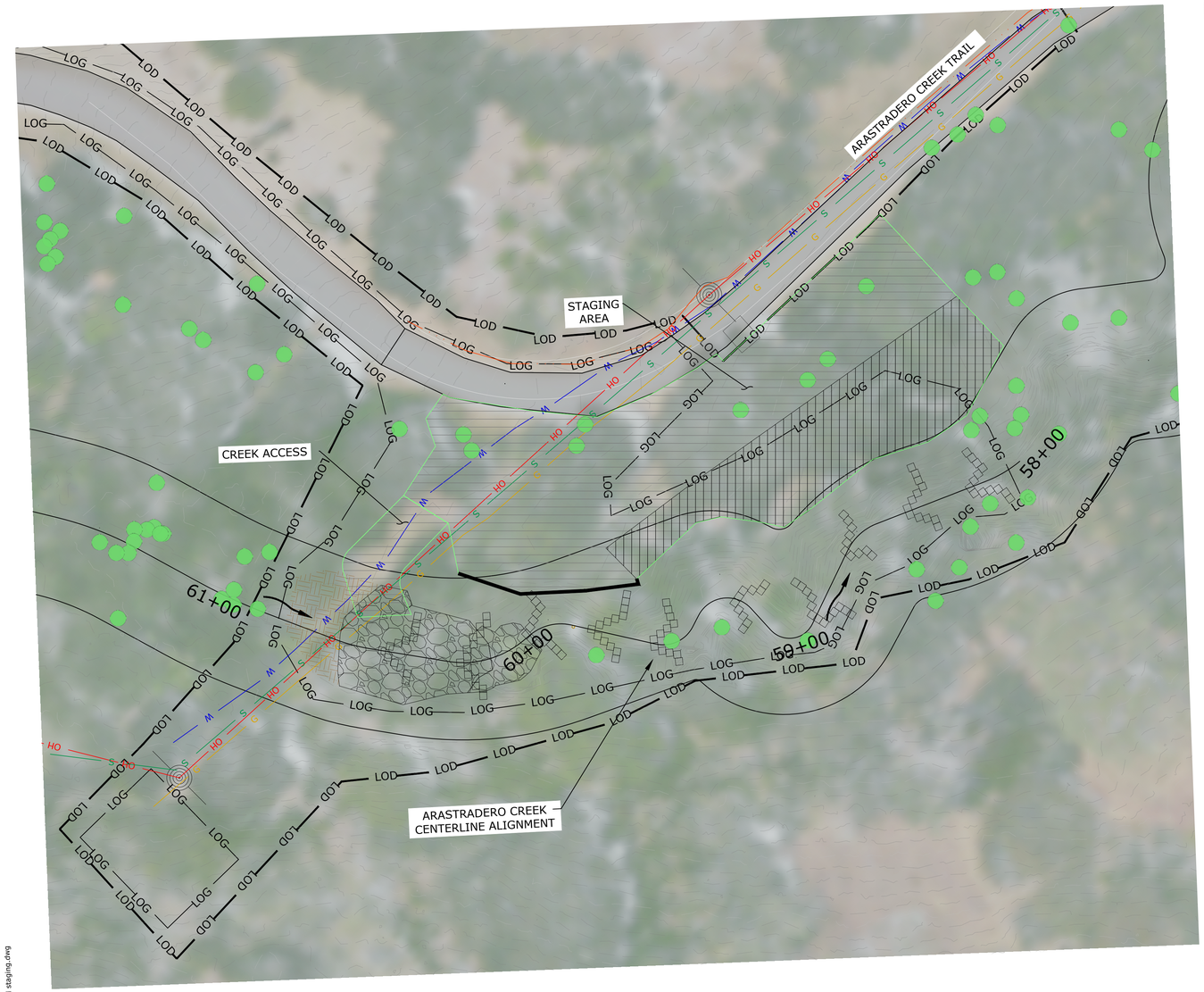
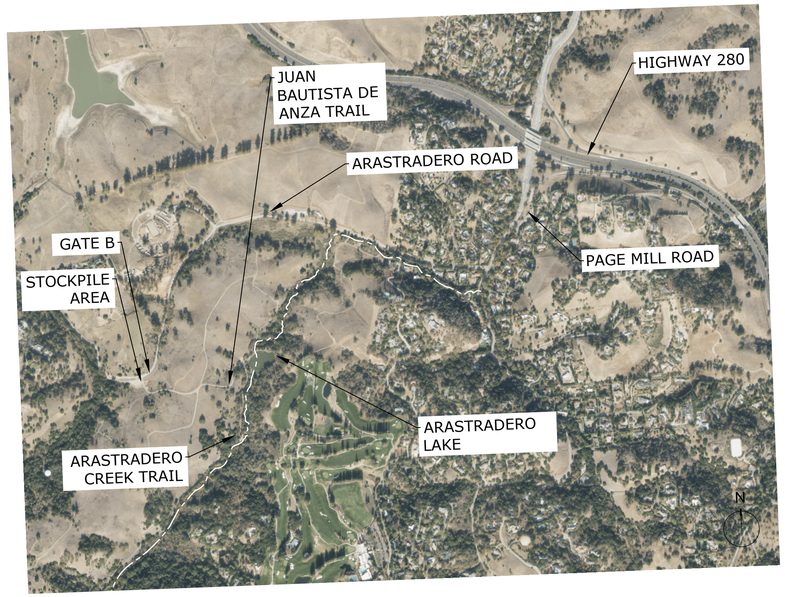



A STAGING AND CREEK ACCESS ROUTE

SCALE: 1" = 20'




B ACCESS PLAN

SCALE: 1" = 1000'

**LEGEND**

| SYMBOL | DESCRIPTION |
|---|---|
| (200) | EXISTING CONTOURS (1 FT) |
| | LIMIT OF DISTURBANCE |
| | LIMIT OF GRADE |
| | FLOW DIRECTION |
| | UTILITY POLE |
| OH | OVERHEAD UTILITIES |
| | ELECTRIC LINE |
| S | SEWER LINE |
| W | WATER LINE |
| G | GAS LINE |
| | STAGING AREA |
| | EXISTING ROCK SLOPE PROTECTION |
| | STOCKPILE AREA |
| | (E) TREE |
| | (E) EMERGENCY REPAIR EARTHEN FILL |
| | SILT FENCE |

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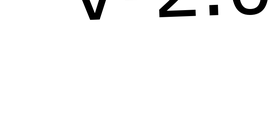
CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**



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PROJECT #340190
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CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

## CONSTRUCTION ACCESS AND STAGING

SHEET 4 OF 19

V-2.0

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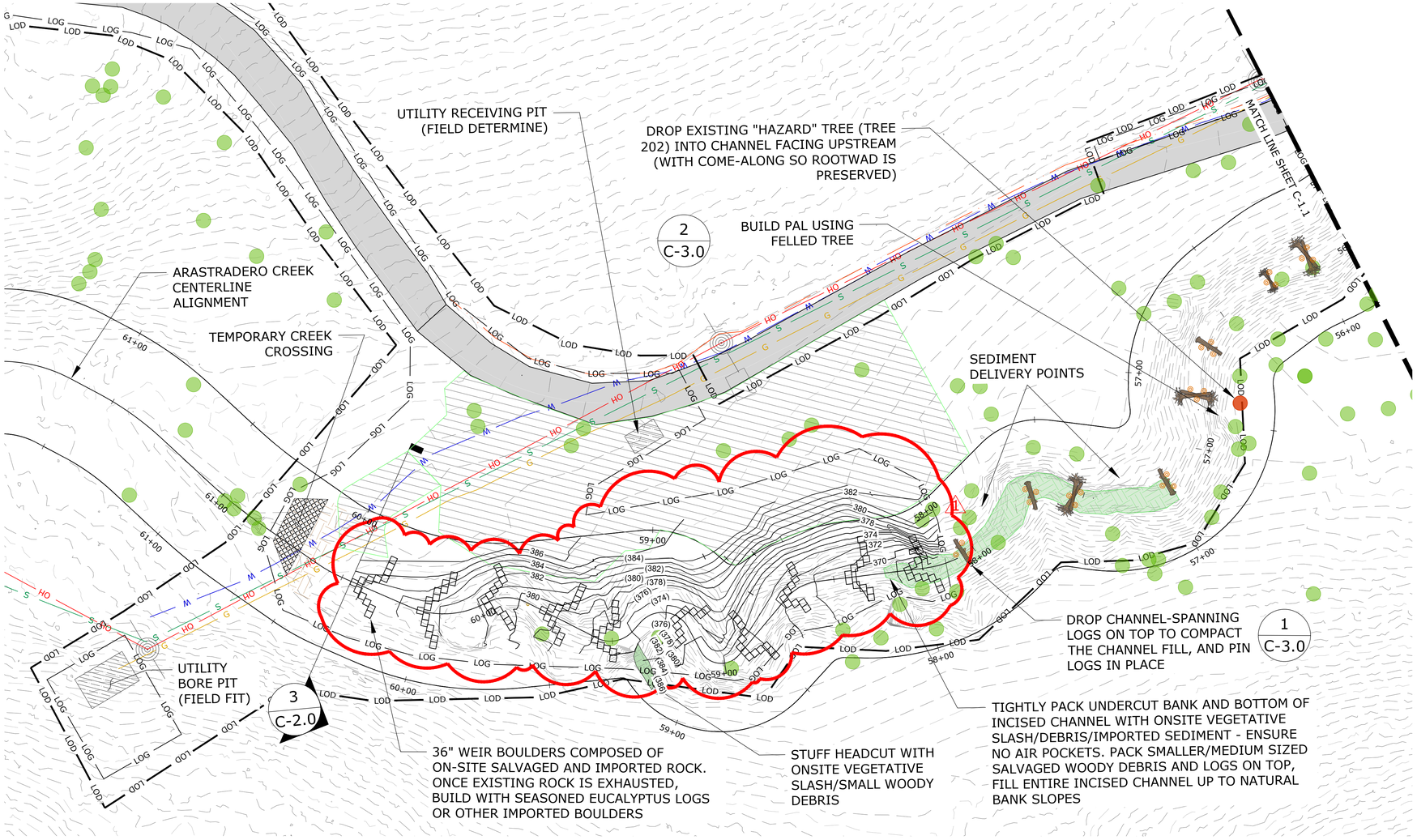
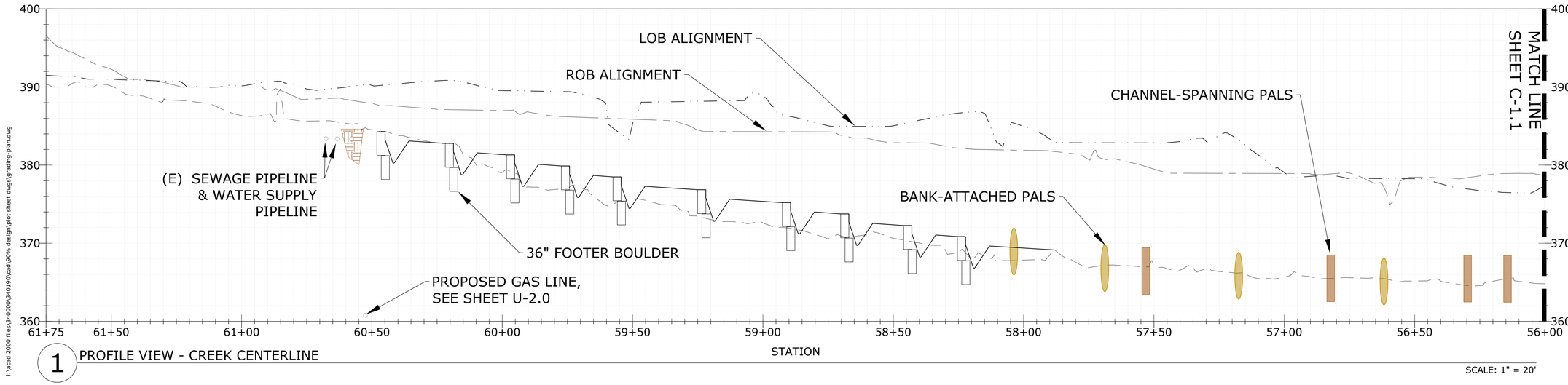
## LEGEND

- LOD — LIMIT OF DISTURBANCE
- LOG — LIMIT OF GRADING
- (200) — EXISTING GRADE
- 200 — PROPOSED GRADE
- UTILITY POLE
- OH — OVERHEAD UTILITIES
- UNDERGROUND ELECTRIC LINE
- S — SEWER LINE
- W — WATER LINE
- G — GAS LINE
- EXISTING TRAIL
- STAGING AREA
- HEADCUT FILL
- (E) CULVERT
- (E) EMERGENCY REPAIR EARTHEN FILL
- WEIR BOULDERS
- BANK-ATTACHED PALS
- CHANNEL-SPANNING PALS
- PROPOSED GRADE PROFILE
- EXISTING GRADE PROFILE
- (E) TREE
- TREE TO BE REMOVED
- (P) UTILITY PITS
- TEMPORARY CREEK CROSSING




A PLAN VIEW

SCALE: 1" = 20'




1 PROFILE VIEW - CREEK CENTERLINE

SCALE: 1" = 20'

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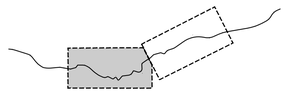
CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**



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ORIGINAL DRAWING SIZE: 24 X 36

## GRADING PLAN

SHEET OF 19

# C-1.0

REPAIR ERODED PORTION OF TRAIL

2 C-3.1

REPAIR ERODED BANK

FINAL DOWNSTREAM PALS TO TIE INTO STEEP BANKS, AND DOWNSTREAM SIDE TO BE PINNED BY MESSY WOOD LOADING

LOB ALIGNMENT

2 C-2.0

FELL LEANING OAK WITH CANOPY FACING UPSTREAM, TREE 241, 16" DBH

SERIES OF SMALL, LOW CHANNEL-SPANNING PALS

LOW, WIDE CHANNEL-SPANNING PALS ON EXISTING DEBRIS JAM

1 C-3.0

1 C-2.0

BUILD PALS USING EXISTING FALLEN TREE IN CHANNEL

ROB ALIGNMENT

CREEK ALIGNMENT CENTERLINE

WILLOW HARVESTING AREA, HARVEST UP TO 15% OF WILLOWS BETWEEN 1-3" BASAL DIAMETER TO BE USED IN PALS

TIGHTLY PACK HEADCUT WITH ONSITE VEGETATIVE SLASH/SMALL WOODY DEBRIS, SECURE WITH LOG

MATCH LINE SHEET C-1.0

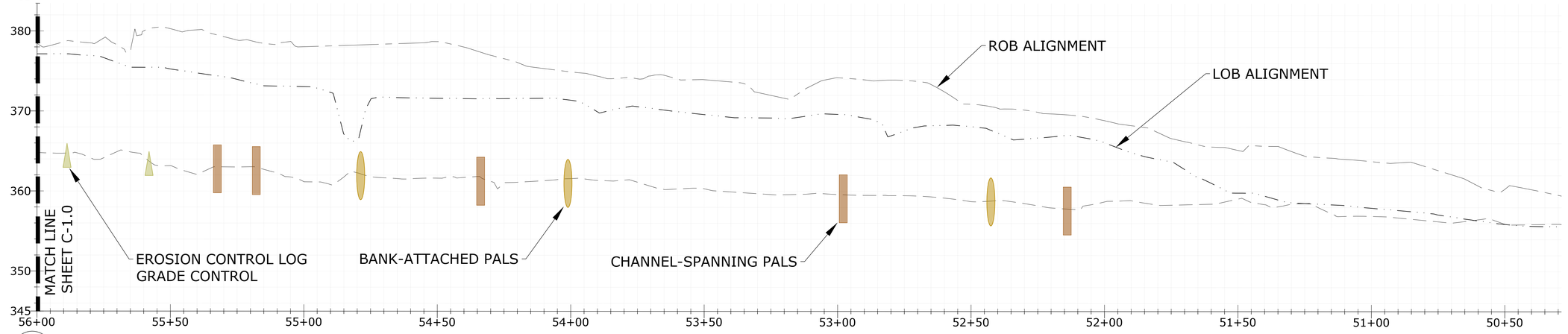
## LEGEND

- LOD — LIMIT OF DISTURBANCE
- LOG — LIMIT OF GRADING
- (200) — EXISTING GRADE
- UTILITY POLE
- OH — OVERHEAD UTILITIES
- UNDERGROUND ELECTRIC LINE
- S — SEWER LINE
- W — WATER LINE
- G — GAS LINE
- EXISTING TRAIL
- EXISTING GRADE PROFILE
- PROPOSED GRADE PROFILE
- LOG GRADE CONTROL STRUCTURE
- BANK-ATTACHED PALS
- CHANNEL-SPANNING PALS
- (E) CULVERT
- WILLOW HARVESTING
- (E) TREE
- TREE TO BE REMOVED
- WOOD LOADING AREA

N

B PLAN VIEW

SCALE: 1" = 20'




2 PROFILE VIEW - CREEK CENTERLINE

SCALE: 1" = 20'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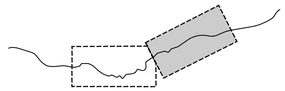
CITY OF PALO ALTO UTILITIES


# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**



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PROJECT #340190
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CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

