

*Technical Report*

**BIOLOGICAL RESOURCES ASSESSMENT**  
**Mokelumne Aqueduct System**  
**Routine Maintenance Project**

**July 2019**

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## Acronyms and Abbreviations

AMMs	avoidance and minimization measures
BMPs	best management practices
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CRLF	California red-legged frog
CTS	California tiger salamander
CWA	Clean Water Act
CY	cubic yards
DD	decimal degrees
DO	dissolved oxygen
DPS	distinct population segment
EBMUD	East Bay Municipal Utilities District
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	evolutionary significant unit
FE	Federally Endangered
FT	Federally Threatened
FR	Federal Register
HSA	hydrologic sub-area
Horizon	Horizon Water and Environment, LLC
IPaC	Information for Planning and Conservation
MSA	Magnuson-Stevens Fishery Conservation and Management Act
amsl	above mean sea level
NMFS	National Marine Fisheries Service
OHW	ordinary high water
Proposed Project or Project	Mokelumne Aqueduct Routine Maintenance Agreements Renewal
RMAs	Routine Maintenance Agreements
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
°F	degrees Fahrenheit
USGS	U.S. Geological Survey

# Executive Summary

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The purpose of this document is to characterize existing biological conditions of the East Bay Municipal Utilities District's (EBMUD) Mokelumne Aqueduct System that is comprised of an approximately 100-mile-long pipeline system that includes the Mokelumne Aqueducts, the Lafayette Aqueducts, the Moraga Aqueduct, the Briones Aqueduct, the USL Aqueduct, and the Sobrante Aqueduct that supplies water from the Mokelumne River to the EBMUD service area within the East San Francisco Bay area (East Bay). EBMUD performs routine maintenance activities to maintain the functional and structural integrity of its facilities. EBMUD's routine maintenance activities associated with their maintenance program (Project) are focused on the following four primary categories within streams and drainages throughout the Aqueduct System: (1) sediment and debris removal, (2) vegetation management, (3) maintenance and repair of culverts, road crossings, and other structures, and (4) bank and levee repair and erosion protection. Additionally, this document presents and discusses applicable regulations governing protected biological resources.

The Mokelumne Aqueduct System maintenance sites span several land cover types throughout the San Francisco Bay Area, Sacramento-San Joaquin River Delta, Central Valley, and Sierra Nevada Foothills regions along the 82-mile alignment. Twenty-nine plant and wildlife species with varying degrees of federal, state, and/or other protection have potential to occur within or adjacent to maintenance sites and could be affected by maintenance activities.

Twelve federally protected species have potential to occur within 58 maintenance sites with suitable habitat and could be affected by maintenance activities potentially (1) affecting the species habitat and/or (2) affecting the species themselves. These species include:

- Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) – Federally Threatened
- California Tiger Salamander (*Ambystoma californiense*) (Central Valley Distinct Population Segment [DPS]) – Federally and State Threatened
- California Red-legged Frog (*Rana draytonii*) – Federally Threatened and California Species of Special Concern
- Alameda Whipsnake (=Striped Racer) (*Masticophis lateralis euryxanthus*) – Federally and State Threatened
- Giant Garter Snake (*Thamnophis gigas*) – Federally and State Threatened
- San Joaquin Kit Fox (*Vulpes macrotis mutica*) – Federally Endangered and State Threatened
- Green Sturgeon (*Acipenser medirostris*) (Southern DPS) – Federally Threatened and California Species of Special Concern
- Sacramento Perch (*Archoplites interruptus*) – Federally and State Threatened
- Delta Smelt (*Hypomesus transpacificus*) – Federally Threatened and California Species of Special Concern
- Steelhead (*Oncorhynchus mykiss*) Central Valley DPS and Central Coast DPS – Federally Threatened
- Chinook Salmon (*Oncorhynchus tshawytscha*) Central Valley Spring-run Evolutionary Significant Unit [ESU]) – Federally Threatened; Central Valley Fall/Late Fall-run ESU – California Species of Special Concern
- Longfin Smelt (*Spirinchus thaleichthys*) – Federal Candidate, State Threatened, and California Species of Special Concern

Further, approximately 60 sites are located within Critical Habitat for Delta smelt. While most of these sites within Critical Habitat are expected to lack the primary constituent elements for this

species, sites that possess primary constituent elements would require formal or informal consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) via Endangered Species Act (ESA) Section 7 (if a federal nexus is present) or Section 10 (Habitat Conservation Plan) if it is determined that maintenance activities could result in “take” of the respective species.

Essential Fish Habitat is designated for Coho salmon in San Francisco Bay and its tributaries, and for Chinook salmon from San Francisco Bay, into the Sacramento-San Joaquin Delta, San Joaquin, and Calaveras Rivers. Maintenance actions that affect these drainages and potentially EFH would require consultation with the NMFS.

Seven state protected species have potential to occur within 130 maintenance sites with suitable habitat and could be affected by maintenance activities potentially affecting the species themselves. These species include:

- Delta Mudwort (*Limosella australis*) – California Rare Plant Rank (CRPR) 2B.1
- Mason’s Lilaepsis (*Lilaeopsis masonii*) – State Rare and CRPR 1B.1
- Foothill Yellow-legged Frog (*Rana boylei*) – State Candidate Threatened and California Species of Special Concern
- Swainson’s Hawk (*Buteo swainsoni*) – State Threatened
- White-tailed Kite (*Elanus leucurus*) – Fully Protected
- Bald Eagle (*Haliaeetus leucocephalus*) – State Endangered and Fully Protected
- California Black Rail (*Laterallus jamaicensis conturniculus*) – State Threatened and Fully Protected

If impacts to these species cannot be avoided, then a CESA Incidental Take Permit (CFGC Section 2081) would be required before potential impacts resulting from maintenance activities could occur.

The implementation of best management practices and avoidance measures would eliminate the potential for take of listed species. Recommended measures are identified in the Biological Resources Assessment.

Thirty-one California Environmental Quality Act (CEQA)-relevant species have potential to occur within the maintenance sites with suitable habitat and could potentially be affected by maintenance activities. These species include:

- Delta Tule Pea (*Lathyrus jepsonii* var. *jepsonii*) – CRPR 1B.2
- Southern Mudwort (*Limosella acaulis*) – California Native Plant Species East Bay Chapter (EBCNPS) A2
- Woolly Rose-mallow (*Hibicus lasiocarpus*) – CRPR 1B.2
- Western Spadefoot (*Spea hammondi*) – California Species of Special Concern
- Silvery Legless Lizard (*Anniella pulchra pulchra*) – California Species of Special Concern
- California Glossy Snake (*Arizona elegans occidentalis*) – California Species of Special Concern
- Western Pond Turtle (*Actinemys [=Emys] marmorata*) – California Species of Special Concern
- Coast Horned Lizard (*Phrynosoma blainvillii*) – California Species of Special Concern
- Tricolored Blackbird (*Agelaius tricolor*) – California Species of Special Concern
- Cooper’s Hawk (*Accipiter cooperii*) – Migratory Bird Treaty Act
- Great Blue Heron (*Ardea herodias*) – Migratory Bird Treaty Act
- Short-eared Owl (*Asio flammeus*) – California Species of Special Concern
- Burrowing Owl (*Athene cunicularia*) – California Species of Special Concern
- Northern Harrier (*Circus hudsonius* [formerly *cyaneus*]) – California Species of Special Concern

- Snowy Egret (*Egretta thula*) – Migratory Bird Treaty Act
- Yellow-breasted Chat (*Icteria virens*) – California Species of Special Concern
- Loggerhead Shrike (*Lanius ludovicianus*) – California Species of Special Concern
- Song Sparrow (*Melospiza melodia*) (“Modesto” Population) – California Species of Special Concern
- Black-crowned Night Heron (*Nycticorax nycticorax*) – Migratory Bird Treaty Act
- Osprey (*Pandion haliaetus*) – Migratory Bird Treaty Act
- Double-crested Cormorant (*Phalacrocorax auritus*)– Migratory Bird Treaty Act
- Yellow Warbler (*Setophaga petechia*) – California Species of Special Concern
- Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) – California Species of Special Concern
- Pallid Bat (*Antrozous pallidus*) – California Species of Special Concern and Western Bat Working Group High Priority
- Townsend’s Big-Eared Bat (*Corynorhinus townsendii*) – California Species of Special Concern and Western Bat Working Ground High Priority
- Silver-haired Bat (*Lasiorycteris notivangans*)– Western Bat Working Group Medium Priority
- Western Red Bat (*Lasiurus blossevillii*) – California Species of Special Concern and Western Bat Working Group High Priority
- Hoary Bat (*Lasiurus cinereus*)– Western Bat Working Group Medium Priority
- San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*) – California Species of Special Concern
- American Badger (*Taxidea taxus*) – California Species of Special Concern
- Sacramento Splittail (*Pogonichthys macrolepidotus*) – California Species of Special Concern

Numerous drainages (e.g., waters of the U.S.) and wetlands bordered by the Mokelumne Aqueduct System maintenance sites are expected to be subject to U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB) jurisdiction. As such, maintenance activities affecting these features may require a Section 404 Permit from the USACE and a Section 401 Water Quality Certification from the RWQCB (or Waste Discharge Requirements [WDRs] for non-federal drainages and wetlands) depending on the nature of the specific impact within jurisdictional areas.

The California Department of Fish and Wildlife (CDFW) regulates work (divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; or deposit or dispose of material into any river, stream, or lake) within streambanks and other waters of the State under Section 1600 of California Fish and Game Code (CFGF). Additionally, CDFW also regulates the removal of riparian habitat associated with such waters of the State. EBMUD currently conducts maintenance activities under existing CFGF Section 1602 Lake and Streambed Alteration Agreements (LSAAs) with CDFW.

# 1 Introduction

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The purpose of this document is to characterize existing biological conditions of the East Bay Municipal Utilities District's (EBMUD) Mokelumne Aqueduct System (**Figure 1**), that is comprised of an approximately 100-mile-long pipeline system that includes the Mokelumne Aqueducts, the Lafayette Aqueducts, the Moraga Aqueduct, the Briones Aqueduct, the USL Aqueduct, and the Sobrante Aqueduct that supplies water from the Mokelumne River to the EBMUD service area within the East San Francisco Bay area (East Bay). EBMUD performs routine maintenance activities to maintain the functional and structural integrity of its facilities. EBMUD's routine maintenance activities associated with their maintenance program (Project) are focused on the following four primary categories within streams and drainages throughout the Aqueduct System: (1) sediment and debris removal, (2) vegetation management, (3) maintenance and repair of culverts, road crossings, and other structures, and (4) bank and levee repair and erosion protection. Additionally, this document presents and discusses applicable regulations governing protected biological resources.

## 1.1 Location and Study Area

The Mokelumne Aqueduct originates at EBMUD's Pardee Reservoir in the Sierra Foothills and extends from the West Portal in Campo Seco through the Central Valley, along the Calaveras River and the Sacramento-San Joaquin River Delta, to the East Portal facility in the EBMUD service area in the East Bay. The diverse regions covered by the Mokelumne Aqueduct are host to several special-status plant, wildlife, and fish species, as well as other sensitive biological resources.

The Project area includes maintenance sites along the 82-mile Mokelumne Aqueduct alignment and adjacent waters within the 100-foot-wide EBMUD right-of-way.

Once the Mokelumne Aqueduct reaches the EBMUD service area, there are a number of separate aqueducts for conveying raw water to the water treatment plants and terminal reservoirs, which span an additional 18 miles through the East Bay. The Project area also includes maintenance sites along portions of these aqueducts, primarily at locations where the aqueducts have discharge structures at local creeks or drainage channels.

**Figures 2a through 2d** provide an overview of the maintenance site locations along the entire Aqueduct alignment from Pardee Reservoir to the EBMUD service area, highlighting both the various counties and boundaries between California Department of Fish and Wildlife (CDFW) Regions 2 and 3. A finer-scale map of the Aqueduct, highlighting the location of routine maintenance sites along the Aqueduct alignment, can be found in Appendix A.

From east to west, the aqueduct system travels through the Counties of Calaveras, San Joaquin, Contra Costa, and Alameda. Approximately 31 miles of the Mokelumne Aqueduct are located in CDFW Region 2 and 51 miles are located in CDFW Region 3. The 18 miles of the East Bay aqueducts are all located in CDFW Region 3.

### 1.1.1 Biological Resources Study Area

The study area for this biological resources assessment includes the approximately 100 miles of Aqueduct pipeline right-of-way plus multiple resource-specific buffers around each RMA maintenance site as described below.

- Special-status plant study area: 100-foot buffer



- Special-status wildlife study area: 500-foot buffer
- Special-status fish study area: 100-foot buffer
- Wetland and Waters of the U.S. study area: 250-foot buffer

## 1.2 Project Overview

The Project involves the routine maintenance of aqueduct facilities at access road and aqueduct stream crossing locations that require CFGC Section 1602 LSAAs (RMAs) authorized by the California Department of Fish and Wildlife (CDFW). Access roads are critical to repairs, maintenance, and operations of the aqueducts and maintenance activities provide for safe travel on the access roads at stream crossings, while ensuring natural flows for ditches, swales and other watercourses. Routine maintenance of the access road stream crossings is ongoing due to changing conditions resulting from weather events, deterioration of culverts and normal use. Routine maintenance work is also required due to deterioration of culvert ends, headwalls and/or weather conditions that could affect the integrity of the aqueduct pipelines. Routine maintenance activities occur every one to five years in the Aqueduct System stream zones depending on location and maintenance needs.

EBMUD's routine maintenance program includes the following categories of activities to maintain the functional and structural integrity of EBMUD-owned facilities:

- *Sediment and Debris Removal* – Removal of debris, sediment, vegetation, rubbish, downed trees, and other material that could obstruct the natural flow in channels;
- *Vegetation Management* – Control of weeds, grasses, emergent vegetation, and woody vegetation in channels and on banks;
- *Maintenance and Repair of Culverts, Road Crossings, and Other Structures* – Maintenance, repair and in-kind replacement of culverts and drainage and erosion control structures (e.g., gates, barricades, bridges, minor repainting with hand tools, minor geotechnical sampling); and
- *Bank and Levee Repair and Erosion Protection* – Erosion control repairs and bank stabilization.

### ***Timing of Work***

Work within streams with natural (earthen or rock-lined) bottoms and/or banks (i.e., sediment and debris removal, culvert repair and replacement, or bank repairs) typically would be conducted between June 1st and October 15th when streams are their driest. Comparable work within concrete-lined channels would be conducted between April 15th and October 15th. All non-ground disturbing maintenance activities (i.e., goat grazing, tree pruning and brush clearing) occurring outside of any creek or drainage also would typically take place between April 15 and October 15. Removal of debris necessary to prevent an imminent flooding threat may occur year-round.

Hand removal activities (i.e., pruning and vegetation removal) may be conducted year-round. Removal of large wood, such as downed or dead trees or branches within creeks would generally be conducted during the dry season (June 1 to October 15).

## 1.3 Personnel

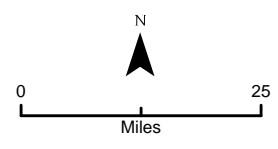
Reconnaissance-level surveys of representative drainage maintenance locations were conducted by personnel detailed in *Section 4.1.2, Field Survey*. This document was prepared by Eric Christensen, Horizon Senior Biologist, and reviewed by Jeff Thomas, Horizon Principal-In-Charge.