## GRADING PLAN

SHEET OF 19

# C-1.1

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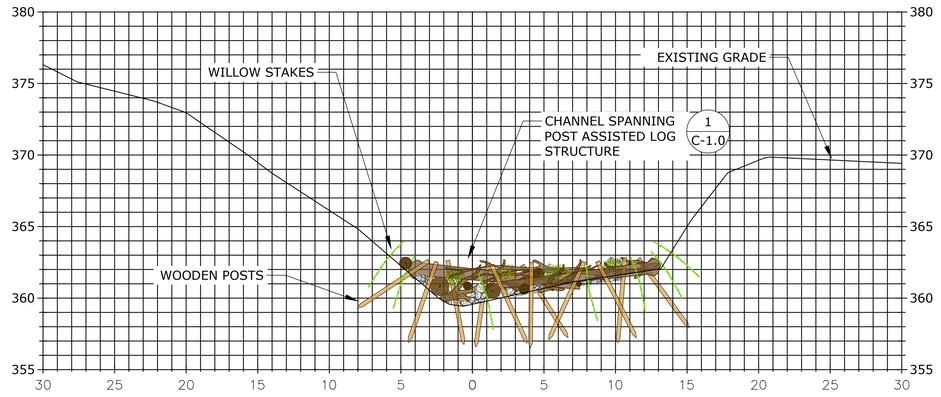
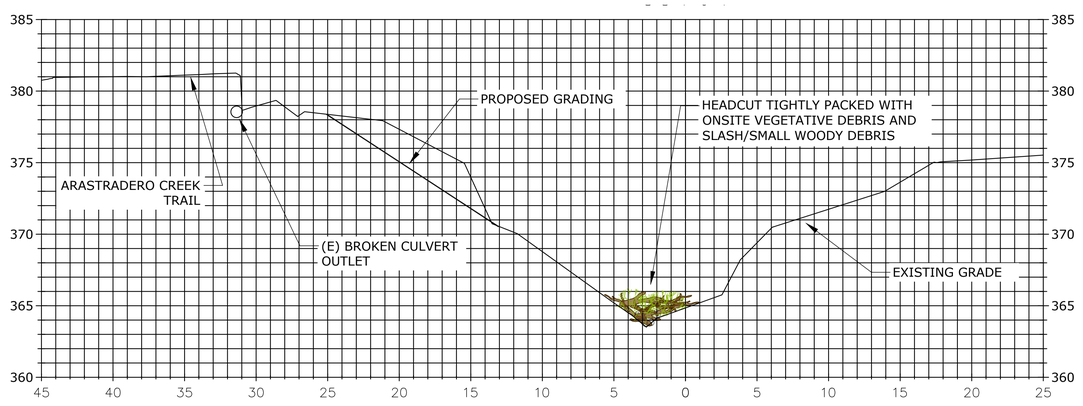


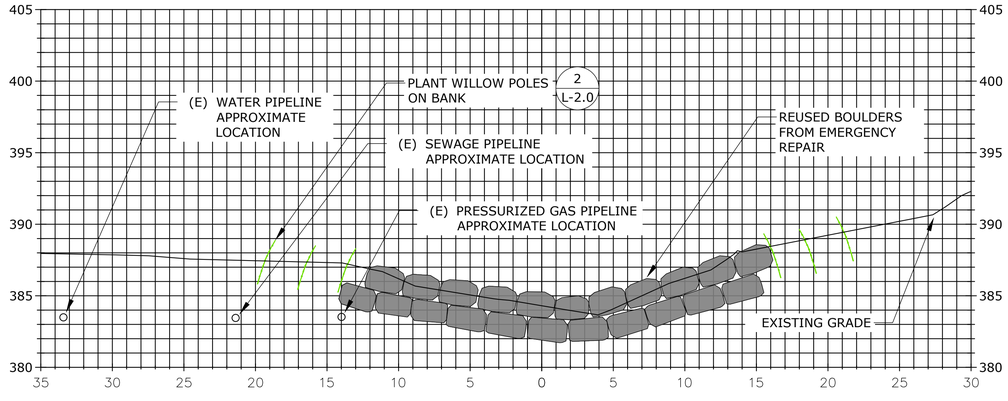

1 C-1.1 SECTION VIEW AT STA 52+98

HORIZONTAL SCALE: 1" = 5' VERTICAL SCALE: 1" = 5'




2 C-1.1 SECTION VIEW AT STA 55+64

HORIZONTAL SCALE: 1" = 5' VERTICAL SCALE: 1" = 5'




3 C-1.0 SECTION VIEW AT STA 60+47

HORIZONTAL SCALE: 1" = 5' VERTICAL SCALE: 1" = 5'

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CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

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ORIGINAL DRAWING SIZE: 24 X 36

## SECTIONS

SHEET 7 OF 19

C-2.0

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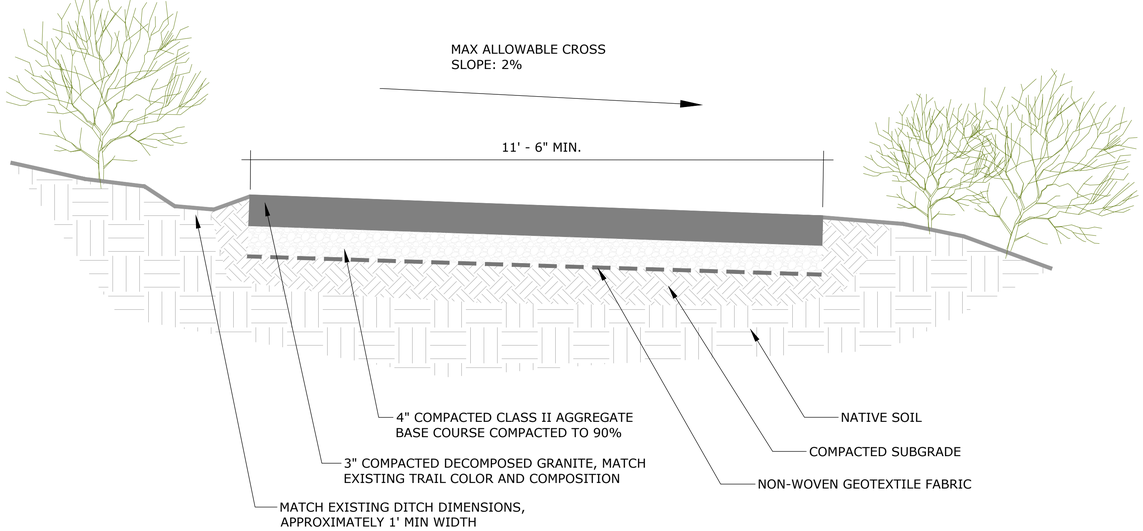
1 C-1.0 TRAILSIDE CULVERT AND DITCH

NOT TO SCALE




2 C-1.0 TRAIL AND DITCH SECTION (TYP.)

NOT TO SCALE

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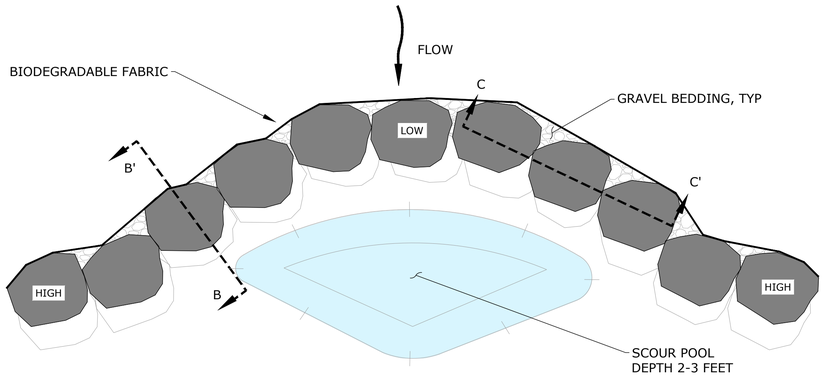
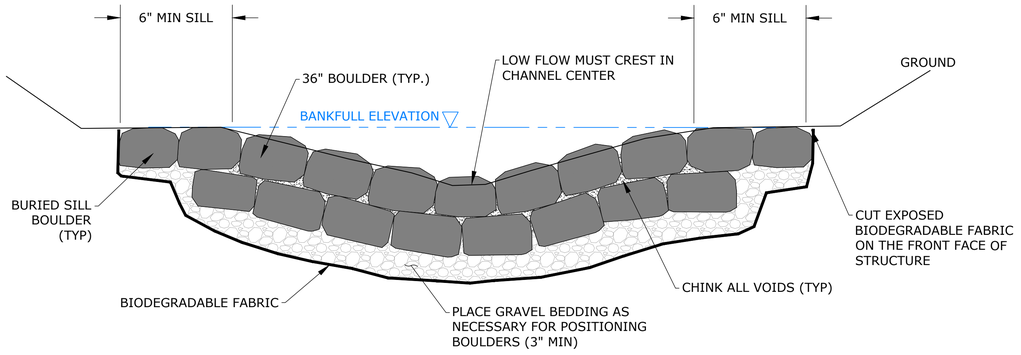
## DETAILS

SHEET 8 OF 19

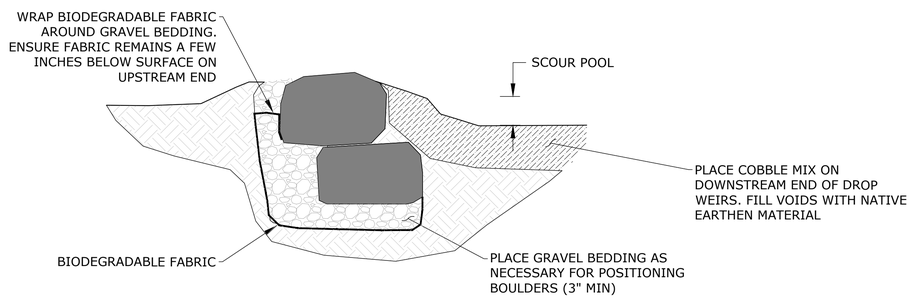
C-3.0



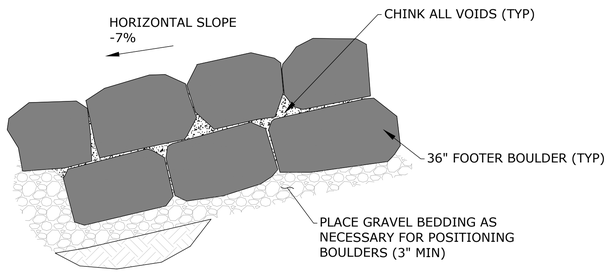

DROP WEIR PLAN VIEW




DROP WEIR CROSS SECTION



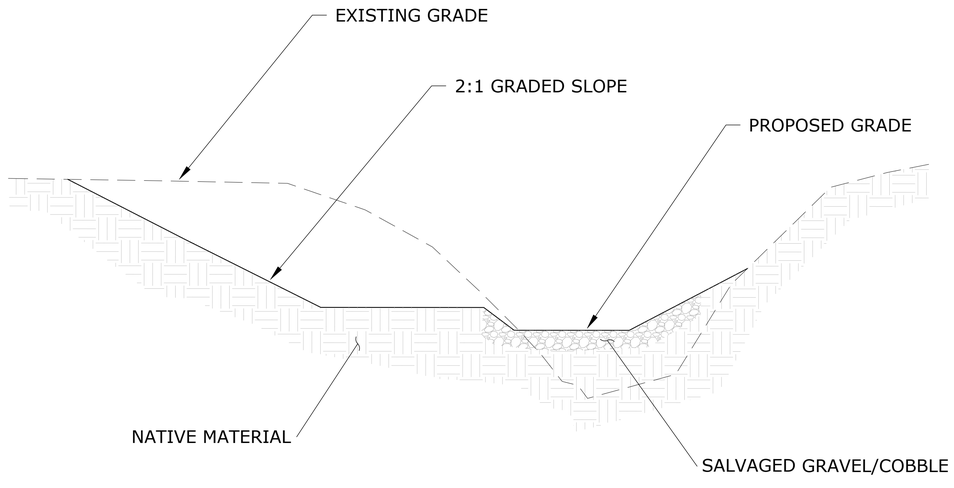

DROP WEIR PROFILE B-B'




DROP WEIR PROFILE C-C'

1 C-3.1 DROP WEIR

NOT TO SCALE




2 C-3.1 TYPICAL CHANNEL GRADING DETAIL

NOT TO SCALE

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CITY OF PALO ALTO UTILITIES

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ORIGINAL DRAWING SIZE: 24 X 36

DETAILS

SHEET 8 OF 19

C-3.1

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## EROSION CONTROL PLAN LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| LOG | LIMIT OF DISTURBANCE |
| (200) | LIMIT OF GRADING |
| 200 | EXISTING GRADE |
| | PROPOSED GRADE |
| | EDGE OF TRAIL |
| | FLOW DIRECTION |
| | OVERHEAD UTILITIES |
| | STRAW WATTLE |
| | COIR FIBER MATTING |
| | SEEDING MIX |
| | WILLOW C... |

N

0 25

SCALE: 1 " = 25'


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CITY OF PALO AL
UTILITIES

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PALO ALTO, CALIFORNIA



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ORIGINAL DRAWING SIZE: 24 X 36

REVEGET...




1 PLAN VIEW

N

0 25

SCALE: 1 " = 25'

**EROSION CONTROL PLAN LEGEND**

| SYMBOL | DESCRIPTION | | |
|---|---|---|---|
| — — - — | LIMIT OF DISTURBANCE | — — — — | OVERHEAD UTILITIES |
| — LOG — | LIMIT OF GRADING | - - - - - - | STRAW WATTLE |
| (200) | EXISTING GRADE | | COIR FIBER MATTING |
| 200 | PROPOSED GRADE | | TREE PLANTING AREA |
| | EDGE OF TRAIL | | WILLOW STAKES |
| ~ | FLOW DIRECTION | | |

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CITY OF PALO ALTO UTILITIES

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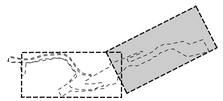
**PALO ALTO, CALIFORNIA**



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## REVEGETATION PLAN

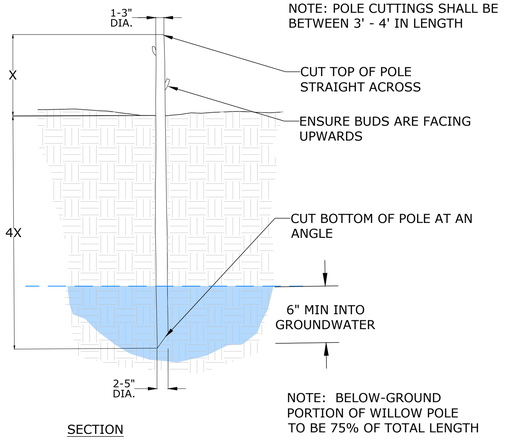
SHEET 16 OF 19

# L-1.1

R ECT 3401 0

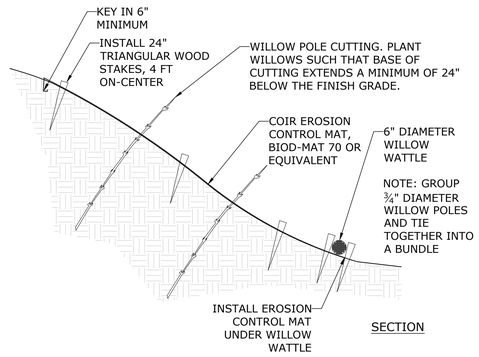
**WILLOW HARVESTING AND INSTALLATION NOTES:**

1. WILLOW CUTTING INSTALLATION SHALL OCCUR BETWEEN NOVEMBER 1ST AND JANUARY 31ST OR AS APPROVED BY THE RESTORATION DESIGNER.
2. WILLOW CUTTINGS WILL BE COLLECTED ON-SITE AT THE LOCATIONS SHOWN IN THE DRAWINGS OR AS APPROVED BY THE RESTORATION DESIGNER.
3. WILLOW POLES SHALL BE CUT FROM APPROXIMATELY ONE-YEAR-OLD BRANCHES. WILLOW POLES SHALL HAVE A MINIMUM LENGTH OF THREE (3) FEET LONG AND A MAXIMUM LENGTH OF FOUR (4) FEET. WILLOW POLES SHALL HAVE A MINIMUM CUT-END DISTAL DIAMETER OF ¾" AND A MAXIMUM CUT-END BASAL DIAMETER OF 3". REMOVE ALL BRANCHES FLUSH WITH POLE. WILLOW POLES SHALL HAVE CONTINUOUS BARK AND STEMS THAT ARE NOT SPLIT, AS SOLELY DETERMINED BY THE RESTORATION DESIGNER.
4. WILLOW POLES SHALL BE HARVESTED FROM A MAXIMUM 30% OF EACH DONOR PLANT AND THE PLANT SHALL BE LEFT IN A HEALTHY, VIGOROUS, AND VISUALLY APPEALING STATE.
5. UNLESS IMMEDIATELY SOAKED AND INSTALLED, WILLOW POLES SHALL BE WRAPPED IN WET BURLAP. POLES MAY BE BUNDLED PRIOR TO BEING WRAPPED WITH A MAXIMUM OF TEN POLES PER BUNDLE. BUNDLES SHALL BE KEPT SHADED, COVERED, COOL, MOIST, AND OUT OF WIND OR SUN AT ALL TIMES UNTIL INSTALLATION OF THE POLES. POLES SHALL BE KEPT FROM FREEZING.
6. SOAK EACH WILLOW POLE IN WATER PRIOR TO PLANTING. THE BASAL END OF EACH WILLOW POLE SHALL BE SOAKED IN A BUCKET OF WATER, TO A MINIMUM DEPTH OF 24", FOR A MINIMUM OF 10 DAYS, IMMEDIATELY PRECEDING PLANTING. POLES SHALL BE INSTALLED WITHIN 14 DAYS FOLLOWING HARVESTING.
7. THE RESTORATION DESIGNER SHALL ACCEPT PLANT MATERIAL BEFORE THE START OF PLANTING.
8. WILLOW POLES SHALL BE IN INSTALLED IN THE WILLOW PLANTING AREAS SHOWN IN THE PLANS. THE CONTRACTOR SHALL STAKE OR MARK THE OUTER LIMITS OF THE PLANTING AREAS FOR APPROVAL BY THE RESTORATION DESIGNER PRIOR TO INSTALLATION.
9. DIG PLANTING HOLES. THE DIMENSION OF THE PLANTING HOLES SHALL BE A MINIMUM DIAMETER OF 3-INCHES AND A MINIMUM DEPTH OF ⅔ THE LENGTH OF THE POLES.
10. INSTALL WILLOW POLE 36" DEEP OR 75% TOTAL LENGTH OF WILLOW POLE. WILLOW POLES SHALL BE PLANTED AT AN ELEVATION AT WHICH THE BASAL END OF THE CUTTING WILL BE IN CONTACT WITH THE WATER TABLE UNTIL ROOTING HAS ESTABLISHED.



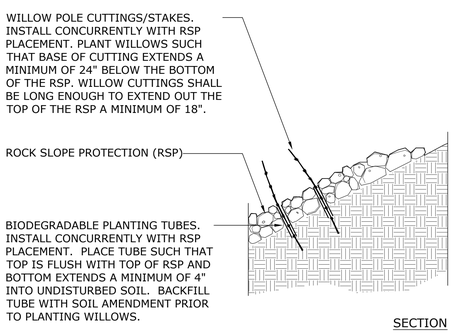

1 C-3.0 WILLOW POLE CUTTING

NOT TO SCALE



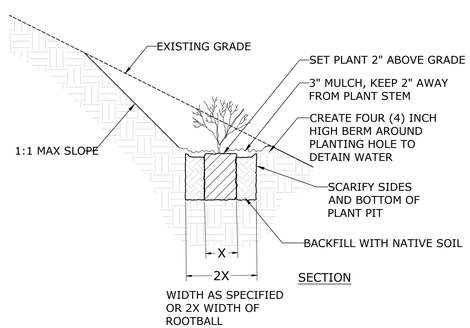

2 C-3.0 WILLOW CUTTING WITH E.C. FABRIC

NOT TO SCALE




3 C-3.0 WILLOW POLE CUTTING IN RSP

NOT TO SCALE




4 L-1.0 TREE & SHRUB PLANTING ON SLOPE

NOT TO SCALE

**SEEDING NOTES**

1. SEED PROCUREMENT: SEED SHALL BE PROVIDED BY THE CONTRACTOR ON THE BASIS OF PURE LIVE SEED (PLS). THE SEED TAGS SHALL BE SUBMITTED TO THE RESTORATION DESIGNER FOR APPROVAL PRIOR TO APPLICATION.
2. SEEDING SCHEDULE: SEEDING SHALL OCCUR BETWEEN SEPTEMBER 15TH AND OCTOBER 15TH UNLESS OTHERWISE APPROVED BY THE RESTORATION DESIGNER.
3. SEEDING AREAS SHALL BE MARKED PRIOR TO SEED APPLICATION AND APPROVED BY THE RESTORATION DESIGNER.
4. SOIL WILL BE PREPARED FOR SEED INSTALLATION BY HAND RAKING OR DISKING.
5. THE SEED MIXES SHALL BE MANUALLY BROADCASTED.
6. THE BROADCAST SEED MIX SHALL INCLUDE THE FOLLOWING COMPONENTS:
   - 6.1. SEED
   - 6.2. STRAW: STRAW SHALL BE 100% RICE STRAW.
   - 6.3. SAND: SAND SHALL BE FINE (0.1 - 0.25 MILLIMETER DIAMETER), MEDIUM (0.25 - 0.5 MILLIMETER DIAMETER), OR COARSE (0.5 - 1.0 MILLIMETER DIAMETER) CLASS SAND, AS SPECIFIED. THE SAND SHALL CONTAIN NO GERMINATION, GROWTH-INHIBITING PROPERTIES, OR ELEMENTS OR COMPOUNDS AT CONCENTRATIONS THAT WILL BE PHYTOTOXIC.
   - 6.4. THE CONTRACTOR SHALL PROVIDE SUBMITTALS OF THE COMPONENTS TO THE RESTORATION DESIGNER FOR APPROVAL.
7. BROADCAST SEEDING SHALL OCCUR AS FOLLOWS:
   - 7.1. RAKING: AREAS DESIGNATED BY THE RESTORATION DESIGNER SHALL BE RAKED TO A MINIMUM DEPTH OF FOUR (4) INCHES.
   - 7.2. INERT MATERIALS: AFTER RECEIVING APPROVAL FOR THE SEED, THE SEED SHALL BE THOROUGHLY AND COMPLETELY BLENDED WITH INERT MATERIAL. THE MIXING OF THE SEED MIX WITH INERT MATERIAL SHALL BE BY VOLUME AS SPECIFIED: ONE PART SEED MIX / THREE PARTS MEDIUM SAND.
   - 7.3. THE SEED/INERT MATERIAL MIXTURE SHALL BE UNIFORMLY AND EVENLY BROADCAST OVER THE DESIGNATED AREAS. BROADCASTING MAY BE DONE BY HAND-HELD SPREADER OR ANOTHER TYPE OF EQUIPMENT OR METHOD, AS APPROVED BY THE RESTORATION DESIGNER.
   - 7.4. THE SEED SHALL BE INCORPORATED INTO THE SOIL TO A MINIMUM DEPTH OF ONE-QUARTER (1/4) INCH AND A MAXIMUM DEPTH OF ONE-HALF (½) INCH. THE INCORPORATION MAY OCCUR BY HAND-RAKING OR THE USE OF A CHAIN HARROW OR TINE HARROW, SUBJECT TO APPROVAL BY THE RESTORATION DESIGNER.
   - 7.5. STRAW: FOLLOWING SEEDING, RICE STRAW SHALL BE APPLIED TO ALL AREAS OF NATIVE SOIL THAT WERE SEEDED UNLESS OTHERWISE DIRECTED BY THE RESTORATION DESIGNER. STRAW SHALL BE APPLIED AT A RATE OF 3,000 POUNDS PER ACRE.

## SEEDING PALETTE

| SYMBOL | SPECIES NAME | COMMON NAME |
|---|---|---|
| | *ACHILLEA MILLEFOLIUM* | COMMON YARROW |
| | *BROMUS CARINATUS* | CALIFORNIA BROME |
| | *ELYMUS GLAUCUS* | BLUE WILDRYE |
| | *FESTUCA CALIFORNICA* | CALIFORNIA FESCUE |
| | *HORDEUM BRACHYANTHERUM* | MEADOW BARLEY |
| | *LEYMUS TRITICOIDES* | CREEPING WILD RYE |
| | *POA SECUNDA* | NATIVE PINE BLUEGRASS |
| | *STIPA PULCHRA* | PURPLE NEEDLEGRASS |


wra Environmental Consultants

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CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**

**NOT FOR CONSTRUCTION**

**REVISED 60% DESIGN**

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF FINAL REVIEW UNDER THE AUTHORITY OF CHRISTOPHER FENG, PE #C-94524

| DATE | ISSUES AND REVISIONS | NO. |
|---|---|---|
| 12/31/25 | 60% PLAN SET | 0 |
| 06/08/26 | REVISED 60% PLAN SET | 1 |

PROJECT #340190
DRAWN BY: BMM, MSD, EWR
CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

## REVEGETATION PLAN

SHEET 17 OF 19

L-2.0

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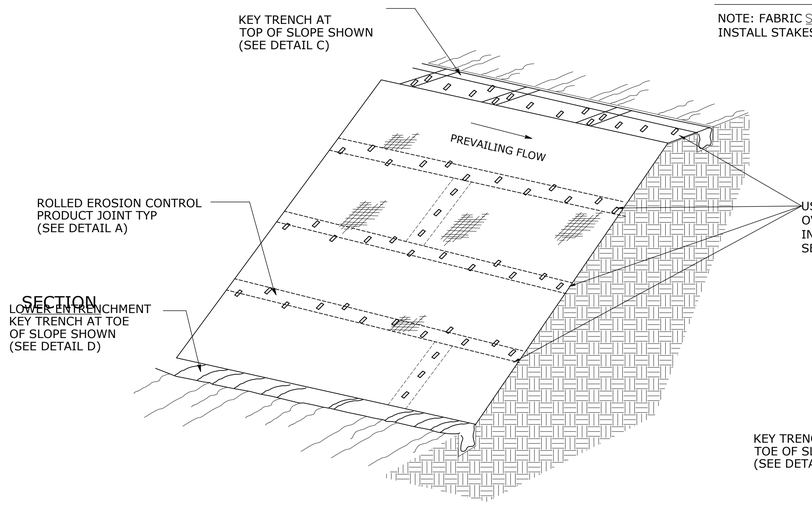


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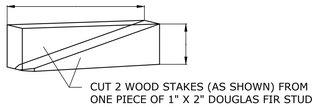
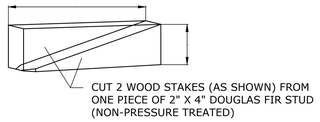


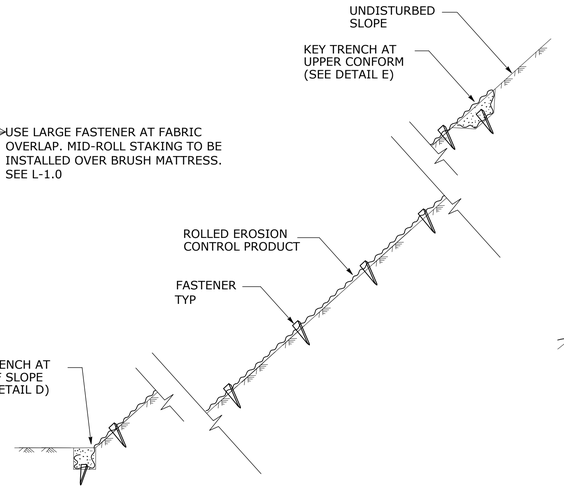

SMALL FASTENER DETAIL

NOTE: FABRIC SHALL NOT BE CUT TO INSTALL STAKES




LARGE FASTENER DETAIL

NOTE: FABRIC SHALL NOT BE CUT TO INSTALL STAKES

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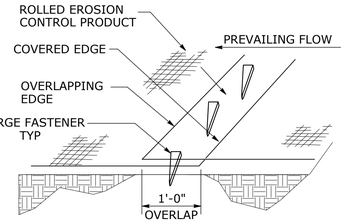
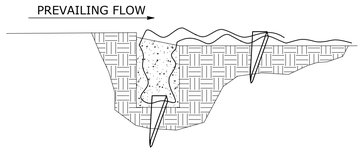



PERSPECTIVE

DETAIL A

SIDE SLOPE OVERLAP

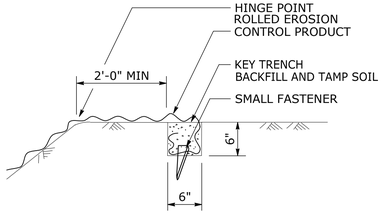



SECTION

DETAIL B

KEY TRENCH AT

UPSTREAM EDGE

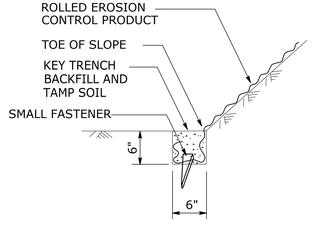



SECTION

DETAIL C

KEY TRENCH AT

TOP OF SLOPE




SECTION

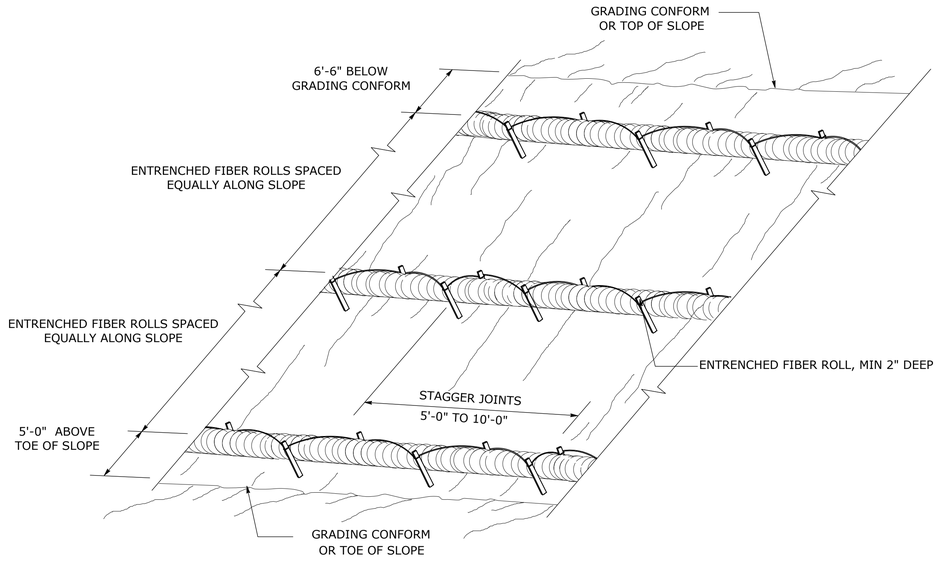
DETAIL D

KEY TRENCH AT

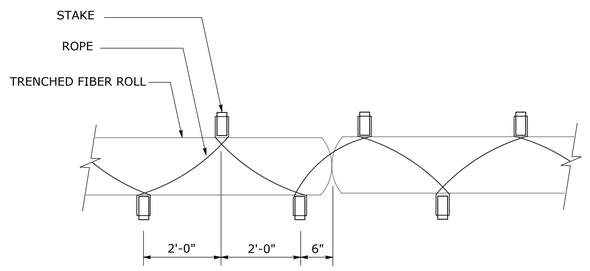
TOE OF SLOPE

1 L-1.0 EROSION CONTROL FABRIC WITH WOOD STAKE FASTENERS

NOT TO SCALE




PERSPECTIVE

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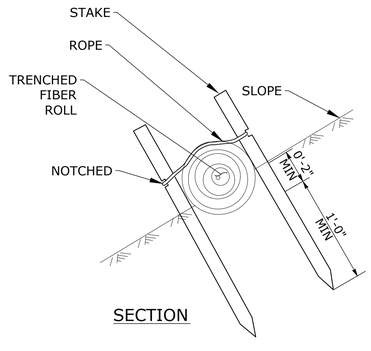


SECTION

2 L-1.0 ENTRENCHED FIBER ROLL (TYPE 2)

NOT TO SCALE

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(415) 454-8868 Phone
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CITY OF PALO ALTO UTILITIES

# ARASTRADERO CREEK RESTORATION AND PIPELINE RELOCATION

**PALO ALTO, CALIFORNIA**

**NOT FOR CONSTRUCTION**

**REVISED 60% DESIGN**

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| 06/08/26 | REVISED 60% PLAN SET | 1 |