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**Figure 1: Project Vicinity**

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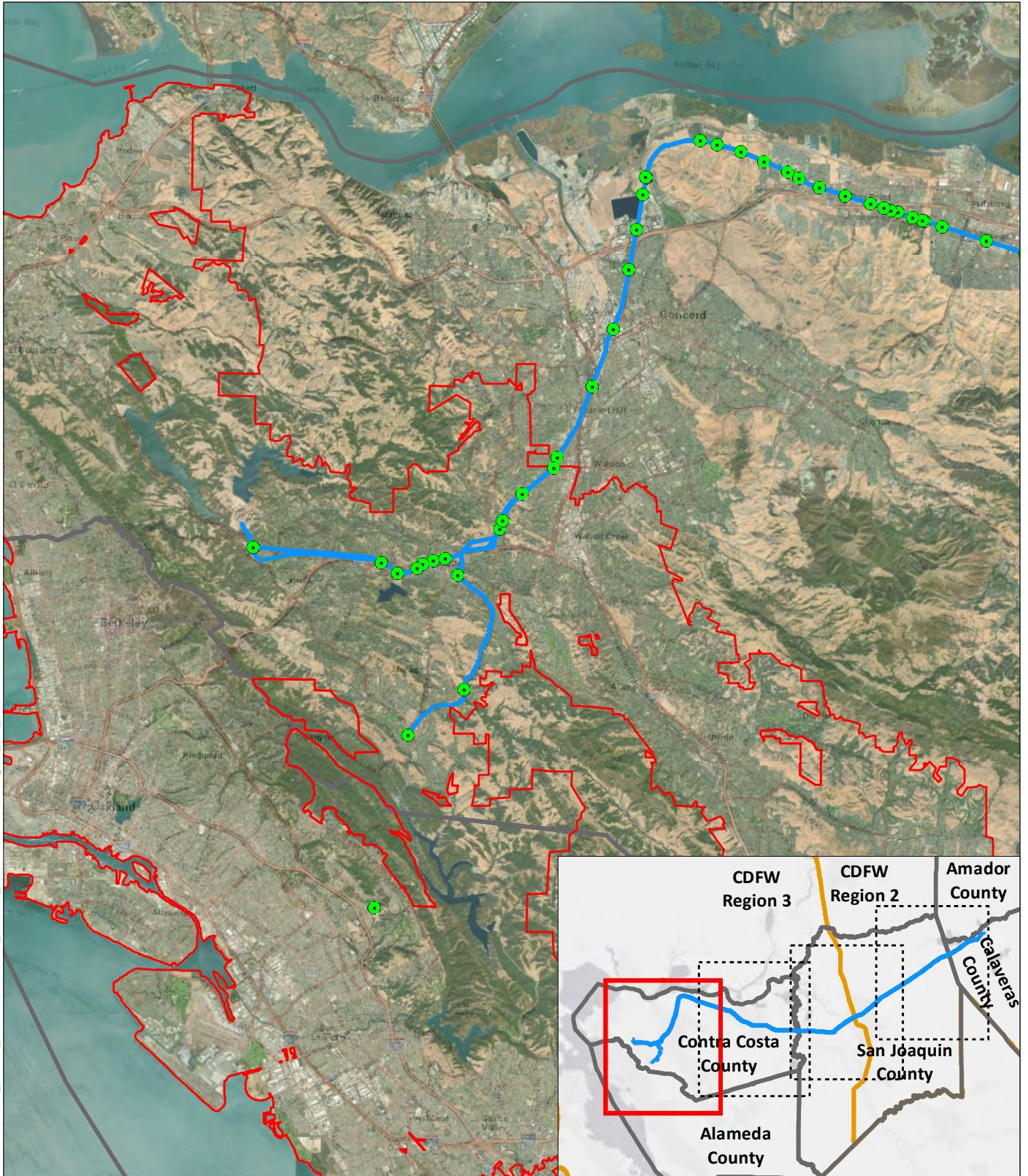
- Aqueduct
- County Boundary
- Service Area

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 Biological Resources Assessment**

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- Maintenance Site
- Aqueduct
- Service Area
- CDFW Region Boundary
- County Boundary

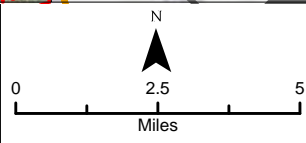


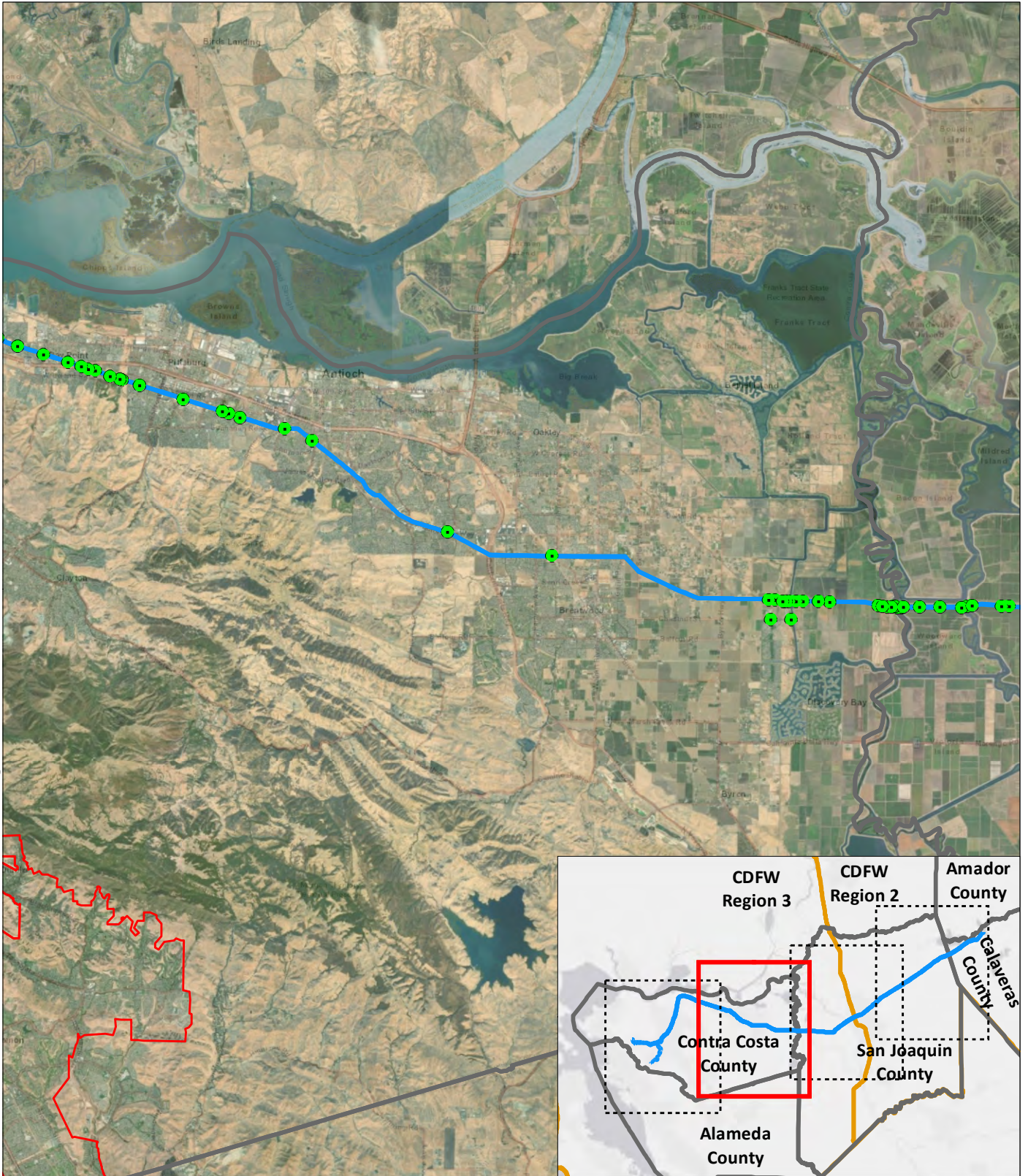
Figure 2a  
Maintenance Site Locations


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 Biological Resources Assessment**

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-  Maintenance Site
-  Aqueduct
-  Service Area
-  CDFW Region Boundary
-  County Boundary

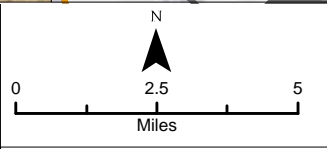


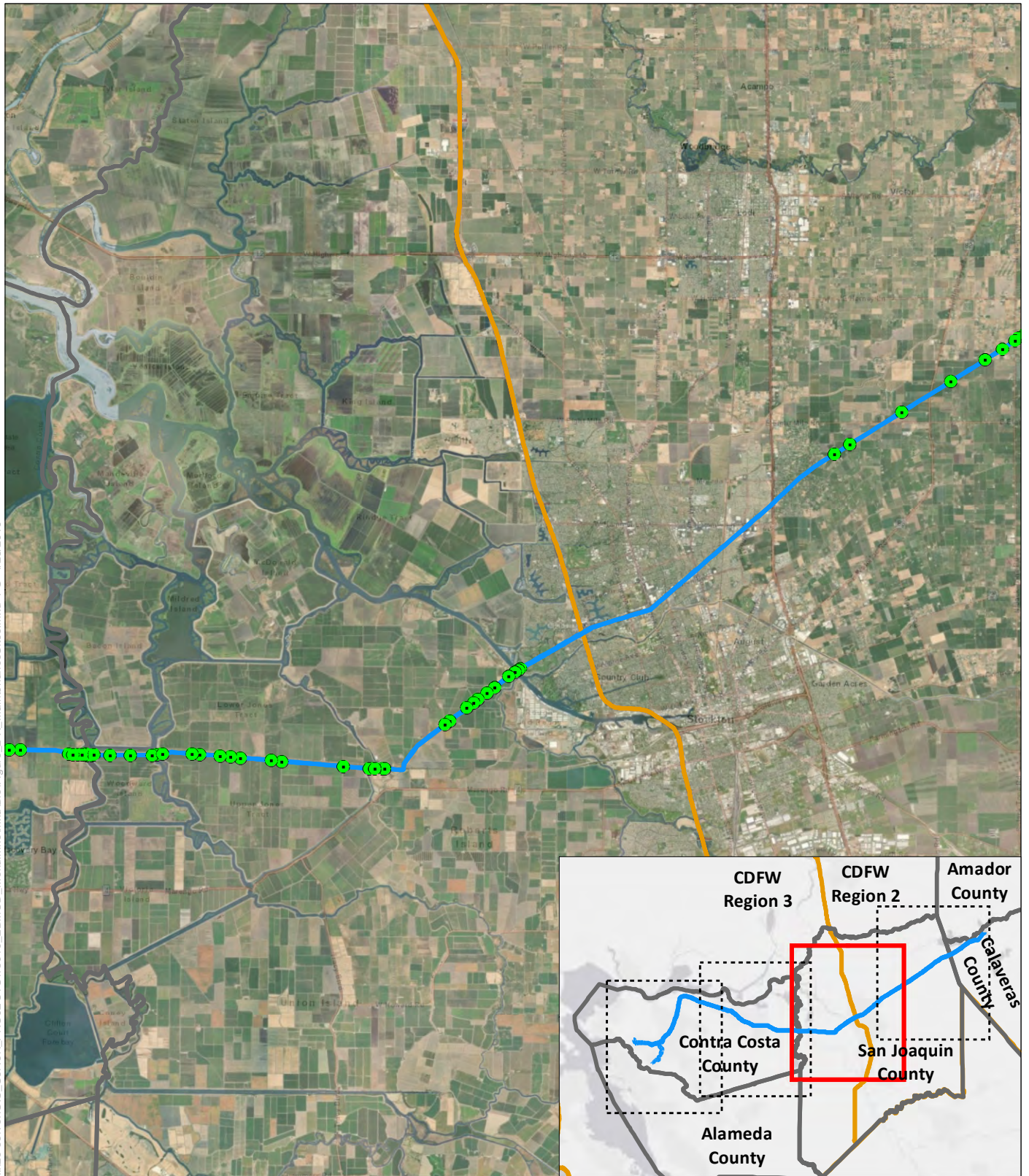
Figure 2b  
 Maintenance Site Locations






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-  Maintenance Site
-  Aqueduct
-  Service Area
-  CDFW Region Boundary
-  County Boundary

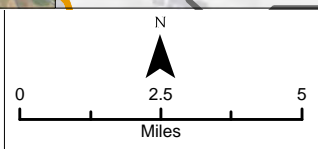


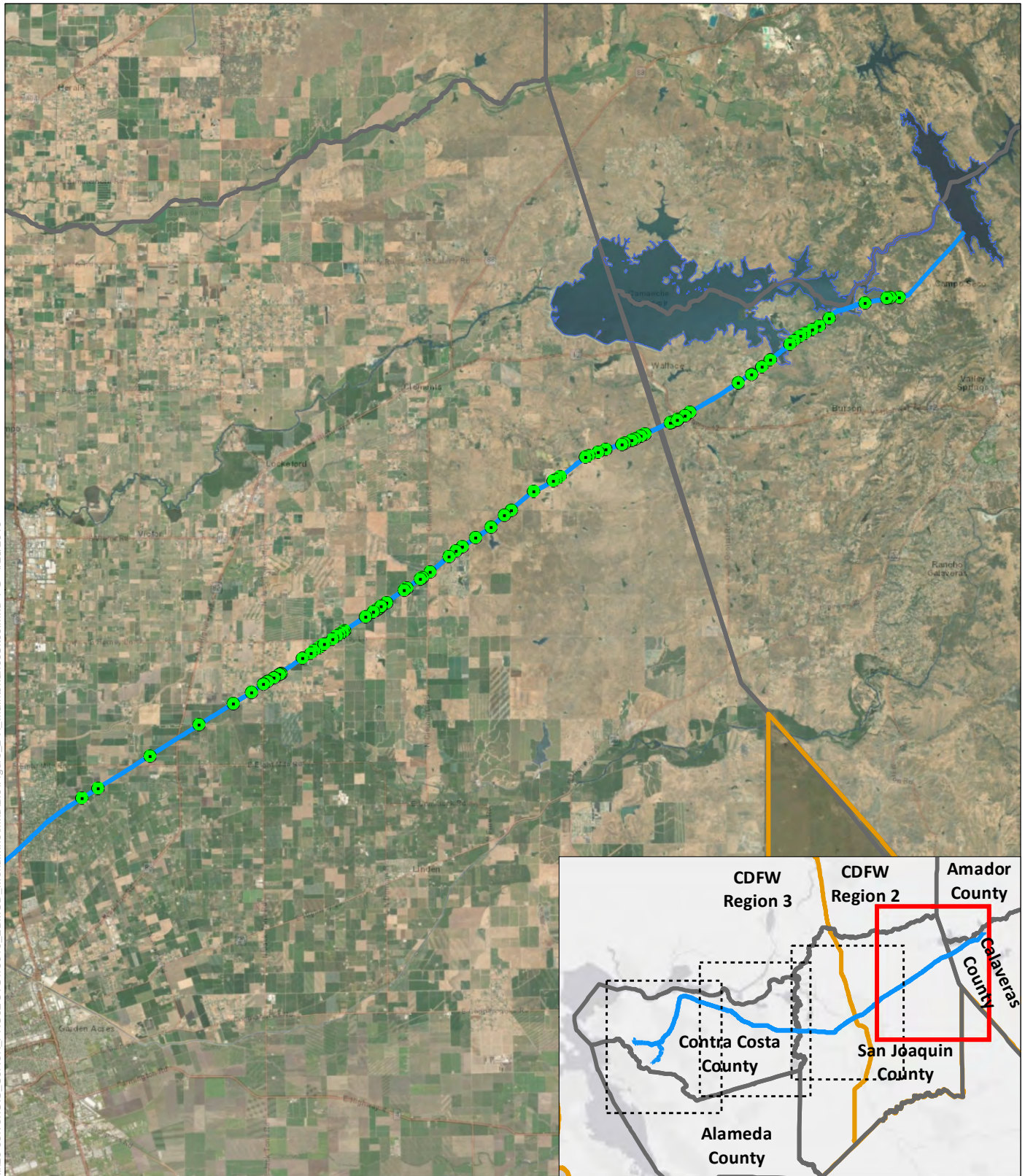
Figure 2c  
Maintenance Site Locations






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-  Maintenance Site
-  Aqueduct
-  Service Area
-  CDFW Region Boundary
-  County Boundary

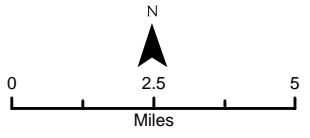


Figure 2d  
Maintenance Site Locations

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## 2 Regulatory Setting

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### 2.1 Federal Laws, Regulations, and Standards

This section summarizes federal, state, regional, and local regulations and plans related to biological resources, including wetlands, that could apply to the Mokelumne Aqueduct Routine Maintenance Agreement Renewals Project.

#### 2.1.1 Endangered Species Act of 1973

The Endangered Species Act (ESA) (16 U.S. Code [USC] Section 1531 et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a significant portion of their range, as well as the protection of habitats on which they depend. The USFWS and NMFS share responsibility for implementing the ESA. In general, USFWS manages land and freshwater species, whereas NMFS manages marine and anadromous species. The ESA and subsequent amendments provide guidance for projects that may affect the continued existence of federally listed species or adversely affect their designated critical habitat.

##### ***Section 4 (d) Incidental Take***

Section 4(d) of the ESA broadly authorizes incidental take of a listed species provided certain conditions are satisfied. USFWS or NMFS may apply, through a Section 4(d) rule, take prohibitions for threatened species but exempt certain programs or activities if they satisfy the conditions specified by the rule. NMFS may apply a Section 4(d) rule at the time of listing or subsequently.

##### ***Section 4 (f) Recovery Plans***

Section 4(f) of the ESA requires that recovery plans be prepared for listed species. A listed species is considered “recovered” when its status improves such that listing is no longer required. Recovery plans provide guidance to improve the status of a listed species, and inform the recovery process and implementation of the ESA overall.

##### ***Section 7 (Interagency Consultation and Biological Assessments)***

Section 7 of the ESA (16 USC Section 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 7(a)(1) directs the Secretary of the Interior (for species managed by USFWS) or the Secretary of Commerce (for species managed by NMFS) to review other programs administered by those departments and use such programs to further the purposes of the ESA. It also directs all other federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of species listed pursuant to the ESA. Section 7(a)(2) states that each federal agency shall, in consultation with the Secretary, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. In fulfilling these requirements, each agency must use the best scientific and commercial data available. This section of the ESA defines the consultation process, which is further developed in regulations promulgated by 50 CFR Section 402.

## **Section 9 (Prohibited Acts)**

Section 9 of the ESA and its implementing regulations prohibit the take of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The term “take” means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” USFWS has interpreted the definition of harm to include habitat modification. Section 9 prohibits a number of specified activities with respect to endangered and threatened plants as well as adverse modifications to critical habitat.