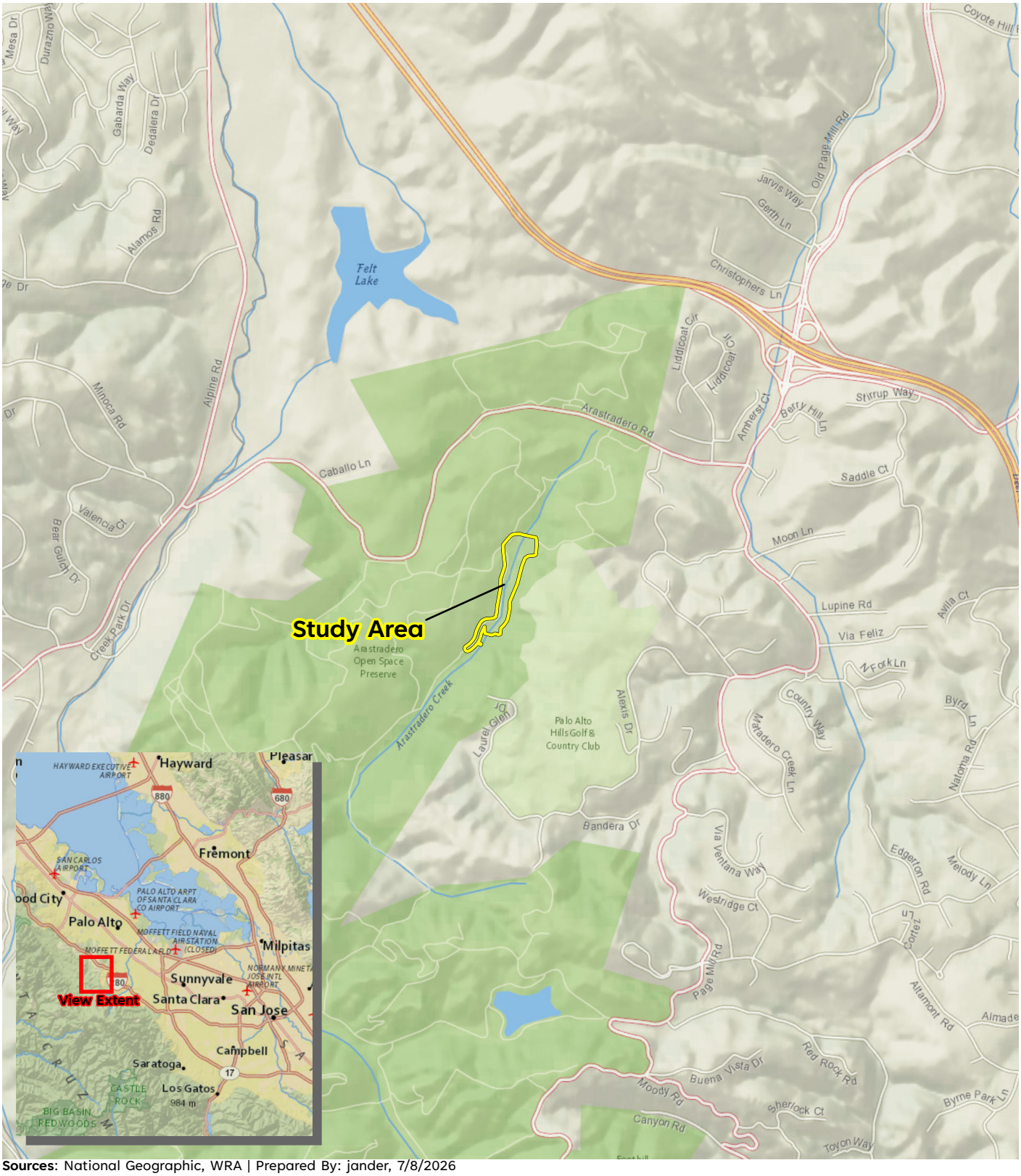
PROJECT #340190
DRAWN BY: BMM, MSD, EWR
CHECKED BY: CCF, CHL
ORIGINAL DRAWING SIZE: 24 X 36

## EROSION CONTROL DETAILS

SHEET 18 OF 19

# EC-1.0

# APPENDIX B. FIGURES

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**Sources**: National Geographic, WRA | Prepared By: jander, 7/8/2026

# Figure 1. Study Area Regional Location Map

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 0.25 0.5 Miles

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Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name: BRTR_Fig2_Aerial Photograph of Study Area

**Sources**: Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

# Figure 2. Study Area Overview

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

wra Environmental Consultants




Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name: BRTR_Fig2_Aerial Photograph of Study Area

**Sources**: Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

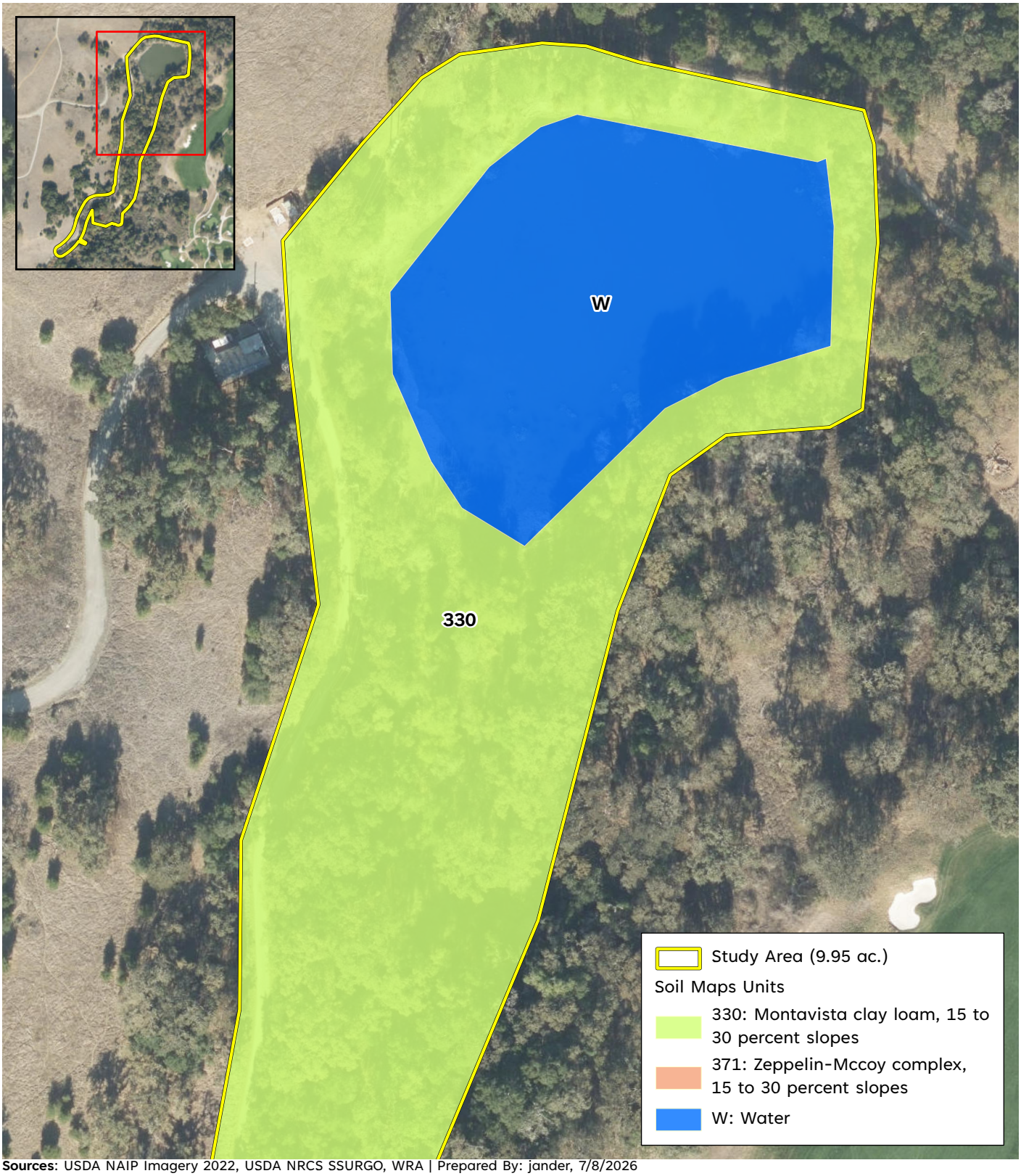
# Figure 2. Study Area Overview

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

wra Environmental Consultants




Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name: BRTR_Fig3_Study Area Soils

**Sources**: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: jander, 7/8/2026

# Figure 3. Soil Types within the Study Area

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

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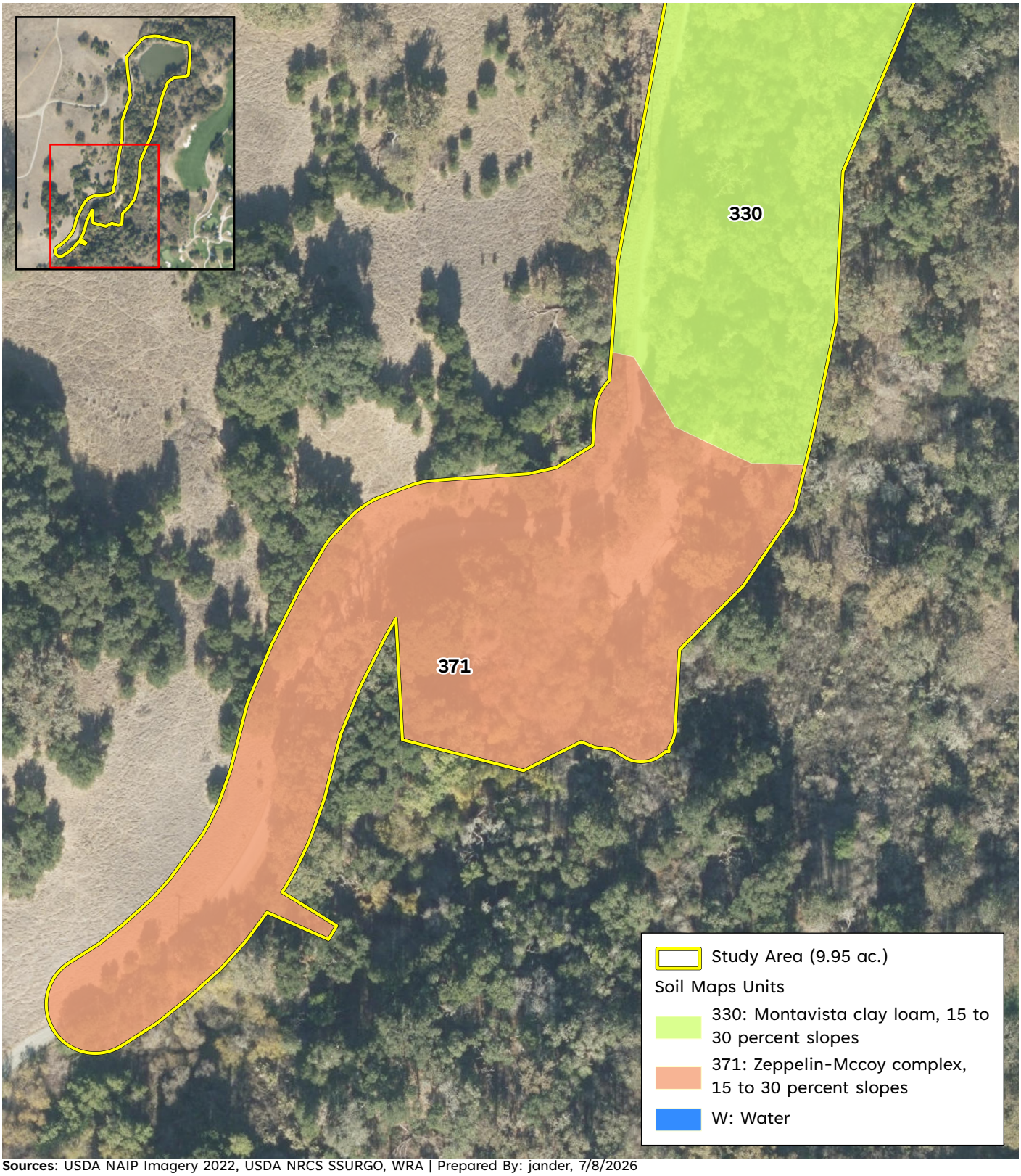


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**Sources**: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: jander, 7/8/2026

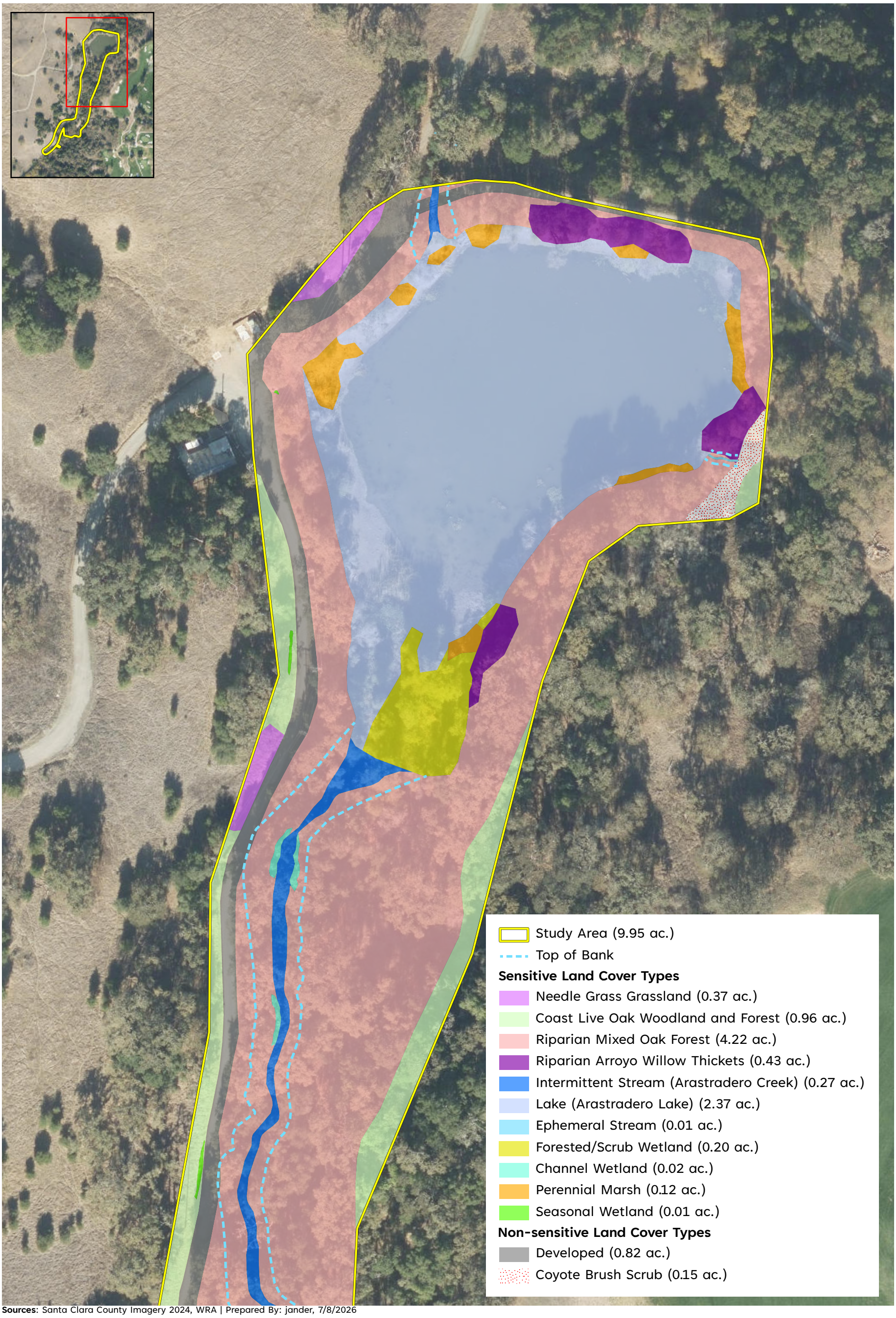
# Figure 3. Soil Types within the Study Area

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

wra Environmental Consultants

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**Sources:** Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

## Figure 4. Land Cover Types in the Study Area

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

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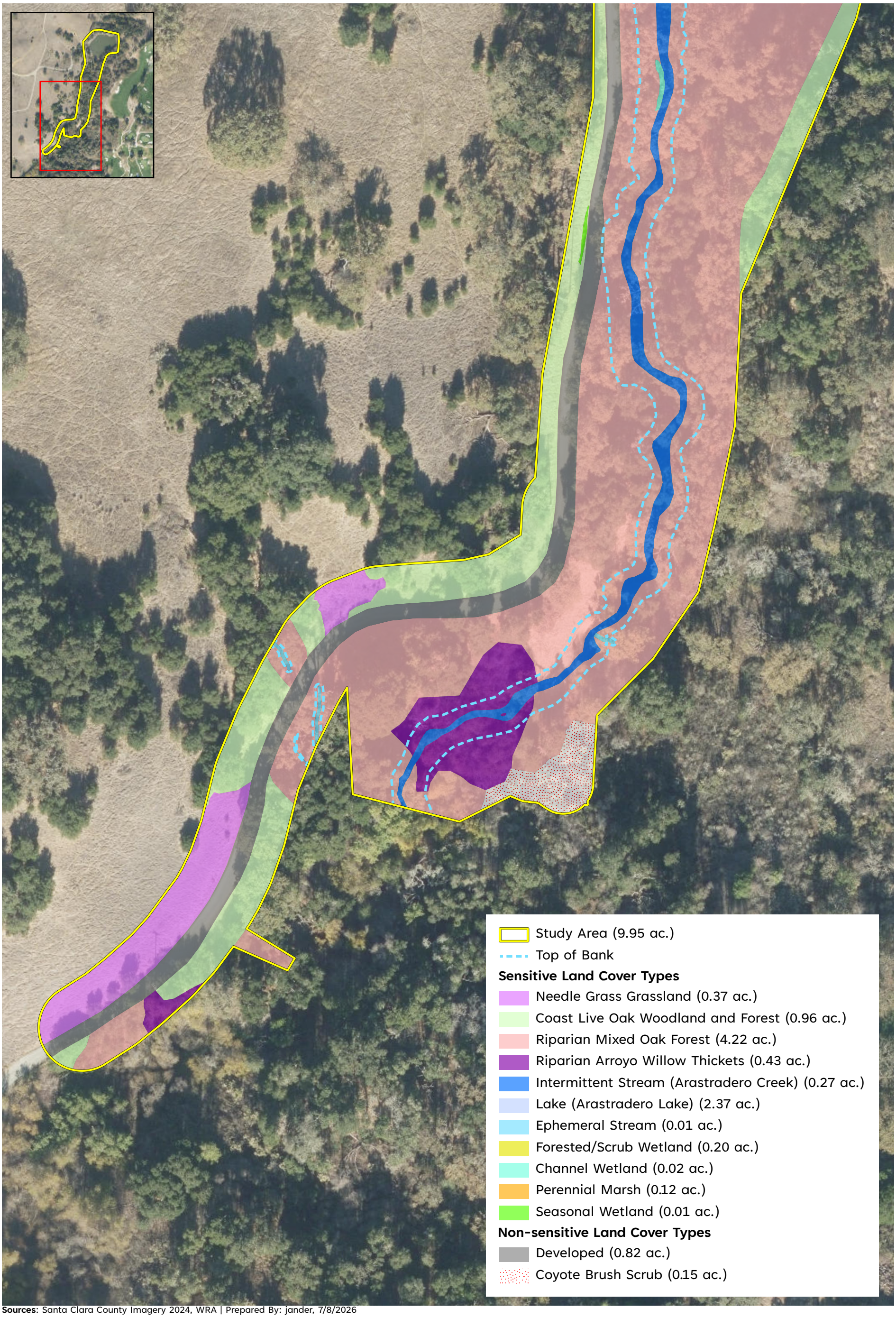