## **Section 10 (Habitat Conservation Plans)**

Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from the USFWS or NMFS for otherwise lawful activities that incidentally may result in take of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit. The HCP associated with the permit ensures that the effects of the authorized incidental take are adequately minimized and mitigated.

### **2.1.2 Magnuson-Stevens Fishery Conservation and Management Act (Sustainable Fisheries Act)**

The amended Magnuson-Stevens Fishery Conservation and Management Act of 1996, also known as the Sustainable Fisheries Act, provides for the conservation and management of all fish resources within the exclusive economic zone of the United States. It requires that all federal agencies consult with NMFS on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat of commercially managed marine and anadromous fish species.

### **2.1.3 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) (16 USC Sections 703–712; 50 CFR Subchapter B) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory birds, or part, nests, or eggs of such migratory birds, that are listed in wildlife protection treaties between the United States and Canada, Mexico, Japan, and Russia. The MBTA applies to almost all avian species that are native to California. The MBTA prohibits the take of such species, including the removal of nests, eggs, and feathers. It requires that all federal agencies consult with USFWS on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect migratory birds.

The Migratory Bird Treaty Reform Act amends the MBTA so that nonnative birds or birds that have been introduced by humans to the United States or its territories are excluded from protection under the MBTA.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs each federal agency taking actions that have or may have adverse impacts on migratory bird populations to work with USFWS to develop a memorandum of understanding to promote the conservation of migratory bird populations.

## **2.1.4 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions (16 USC. Section 668). Under the Bald and Golden Eagle Protection Act, it is a violation to “take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest or egg, thereof...”. Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

## **2.1.5 Clean Water Act (Sections 401 & 404)**

The Clean Water Act (CWA) (33 USC Section 1251) establishes the basic structure for regulating discharges of pollutants (including dredged or fill material) into waters of the United States (U.S.), including wetlands, and for regulating quality standards for surface waters. The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters.

CWA Section 404 prohibits the discharge of dredged or fill material into waters of the U.S., including wetlands, without a permit from the USACE. CWA Section 401 requires that an applicant for a federal license or permit that allows activities with the potential to result in a discharge to waters of the U.S., including wetlands, obtain a Section 401 water quality certification.

## **2.2 State Agencies, Laws, and Programs**

### **2.2.1 California Fish and Game Code**

The California Fish and Game Code (F&G Code) includes various statutes that protect biological resources, including the requirements for a notification of lake or streambed alteration, Native Plant Protection Act of 1977 (NPPA), the California Endangered Species Act (CESA), and multiple species-specific protection regulations.

#### ***Section 1600 et seq. (Lake and Streambed Alteration)***

Section 1600 et seq. of the Fish and Game Code establishes the Lake and Streambed Alteration Program to provide for protection and conservation of fish and wildlife resources with respect to any project that may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake.

Under the program, an applicant must notify and enter into an agreement with CDFW before undertaking any activity that would substantially divert or obstruct the natural flow of any river, stream, or lake; or would substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or would deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

CDFW typically interprets its jurisdiction under Section 1600 to include the bed and bank of lakes and stream, as well as the adjacent floodplain and riparian vegetation, if present.

### ***Sections 1900-1913 (California Native Plant Protection Act)***

The California NPPA requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of this act prohibit the taking of listed plants from the wild and require notification, by the land owner undertaking a land use change action, of the CDFW at least 10 days in advance of that land use change on lands in California. This allows CDFW to salvage listed plant species that otherwise would be destroyed.

### ***Sections 2050-2098 (California Endangered Species Act)***

CESA (California Fish and Game Code Sections 2050–2098) declares that it is the policy of the State that State agencies should not approve projects that would jeopardize the continued existence of a species listed under CESA as endangered or threatened or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if reasonable and prudent alternatives are available consistent with conserving the species or its habitat that would prevent jeopardy (California Fish and Game Code Section 2053).

Section 2080 of the Fish and Game Code prohibits the take of any species that is state-listed as endangered or threatened, or designated as a candidate for such listing. “Take” is defined by Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” an individual of a listed species. Under the CESA, the CDFW may issue an incidental take permit authorizing the take of listed and candidate species that is incidental to an otherwise lawful activity, subject to specified conditions.

### ***Sections 3511, 4700, 5050, and 5515 (Fully Protected Species)***

CDFW has designated 37 fully protected species and prohibited the take or possession of these species at any time, and no licenses or permits may be issued for their take except for necessary scientific research or relocation of certain bird species for the protection of livestock.

### ***Sections 3503, 3503.5, and 3513 (Nesting Bird Protections)***

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by code or any regulation made in accordance with the code. Section 3503.5 prohibits the take, possession, or needless destruction of any nests, eggs, or birds in the orders Falconiformes (New World vultures, hawks, eagles, ospreys, and falcons, among others) or Strigiformes (owls). Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, projects are generally required to reduce or eliminate disturbances at active nesting territories during the nesting cycle.

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

The 1969 Porter–Cologne Water Quality Control Act (known as the Porter–Cologne Act) dovetails with the CWA. It established the State Water Resources Control Board (SWRCB) and divided the state into nine regions, each overseen by its own RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state’s surface water and groundwater supplies; however, much of the SWRCB’s daily implementation authority is delegated to the nine RWQCBs,



which are responsible for implementing CWA Sections 402 and 303[d]. In general, the SWRCB manages water rights and regulates statewide water quality, whereas RWQCBs focus on water quality within their respective regions.

The Porter–Cologne Act requires that the RWQCB develop water quality control plans (also known as Basin Plans) that designate beneficial uses of California’s major surface-water bodies and groundwater basins and establish specific narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a waterbody (i.e., the reasons that the waterbody is considered valuable). Water quality objectives reflect the standards necessary to protect and support those beneficial uses. Basin Plan standards are primarily implemented by regulating waste discharges so that water quality objectives are met. Under the Porter–Cologne Act, Basin Plans must be updated every three years. Project activities that result in point-source discharges into state-regulated waters are subject to the RWQCB’s Waste Discharge Requirements Program in order to ensure compliance with Basin Plan standards and water quality objectives.

### **2.2.3 California Environmental Quality Act**

All “discretionary projects” within the state of California are required to comply with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.). “Discretionary” refers to situations when a governmental agency exercises its judgement to decide if and how to approve or execute a project.

CEQA’s basic purposes are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways by which environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring implementation of feasible mitigation measures or project alternatives that would substantially lessen any significant effects that a project would have on the environment.
- Disclose to the public the reasons that a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

With certain strictly limited exceptions, CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before approving or carrying out projects. CEQA establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA’s objectives. For example, the agency with principal responsibility for approving or carrying out a project (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If there is substantial evidence that the project would result in significant environmental impacts that cannot be mitigated to a level of insignificance, CEQA requires that the agency prepare an environmental impact report (EIR) that analyzes both the proposed project and a reasonable range of potentially feasible alternatives.

## **2.3 Local and Regional Laws and Plans**

Within the study area, numerous regional, county, and city ordinances and policies exist for the protection of biological resources. Examples include ordinances and local zoning that specify setbacks for wetlands, streams, and lakes and regulate the removal of trees. General plans in

Alameda, Contra Costa, San Joaquin, and Calaveras counties; and the cities of Oakland, Moraga, Orinda, Lafayette, Pleasant Hill, Concord, Pittsburgh, Antioch, Brentwood, and Stockton include multiple conservation goals covering vegetation and wildlife resources within their respective jurisdictions. Alameda, Contra Costa, San Joaquin, and Calaveras counties; and the cities of Oakland, Moraga, Orinda, Lafayette, Pleasant Hill, Concord, Pittsburgh, Antioch, Brentwood, and Stockton also regulate the removal of protected trees within their respective jurisdictions. The East Contra Costa County Habitat Conservation Plan (HCP), San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and the EBMUD Low Effect East Bay HCP (Watershed Lands HCP) include programs to maintain water quality, biodiversity (including multiple special-status species), forestry, livestock grazing, agricultural operations, fire and fuel management, and recreation. The EBMUD Watershed Lands HCP applies to and covers drainage maintenance sites within EBMUD watershed lands in the East Bay Hills.

EBMUD is not subject to building and land use zoning ordinances for projects involving the transmission of water (Government Code Section 53091); however, EBMUD strives to consider and work with local jurisdictions (e.g., tree ordinances) and neighboring communities during project planning to conform to local environmental protection policies, where feasible, and not contrary to its public purpose and responsibilities.

## 3 Study Area Description

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### 3.1 Environmental Setting

The project study area traverses numerous land use and land cover types, throughout which unique topographic, climatic, hydrologic, and soils conditions are present. The following sub-sections describe these characteristics by region.

#### 3.1.1 Location

##### ***San Francisco Bay Area***

The study area includes a portion of the San Francisco Bay (SF Bay) Area within Alameda and Contra Costa Counties, with the eastern area including the cities of Oakley and Brentwood. The SF Bay Area is the second most densely populated area of the state of California, after the southern California metropolitan region. The SF Bay Area within the study area consists of watersheds within the East SF Bay Hills that drain into EBMUD operated facilities (i.e., San Pablo Reservoir, Briones Reservoir, Siesta Valley, Gateway Area, Lafayette Reservoir, Upper San Leandro Reservoir, Chabot Reservoir, and surrounding watershed lands), numerous streams, and ultimately the San Francisco Bay. The region is bounded on the east by the Delta, on the north by Suisun and Honker bays and several Delta islands (Mallard, Browns, Winter, and Kimball islands), on the west by the Berkeley and Oakland hills, and on the south by Mount Diablo and surrounding cities.

As mentioned in Section 2.3, the EBMUD Low Effect East Bay HCP (Watershed Lands HCP) covers activities within its permit area. Maintenance activities at sites outside of the Watershed Lands HCP permit area within the SF Bay Area are the subject of this biological resources assessment.

##### ***Sacramento-San Joaquin River Delta***

Forty percent of the state's water falls as either rain or snow over much of the northern and central parts of the state and drains into the Sacramento or San Joaquin Rivers, which feed into the Sacramento-San Joaquin Delta (Delta). The Delta and the San Francisco Bay together form California's largest estuary (1,600 square miles of waterways). The Delta is a low-lying area that contains the tidally influenced portions of the Sacramento, San Joaquin, Mokelumne, and Cosumnes Rivers. The Delta was once an extensive brackish marsh formed by the confluence of the Sacramento and San Joaquin rivers, but has been extensively diked and drained for agriculture, flood protection, and water supply. Within the study area, the Delta is generally bounded on the east by eastern Stockton and the Central Valley; on the north by the census-designated place Knightsen and agricultural land on several Delta islands (Bacon, Mildred, McDonald, and Vulcan islands); on the west by Bixler Road (north of Discovery Bay); and on the south by agricultural fields, Discovery Bay, Woodward Island, Holt, and the southern two-thirds of Stockton.

##### ***Central Valley***

The Central Valley contains the Sacramento Valley and the San Joaquin Valley. Together they form a vast, flat valley, approximately 450 miles long and averaging 50 miles wide, with elevations almost entirely below 300 feet above mean sea level (amsl). The Central Valley is surrounded by the Sierra Nevada on the east, the Coast Ranges (including Diablo Range) on the west, the Tehachapi Mountains on the south, and the Klamath and Cascade Ranges on the north. Within the study area, the Central

Valley is bounded on the east by the census-designated place Wallace; on the north by agricultural and rangeland, the town of Victor, and unincorporated communities of Lockeford and Clements; on the west by western Stockton and the Delta; and on the south by agricultural and rangeland, and the census-designated place of Waterloo.

### ***Sierra Nevada Foothills***

The Sierra Nevada Mountains form the majority of the spine of California's landscape, extending approximately 400 miles from north to south. The Sierra Nevada Mountains merge with the southern Cascades near Mount Lassen. The Sierra Nevada Range extends south to the Mojave Desert, where it curves south to link with the Tehachapi Mountains. The Sierra Nevada Foothills comprise low to high rolling hills within the eastern transition zone between the Central Valley and Sierra Nevada Mountains. With the study area, the Sierra Nevada Foothills are bounded on the west by the Central Valley immediately west of the census-designated place of Wallace, on the north by the Camanche Reservoir and the Amador County boundary, on the east by the unincorporated community of Campo Seco and the adjacent Sierra Nevada Mountains, and on the south by the unincorporated community of Burson.

## **3.1.2 Topography and Elevation**

### ***San Francisco Bay Area***

Mount Diablo dominates the region at approximately 3,848 feet amsl, with several low coastal mountains within the Diablo Range possessing numerous peaks that rise above 3,000 feet amsl. Mountains within the Diablo Range are generally north-south oriented and support valleys with associated drainages that typically flow west and north. The approximate elevation range of the study area, San Francisco Bay, varies from a minimum of eight feet amsl to a maximum of 610 feet amsl, with an average elevation of 131 feet amsl.

### ***Sacramento-San Joaquin River Delta***

The Sacramento-San Joaquin River Delta is the junction where the Sacramento and San Joaquin rivers, charged from their many tributaries, flow into the San Francisco Bay. The Delta is the lowest part of the Central Valley and includes several low-gradient meandering channels, sloughs, canals, ditches, stream networks, and interspersing islands. The drainages within the study area generally flow north, northwest, and west toward San Francisco Bay. The approximate elevation range of the study area, Sacramento-San Joaquin River Delta, varies from three feet below mean sea level (msl) to ten feet amsl, with an average elevation of approximately 6 feet msl.

### ***Central Valley***

The Central Valley is a low elevation basin made up by the Sacramento Valley in the northern half and the San Joaquin in the southern half, entirely draining into the Delta and, ultimately, into the San Francisco Bay. The Sacramento River drains the Sacramento Valley, which subtly trends in a south direction, and the San Joaquin River drains the San Joaquin Valley, which subtly trends in a north direction. The approximate elevation range of the study area, within the Central Valley, varies from one foot below msl to 85 feet amsl, with an average elevation of 42 feet amsl.

### ***Sierra Nevada Foothills***

The Sierra Nevada Foothills abut the eastern boundary of the Central Valley and support numerous streams and drainages that generally flow west. The Sierra Nevada Foothills gradually to abruptly increase in elevation in an eastern trajectory, away from the Central Valley. The approximate elevation range of the study area, within the Sierra Nevada Foothills, varies from 85 feet amsl to 384 feet amsl, with an average elevation of 226 feet amsl.

## **3.1.3 Climate and Hydrology**

### ***San Francisco Bay Area***

The SF Bay Area climate is characterized by relatively cool, often foggy summers and cool winters, due to the nearby proximity to the Pacific Ocean. The area receives 15–25 inches of rain annually from October to April, leaving most of the smaller streams dry by the end of summer. Average temperatures range from 51 to 64°F and the growing season lasts 277 to 350 days.

### ***Sacramento-San Joaquin River Delta***

The Sacramento-San Joaquin River Delta has hot, dry summers and foggy winters with sporadic rainfall of varying intensity. Annual rainfall averages 5–15 inches, with the least rainfall occurring in the southern and western (in the rain shadow of the Coast Range) portions of the Delta. Average temperatures range from 52 to 77°F and the growing season lasts 225 to 300 days.

### ***Central Valley***

Similar to the Delta, the Central Valley has hot, dry summers and foggy winters with sporadic rainfall of varying intensity. Annual rainfall averages 5–20 inches, with the least rainfall occurring in the southern portions and along the west side (in the rain shadow of the Coast Range). Average temperatures range from 52 to 77°F and the growing season lasts 225 to 300 days.

### ***Sierra Nevada Foothills***

The Sierra Nevada Foothills (Foothills) have short hot, dry summers and foggy, rainy winters. Annual rainfall averages 20–40 inches, with the most rainfall occurring in the eastern, higher elevation portions due to the Sierra Nevada Mountain Range being on the western side of the rain shadow. Average temperatures range from 55 to 64°F and the growing season lasts 200 to 300 days.

## **3.1.4 Soils**

Seventeen soil complexes occur within the maintenance sites and their locations are shown on **Figures 3a** through **3d**. Clear Lake (s688) and Stockton-Clear Lake-Capay (s824) soil units are poorly drained and are commonly associated with wetlands and streams. Webile-Retryde-Kingile (s865), Rindge-Gazwell-Egbert (s852), and Peltier-Egbert (s866) soil units are poorly drained and occur in the Delta. Finrod-Cogna-Archerdale (s857) and San Joaquin-Rocklin-Redding-Montpellier-Cometa (s876) soil units have hardpans that are cemented to varying degrees and, where hardpan cementation is more complete, these soils typically support wetlands and streams.

### ***San Francisco Bay Area***

The following six soil complexes occur within the maintenance sites in the San Francisco Bay Area region.

- Clear Lake (s688);
- Millsholm-Los Osos-Los Gatos-Lodo (s684);
- Urban land-Tierra (s691);
- Veritas-Tinnin-Delhi (s860);
- Fontana-Diablo-Altamont (s694); and
- Zamora-Rincon-Capay-Brentwood (s693)

### ***Sacramento-San Joaquin River Delta***

The following five soil complexes occur within the maintenance sites in the Sacramento-San Joaquin River Delta.

- Webile-Retryde-Kingile (s865);
- Rindge-Gazwell-Egbert (s852);
- Peltier-Egbert (s866);
- Stockton-Clear Lake-Capay (s824); and
- Finrod-Cogna-Archerdale (s857).

### ***Central Valley***

The following two soil complexes occur within the maintenance sites in the Central Valley.

- San Joaquin-Rocklin-Redding-Montpellier-Cometa (s876);
- Redding-Corning (s821);

### ***Sierra Nevada Foothills***

The following four soil complexes occur within the maintenance sites in the Sierra Nevada foothills.

- Peters-Pentz (s836);
- Red Bluff-Perkins-Pardee (s843);
- Rock outcrop-Mokelumne variant-Mokelumne (s842); and
- Rock outcrop-Henneke-Delpiedra (s838).

## **3.1.5 Land Use**

### ***San Francisco Bay Area***

Predominant land uses in the SF Bay Area include urban, suburban, commercial, and industrial, with much of this development occurring within the flat portions of the SF Bay. Open space, used for

recreation and rangeland, generally occurs in the more mountainous portions of the East SF Bay Hills, as well as sparse areas of rural residences.

### ***Sacramento-San Joaquin River Delta***

Agriculture is the also dominate land use in the Delta, with the farmers utilizing the relatively high water table and plentiful sun to grow numerous crops. Small patches of suburban towns occur in the Delta, typically at bridges and other intersections between boat and automobile traffic. Rural residential structures, often associated with agricultural management, are also located throughout much of the higher elevation, less flood-prone portions of the Delta.

### ***Central Valley***

Agriculture, pastures, and rangeland are the dominate land uses in the Central Valley, with the farmers and ranchers benefiting from the plentiful sun to grow numerous crops and grain to support livestock. The City of Stockton is the dominant urban land use in the study area that is surrounded by suburban, industrial, and commercial areas ringing the outskirts of the City. Small areas of unincorporated communities and clusters of rural residences occur in other areas of the Central Valley, and they are often associated with agricultural and livestock production.

### ***Sierra Nevada Mountains Foothills***

Rangeland and agriculture, with low densities of associated rural residential structures, are the dominant land uses in the Foothills within the study area. Suburban communities are rapidly expanding in the Foothills. Other land uses in the Foothills include silviculture, mining, and reservoirs and other water impoundments.


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



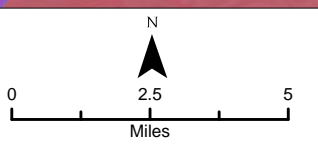


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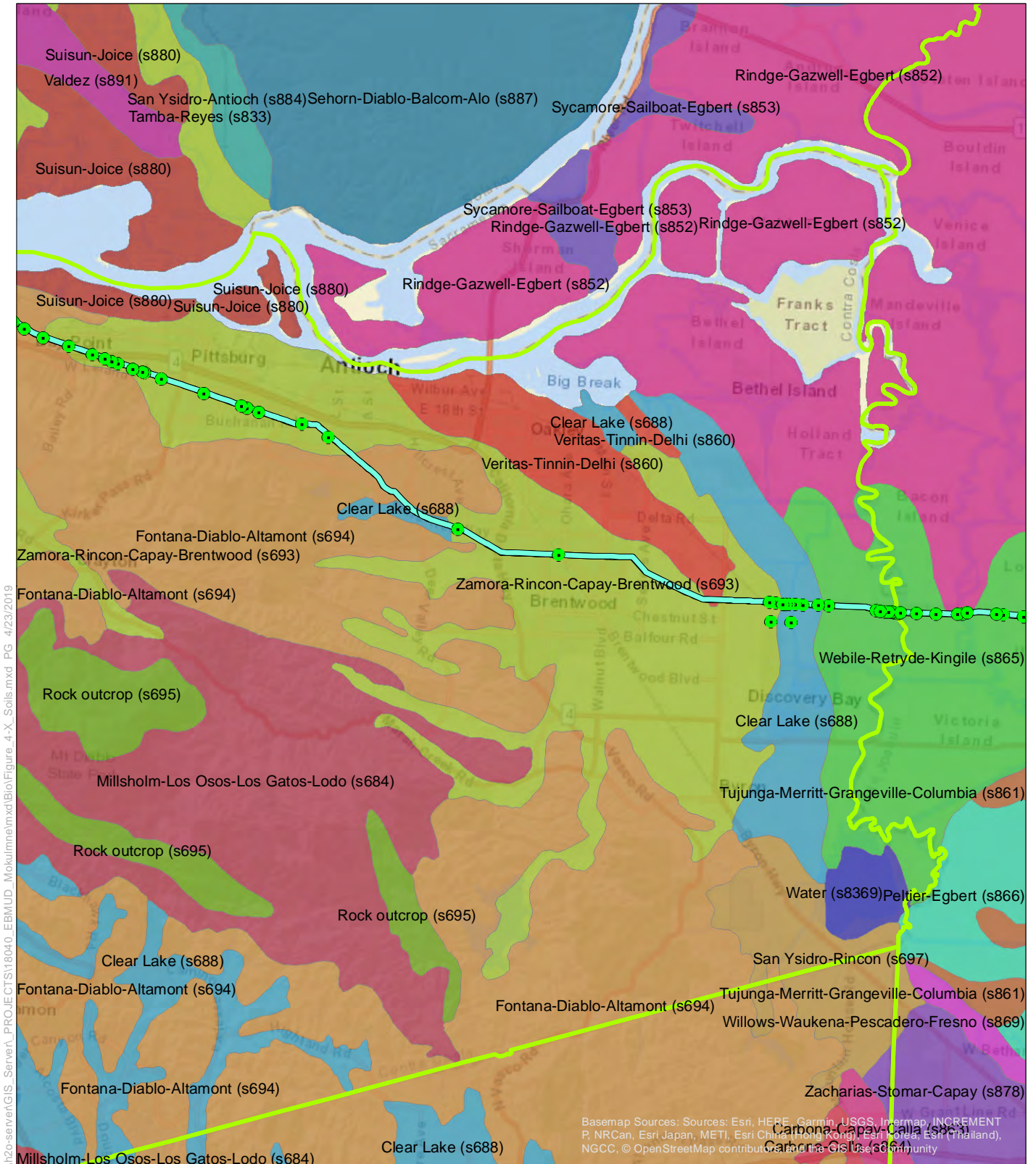
-  Maintenance Sites
-  Aqueduct
-  County Boundary



**Figure 3a**  
**Soils Map of the**  
**Proposed Project**



**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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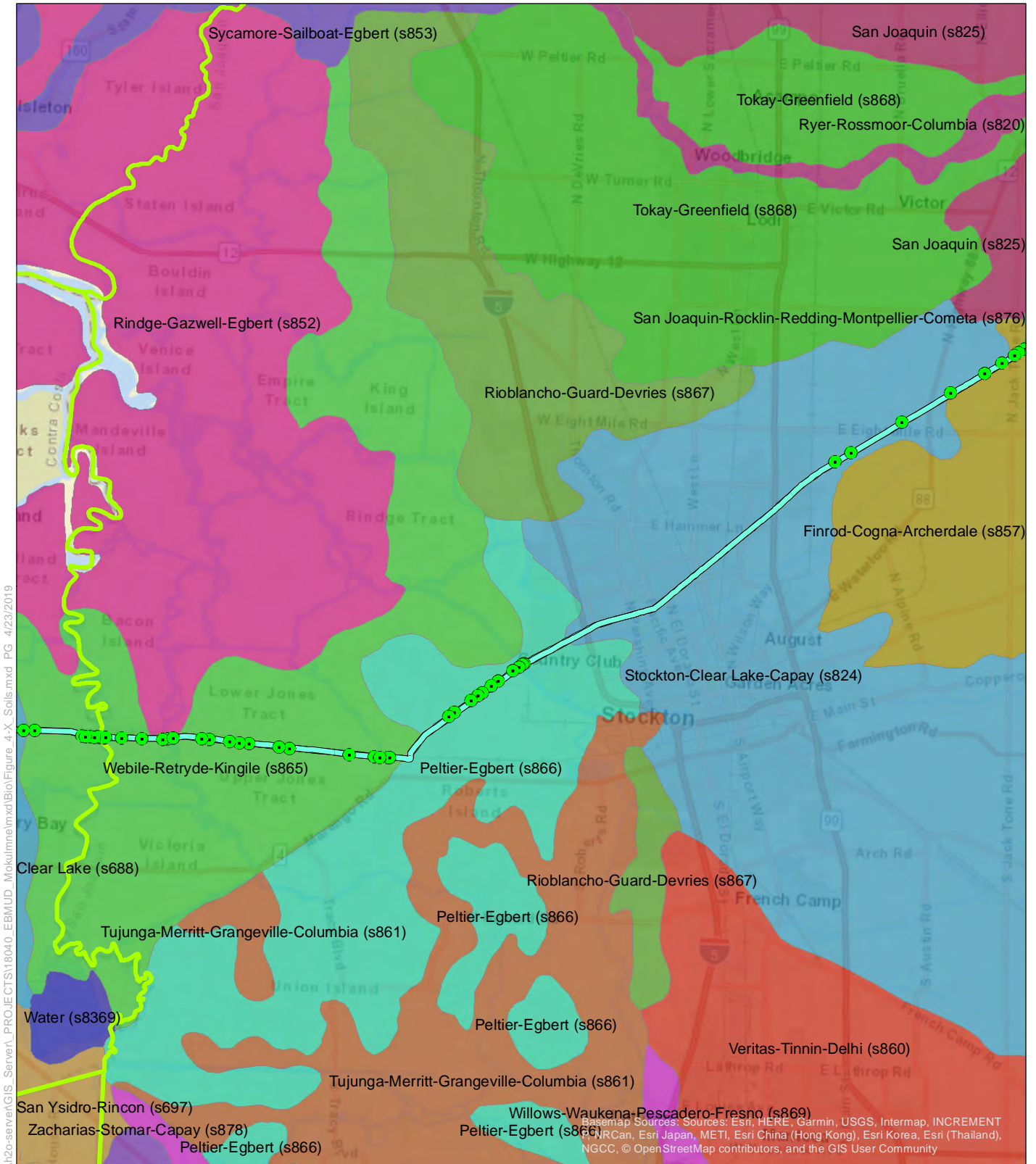


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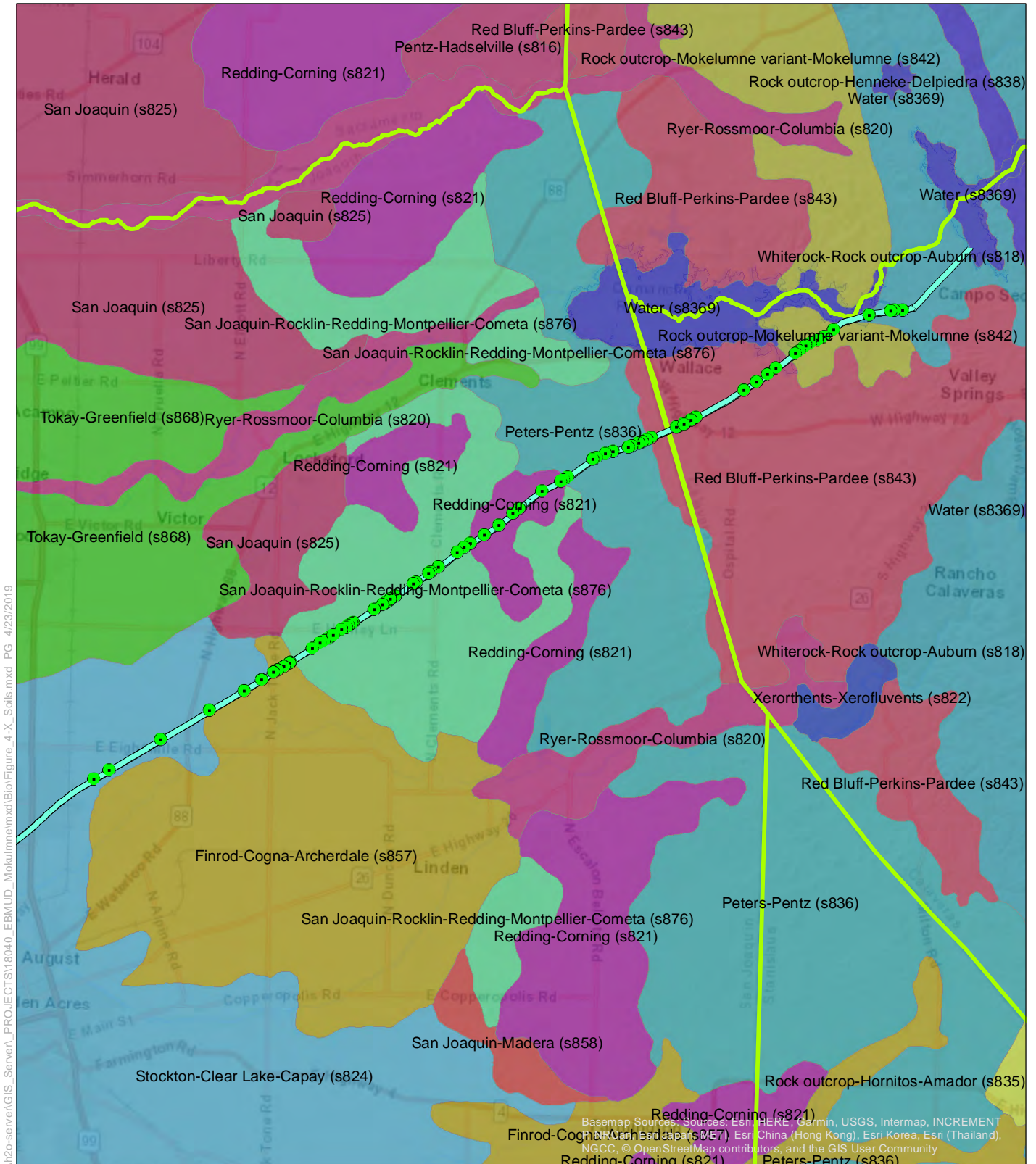


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## 4 Existing Biological Resources

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### 4.1 Inventory Methods

Baseline biological resources in the study area were evaluated by reviewing pertinent literature and conducting a field survey in order to supplement background information with representative site-specific investigations. The methods of each, literary review and the field survey, are described below.

#### 4.1.1 Literature Reviewed

Biological resource information in the study area was evaluated by reviewing the following data sources on special-status species, watersheds, water bodies, water quality, floodplain mapping, jurisdictional wetlands and waters of the U.S., and vegetation communities:

- USFWS list of federally endangered and threatened species that may occur in the proposed Project, and/or may be affected by the proposed Project<sup>1</sup> (Appendix E);
- USFWS's Critical Habitat Portal<sup>2</sup>;
- National Wetland Inventory (NWI) results<sup>3</sup>
- NOAA essential fish habitat mapper<sup>4</sup>;
- NMFS California Species List<sup>5</sup>;
- CDFW California Natural Diversity Database (CNDDDB) queries for the U.S. Geological Survey (USGS) 7.5-minute quadrangles encompassing the study area, which are: San Leandro, Hayward, Oakland East, Las Trampas Ridge, Richmond, Briones Valley, Walnut Creek, Clayton, Vine Hill, Honker Bay, Antioch North, Antioch South, Brentwood, Woodward Island, Holt, Stockton West, Stockton East, Lodi South, Waterloo, Linden, Clements, Wallace, and Valley Springs<sup>6</sup> (Appendix E);

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<sup>1</sup> U.S. Fish and Wildlife Service. 2019. List of Federally Endangered and Threatened Species that may occur in the Proposed Project, and/or may be affected by the proposed Project. IPaC ECOS. Available: <https://ecos.fws.gov/ipac/>. Accessed: April 23, 2019.

<sup>2</sup> U.S. Fish and Wildlife Service. 2018. Critical Habitat Data. Available: <https://www.fws.gov/sacramento/es/Critical-Habitat/Data/>. Accessed: December 17, 2018.

<sup>3</sup> U.S. Fish and Wildlife Service. 2018. National Wetland Inventory. Available: <https://www.fws.gov/wetlands/>. Accessed: December 12, 2018.

<sup>4</sup> National Ocean and Atmospheric Administration. Essential Fish Habitat Mapper. National Marine Fisheries Service, U.S. Department of Commerce. Available: <https://www.habitat.noaa.gov/protection/efh/efhmapper/>. Accessed: December 14, 2018.

<sup>5</sup> National Marine Fisheries Service. 2018. California Species List. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Available: [https://www.westcoast.fisheries.noaa.gov/maps\\_data/california\\_species\\_list\\_tools.html](https://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html). Accessed: December 14, 2018.

<sup>6</sup> California Department of Fish and Wildlife. 2019. California Natural Diversity Database. RareFind 5. Accessed: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed: April 23, 2019.