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**Sources:** Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

## Figure 4. Land Cover Types in the Study Area

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

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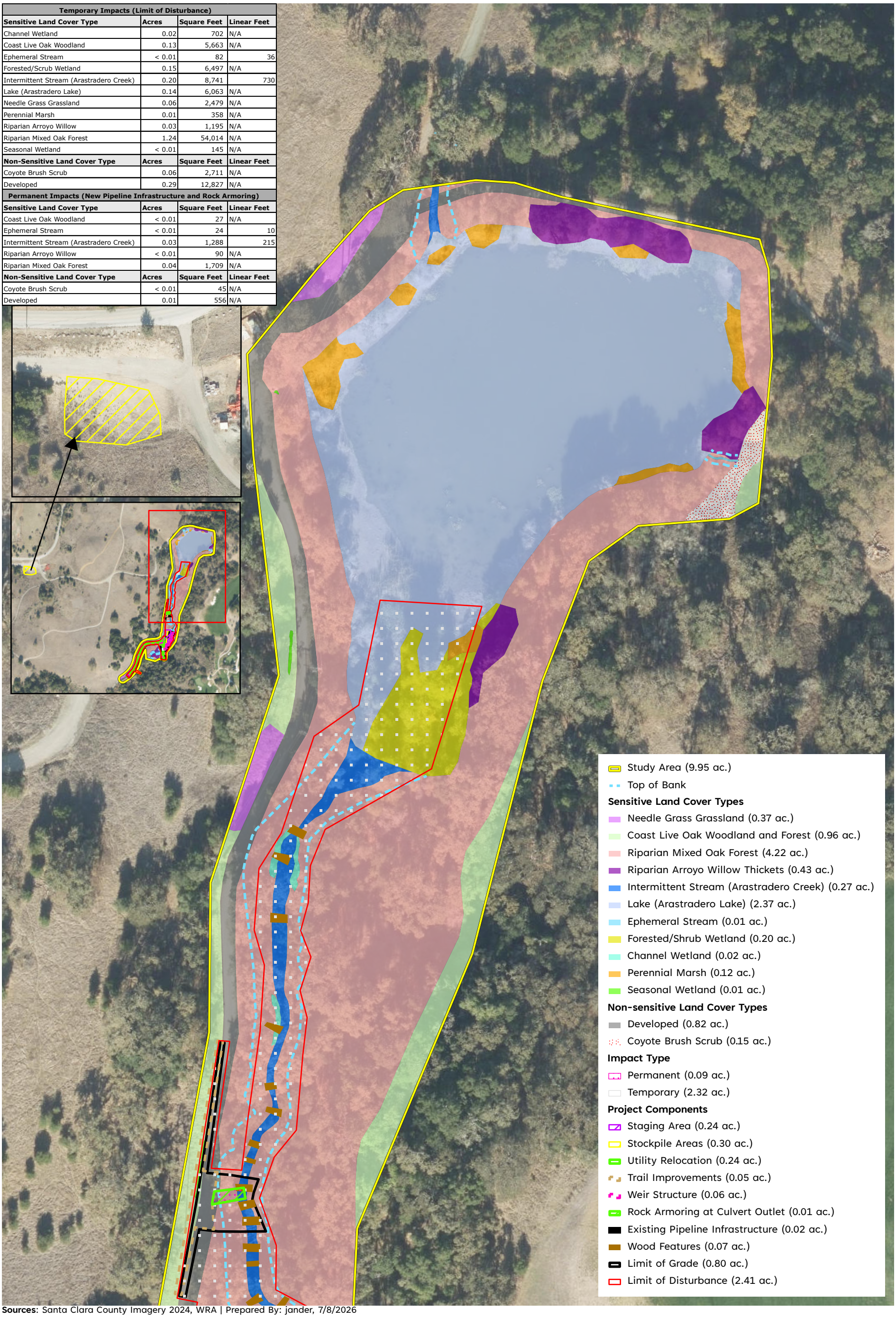
| Temporary Impacts (Limit of Disturbance) | | | |
|---|---|---|---|
| **Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Channel Wetland | 0.02 | 702 | N/A |
| Coast Live Oak Woodland | 0.13 | 5,663 | N/A |
| Ephemeral Stream | < 0.01 | 82 | 36 |
| Forested/Scrub Wetland | 0.15 | 6,497 | N/A |
| Intermittent Stream (Arastradero Creek) | 0.20 | 8,741 | 730 |
| Lake (Arastradero Lake) | 0.14 | 6,063 | N/A |
| Needle Grass Grassland | 0.06 | 2,479 | N/A |
| Perennial Marsh | 0.01 | 358 | N/A |
| Riparian Arroyo Willow | 0.03 | 1,195 | N/A |
| Riparian Mixed Oak Forest | 1.24 | 54,014 | N/A |
| Seasonal Wetland | < 0.01 | 145 | N/A |
| **Non-Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Coyote Brush Scrub | 0.06 | 2,711 | N/A |
| Developed | 0.29 | 12,827 | N/A |
| **Permanent Impacts (New Pipeline Infrastructure and Rock Armoring)** | | | |
| **Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Coast Live Oak Woodland | < 0.01 | 27 | N/A |
| Ephemeral Stream | < 0.01 | 24 | 10 |
| Intermittent Stream (Arastradero Creek) | 0.03 | 1,288 | 215 |
| Riparian Arroyo Willow | < 0.01 | 90 | N/A |
| Riparian Mixed Oak Forest | 0.04 | 1,709 | N/A |
| **Non-Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Coyote Brush Scrub | < 0.01 | 45 | N/A |
| Developed | 0.01 | 556 | N/A |




**Sources**: Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

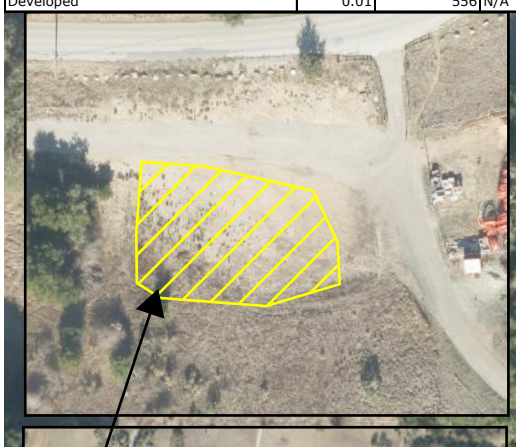
## Figure 5. Project Impacts

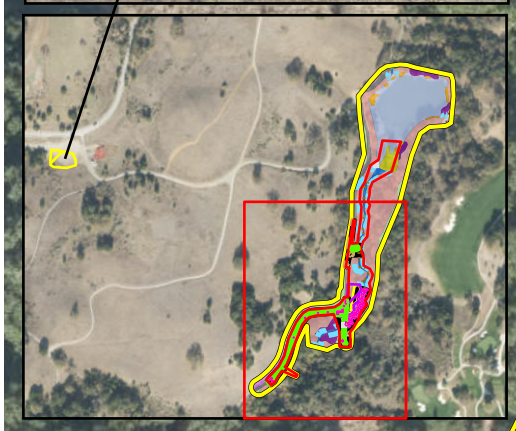
Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet N

wra Environmental Consultants

| Temporary Impacts (Limit of Disturbance) | | | |
|---|---|---|---|
| **Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Channel Wetland | 0.02 | 702 | N/A |
| Coast Live Oak Woodland | 0.13 | 5,663 | N/A |
| Ephemeral Stream | < 0.01 | 82 | 36 |
| Forested/Scrub Wetland | 0.15 | 6,497 | N/A |
| Intermittent Stream (Arastradero Creek) | 0.20 | 8,741 | 730 |
| Lake (Arastradero Lake) | 0.14 | 6,063 | N/A |
| Needle Grass Grassland | 0.06 | 2,479 | N/A |
| Perennial Marsh | 0.01 | 358 | N/A |
| Riparian Arroyo Willow | 0.03 | 1,195 | N/A |
| Riparian Mixed Oak Forest | 1.24 | 54,014 | N/A |
| Seasonal Wetland | < 0.01 | 145 | N/A |
| **Non-Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Coyote Brush Scrub | 0.06 | 2,711 | N/A |
| Developed | 0.29 | 12,827 | N/A |
| **Permanent Impacts (New Pipeline Infrastructure and Rock Armoring)** | | | |
| **Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Coast Live Oak Woodland | < 0.01 | 27 | N/A |
| Ephemeral Stream | < 0.01 | 24 | 10 |
| Intermittent Stream (Arastradero Creek) | 0.03 | 1,288 | 215 |
| Riparian Arroyo Willow | < 0.01 | 90 | N/A |
| Riparian Mixed Oak Forest | 0.04 | 1,709 | N/A |
| **Non-Sensitive Land Cover Type** | **Acres** | **Square Feet** | **Linear Feet** |
| Coyote Brush Scrub | < 0.01 | 45 | N/A |
| Developed | 0.01 | 556 | N/A |





Study Area (9.95 ac.)
Top of Bank

**Sensitive Land Cover Types**
- Needle Grass Grassland (0.37 ac.)
- Coast Live Oak Woodland and Forest (0.96 ac.)
- Riparian Mixed Oak Forest (4.22 ac.)
- Riparian Arroyo Willow Thickets (0.43 ac.)
- Intermittent Stream (Arastradero Creek) (0.27 ac.)
- Lake (Arastradero Lake) (2.37 ac.)
- Ephemeral Stream (0.01 ac.)
- Forested/Shrub Wetland (0.20 ac.)
- Channel Wetland (0.02 ac.)
- Perennial Marsh (0.12 ac.)
- Seasonal Wetland (0.01 ac.)

**Non-sensitive Land Cover Types**
- Developed (0.82 ac.)
- Coyote Brush Scrub (0.15 ac.)

**Impact Type**
- Permanent (0.09 ac.)
- Temporary (2.32 ac.)

**Project Components**
- Staging Area (0.24 ac.)
- Stockpile Areas (0.30 ac.)
- Utility Relocation (0.24 ac.)
- Trail Improvements (0.05 ac.)
- Weir Structure (0.06 ac.)
- Rock Armoring at Culvert Outlet (0.01 ac.)
- Existing Pipeline Infrastructure (0.02 ac.)
- Wood Features (0.07 ac.)
- Limit of Grade (0.80 ac.)
- Limit of Disturbance (2.41 ac.)

Path: L:\Acad 2000 Files\340000\340190\GIS\ArcMap\340190Base.aprx Layout Name: BRTR_Fig5_Impacts

**Sources:** Santa Clara County Imagery 2024, WRA | Prepared By: jander, 7/8/2026

# Figure 5. Project Impacts

Arastradero Creek Restoration and
Pipeline Relocation Project
Palo Alto, Santa Clara County, California

0 50 100 Feet

N

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# APPENDIX C. SPECIES OBSERVED IN AND AROUND THE STUDY AREA

Appendix C-1. Plant species observed within and around the Study Area on March 15, April 9, and November 10, 2025.

| SCIENTIFIC NAME | COMMON NAME | ORIGIN | FORM | RARITY STATUS[1] | CAL-IPC STATUS[2] | WETLAND STATUS[3] |
|---|---|---|---|---|---|---|
| ***Achillea millefolium*** | Yarrow | native | perennial herb | - | - | FACU |
| ***Aesculus californica*** | Buckeye | native | tree | - | - | - |
| ***Aira caryophyllea*** | Silvery hairgrass | non-native | annual grass | - | - | FACU |
| ***Aquilegia formosa*** | Columbine | native | perennial herb | - | - | FAC |
| ***Artemisia douglasiana*** | California mugwort | native | perennial herb | - | - | FAC |
| ***Avena* sp.** | Oat | non-native (moderate) | annual grass | - | Moderate | - |
| ***Baccharis pilularis*** | Coyote brush | native | shrub | - | - | - |
| ***Barbarea orthoceras*** | Winter cress | native | perennial herb | - | - | FACW |
| ***Bellardia trixago*** | Mediterranean lineseed | non-native (invasive) | annual herb | - | Limited | - |
| ***Brassica nigra*** | Black mustard | non-native (invasive) | annual herb | - | Moderate | - |
| ***Bromus diandrus*** | Ripgut brome | non-native (invasive) | annual grass | - | Moderate | - |
| ***Bromus hordeaceus*** | Soft chess | non-native (invasive) | annual grass | - | Limited | FACU |
| ***Calystegia* sp.** | False bindweed | native | perennial herb | - | - | - |
| ***Capsella bursa-pastoris*** | Shepherd's purse | non-native | annual herb | - | - | FACU |
| ***Cardamine hirsuta*** | Hairy bitter cress | non-native | annual herb | - | - | FACU |
| ***Carduus pycnocephalus* ssp. *pycnocephalus*** | Italian thistle | non-native (invasive) | annual herb | - | Moderate | - |
| ***Centaurea solstitialis*** | Yellow starthistle | non-native (invasive) | annual herb | - | High | - |
| ***Chlorogalum pomeridianum*** | Amole | native | perennial herb | - | - | - |

| SCIENTIFIC NAME | COMMON NAME | ORIGIN | FORM | RARITY STATUS[1] | CAL-IPC STATUS[2] | WETLAND STATUS[3] |
|---|---|---|---|---|---|---|
| ***Cirsium vulgare*** | Bullthistle | non-native (invasive) | perennial herb | - | Moderate | FACU |
| ***Claytonia perfoliata*** | Miner's lettuce | native | annual herb | - | - | FAC |
| ***Clinopodium douglasii*** | Yerba buena | native | perennial herb | - | - | FACU |
| ***Conium maculatum*** | Poison hemlock | non-native (invasive) | perennial herb | - | Moderate | FACW |
| ***Cornus sericea*** | American dogwood | native | shrub | - | - | FACW |
| ***Cynosurus echinatus*** | Dogtail grass | non-native (invasive) | annual grass | - | Moderate | - |
| ***Cyperus eragrostis*** | Tall cyperus | native | perennial grasslike herb | - | - | FACW |
| ***Diplacus aurantiacus*** | Sticky monkeyflower | native | shrub | - | - | FACU |
| ***Dipsacus* sp.** | Teasel | non-native (invasive) | annual herb | - | Moderate | - |
| ***Dryopteris arguta*** | Wood fern | native | fern | - | - | - |
| ***Elymus glaucus*** | Blue wildrye | native | perennial grass | - | - | FACU |
| ***Elymus triticoides*** | Beardless wild rye | native | perennial grass | - | - | FAC |
| ***Epilobium brachycarpum*** | Panicled willow herb | native | annual herb | - | - | FAC |
| ***Erodium botrys*** | Big heron bill | non-native | annual herb | - | - | FACU |
| ***Erodium cicutarium*** | Red stemmed filaree | non-native (invasive) | annual herb | - | Limited | - |
| ***Festuca myuros*** | Rattail sixweeks grass | non-native (invasive) | annual grass | - | Moderate | FACU |
| ***Festuca perennis*** | Italian rye grass | non-native (invasive) | annual, perennial grass | - | Moderate | FAC |
| ***Frangula californica*** | California coffeeberry | native | shrub | - | - | - |