- CNPS’s Inventory of Rare and Endangered Plants of California queries for the USGS 7.5-minute quadrangles within the study area<sup>7</sup> (Appendix E);
- CNPS East Bay Chapter’s Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties (Appendix F)<sup>8</sup>;
- eBird records for the study area<sup>9</sup>;
- EBMUD documents and plans relevant to the Mokelumne Aqueduct:
  - EBMUD Range Resource Management Plan (2001);
  - EBMUD East Bay Revised Watershed Master Plan (2017) and associated East Bay Low Effect Habitat Conservation Plan (HCP) (2008);
  - *Biological Assessment of EBMUD Aqueduct Routine Maintenance Sites 1-30 in Contra Costa County, California*<sup>10</sup>;
  - *Lower Mokelumne River Upstream Fish Migration Monitoring Conducted at Woodbridge Irrigation District Dam August 2014 through July 2015* (Del Real, C. and Saldate, M. 2015);
  - Initial Study and Mitigated Negative Declaration: Recoat Mokelumne Aqueducts Phase 8 – Slough Crossings Project (EBMUD 2010);
  - Initial Study and Mitigated Negative Declaration for the Mokelumne Aqueduct Seismic Upgrade Project (EBMUD 1996);
- Aerial photography<sup>11</sup>
- USGS topographic maps<sup>12</sup>

Results from the USFWS, NWI, NOAA, NMFS, CDFW’s CNDDB, and CNPS database queries are provided in Appendix E.

#### 4.1.2 Field Survey

Horizon Senior Biologist Eric Christensen conducted a biological reconnaissance survey of the representative drainage maintenance location sites with EBMUD biological staff on the associated dates included in Table 1 below.

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<sup>7</sup> California Native Plant Society. 2019. Inventory of Rare and Endangered Plants of California queries for the USGS 7.5-minute Quadrangles within the Study Area. Available: <http://www.rareplants.cnps.org/advanced.html>. Accessed: April 23, 2019.

<sup>8</sup> California Native Plant Society, East Bay Chapter. 2019. Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties. Available: <https://ebcnps.fatcow.com/cgi-bin/ebrare/ebrare.cgi>

<sup>9</sup> Cornell Lab of Ornithology. 2018. eBird Species Database. Available: <https://ebird.org/map>. Accessed: December 14, 2018.

<sup>10</sup> Dudek. 2010. Biological Assessments of EBMUD Aqueduct Routine Maintenance Sites 1-30 in Contra Costa County, California.

<sup>11</sup> Google. 2018. Aerial Photography. Google Earth Pro, Vers. 7.3.2.5491. Mountain View, California.

<sup>12</sup> ESRI. 2018. Topographic Map Database. Redlands, California.

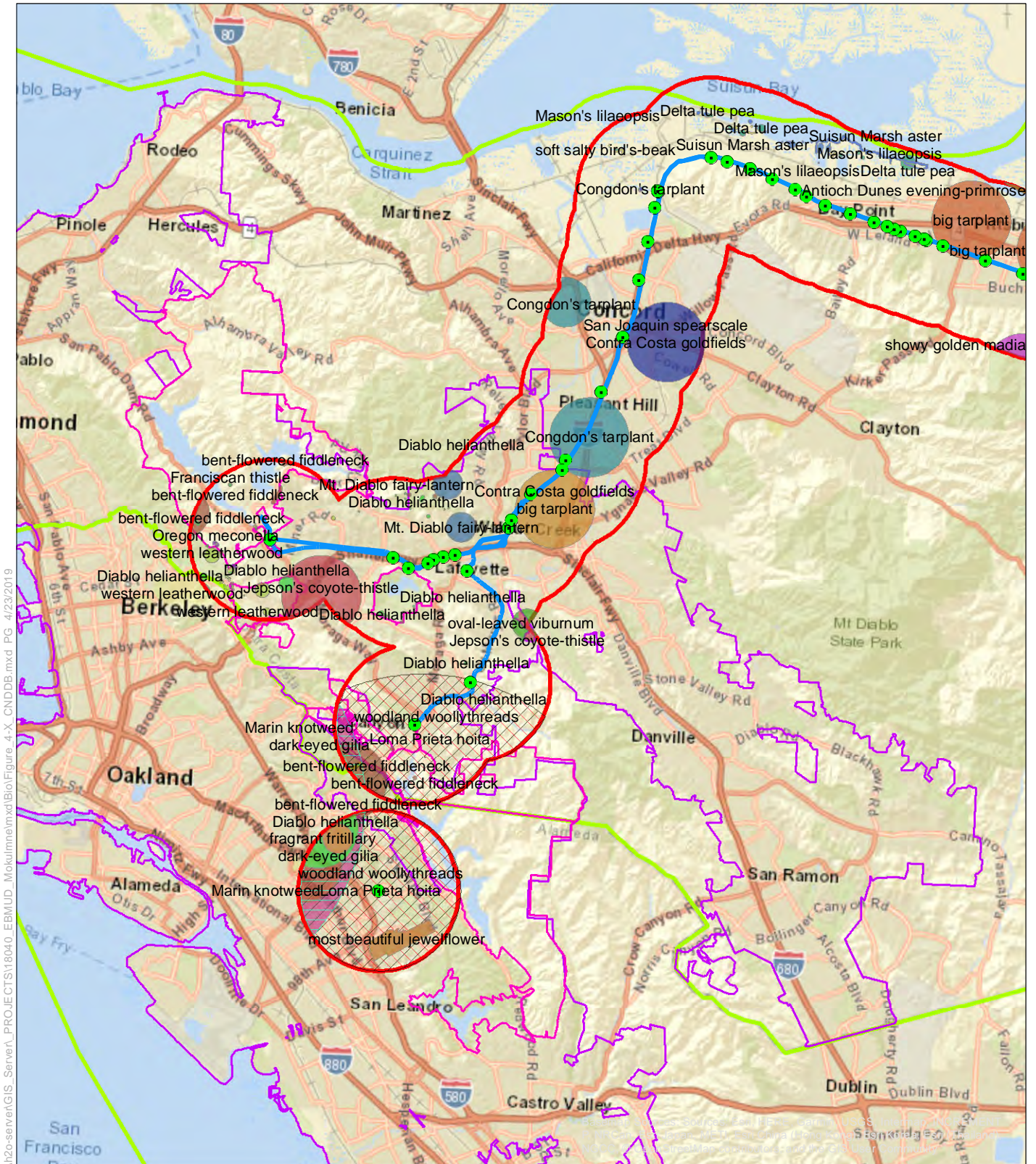
**Table 1: Survey Dates, Personnel, and Drainage Maintenance Sites.**

<b>Date</b>	<b>Personnel</b>	<b>Drainage Maintenance Sites</b>
December 13, 2018	Eric Christensen	126, 133, and 172
December 18, 2018	Eric Christensen	74, 80, 81, 90, 91, 92, 109, 110, 114, and 115
December 19, 2018	Eric Christensen Bridget Lillis	2, 3, 4, 18, 19, 20, 37, 38, 44, 45, and 46

The survey effort consisted of a visual assessment of the condition of these sites to indicate representative conditions in the greater study area. Maps of baseline biological resources including an aerial photographic overview of the Aqueduct alignment (Figure 2), detailed aerial photography and maintenance site locations (Appendix A), soil complexes throughout the Aqueduct (Figure 3), CNDDDB special-status plant occurrence records within two miles of the maintenance sites (Figure 4), CNDDDB special-status wildlife occurrence records within two miles of the maintenance sites (Figure 5), and Critical Habitat (Figure 6) were created based on the literature review.


Surveys were conducted in the field on-foot to cover an approximate 200-foot buffer around each drainage maintenance location where accessible to ensure total search coverage. Natural and anthropogenic features, land cover types, and the presences of common and special-status species were visually surveyed. Visual aids, such as binoculars, were used to better assess survey areas and wildlife species when appropriate. Field data were collected as photographs, notes, and mark-ups on aerial photographs, and geospatial data were collected on an iPad with ArcGIS Collector. Collector data were downloaded and geo-rectified in ArcGIS Version 10.6.1.

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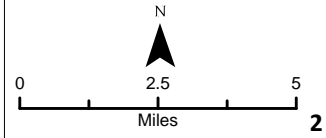
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EBMUD

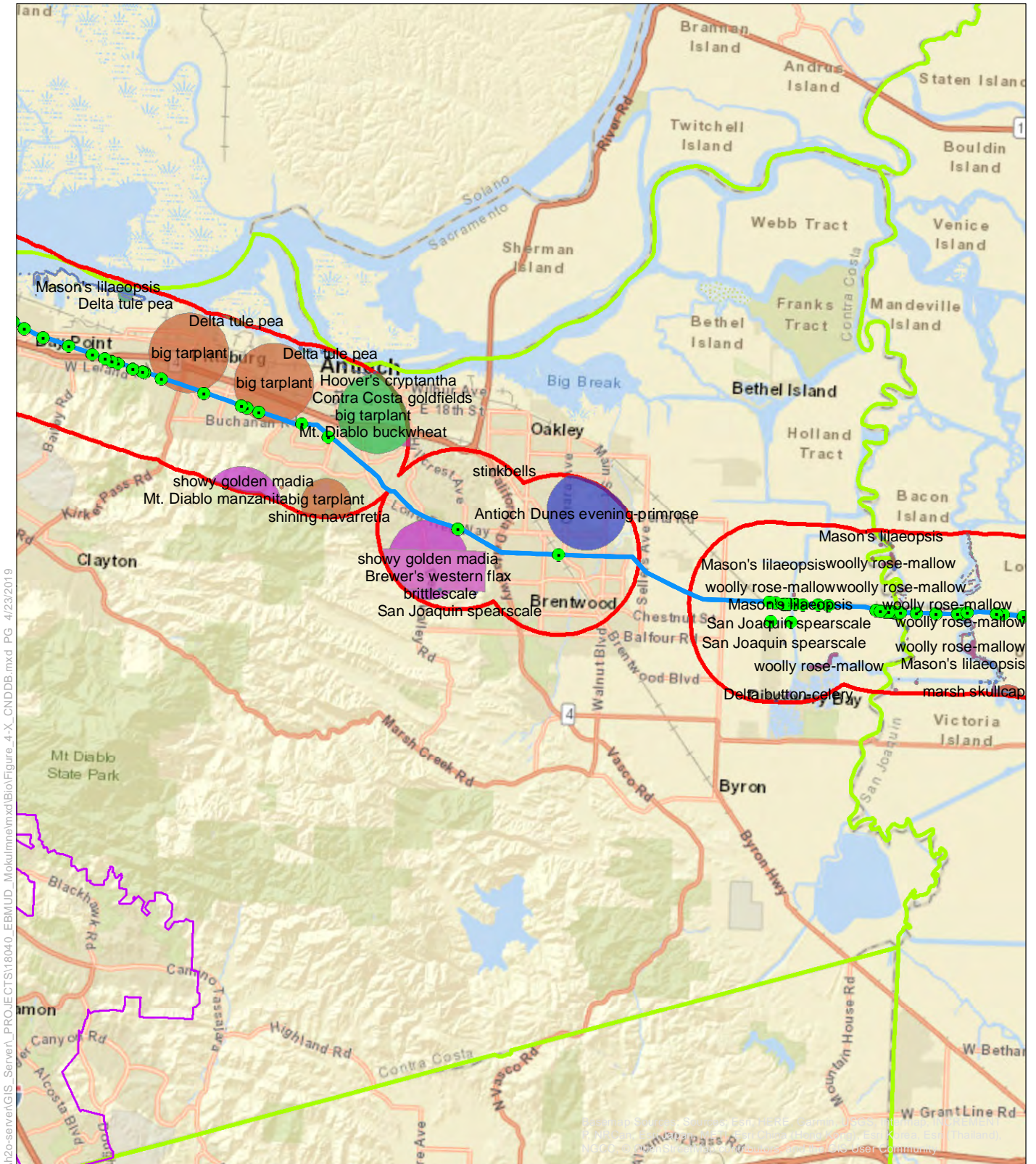
- Maintenance Sites
- Aqueduct
- EBMUD Property
- Service Area
- Maintenance Site 2-Mile Buffer
- County Boundary



**Figure 4a**  
**CNDDB Occurrences of**  
**Special-status Plants within**  
**2 miles of the Proposed Project**

**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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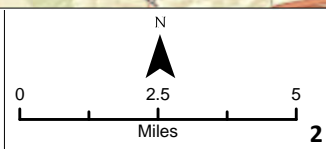


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- Maintenance Sites
- Aqueduct
- EBMUD Property
- Service Area
- Maintenance Site 2-Mile Buffer
- County Boundary

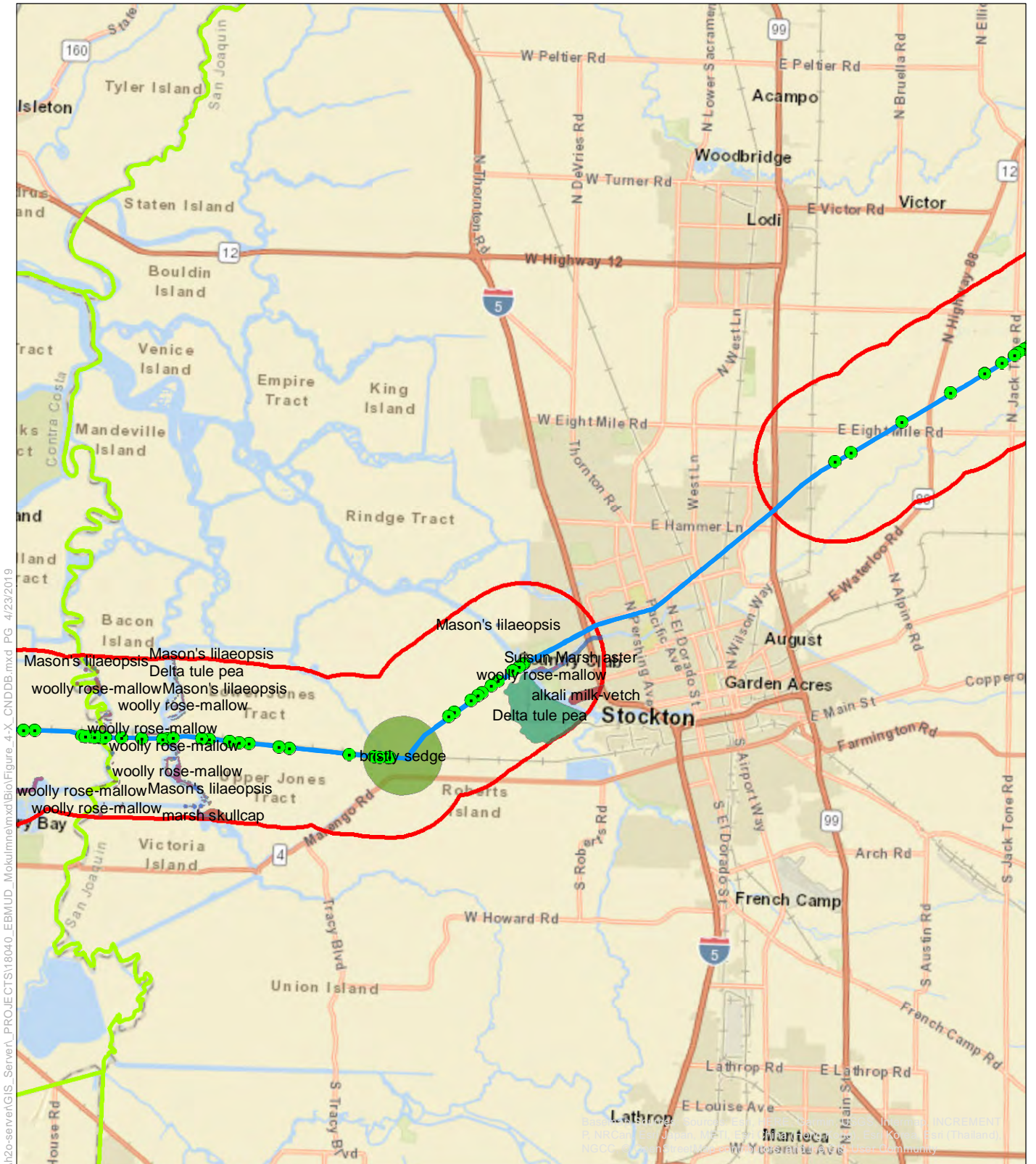


**Figure 4b**  
**CNDDDB Occurrences of**  
**Special-status Plants within**  
**2 miles of the Proposed Project**

**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**


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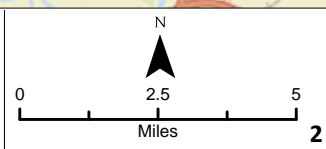
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EBMUD

- Maintenance Sites
- Aqueduct
- EBMUD Property
- Service Area
- Maintenance Site 2-Mile Buffer
- County Boundary