| SCIENTIFIC NAME | COMMON NAME | ORIGIN | FORM | RARITY STATUS[1] | CAL-IPC STATUS[2] | WETLAND STATUS[3] |
|---|---|---|---|---|---|---|
| ***Fumaria* sp.** | Fumitory | non-native | annual, perennial herb | - | - | - |
| ***Galium aparine*** | Cleavers | native | annual herb | - | - | FACU |
| ***Genista monspessulana*** | French broom | non-native (invasive) | shrub | - | High | - |
| ***Geranium dissectum*** | Cutleaf geranium | non-native (invasive) | annual herb | - | Limited | - |
| ***Geranium purpureum*** | Little robin | non-native (invasive) | annual, biennial herb | - | Limited | - |
| ***Hedera helix*** | English ivy | non-native (invasive) | vine, shrub | - | High | FACU |
| ***Helenium puberulum*** | Sneezeweed | native | perennial herb | - | - | FACW |
| ***Heracleum maximum*** | Common cowparsnip | native | perennial herb | - | - | FACW |
| ***Heteromeles arbutifolia*** | Toyon | native | shrub | - | - | - |
| ***Hirschfeldia incana*** | Short-podded mustard | non-native (invasive) | perennial herb | - | Moderate | - |
| ***Hordeum murinum*** | Foxtail barley | non-native (invasive) | annual grass | - | Moderate | FACU |
| ***Juncus patens*** | Common rush | native | perennial grasslike herb | - | - | FACW |
| ***Lonicera hispidula*** | Pink honeysuckle | native | vine, shrub | - | - | FACU |
| ***Lupinus bicolor*** | Miniature lupine | native | annual, perennial herb | - | - | - |
| ***Lupinus succulentus*** | Arroyo lupine | native | annual herb | - | - | - |
| ***Lysimachia arvensis*** | Scarlet pimpernel | non-native | annual herb | - | - | FAC |
| ***Marah fabacea*** | California man-root | native | perennial herb, vine | - | - | - |
| ***Melilotus* sp.** | Sweetclover | non-native | - | - | - | - |
| ***Mentha* sp.** | Mint | - | - | - | - | - |

| SCIENTIFIC NAME | COMMON NAME | ORIGIN | FORM | RARITY STATUS[1] | CAL-IPC STATUS[2] | WETLAND STATUS[3] |
|---|---|---|---|---|---|---|
| ***Oemleria cerasiformis*** | Oso berry | native | shrub | - | - | FACU |
| ***Pedicularis* sp.** | Lousewort | native | perennial herb | - | - | - |
| ***Pentagramma triangularis*** | Gold back fern | native | fern | - | - | - |
| ***Phalaris aquatica*** | Harding grass | non-native (invasive) | perennial grass | - | Moderate | FACU |
| ***Plantago lanceolata*** | Ribwort | non-native (invasive) | perennial herb | - | Limited | FAC |
| ***Polystichum munitum*** | Western sword fern | native | fern | - | - | FACU |
| ***Prunus cerasifera*** | Cherry plum | non-native (invasive) | tree | - | Limited | - |
| ***Prunus ilicifolia*** | Holly leaf cherry | native | tree, shrub | - | - | - |
| ***Quercus agrifolia*** | Coast live oak | native | tree | - | - | - |
| ***Quercus douglasii*** | Blue oak | native | tree | - | - | - |
| ***Quercus kelloggii*** | California black oak | native | tree | - | - | - |
| ***Quercus lobata*** | Valley oak | native | tree | - | - | FACU |
| ***Ranunculus californicus*** | Common buttercup | native | perennial herb | - | - | FACU |
| ***Rhamnus crocea*** | Redberry | native | shrub | - | - | - |
| ***Ribes californicum*** | California gooseberry | native | shrub | - | - | - |
| ***Rosa californica*** | California wild rose | native | shrub | - | - | FAC |
| ***Rubus ursinus*** | Pacific blackberry | native | vine, shrub | - | - | FAC |
| ***Rumex conglomeratus*** | Green dock | non-native | perennial herb | - | - | FACW |
| ***Rumex crispus*** | Curly dock | non-native (invasive) | perennial herb | - | Limited | FAC |
| ***Salix laevigata*** | Red willow | native | tree | - | - | FACW |
| ***Salix lasiolepis*** | Arroyo willow | native | tree, shrub | - | - | FACW |

| SCIENTIFIC NAME | COMMON NAME | ORIGIN | FORM | RARITY STATUS[1] | CAL-IPC STATUS[2] | WETLAND STATUS[3] |
|---|---|---|---|---|---|---|
| ***Sambucus mexicana*** | Blue elderberry | native | shrub | - | - | FACU |
| ***Sanicula crassicaulis*** | Pacific sanicle | native | perennial herb | - | - | - |
| ***Scrophularia californica*** | California bee plant | native | perennial herb | - | - | FAC |
| ***Solanum umbelliferum*** | Blue witch | native | shrub | - | - | - |
| ***Sonchus oleraceus*** | Common sow thistle | non-native | annual herb | - | - | UPL |
| ***Stachys bullata*** | Southern hedge nettle | native | perennial herb | - | - | - |
| ***Stellaria media*** | Chickweed | non-native | annual herb | - | - | FACU |
| ***Stipa pulchra*** | Purple needle grass | native | perennial grass | - | - | - |
| ***Symphoricarpos albus* var. *laevigatus*** | Common snowberry | native | shrub | - | - | FACU |
| ***Symphyotrichum chilense*** | Pacific aster | native | perennial herb | - | - | FAC |
| ***Taraxacum officinale*** | Red seeded dandelion | non-native | perennial herb | - | - | FACU |
| ***Torilis arvensis*** | Field hedge parsley | non-native (invasive) | annual herb | - | Moderate | - |
| ***Toxicodendron diversilobum*** | Poison oak | native | vine, shrub | - | - | FACU |
| ***Trifolium hirtum*** | Rose clover | non-native (invasive) | annual herb | - | Limited | - |
| ***Trillium* sp.** | Wakerobin | native | perennial herb | - | - | - |
| ***Typha* sp.** | Cattail | - | perennial herb | - | - | OBL |
| ***Umbellularia californica*** | California bay | native | tree | - | - | FAC |
| ***Urtica dioica*** | Stinging nettle | native | perennial herb | - | - | FAC |
| ***Vicia sativa*** | Spring vetch | non-native | annual herb, vine | - | - | FACU |

| SCIENTIFIC NAME | COMMON NAME | ORIGIN | FORM | RARITY STATUS[1] | CAL-IPC STATUS[2] | WETLAND STATUS[3] |
|---|---|---|---|---|---|---|
| *Vicia villosa* | Hairy vetch | non-native | annual herb, vine | - | - | - |

**Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2025]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2025] or Rare Plant Inventory (CNPS 2025). Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species.**

**[1] California Native Plant Society. 2025. Rare Plant Inventory (online edition, v9.5). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: December 2025.**

- **FE: Federal Endangered**
- **FT: Federal Threatened**
- **SE: State Endangered**
- **ST: State Threatened**
- **SR: State Rare**
- **Rank 1A: Plants presumed extinct in California**
- **Rank 1B: Plants rare, threatened, or endangered in California and elsewhere**
- **Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere**
- **Rank 3: Plants about which we need more information – a review list**
- **Rank 4: Plants of limited distribution – a watch list**

**[2] California Invasive Plant Council. 2025. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: December 2025.**

- **High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.**
- **Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically**
- **Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically**
- **Assessed: Assessed by Cal-IPC and determined to not be an existing current threat**

**[3] U.S. Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Online at: http://wetland-plants.usace.army.mil/**

- **OBL: Almost always found in wetlands**
- **FACW: Usually found in wetlands**
- **FAC: Equally found in wetlands and uplands**
- **FACU: Usually not found in wetlands**
- **UPL: Almost never found in wetlands**
- **NL: Not listed, assumed almost never found in wetlands**
- **NI: No information; not factored during wetland delineation**

**Appendix C-2.** Wildlife species observed within and around the Study Area on May 4, 2023.

| WILDLIFE | | |
|---|---|---|
| **SCIENTIFIC NAME** | **COMMON NAME** | **STATUS[4]** |
| **BIRDS** | | |
| *Melanerpes formicivorus* | Acorn Woodpecker | No Status |
| *Fulica americana* | American Coot | No Status |
| *Corvus brachyrhynchos* | American Crow | No Status |
| *Calypte anna* | Anna's Hummingbird | No Status |
| *Thryomanes bewickii* | Bewick's Wren | No Status |
| *Sayornis nigricans* | Black Phoebe | No Status |
| *Psaltriparus minimus* | Bushtit | No Status |
| *Melozone crissalis* | California Towhee | No Status |
| *Corvus corax* | Common Raven | No Status |
| *Junco hyemalis* | Dark-eyed Junco | No Status |
| *Sturnus vulgaris* | European Starling | No Status |
| *Zonotrichia atricapilla* | Golden-crowned Sparrow | No Status |
| *Ardea alba* | Great Egret | Breeding sites protected by CDFW |
| *Spinus psaltria* | Lesser Goldfinch | No Status |
| *Anas platyrhynchos* | Mallard | No Status |
| *Baeolophus inornatus* | Oak Titmouse | No Status |
| *Podilymbus podiceps* | Pie-billed Grebe | No Status |
| *Buteo lineatus* | Red-shouldered Hawk | No Status |
| *Buteo jamaicensis* | Red-tailed Hawk | No Status |
| *Corthylio calendula* | Ruby-crowned Kinglet | No Status |
| *Melospiza melodia* | Song Sparrow | No Status |
| *Pipilo maculatus* | Spotted Towhee | No Status |
| *Tachycineta bicolor* | Tree Swallow | No Status |
| *Aphelocoma californica* | Western Scrub-Jay | No Status |
| *Sitta carolinensis* | White-breasted Nuthatch | No Status |
| *Zonotrichia leucophrys* | White-crowned sparrow | No Status |
| *Meleagris gallopavo* | Wild Turkey | No Status |

| WILDLIFE | | |
|---|---|---|
| *Setophaga coronata* | Yellow-rumped Warbler | No Status |
| **REPTILES AND AMPHIBIANS** | | |
| *Batrachoceps attenuatus* | California Slender Salamander | No Status |
| *Rana catasbienta* | American bullfrog | No Status |
| *Scleropus occidentalis* | Western fence lizard | No Status |
| *Pseudacris regilla* | Pacific chorus frog | No Status |
| **MAMMALS** | | |
| *Sciurus niger* | Eastern Fox Squirrel | No Status |
| *Thomomys bottae* | Botta's pocket gopher | No Status |
| *Lepus californicus* | Black-tailed jackrabbit | No Status |
| *Odocoileus hemionus columbianus* | Black-tailed deer | No Status |

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

[4]**Status**

**FD:** Federal Delisted
**FE:** Federal Endangered
**FT:** Federal Threatened
**SD:** State Delisted
**SE:** State Endangered
**SSC:** Species of Special Concern
**ST:** State Threatened
**SR:** State Rare
**SFP:** California Fully Protected

# APPENDIX D. SPECIAL-STATUS SPECIES POTENTIAL TABLE

## Appendix D. Potential for Special-Status Plant and Wildlife Species to Occur within the Study Area.

List Compiled from the California Department of Fish and Wildlife Natural Diversity Database (CDFW 2025b), U.S. Fish and Wildlife Service Information for Planning and Consultation Species Lists (USFWS2025), and California Native Plant Society Rare Plant Inventory (CNPS 2025) search of the Palo Alto and surrounding eight U.S. Geological Survey 7.5' quadrangles.

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| **PLANTS** | | | | |
| ***Acanthomintha duttonii*** **San Mateo thorn-mint** | FE, SE, Rank 1B.1 | Chaparral, valley and foothill grassland. Elevation ranges from 165 to 985 feet (50 to 300 meters). Blooms Apr-Jun. | **Unlikely.** Serpentine soils/grassland are present nearby, however no serpentine soils/grassland are present within the Study Area. | No further recommendations. |
| ***Allium peninsulare*** **var.** ***franciscanum*** **Franciscan onion** | Rank 1B.2 | Cismontane woodland, valley and foothill grassland. Elevation ranges from 170 to 1000 feet (52 to 305 meters). Blooms (Apr)May-Jun. | **Moderate potential**. Suitable grassland habitat is present nearby and within the Study Area. The nearest recent documented occurrence of this species is at Jasper Ridge Biological Preserve, approximately 3.6 miles northwest of the Study Area. | See Sections 5 and 7 for a further discussion of this species. |
| ***Amsinckia lunaris*** **Bent-flowered fiddleneck** | Rank 1B.2 | Cismontane woodland, coastal bluff scrub, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Androsace elongata*** **ssp.** ***acuta*** **California androsace** | Rank 4.2 | Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 490 to 4280 feet (150 to 1305 meters). Blooms Mar-Jun. | **Unlikely.** Documented occurrences of this species in the vicinity of the Study Area are historic and presumed extirpated. | No further recommendations. |
| ***Arctostaphylos andersonii*** **Anderson's manzanita** | Rank 1B.2 | Broadleafed upland forest, chaparral, north coast coniferous forest. Elevation ranges from 195 to 2495 feet (60 to 760 meters). Blooms Nov-May. | **Unlikely.** While historic occurrences of this species have been observed along the coastal ranges west of Study Area, the Study Area does not contain suitable redwood forest habitat. | No further recommendations. |
| ***Arctostaphylos regismontana*** **Kings Mountain manzanita** | Rank 1B.2 | Broadleafed upland forest, chaparral, north coast coniferous forest. Elevation ranges from 1000 to 2395 feet (305 to 730 meters). Blooms Dec-Apr. | **Unlikely.** The Study Area does not contain suitable soils to support this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Astragalus pycnostachyus* var. *pycnostachyus*** **Coastal marsh milk-vetch** | Rank 1B.2 | Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Elevation ranges from 0 to 180 feet (0 to 55 meters). Blooms (Apr-May)Jun-Oct. | **No potential**. The Study Area does not contain suitable coastal habitat for this species. | No further recommendations. |
| ***Astragalus tener* var. *tener*** **Alkali milk-vetch** | Rank 1B.2 | Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 5 to 195 feet (1 to 60 meters). Blooms Mar-Jun. | **No potential.** The Study Area does not contain suitable habitat for this species. | No further recommendations. |
| ***Calandrinia breweri*** **Brewer's calandrinia** | Rank 4.2 | Chaparral, coastal scrub. Elevation ranges from 35 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar-Jun. | **Unlikely.** Sandy soils are not present within the Study Area. | No further recommendations. |
| ***Calochortus umbellatus*** **Oakland star-tulip** | Rank 4.2 | Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 330 to 2295 feet (100 to 700 meters). Blooms Mar-May. | **Unlikely.** The Study Area is outside of the documented range of this species. | No further recommendations. |
| ***Calochortus uniflorus*** **Pink star-tulip** | Rank 4.2 | Coastal prairie, coastal scrub, meadows and seeps, north coast coniferous forest. Elevation ranges from 35 to 3510 feet (10 to 1070 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area is outside of the documented range of this species. | No further recommendations. |
| ***Castilleja ambigua* var. *ambigua*** **Johnny-nip** | Rank 4.2 | Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools (margins). Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug. | **No potential.** The Study Area does not contain suitable coastal habitat for this species. | No further recommendations. |
| ***Centromadia parryi* ssp. *congdonii*** **Congdon's tarplant** | Rank 1B.1 | Valley and foothill grassland (alkaline). Elevation ranges from 0 to 755 feet (0 to 230 meters). Blooms (Apr)May-Oct(Nov). | **No potential.** The Study Area does not contain suitable habitat for this species. | No further recommendations. |
| ***Chloropyron maritimum* ssp. *palustre*** **Point Reyes salty bird's-beak** | Rank 1B.2 | Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct. | **No potential.** The Study Area does not contain suitable habitat for this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Cirsium fontinale* var. *fontinale*** **Fountain thistle** | FE, SE, Rank 1B.1 | Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland. Elevation ranges from 150 to 575 feet (45 to 175 meters). Blooms (Apr)May-Oct. | **Unlikely.** No mesic serpentine habitat present within the Study Area. | No further recommendations. |
| ***Cirsium praeteriens*** **Lost thistle** | Rank 1A | Presumed extinct, habitat unknown. Elevation ranges from 0 to 328 feet (0 to 100 meters). Blooms Jun – Jul. | **No potential.** This species is presumed to be extirpated from the region. | No further recommendations. |
| ***Clarkia breweri*** **Brewer's clarkia** | Rank 4.2 | Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 705 to 3660 feet (215 to 1115 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area is outside of the documented range of this species. | No further recommendations. |
| ***Clarkia concinna* ssp. *automixa*** **Santa Clara red ribbons** | Rank 4.3 | Chaparral, cismontane woodland. Elevation ranges from 295 to 4920 feet (90 to 1500 meters). Blooms (Apr)May-Jun(Jul). | **Moderate Potential.** Suitable chaparral and woodland habitat are present within the Study Area. A recent occurrence of this species is documented in Foothills Open Space Preserve, approximately 1.8 miles south of the Study Area (CCH2 2025). | See Sections 5 and 7 for a further discussion of this species. |
| ***Collinsia corymbosa*** **Round-headed collinsia** | Rank 1B.2 | Coastal dunes. Elevation ranges from 0 to 65 feet (0 to 20 meters). Blooms Apr-Jun. | **No potential.** No suitable habitat is present within the Study Area. | No further recommendations. |
| ***Collinsia multicolor*** **San Francisco collinsia** | Rank 1B.2 | Closed-cone coniferous forest, coastal scrub. Elevation ranges from 100 to 900 feet (30 to 275 meters). Blooms (Feb)Mar-May. | **Unlikely.** No suitable habitat is present within the Study Area. | No further recommendations. |
| ***Cypripedium fasciculatum*** **Clustered lady's-slipper** | Rank 4.2 | Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 330 to 7990 feet (100 to 2435 meters). Blooms Mar-Aug. | **Unlikely.** No suitable habitat is present within the Study Area. | No further recommendations. |
| ***Cypripedium montanum*** **Mountain lady's-slipper** | Rank 4.2 | Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 605 to 7300 feet (185 to 2225 meters). Blooms Mar-Aug. | **Unlikely.** The Study Area does not contain suitable dry, undisturbed slopes with Douglas fir to support this species, which typically occurs at higher elevations. | No further recommendations. |
| ***Deinandra paniculata*** **Paniculate tarplant** | Rank 4.2 | Coastal scrub, valley and foothill grassland, vernal pools. Elevation ranges from 80 to 3085 feet (25 to 940 meters). Blooms (Mar)Apr-Nov. | **Unlikely.** This species is known from a single historical observation within the SF Bay Area. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Dirca occidentalis*** **Western leatherwood** | Rank 1B.2 | Broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr). | **High potential.** Suitable brushy slope habitat is present within the Study Area. This species has been documented and there are multiple occurrences of this species documented within 2 miles of the Study Area, in the Foothills Nature Preserve (CDFW 2025b). | See Sections 5 and 7 for a further discussion of this species. |
| ***Elymus californicus*** **California bottle-brush grass** | Rank 4.3 | Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug(Nov). | **Moderate potential.** The Study Area contains suitable riparian woodland habitat to support this species, which has been documented in La Honda Creek Open Space Preserve, approximately 5.6 miles southwest of the Study Area (CCH2 2025). | See Sections 5 and 7 for a further discussion of this species. |
| ***Eriophyllum latilobum*** **San Mateo woolly sunflower** | FE, SE, Rank 1B.1 | Cismontane woodland (often roadsides), coastal scrub, lower montane coniferous forest. Elevation ranges from 150 to 1085 feet (45 to 330 meters). Blooms May-Jun. | **Unlikely.** The Study Area does not contain serpentine soils to support this species. | No further recommendations. |
| ***Eryngium aristulatum* var. *hooveri*** **Hoover's button-celery** | Rank 1B.1 | Vernal pools. Elevation ranges from 10 to 150 feet (3 to 45 meters). Blooms (Jun)Jul(Aug). | **No potential.** The Study Area does not contain suitable habitat for this species. | No further recommendations. |
| ***Eryngium jepsonii*** **Jepson's coyote-thistle** | Rank 1B.2 | Valley and foothill grassland, vernal pools. Elevation ranges from 10 to 985 feet (3 to 300 meters). Blooms Apr-Aug. | **Unlikely.** Seasonal wetland habitat within the Study Area is highly disturbed and unlikely to support this species. | See Sections 5 and 7 for a further discussion of this species. |
| ***Erysimum franciscanum*** **San Francisco wallflower** | Rank 4.2 | Chaparral, coastal dunes, coastal scrub, valley and foothill grassland. Elevation ranges from 0 to 1805 feet (0 to 550 meters). Blooms Mar-Jun. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Extriplex joaquinana*** **San Joaquin spearscale** | Rank 1B.2 | Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 5 to 2740 feet (1 to 835 meters). Blooms Apr-Oct. | **Unlikely**. The Study Area does not contain suitable soils to support this species. | No further recommendations. |
| ***Fissidens pauperculus*** **Minute pocket moss** | Rank 1B.2 | North coast coniferous forest (damp coastal soil). Elevation ranges from 35 to 3360 feet (10 to 1024 meters). | **No potential.** The Study Area does not contain suitable habitat to support this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Fritillaria biflora* var. *ineziana*** **Hillsborough chocolate lily** | Rank 1B.1 | Cismontane woodland, valley and foothill grassland. Elevation ranges from 490 to 490 feet (150 to 150 meters). Blooms Mar-Apr. | **Unlikely.** The Study Area does not contain serpentine soils to support this species. | No further recommendations. |
| ***Fritillaria liliacea*** **Fragrant fritillary** | Rank 1B.2 | Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 10 to 1345 feet (3 to 410 meters). Blooms Feb-Apr. | **Moderate potential.** The Study Area contains suitable habitat to support this species. While this species is often found on serpentine, it is not a strict serpentine endemic. The nearest recent documented occurrence of this species is at Edgewood Park, approximately 6.5 miles northwest of the Study Area. | See Sections 5 and 7 for a further discussion of this species. |
| ***Hesperevax sparsiflora* var. *brevifolia*** **Short-leaved evax** | Rank 1B.2 | Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 705 feet (0 to 215 meters). Blooms Mar-Jun. | **No potential.** The Study Area does not contain suitable habitat to support this species. | No further recommendations. |
| ***Hesperolinon congestum*** **Marin western flax** | FT, ST, Rank 1B.1 | Chaparral, valley and foothill grassland. Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul. | **Unlikely.** The Study Area does not contain serpentine soils to support this species. | See Sections 5 and 7 for a further discussion of this species. |
| ***Hoita strobilina*** **Loma Prieta hoita** | Rank 1B.1 | Chaparral, cismontane woodland, riparian woodland. Elevation ranges from 100 to 2820 feet (30 to 860 meters). Blooms May-Jul(Aug-Oct). | **Unlikely.** The Study Area is outside the documented range of this species, and does not contain serpentine soils. | No further recommendations. |
| ***Hosackia gracilis*** **Harlequin lotus** | Rank 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. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Iris longipetala*** **Coast iris** | Rank 4.2 | Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May(Jun). | **No potential**. The Study Area does not contain suitable habitat for this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Lasthenia conjugens*** **Contra Costa goldfields** | FE, Rank 1B.1 | Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun. | **No potential.** The Study Area does not contain suitable habitat for this species, and there are no documented occurrences on the San Francisco Peninsula. | No further recommendations. |
| ***Legenere limosa*** **Legenere** | Rank 1B.1 | Vernal pools. Elevation ranges from 5 to 2885 feet (1 to 880 meters). Blooms Apr-Jun. | **No potential.** No suitable habitat within the Study Area. | No further recommendations. |
| ***Leptosiphon ambiguus*** **Serpentine leptosiphon** | Rank 4.2 | Cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 395 to 3710 feet (120 to 1130 meters). Blooms Mar-Jun. | **Unlikely.** The Study Area does not contain serpentine soils. | No further recommendations. |
| ***Leptosiphon aureus*** **Bristly leptosiphon** | Rank 4.2 | Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr-Jul. | **Unlikely**. The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Leptosiphon grandiflorus*** **Large-flowered leptosiphon** | Rank 4.2 | Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug. | **Unlikely.** The Study Area does not contain sandy soils to support this species. | No further recommendations. |
| ***Leptosiphon latisectus*** **Broad-lobed leptosiphon** | Rank 4.3 | Broadleafed upland forest, cismontane woodland. Elevation ranges from 560 to 4920 feet (170 to 1500 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Lessingia arachnoidea*** **Crystal Springs lessingia** | Rank 1B.2 | Cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 195 to 655 feet (60 to 200 meters). Blooms Jul-Oct. | **Unlikely**. The Study Area is outside the documented range of this species and does not contain serpentine soils. | No further recommendations. |
| ***Lessingia hololeuca*** **Woolly-headed lessingia** | Rank 3 | Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct. | **Moderate Potential.** Suitable broadleafed upland forest and grassland habitat is present within the Study Area. This species has been documented in Woodridge, approximately 2.4 miles northwest of the Study Area (CCH 2025). | See Sections 5 and 7 for a further discussion of this species. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Lessingia tenuis*** **Spring lessingia** | Rank 4.3 | Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 985 to 7055 feet (300 to 2150 meters). Blooms May-Jul. | **Unlikely.** The Study Area is well below the documented elevational range for this species. | No further recommendations. |
| ***Malacothamnus arcuatus*** **var. *arcuatus*** **Arcuate bushmallow** | Rank 1B.2 | Chaparral, cismontane woodland. Elevation ranges from 50 to 1165 feet (15 to 355 meters). Blooms Apr-Sep. | **High Potential.** The Study Area contains suitable chaparral and woodland habitat to support this species, which has been documented 0.13 mile upstream (south) of the Study Area (CDFW 2025b). | See Sections 5 and 7 for a further discussion of this species. |
| ***Monolopia gracilens*** **Woodland woollythreads** | Rank 1B.2 | Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland. Elevation ranges from 330 to 3935 feet (100 to 1200 meters). Blooms (Feb)Mar-Jul. | **High Potential.** The Study Area contains suitable openings in woodland and chaparral, and grassland habitat to support this species, which has been documented at multiple locations within the Palo Alto Foothills Park within 2 miles of the Study Area (CDFW 2025b). | See Sections 5 and 7 for a further discussion of this species. |
| ***Pedicularis dudleyi*** **Dudley's lousewort** | SR, Rank 1B.2 | Chaparral (maritime), cismontane woodland, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 195 to 2955 feet (60 to 900 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area does not contain deep shady woods or old growth redwood forest habitat to support this species. | No further recommendations. |
| ***Pentachaeta bellidiflora*** **White-rayed pentachaeta** | FE, SE, Rank 1B.1 | Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 115 to 2035 feet (35 to 620 meters). Blooms Mar-May. | **Moderate potential.** Suitable grassland habitat is present to support this species, which is known from Edgewood Park, approximately 7.5 miles north of the Study Area (CDFW 2025b). While this species often occurs on serpentine, it is not a strict serpentine endemic. | See Sections 5 and 7 for a further discussion of this species. |
| ***Perideridia gairdneri*** **ssp. *gairdneri*** **Gairdner's yampah** | Rank 4.2 | Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 2000 feet (0 to 610 meters). Blooms Jun-Oct. | **Unlikely.** There are no documented occurrences of this species within the vicinity of the Study Area. | No further recommendations. |
| ***Piperia candida*** **White-flowered rein orchid** | Rank 1B.2 | Broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 100 to 4300 feet (30 to 1310 meters). Blooms (Mar-Apr)May-Sep. | **Unlikely.** The Study Area is outside of the documented range of this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Piperia michaelii*** **Michael's rein orchid** | Rank 4.2 | Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Elevation ranges from 10 to 3000 feet (3 to 915 meters). Blooms Apr-Aug. | **Unlikely.** The Study Area does not contain dry mudstone or humus soils to support this species. | No further recommendations. |
| ***Plagiobothrys chorisianus*** **var. *chorisianus*** **Choris' popcornflower** | Rank 1B.2 | Chaparral, coastal prairie, coastal scrub. Elevation ranges from 10 to 525 feet (3 to 160 meters). Blooms Mar-Jun. | **Unlikely**. The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Plagiobothrys chorisianus*** **var. *hickmanii*** **Hickman's popcornflower** | Rank 4.2 | Chaparral, closed-cone coniferous forest, coastal scrub, marshes and swamps, vernal pools. Elevation ranges from 50 to 1280 feet (15 to 390 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Plagiobothrys glaber*** **Hairless popcornflower** | Rank 1A | Marshes and swamps (coastal salt), meadows and seeps (alkaline). Elevation ranges from 50 to 590 feet (15 to 180 meters). Blooms Mar-May. | **No potential.** This species is thought to be extirpated from the region. | No further recommendations. |
| ***Ranunculus lobbii*** **Lobb's aquatic buttercup** | Rank 4.2 | Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May. | **Moderate potential.** The Study Area contains suitable wetland habitat to support this species, which is documented to occur in the Windy Hill Open Space Preserve, approximately 2.5 miles southwest of the Study Area (CCH2 2025). | See Sections 5 and 7 for a further discussion of this species. |
| ***Sagittaria sanfordii*** **Sanford's arrowhead** | Rank 1B.2 | Marshes and swamps (shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov). | **Moderate potential.** Arastradero Lake within the Study Area contains suitable marsh habitat to support this species, which has been documented in Jasper Ridge Open Space Preserve, approximately 2.1 miles northwest of the Study Area (CDFW 2025b). | See Sections 5 and 7 for a further discussion of this species. |
| ***Sanicula hoffmannii*** **Hoffmann's sanicle** | Rank 4.3 | Broadleafed upland forest, chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Elevation ranges from 100 to 985 feet (30 to 300 meters). Blooms Mar-May. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Senecio aphanactis*** **Chaparral ragwort** | Rank 1B.2 | Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 50 to 2625 feet (15 to 800 meters). Blooms Jan-Apr(May). | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Silene verecunda* ssp. *verecunda*** **San Francisco campion** | Rank 1B.2 | Chaparral, coastal bluff scrub, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 100 to 2115 feet (30 to 645 meters). Blooms (Feb)Mar-Jul(Aug). | **Unlikely.** The only documented occurrence of this species within the Study Area is presumed to be extirpated. | No further recommendations. |
| ***Spergularia macrotheca* var. *longistyla*** **Long-styled sand-spurrey** | Rank 1B.2 | Marshes and swamps, meadows and seeps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May. | **No potential.** The Study Area does not contain suitable habitat. | No further recommendations. |
| ***Stuckenia filiformis* ssp. *alpina*** **Northern slender pondweed** | Rank 2B.2 | Marshes and swamps (shallow freshwater). Elevation ranges from 985 to 7055 feet (300 to 2150 meters). Blooms May-Jul. | **Unlikely.** The Study Area is outside of the documented range of this species, and well below the documented elevational range in which this species is known to occur. | No further recommendations. |
| ***Suaeda californica*** **California seablite** | FE, Rank 1B.1 | Marshes and swamps (coastal salt). Elevation ranges from 0 to 50 feet (0 to 15 meters). Blooms Jul-Oct. | **No potential.** The Study Area does not contain suitable habitat. | No further recommendations. |
| ***Trifolium amoenum*** **Two-fork clover** | FE, Rank 1B.1 | Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun. | **Moderate potential.** Suitable grassland habitat is present within the Study Area, which is not a strict serpentine endemic. This species has been documented along San Francisquito Creek, approximately 3 miles northwest of the Study Area. | See Sections 5 and 7 for a further discussion of this species. |
| ***Trifolium buckwestiorum*** **Santa Cruz clover** | Rank 1B.1 | Broadleafed upland forest, cismontane woodland, coastal prairie. Elevation ranges from 115 to 2000 feet (35 to 610 meters). Blooms Apr-Oct. | **Unlikely.** The Study Area is outside the documented range of this species. | No further recommendations. |
| ***Trifolium hydrophilum*** **Saline clover** | Rank 1B.2 | Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun. | **No potential.** The Study Area does not contain suitable habitat to support this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Triphysaria floribunda*** **San Francisco owl's-clover** | Rank 1B.2 | Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 525 feet (10 to 160 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area is outside the current documented range of this species. | No further recommendations. |
| ***Usnea longissima*** **Methuselah's beard lichen** | Rank 4.2 | Broadleafed upland forest, north coast coniferous forest. Elevation ranges from 165 to 4790 feet (50 to 1460 meters). | **Unlikely.** The Study Area is too inland to support this species. | No further recommendations. |
| **WILDLIFE** | | | | |
| **MAMMALS** | | | | |
| ***Myotis yumanensis*** **Yuma myotis** | WBWG:LM | Lower montane coniferous forest \| Riparian forest \| Riparian woodland \| Upper montane coniferous forest. Optimal habitats are open forests and woodlands with sources of water over which to feed. Known for its ability to survive in urbanized environments. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices. | **Moderate Potential.** The Study Area supports roosting habitat in medium-large trees with dense foliage, and in a footbridge at the outfall of Arastradero Lake. Foraging habitat occurs in and around Arastradero Lake. The closest documented occurrence is located approximately 7.4 miles to the southeast of the Study Area (CDFW 2025b, CNDDB Occ # 36). | See Sections 5 and 7 for a further discussion of this species. |
| ***Antrozous pallidus*** **pallid bat** | SSC, WBWG:H | Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. | **Moderate Potential.** Tree snags and a wooden footbridge offer potential roost sites for this species. Open areas may provide suitable foraging habitat for this species. Multiple historic occurrences are documented within the vicinity of the Study Area. | See Sections 5 and 7 for a further discussion of this species. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Corynorhinus townsendii*** **Townsend's big-eared bat** | SSC, WBWG:H | Associated with a wide variety of habitats from deserts to higher-elevation mixed and coniferous forests. Females form maternity colonies in buildings, caves and mines, and males roost singly or in small groups. Foraging typically occurs at edge habitats near wooded areas, e.g. along streams. | **Low Potential.** The Study Area supports suitable foraging habitat for this species in forest edge habitats and along Arastradero Lake. The Study Area does not contain any large cavities or structures for roosting habitat. The closest documented occurrence is 2.2 miles west of the Study Area (CDFW 2025b, CNDDB Occ # 429). | No Further Recommendations. |
| ***Lasiurus cinereus*** **Hoary bat** | WBWG:M | Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water. | **Moderate Potential.** The Study Area supports roosting habitat in medium-large trees with dense foliage, and foraging habitat in Arastradero Lake and edge habitat. Multiple occurrences are documented in the vicinity of the Study Area, the closest of which is a nonspecific location which may overlap with Study Area (CDFW 2025b, CNDDB Occ # 117). | See Sections 5 and 7 for a further discussion of this species. |
| ***Neotoma fuscipes annectens*** **San Francisco dusky-footed woodrat** | SSC | Chaparral \| Redwood. Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest-building materials. | **Present.** Multiple middens were documented around the Study Area. The Study Area supports suitable forest and understory habitat for this species. The closest documented occurrence is located 1.5 miles to the Northwest (CDFW 2025b, CNDDB Occ # 9). | See Sections 5 and 7 for a further discussion of this species. |
| ***Reithrodontomys raviventris*** **salt-marsh harvest mouse** | FE, SE, SFP | Marsh & swamp \| Wetland. Endemic to the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape. | **No Potential.** The Study Area does not support suitable salt marsh habitat for this species. | No further recommendations. |
| ***Sorex vagrans halicoetes*** **salt-marsh wandering shrew** | SSC | Marsh & swamp \| Wetland. Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among Salicornia. | **No Potential.** The Study Area does not support suitable salt marsh habitat for this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Taxidea taxus*** **American badger** | SSC | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows. | **Moderate Potential.** The Study Area supports suitable forest and grassland habitat for this species. Numerous occurrences have been detected in adjacent open space preserves by a long-term camera trapping study. The closest documented occurrence is located 1.8 miles north (CDFW 2025b, CNDDB Occ # 641). | See Sections 5 and 7 for a further discussion of this species. |
| | | **BIRDS** | | |
| ***Agelaius tricolor*** **Tricolored blackbird** | ST, SSC, BCC | Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. Nesting colony. | **Unlikely.** This species is known to occur in large colonies, predominantly in California's Central Valley. Occurrences in the south San Francisco Bay Area are historical and presumed extirpated. | No further recommendations. |
| ***Ardea alba*** **Great egret** | Rookery Sites Protected by CDFW | (Nesting colony). Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates. | **Present.** Multiple individuals of these species were observed roosting in mature trees around the margin of Arastradero Lake. | See Sections 5 and 7 for a further discussion of this species. |
| ***Ardea herodias*** **Great blue heron** | Rookery Sites Protected by CDFW | (Nesting Colony). Brackish marsh \| Estuary \| Freshwater marsh \| Marsh & swamp \| Riparian forest \| Wetland. Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. | **High Potential.** The Study Area supports suitable rookery habitat in mature trees around the margins of Arastradero lake. Foraging habitat is present around the lake and in Arastradero creek. No individuals of these species were observed during 2025 surveys. | See Sections 5 and 7 for a further discussion of this species. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Asio flammeus*** **Short-eared owl** | SSC, BCC | (Nesting). Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation. | **Unlikely.** The Study Area does not provide suitable marsh or swamp land habitat for nesting or foraging. | No further recommendations. |
| ***Asio otus*** **Long-eared owl** | SSC, BCC | (Nesting). Inhabits riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Requires adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding. | **Moderate Potential.** Riparian habitat in the Study Area along Arastradero Creek provides suitable nesting habitat for this species. Adjacent grassland habitat may provide suitable foraging habitat with abundant small mammal prey. The closest documented occurrence is located 4.6 miles to the south (CDFW 2025b, CNDDB Occ # 37). | See Sections 5 and 7 for a further discussion of this species. |
| ***Athene cunicularia*** **Burrowing owl** | SCE, SSC, BCC | (Burrow sites & some wintering sites). Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. Preys upon insects and small vertebrates. | **Unlikely.** The Study Area does not contain suitable grassland or small mammal burrowing habitat. | No further recommendations. |
| ***Brachyramphus marmoratus*** **Marbled murrelet** | FT, SE | (Nesting). Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes. | **No Potential.** The Study Area does not support suitable old growth redwood nesting or aquatic foraging habitat. | No further recommendations. |
| ***Charadrius nivosus nivosus*** **Western snowy plover** | FT, SSC | (Nesting). Great Basin standing waters \| Sand shore \| Wetland. Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting. | **No Potential.** The Study Area does not support suitable freshwater marsh, wet meadow, or salt marsh habitat. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Circus hudsonius* Northern harrier** | SSC, BCC | (Nesting). Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. | **Unlikely.** The Study Area supports suitable grassland foraging habitat for this species. No suitable marsh edge habitat or flat open grassland is present. This species may occur as an occasional forager in the Study Area, but it is unlikely to nest due to the lack of suitable nesting habitat. The closest occurrence is documented approximately 6.4 miles to the northeast (CDW 2025b, CNDDB Occ # 33). | No further recommendations. |
| ***Coturnicops noveboracensis* Yellow rail** | SSC, BCC | (Nesting). Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic. | **No Potential.** The Study Area does not support suitable freshwater marsh or wet meadow habitat for this species. | No further recommendations. |
| ***Egretta thula* Snowy egret** | Rookery Sites Protected by CDFW | (Nesting colony). Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes. Nesting colony. | **High Potential.** The Study Area supports suitable rookery habitat in mature trees around the margins of Arastradero lake. Foraging habitat is present around the lake and in Arastradero creek. No individuals of these species were observed during 2025 surveys. | See Sections 5 and 7 for a further discussion of this species. |
| ***Elanus leucurus* White-tailed kite** | SFP | (Nesting). Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates. | **Moderate Potential.** Large trees in the Study Area may provide suitable nesting habitat. Though not contained within the Study Area, nearby grassland may provide suitable foraging habitat. The closest documented occurrence is located 7.6 miles to the east (CDFW 2025b, CNDDB Occ # 85). | See Sections 5 and 7 for a further discussion of this species. |
| ***Falco peregrinus anatum* American peregrine falcon** | Federal Delisted, State Delisted | (Nesting). Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site. | **Moderate Potential.** The Study Area supports suitable nesting habitat in open areas near Lake Arastradero. | This species does not have special status to warrant consideration. It is protected under nesting bird protections discussed in Sections 5 and 7. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Geothlypis trichas sinuosa*** **Saltmarsh common yellowthroat** | SSC, BCC | Marsh & swamp. Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting. | **Unlikely.** The Study Area does not support suitable marsh habitat. Emergent freshwater vegetation is present on the margins of Arastradero Lake. | No further recommendations. |
| ***Haliaeetus leucocephalus*** **Bald eagle** | BGEPA, Federal Delisted, SE, SFP | (Nesting and wintering). Occurs in ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live trees with open branches, especially ponderosa pine. Roosts communally in winter. | **Moderate Potential.** Large trees in the Study Area may provide suitable nesting habitat for this species. A nesting pair was documented in a eucalyptus tree in the south side of Felt Lake, approximately 0.5 miles north of the Study Area (CDFW 2025b, CNDDB Occ # 368). | See Sections 5 and 7 for a further discussion of this species. |
| ***Laterallus jamaicensis coturniculus*** **California black rail** | ST, SFP | (Nesting). Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic. | **No Potential.** The Study Area does not support suitable freshwater marsh, wet meadow, or salt marsh habitat. | No further recommendations. |
| ***Melospiza melodia pusillula*** **Alameda song sparrow** | SSC, BCC | Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia. | **No potential.** The Study Area does not contain suitable salt marsh habitat. | No further recommendations. |
| ***Rallus obsoletus obsoletus*** **California Ridgway's rail** | FE, SE, SFP | Year-round resident in tidal marshes of the San Francisco Bay estuary. Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. | **No Potential.** The Study Area does not support suitable salt marsh habitat. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Riparia riparia*** **Bank swallow** | ST | (Nesting). Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co. | **Unlikely.** The Study Area is outside of the breeding range for this species. This species may occur in the Study Area as an occasional visitor. Nesting adults are unlikely to occur in the Study Area. | No further recommendations. |
| ***Rynchops niger*** **Black skimmer** | SSC, BCC | (Nesting colony). Found primarily in southern California; South San Francisco Bay has a small resident population. Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs. | **No Potential.** The Study Area does not support suitable aquatic nesting or bay foraging habitat. | No further recommendations. |
| ***Sternula antillarum browni*** **California least tern** | FE, SE, SFP | (Nesting colony.) Nests along the coast from San Francisco Bay south to northern Baja California. Summer resident along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins. | **No Potential.** The Study Area does not support suitable aquatic nesting or bay foraging habitat. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| **REPTILES & AMPHIBIANS** | | | | |
| ***Actinemys marmorata*** **Northwestern pond turtle** | FPT, SSC | Occurs in areas of the Coast Range from the Oregon-California border down to northern Monterey County, the lower elevation and foothills of the southern Cascades and Sierra Nevada Mountains, and areas within the Sacramento and San Joaquin Valleys. A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying. | **High Potential.** The Study Area supports suitable aquatic breeding and nesting habitat in and around Arastradero Lake. The closest documented occurrence is located approximately 0.8 miles north in Felt Lake (CDFW 2025b, CNDDB Occ # 1624). This occurrence is outside of the known breeding dispersal distance of 0.3mi. The nearby population increases the chance of colonization in Arastradero Lake. No individuals of this species were detected during 2025 surveys. | See Sections 5 and 7 for further discussion of this species. |
| ***Ambystoma californiense*** **pop. 1 California tiger salamander - central California DPS** | FT, ST | Central Valley, from Sacramento and Yolo counties through Coast Range foothills and valleys to San Luis Obispo and Kern counties (Temblor Range); along east side of San Joaquin Valley and Sierra Nevada foothills to northwestern Tulare County. Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding. | **Unlikely.** The Study Area does not provide typical aquatic habitat and upland refugia for this species. It's presence is not ruled out here because of the Study Area's proximity to nearby potentially suitable habitat. Occurrences in the vicinity of the Study Area west of Interstate 280 are presumed extirpated. | No further recommendations. |
| ***Aneides niger*** **Santa Cruz black salamander** | SSC | Mixed deciduous and coniferous woodlands and coastal grasslands in San Mateo, Santa Cruz, and Santa Clara counties. Adults found under rocks, talus, and damp woody debris. | **Moderate Potential.** The Study Area supports suitable moist woodland habitat in the Arastradero Creek riparian corridor. The closest contemporary documented occurrence is located approximately 4.4 miles west of the Study Area (CDFW 2025b, CNDDB Occ # 20). No individuals of this species were observed in 2025. | See Sections 5 and 7 for further discussion of this species. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Dicamptodon ensatus*** **California giant salamander** | SSC | Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year. | **Unlikely.** Arastradero Creek is an intermittent stream, and the surrounding landscape is characterized by mesic Oak Woodland. Therefore, the Study Area does not support suitable perennial stream and wet forest habitat. Numerous occurrences historic occurrences are documented in nearby open space preserves. The closest contemporary occurrence is located in Bear Gulch Creek, 5.5 miles to the northwest (CDFW 2025b, CNDDB Occ # 160). No individuals of this species were observed in 2025. | No further recommendations. |
| ***Rana boylii*** **pop. 4 Foothill yellow- legged frog - central coast DPS** | FT, SE | San Francisco Peninsula and Diablo Range south of San Francisco Bay Estuary, and south through the Santa Cruz and Gabilan Mountains east of the Salinas River in the southern inner Coast Ranges. Partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis. | **Unlikely.** Arastradero Creek provides suitable dispersal and foraging habitat for this species, but it is unlikely to provide sufficient flow in spring to support breeding. The nearest occurrence to the Project Area, is from 1940 and is considered extirpated (CDFW 2025b) and the species is generally considered to be extirpated in this area. | No further recommendations. |
| ***Rana draytonii*** **California red- legged frog** | FT, SSC | Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains. | **High Potential.** The Study Area supports suitable aquatic breeding habitat in Arastradero Lake, and suitable aquatic nonbreeding habitat and upland dispersal habitat in and around Arastradero Creek. The closest documented occurrence is located in Matadero Creek, approximately 1.5 miles northeast of the Study Area (CDFW 2025b, CNDDB Occ # 230). During high flow events, Matadero Creek may function as a dispersal corridor to Arastradero Creek via a culvert under Interstate 280. No individuals of this species were detected during 2025 surveys. | See Sections 5 and 7 for further discussion of this species. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Taricha rivularis*** **Red-bellied newt** | SSC | Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Isolated population of uncertain origin in Santa Clara County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate. | **Unlikely.** Arastradero Creek is an intermittent stream, and the surrounding landscape is characterized by mesic Oak Woodland. Therefore, the Study Area does not support suitable perennial stream and wet forest habitat. The closest documented occurrence is located approximately 5.6 miles to the south (CDFW 2025b, CNDDB Occ # 134). No individuals of this species were observed during 2025 surveys. | No further recommendations. |
| ***Thamnophis sirtalis tetrataenia*** **San Francisco gartersnake** | FE, SE, SFP | Inhabits vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important. | **Unlikely.** The Study Area provides suitable perennial aquatic habitat. There are no documented populations of this species within 3 miles of the Study Area (CDFW 2025d). | No further recommendations. |
| | | **FISHES** | | |
| ***Acipenser medirostris*** **pop. 1 Green sturgeon - southern DPS** | FT, SSC | Spawns in the Sacramento, Feather and Yuba Rivers. Presence in upper Stanislaus and San Joaquin Rivers may indicate spawning. Non-spawning adults occupy marine/estuarine waters. Delta Estuary is important for rearing juveniles. Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder. | **No Potential.** The Study Area does not support suitable high order stream or estuarine habitat. | No further recommendations. |
| ***Oncorhynchus mykiss irideus*** **pop. 8 Steelhead - central California coast DPS** | FT, SSC | This DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays. | **No Potential.** Arastradero creek is too small to provide suitable habitat for this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Spirinchus thaleichthys*** **Longfin smelt** | ST | Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater. | **No Potential.** The Study Area does not support suitable open water or estuarine habitat for this species. | No further recommendations. |
| ***Spirinchus thaleichthys* pop. 2** **Longfin smelt - San Francisco Bay-Delta DPS** | FE, ST | Pelagic and anadromous within the Sacramento-San Joaquin River Delta, San Francisco Bay, and Gulf of the Farallones. Spawns in lower freshwater reaches of Sacramento and San Joaquin Rivers. First year in Suisun Bay; later SF Bay or Gulf of the Farallones. Occurs in salinities ranging from pure freshwater to pure saltwater; typically salinities ranging from 14-28 parts per thousand (ppt). Generally occupies water temperatures from 61-68F, with spawning occurring in water temperatures from 41-58F. | **No Potential.** The Study Area does not support suitable open water or estuarine habitat for this species. | No further recommendations. |
| **INVERTEBRATES** | | | | |
| ***Bombus crotchii*** **Crotch's bumble bee** | SCE | Coastal California east to the Sierra-Cascade crest and south into Mexico. Favoring grassland and scrub habitats. Typical of bumble bees, nests are usually constructed underground. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*. | **Moderate Potential.** The Study Area supports suitable foraging habitat in herbaceous flowering plants found in the riparian and oak woodland understory. Suitable nesting habitat is present in the annual grassland understory of oak woodland found in the margin of the Study Area. | See Sections 5 and 7 for a further discussion of this species. |
| ***Bombus occidentalis*** **Western bumble bee** | SCE | Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated. | Unlikely. Riparian habitat does not support suitable foraging or nesting habitat for this species. | No further recommendations. |