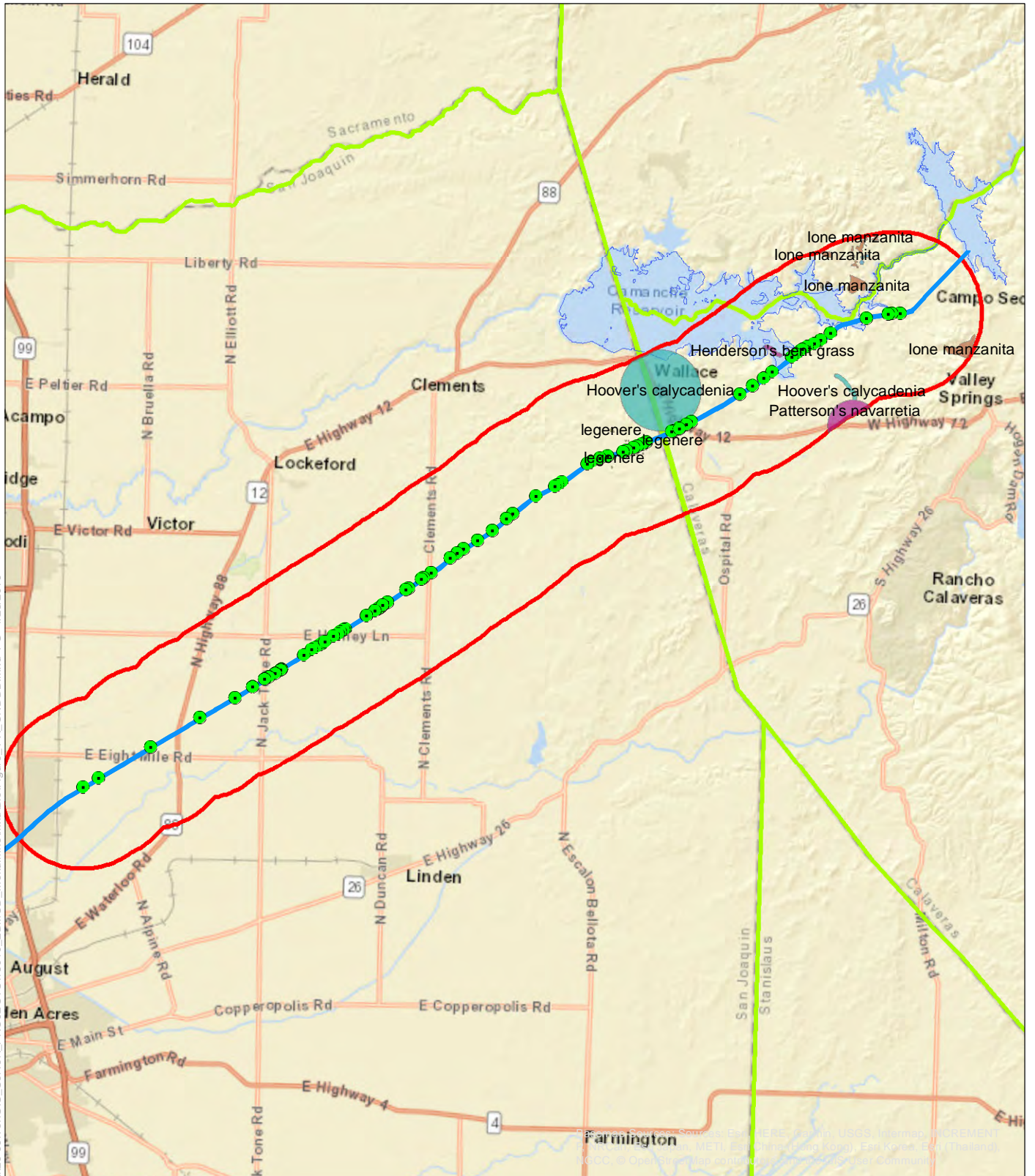


**Figure 4c**  
**CNDDB Occurrences of**  
**Special-status Plants within**  
**2 miles of the Proposed Project**

**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

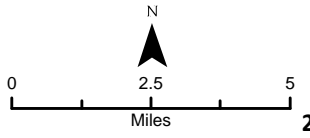
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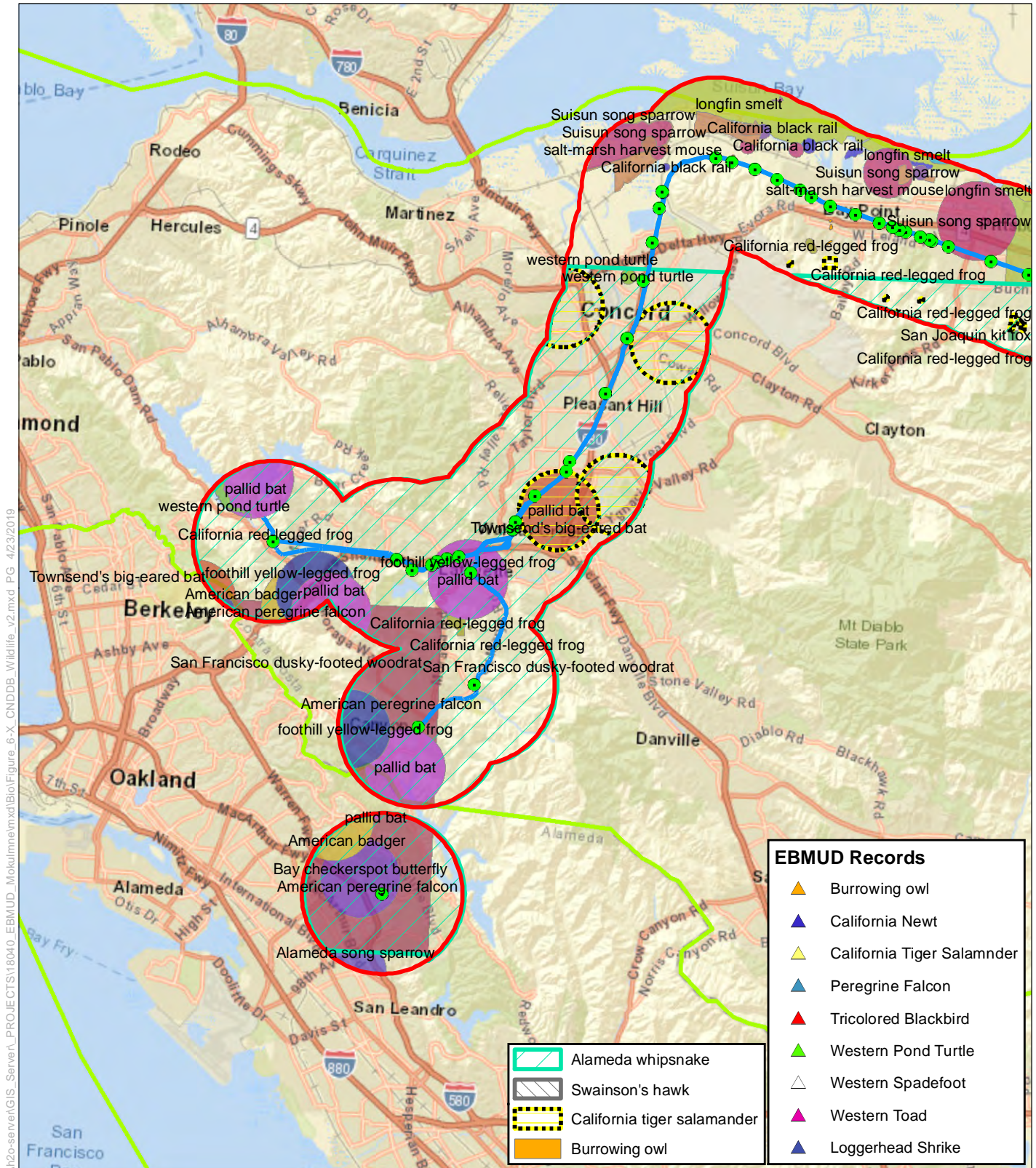
- Maintenance Sites
- Aqueduct
- EBMUD Property
- Service Area
- Maintenance Site 2-Mile Buffer
- County Boundary



**Figure 4d**  
**CNDDDB Occurrences of**  
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**2 miles of the Proposed Project**

**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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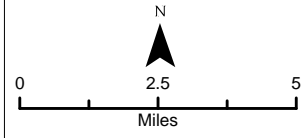


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EBMUD Records	
	Burrowing owl
	California Newt
	California Tiger Salamander
	Peregrine Falcon
	Tricolored Blackbird
	Western Pond Turtle
	Western Spadefoot
	Western Toad
	Loggerhead Shrike

**Figure 5a**  
**CNDDDB Occurrences of**  
**Special-status Animals within**  
**2 miles of the Proposed Project**

- Maintenance Sites
- Aqueduct
- Maintenance Sites 2-Mile Buffer
- County Boundary

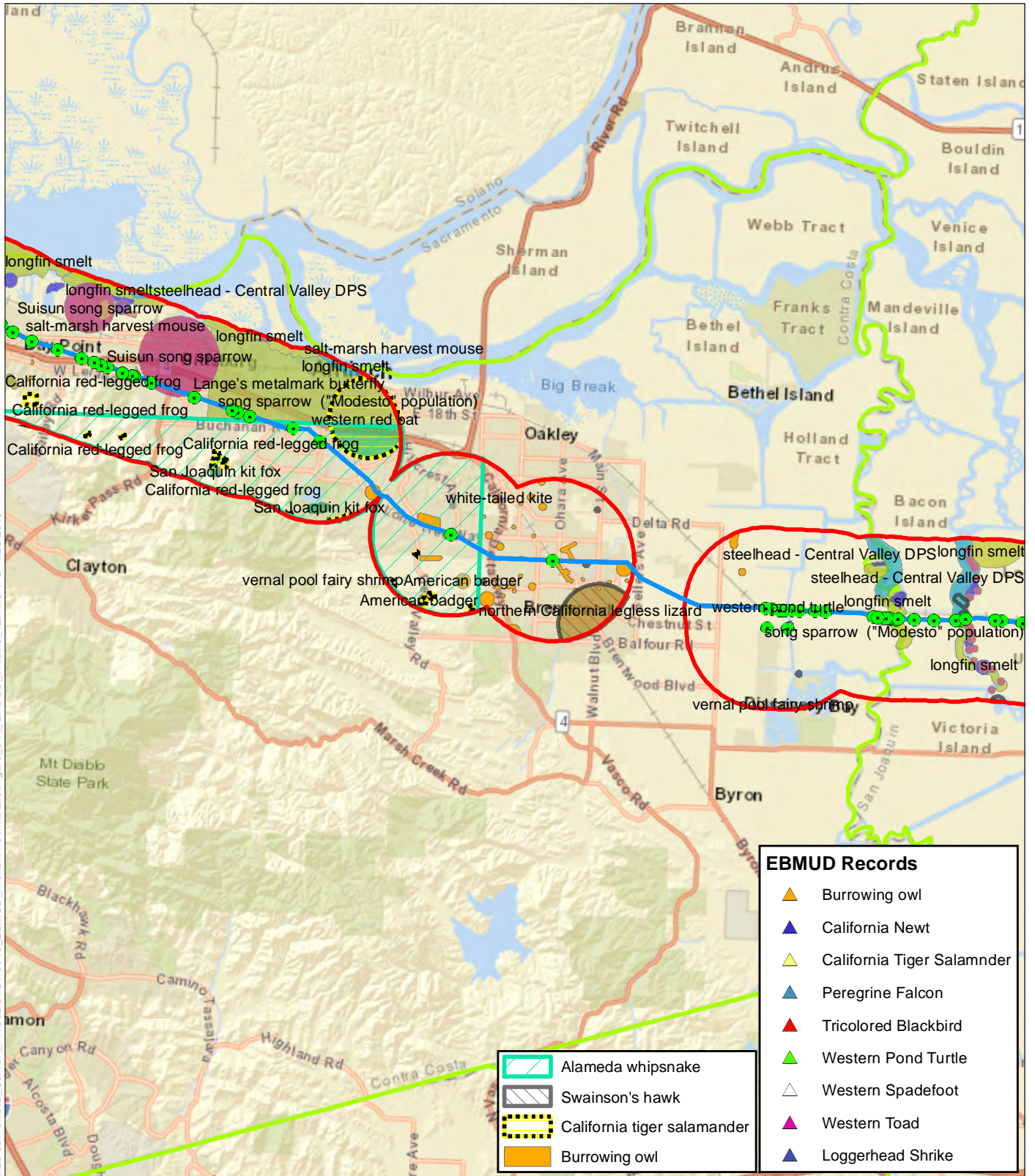


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**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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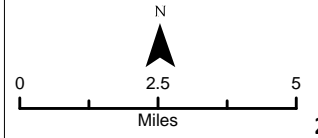


**EBMUD Records**

- ▲ Burrowing owl
- ▲ California Newt
- ▲ California Tiger Salamander
- ▲ Peregrine Falcon
- ▲ Tricolored Blackbird
- ▲ Western Pond Turtle
- △ Western Spadefoot
- ▲ Western Toad
- ▲ Loggerhead Shrike

- Alameda whipsnake
- Swainson's hawk
- California tiger salamander
- Burrowing owl

- Maintenance Sites
- Aqueduct
- Maintenance Sites 2-Mile Buffer
- County Boundary



**Figure 5b**  
**CNDDDB Occurrences of**  
**Special-status Animals within**  
**2 miles of the Proposed Project**

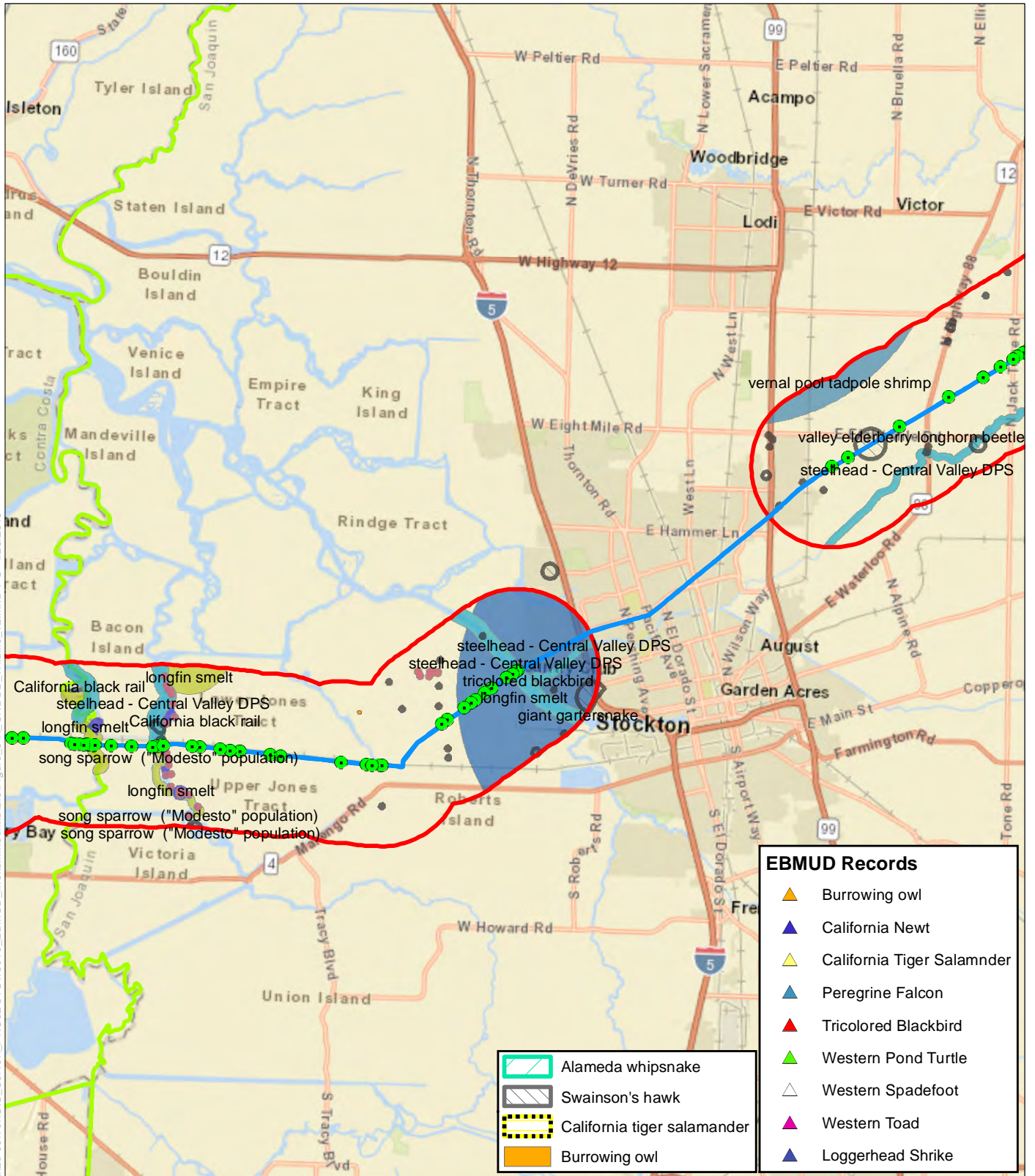
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**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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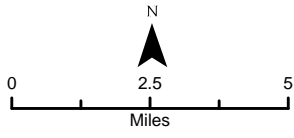


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EBMUD Records	
	Burrowing owl
	California Newt
	California Tiger Salamander
	Peregrine Falcon
	Tricolored Blackbird
	Western Pond Turtle
	Western Spadefoot
	Western Toad
	Loggerhead Shrike

- Maintenance Sites
- Aqueduct
- Maintenance Sites 2-Mile Buffer
- County Boundary



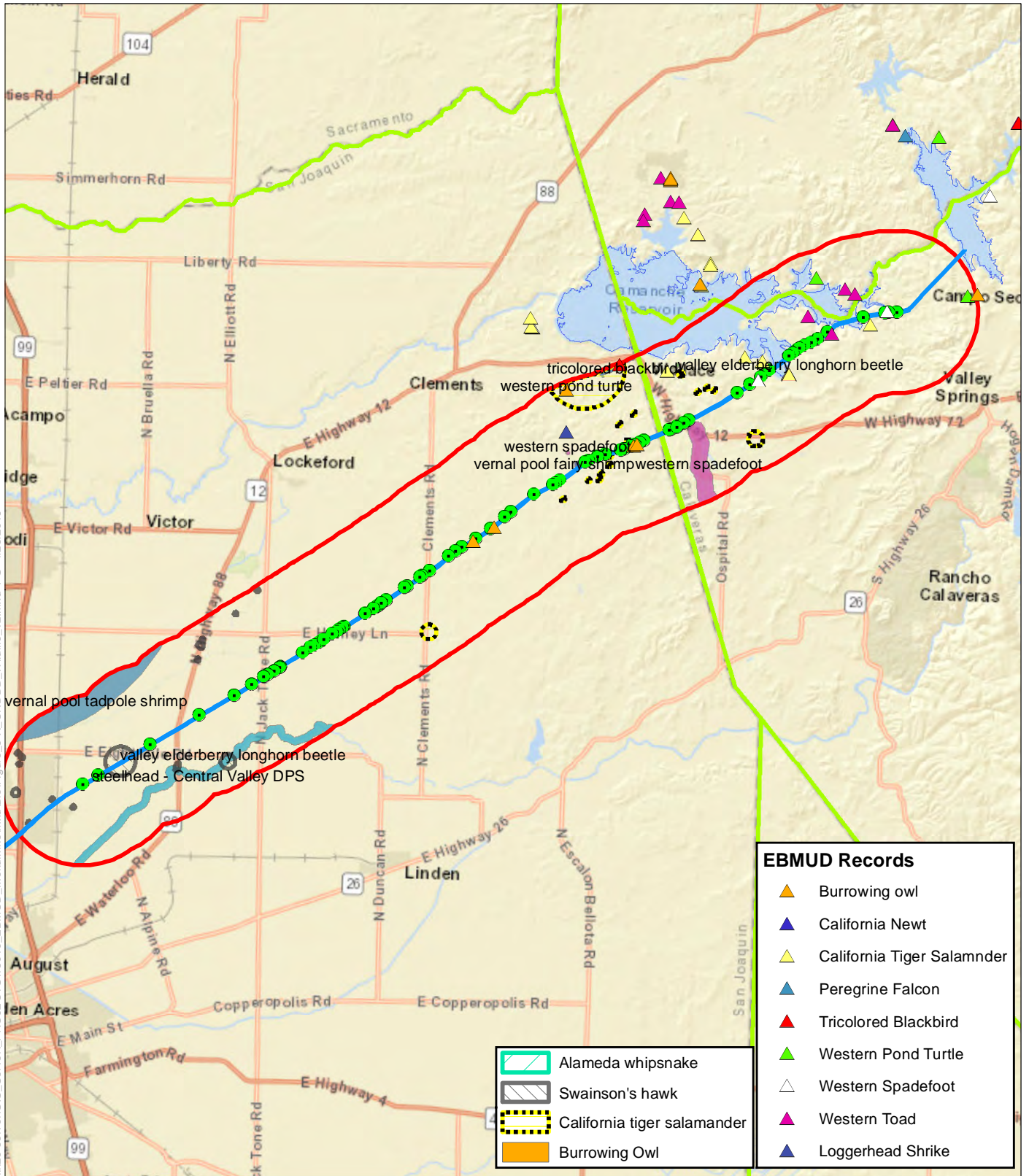
**Figure 5c**  
**CNDDDB Occurrences of**  
**Special-status Animals within**  
**2 miles of the Proposed Project**

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**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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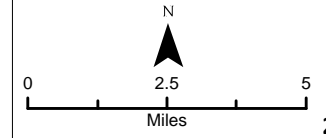


**EBMUD Records**

- ▲ Burrowing owl
- ▲ California Newt
- ▲ California Tiger Salamander
- ▲ Peregrine Falcon
- ▲ Tricolored Blackbird
- ▲ Western Pond Turtle
- ▲ Western Spadefoot
- ▲ Western Toad
- ▲ Loggerhead Shrike

- Alameda whipsnake
- Swainson's hawk
- California tiger salamander
- Burrowing Owl

- Maintenance Sites
- Aqueduct
- Maintenance Sites 2-Mile Buffer
- County Boundary

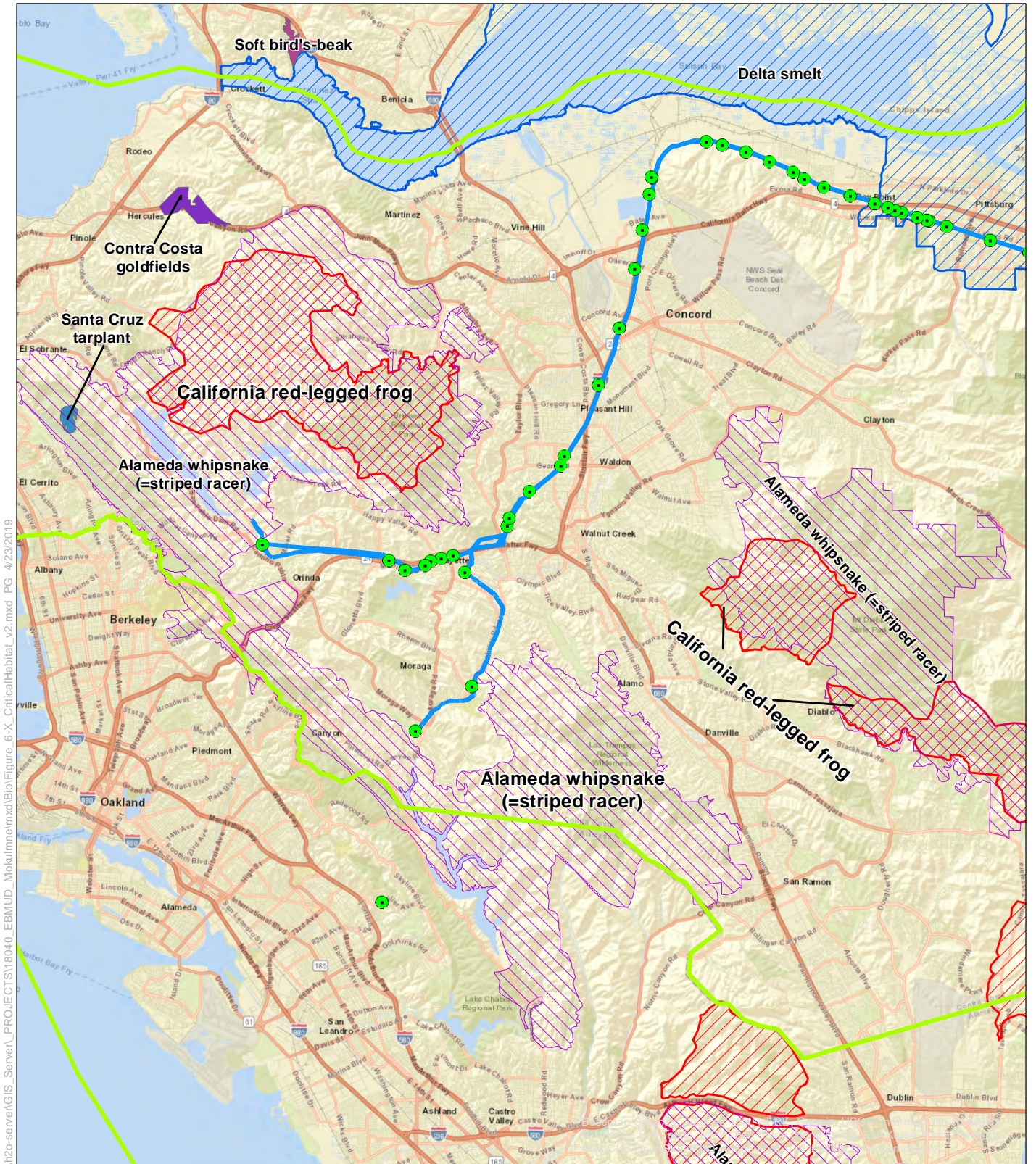


**Figure 5d**  
**CNDDDB Occurrences of**  
**Special-status Animals within**  
**2 miles of the Proposed Project**

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**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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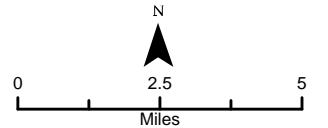


\\h2o-server\GIS\_Server\PROJECTS\18040\_EBMUD\_Mokelumne\mxd\Bio\Figure 6-X CriticalHabitat\_v2.mxd PG 4/23/2019

- |                                    |                            |                            |
|------------------------------------|----------------------------|----------------------------|
| Aqueduct                           | California red-legged frog | Vernal pool fairy shrimp   |
| County Boundary                    | Delta smelt                | Vernal pool tadpole shrimp |
| Alameda whipsnake (=striped racer) | Sacramento Orcutt grass    |                            |

**Figure 6a**  
**Critical Habitat**

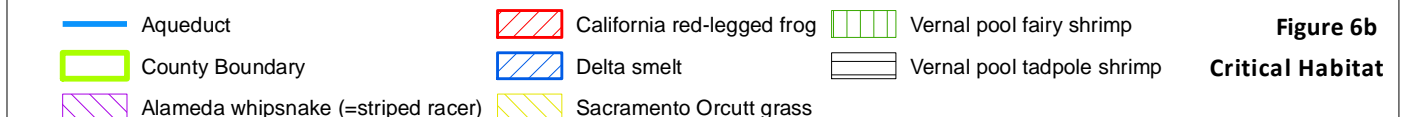
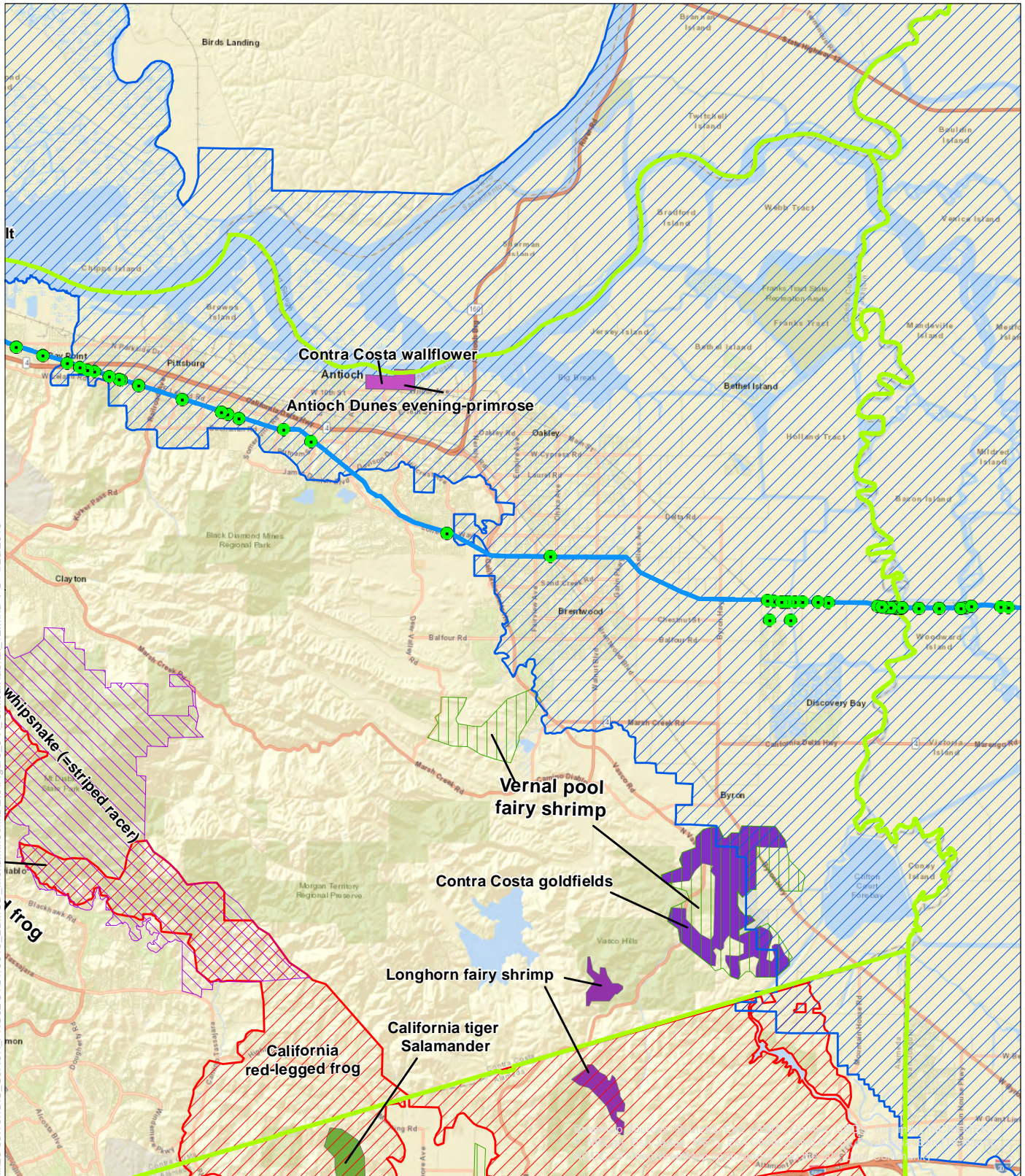
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**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

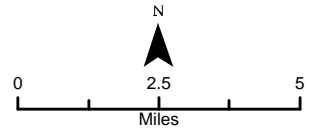
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**Figure 6b**  
**Critical Habitat**

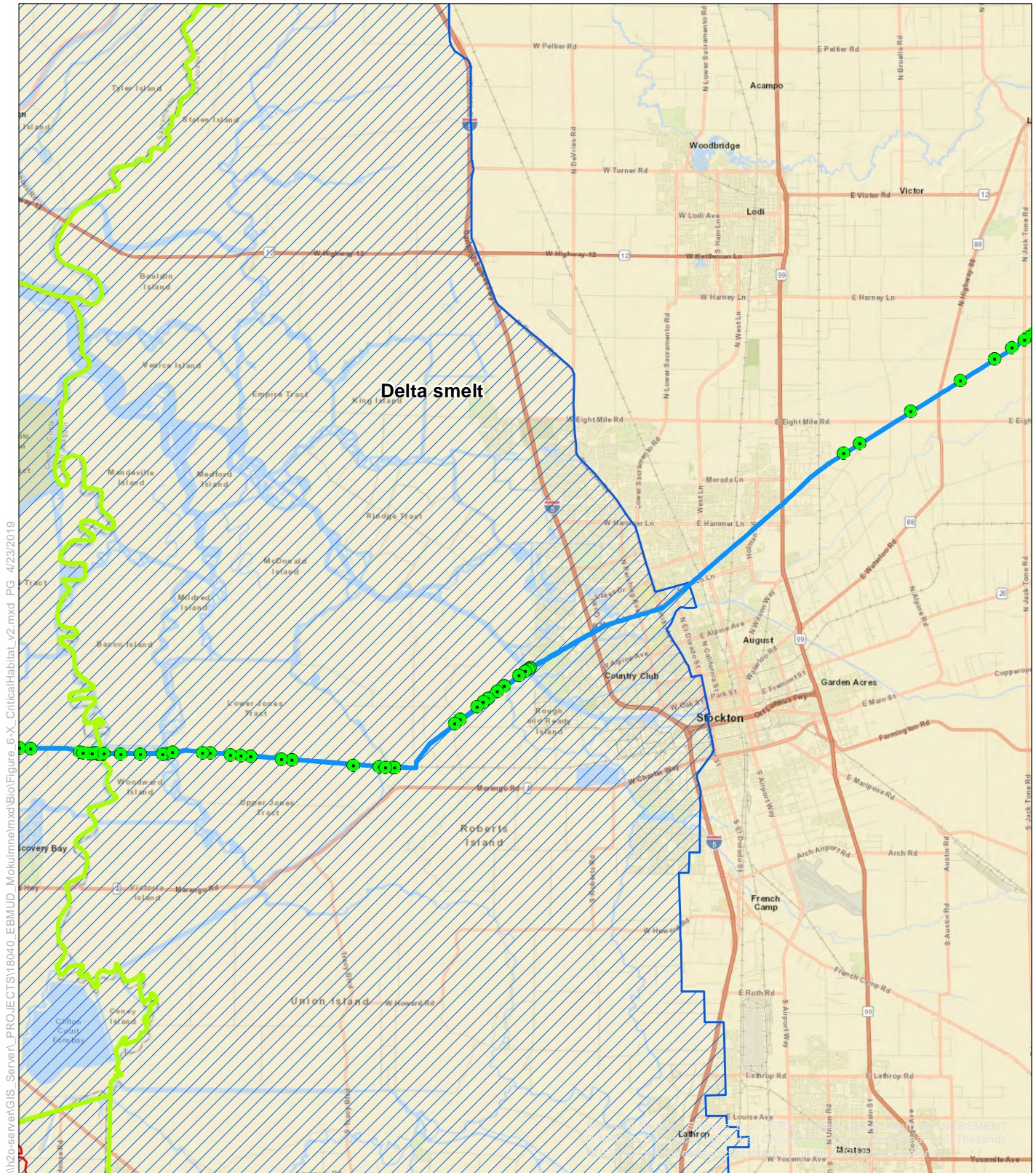
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**EBMUD Mokelumne Aqueduct System**  
**Biological Resources Assessment**