| SCIENTIFIC NAME | STATUS | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ***Danaus plexippus plexippus pop. 1*** **Monarch - California overwintering population** | FPT | Closed-cone coniferous forest. Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Breeding habitat includes open areas with larval host plant milkweed (Asclepias sp.) and nectar sources. | **Moderate Potential.** The Study Area is located within the overwintering and early breeding zone of the western monarch. Monarchs are known to disperse along riparian corridors. Transient monarchs may therefore utilize riparian habitat in the spring and fall when migrating between overwintering and breeding habitat. The Study Area supports documented larval host plants and breeding occurrences within 0.3 miles of (Xerces Society 2025). However, the Study Area does not contain suitable overwintering habitat. Transient monarchs may utilize riparian habitat in the spring and fall when migrating between overwintering and breeding habitat. Reproductive adults may also breed on early-emerging milkweed during the winter and early spring. | See Sections 5 and 7 for further discussion of this species. |
| ***Euphydryas editha bayensis*** **Bay checkerspot butterfly** | FT | Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants. | **Unlikely.** The Study Area does not support suitable serpentine grassland habitat for this species. | No further recommendations. |
| ***Speyeria zerene myrtleae*** **Myrtle's silverspot butterfly** | FE | Restricted to the fog belt of northern Marin and southernmost Sonoma County, including the Point Reyes peninsula; extirpated from coastal San Mateo County. Occurs in coastal prairie, dunes, and grassland. Larval foodplant is typically *Viola adunca*. Adult flight season may range from late June to early September. | **Unlikely.** The Study Area does not support suitable coastal prairie, dune or grassland habitat. | No further recommendations. |

**Key to Define Status Codes:**

**BCC:** USFWS Bird of Conservation Concern
**BGEPA:** Bald and Golden Eagle Protection Act Species
**FC:** Federal Candidate for Listing
**FE:** Federal Endangered
**FPE:** Federal Proposed Endangered

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|---|---|
| **FPT:** | Federal Proposed Threatened |
| **FT:** | Federal Threatened |
| **SC:** | State Candidate for Listing |
| **SCE:** | State Candidate Endangered |
| **SCT:** | State Candidate Threatened |
| **SE:** | State Endangered |
| **SFP:** | State Fully Protected Animal |
| **SR:** | State Rare |
| **SSC:** | State Species of Special Concern |
| **ST:** | State Threatened |
| **Rank 1A:** | Plants presumed extinct in California |
| **Rank 1B:** | Plants rare, threatened, or endangered in California and elsewhere |
| **Rank 2:** | Plants rare, threatened, or endangered in California, but more common elsewhere |
| **Rank 3:** | Plants about which we need more information – a review list |
| **Rank 4:** | Plants of limited distribution – a watch list |
| **WBWG:** | Western Bat Working Group Priority |

**Potential for Occurrence:**

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential**. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

# APPENDIX B. CULTURAL RESOURCES STUDY

***THE CULTURAL RESOURCES STUDY IS AVAILABLE FOR REVIEW AT THE CITY OF PALO ALTO BY QUALIFIED INDIVIDUALS ONLY.***