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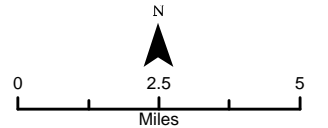


\\hp2c-server\GIS\_Server\PROJECTS\18040\_EBMUD\_Mokelumne\mxd\Bio\Figure\_6-X\_CriticalHabitat\_v2.mxd PG. 4/23/2019

- Aqueduct
- County Boundary
- Alameda whipsnake (=striped racer)
- California red-legged frog
- Delta smelt
- Sacramento Orcutt grass
- Vernal pool fairy shrimp
- Vernal pool tadpole shrimp

**Figure 6c**  
**Critical Habitat**

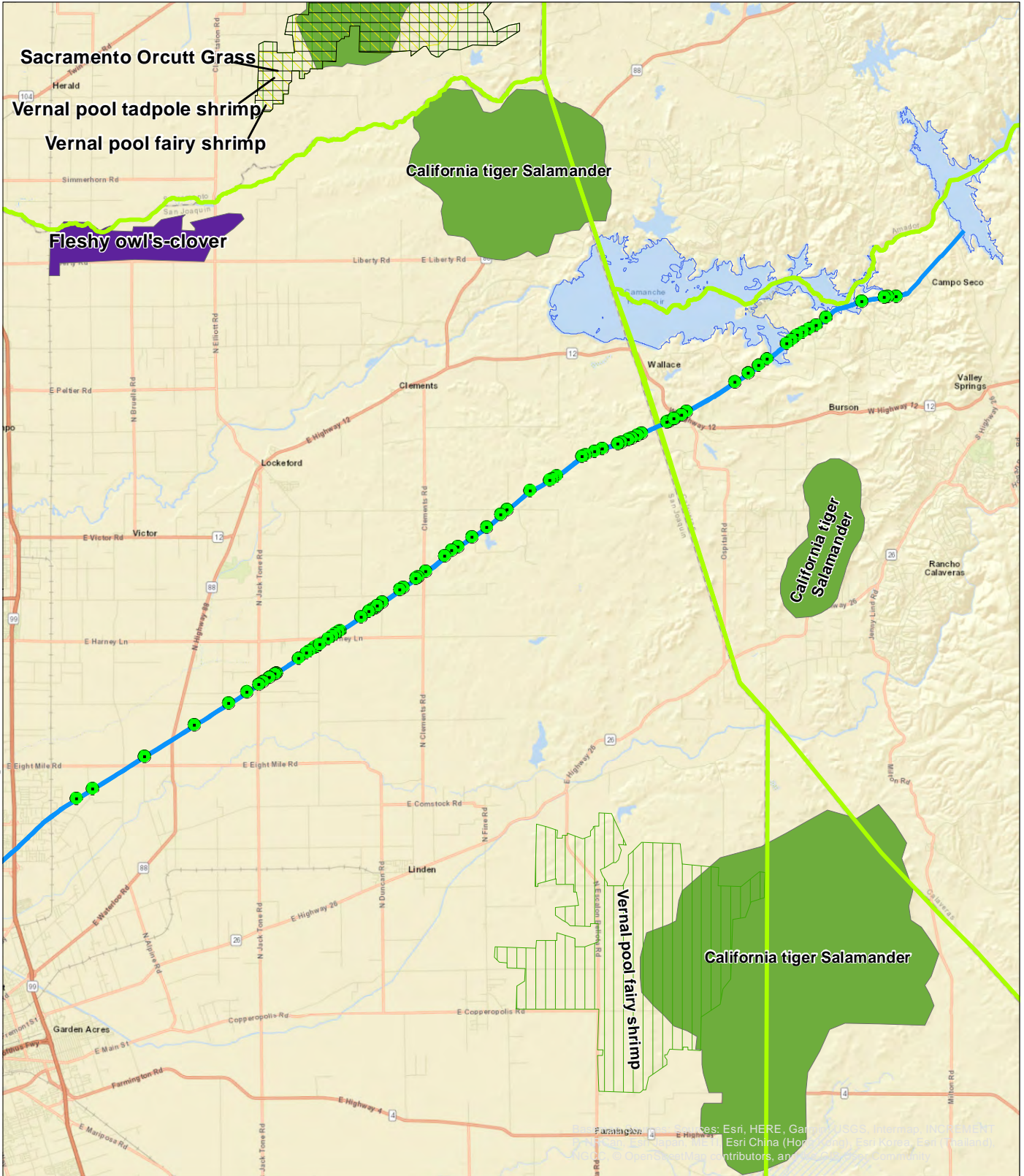
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Aqueduct	California red-legged frog	Vernal pool fairy shrimp	<b>Figure 6d</b> <b>Critical Habitat</b>
County Boundary	Delta smelt	Vernal pool tadpole shrimp	
Alameda whipsnake (=striped racer)	Sacramento Orcutt grass		

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 Horizon  
 WATER and ENVIRONMENT

Prepared for:  
 EBMUD

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Biological Resources Assessment**

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## 4.2 Land Cover Types

Land cover was characterized based on aerial photography and ground-truthed during the surveys, described in Table 1, at selected maintenance sites. Upland vegetation within the maintenance sites is primarily mowed and maintained such that vegetation height does not exceed 4 inches to aid in EBMUD' routine leak detection practices. As a result of ongoing vegetation maintenance, much of the upland portions of the maintenance sites and Mokelumne Aqueduct is primarily California annual grassland, ruderal land cover, and a mixture of grassland and ruderal vegetation. Eight primary land cover types, including agricultural land, wetland, aquatic, woodland, valley foothill riparian, grassland, ruderal, and developed, occur adjacent to the maintenance sites and throughout the greater study area. The characteristics of each land cover type, including vegetative and wildlife associations, is described below.

### 4.2.1 Agricultural Land

Freshwater marsh occurs in and adjacent to multiple maintenance sites. Agricultural lands within and adjacent to the Study Area include irrigated pastures, orchards, and row crops. Pastures are typically cultivated in alfalfa (*Medicago sativa*), rescue grass (*Bromus catharticus*), Johnson grass (*Sorghum halpense*), tall fescue (*Festuca arundinaceae*), and Italian ryegrass (*Festuca perennis*). Typical orchard crops in the Central Valley are peach (*Prunus persica*), common pear (*Pyrus communis*), almond (*Prunus dulcis*), and English walnut (*Juglans regia*). Typical row crops include alfalfa, broccoli (*Brassica oleracea*), corn (*Zea mays*), and tomatoes (*Solanum lycopersicum*), among others.

Flood irrigated pasture provides food, cover, and nesting grounds for wildlife species; the value of the habitat varies with crop type and agricultural practices. Bird diversity can be high in irrigated pastures<sup>13</sup>. Species commonly utilizing pasture lands include red-winged blackbird (*Agelaius phoeniceus*), Brewer's blackbird (*Euphagus cyanocephalus*), western meadowlarks (*Sturnella neglecta*), European startling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and American kestrel (*Falco sparverius*). Some pasture lands and crop fields provide suitable breeding habitat for northern harrier (*Circus hudsonius*). Fallow fields are likely to have larger populations of small mammals, such as Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Otospermophilus beecheyi*), than actively farmed fields. Small mammals in flood irrigated pasture and row crops provide important prey resources for raptors such as red-tailed hawk (*Buteo jamaicensis*) and Swainson's hawk (*Buteo swainsoni*).

In orchards, the understory vegetation that provides food and cover for wildlife is generally removed, limiting the abundance and diversity of wildlife species. Species such as the western fence lizard (*Sceloporous occidentalis*) and side-blotched lizard (*Uta stansburiana*) can occur in this land cover type. American crow and yellow-billed magpies (*Pica nuttalli*), which forage on nut crops, are often present

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<sup>13</sup> Hartman, C.A., and K. Kyle. 2010. Farming for Birds: Alfalfa and Forages as Valuable Wildlife Habitat. IN: Proceedings, 2010 California Alfalfa & Forage Symposium and Corn/Cereal Silage Mini-Symposium, Visalia, CA, December, 1-2 2010. UCCE, University of California, Davis.

## 4.2.2 Wetlands

### **Freshwater Marsh**

Freshwater marsh occurs in and adjacent to multiple maintenance sites. Freshwater marsh most frequently occurs in aquatic channels within the Delta, but it is also present in perennial riverine channels and along the edges of lacustrine (e.g., lakes, ponds, reservoir) features in the East Bay Hills, Central Valley, and Sierra Nevada Foothills. Dominant vegetation species include cattail (*Typha* spp.), hardstem bulrush (*Schoenoplectus acutus*), California bulrush (*Schoenoplectus californicus*), Chairmaker's bulrush (*Schoenoplectus americanus*), willow shrubs (*Salix* spp.), California mugwort (*Artemisia douglasiana*), and rabbitsfoot grass (*Polypogon monspeliensis*). Taller species grow in water depths between one to three feet and shorter species grow from one foot deep to above the water line. Small fish typically use this marsh type as refugia from larger predators, and several bird species, including great egret (*Ardea alba*), forage within freshwater marsh. Marshes along perennial streams can provide habitat for western pond turtle, giant garter snake (*Thamnophis gigas*), California red-legged frog (*Rana draytonii*), non-native American bullfrog (*Lithobates catesbeianus*), Sierran treefrog (*Pseudacris sierra* [formerly *Hyla regilla*]), and foothill yellow-legged frog (*Rana boylei*). California tiger salamander (*Ambystoma californiense*) can occur within seasonally inundated marshes and, if predators (e.g., fish, bullfrogs) are absent, perennial marshes; although, the species is most commonly associated with vernal pools. The CDFW refers to this community as "American bulrush marsh alliance" and has given it a rarity rank of G5S3. This alliance and all associations within it are considered rare<sup>14</sup>.

### **Seasonal Wetlands**

Seasonal wetlands do not occur within maintenance sites, but are located adjacent to several sites. Seasonal wetlands in the study area are freshwater wetlands that are seasonally inundated or their soil saturated during the wet season (i.e., winter and spring). These features are typically charged by direct rainfall and adjacent uplands runoff, and seasonal wetlands dry completely during early spring to summer. Dominant plant species typically associated with seasonal wetlands include Greene's popcornflower (*Plagiobothrys greenei*), smooth-rayed goldfields (*Lasthenia glaberrima*), cowbag clover (*Trifolium depauperatum*), Fitch's spikeweed (*Centromadia fitchii*), peppergrass (*Lepidium nitidum*), and Oregon timwort (*Cicendia quadrangularis*). Seasonal wetlands do not support vernal pool branchiopods (e.g., fairy shrimp), because they do not possess a long enough hydroperiod (i.e., inundation duration). Several shorebird, duck, and other water fowl species forage in seasonal wetlands, as these wetlands offer resting and feeding opportunities during migrations along the Pacific flyway. Sierran treefrogs breed and forage in seasonal wetlands.

### **Vernal Pool**

Vernal pools do not occur within maintenance sites, but are located adjacent to several sites. Vernal pools are similar to seasonal wetlands, in that they are charged from direct rainfall and adjacent upland runoff. Vernal pools are typically deeper than seasonal wetlands, as they remain inundated for extended durations in the wet season. After the wet season, vernal pools dry completely in late spring to mid-summer. Dominant plant species are largely comprised of native wetland species such as common spikerush (*Eleocharis macrostachya*), vernal pool buttercup (*Ranunculus bonariensis*),

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<sup>14</sup> California Department of Fish and Wildlife. 2018. Natural Communities. Available: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>. Accessed: December 17, 2018.

coyote thistle (*Eryngium vaseyi*), Fremont's goldfields (*Lasthenia fremontii*), yellow rayed goldfields (*Lasthenia glabrata*), flatface downingia (*Downingia pulchella*), toothed calicoflower (*Downingia cuspidata*), doublehorn calicoflower (*Downingia bicornuta*), and blow wives (*Achyraea mollis*). Wildlife in vernal pools is similar to that found in seasonal wetlands, but vernal pools can support special-status branchiopods, including vernal pool tadpole shrimp (*Lepidurus packardii*), longhorn fairy shrimp (*Branchinecta longiantenna*), conservancy fairy shrimp (*B. conservatio*), and vernal pool fairy shrimp (*B. lynchi*). California tiger salamander and western spadefoot (*Spea hammondi*) breed and forage within some vernal pools.

### 4.2.3 Aquatic (Streams, Ponds, Sloughs)

#### **Lacustrine**

Lacustrine (i.e., lake) occurs in and adjacent to multiple maintenance sites. Lacustrine is the dominant cover type in the reservoirs, ponds, and stock ponds throughout the study area. Lacustrine features are flooded with standing water exceeding 2 meters (6.6 feet [ft]) at low water.

Floating and/or submerged vegetation is often found in lacustrine features. Duckweeds (*Lemna* spp.) and mosquito fern (*Azolla* spp.) may be found floating on the water surface, and rooted plants with floating leaves, such as smartweed (*Persicaria* sp.) may also be found. Submerged plants include algae and pondweeds (*Potamogeton* spp.).

Reservoirs and ponds provide habitat for a variety of wildlife species. Common resident birds that occur in these features include western grebe (*Aechmophorus occidentalis*), double-crested cormorant (*Phalacrocorax auritus*), Canada goose (*Branta canadensis*), and mallard (*Anas platyrhynchos*). Many species of wintering ducks, such as the common merganser (*Mergus merganser*), northern shoveler (*Anas clypeata*), lesser scaup (*Aythya affinis*), and bufflehead (*Bucephala clangula*) typically occur in lacustrine features.

Amphibian species that may be found in lacustrine features include the Sierran chorus frog, American bullfrog, California newt, and California toad (*Anaxyrus boreas halophilus*).

#### **Riverine**

Riverine features occur in and adjacent to multiple maintenance sites. Riverine features in the study area include perennial streams, intermittent streams, and ephemeral drainages. These features are located throughout the study area in all regions. The characteristics of riverine features vary considerably. Several channels provide perennial aquatic habitat for fish and wildlife, migratory corridors, and often support associated riparian habitat on riverbanks. Many smaller streams and drainages experience periods of low flow (i.e., intermittent streams) or no surface flow during summer and fall (i.e., ephemeral drainages).

Riverine features in tidally influenced channels, generally located in drainages in close proximity to Suisun Bay within the East Bay Hills and Delta regions, generally support varying degrees of salt tolerant plants such as three-square bulrush (*Schoenoplectus americanus*) depending on the water's salinity content. Concrete channels typically support shallow-rooted or floating aquatic plants such as watercress (*Nasturtium officinale*), water primrose (*Ludwigia* spp.), water plantain (*Alisma plantago-aquatica*), smartweeds (*Polygonum* spp.) and non-vascular plants such as filamentous algae. Cattail, hardstem bulrush, and knotgrass (*Paspalum distichum*) are common in low-gradient earthen channels that are not in the tidal zone commonly found in the Delta and Central Valley regions. Giant horsetail (*Equisetum telmateia*), perennial pepperweed (*Lepidium latifolium*), tall

flatsedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and cocklebur (*Xanthium strumarium*) are also often present.

Common, widespread bird species that use streams in the study area include black-crowned night heron (*Nycticorax nycticorax*), green heron (*Butorides virescens*), great egret, mallard, and other waterfowl. Some species of amphibians use streams for breeding, particularly American bullfrogs, which are not native to California. Native amphibians and reptiles that may be present in and around streams in the study area include Sierran treefrog, California toad, California newt (*Taricha torosa*), and non-native red-eared slider (*Trachemys scripta elegans*).

Special-status species with the potential to occur in some streams and drainages in the study area include California red-legged frog, foothill yellow-legged frog, western pond turtle (*Actinemys marmorata*), giant garter snake, Delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), and steelhead (*Oncorhynchus mykiss*).

## 4.2.4 Woodland

### **Coast Live Oak Woodland**

Coast live oak woodland occurs in and adjacent to multiple maintenance sites. Coast live oak woodland is present within the East Bay Hills region of the study area. This land cover is dominated by coast live oak (*Quercus agrifolia*) and the canopy may range from open to relatively closed. This land cover is generally found along drainages within the study area, but is also found along hillslopes and upland flats. In areas along drainages, California bay (*Umbellularia californica*) is common, and may be co-dominant with coast live oak. California buckeye (*Aesculus californica*) is occasionally found in this land cover type. The understory is variable in composition and includes species such as native California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), oso berry (*Oemleria cerasiformis*), ocean spray (*Holodiscus discolor*), woodfern (*Dryopteris arguta*) and swordfern (*Polystichum munitum*), as well as non-native Himalayan blackberry (*R. armeniacus*). Forests dominated by coast live oak are considered to be one of the most fire resistant tree-dominated land cover types<sup>15</sup>. The thick bark and small leaves of coast live oak contribute to the fire resistance of this land cover<sup>5</sup>.

On hill slopes and other non-riparian areas, coast live oaks are generally the main canopy species, and may be more widely spaced. In these locations, various grasses are often dominant in the understory, including wild oats (*Avena* spp.) and riggut brome (*Bromus diandrus*). Purple needlegrass (*Stipa pulchra* [= *Nasella pulchra*]) is occasionally found in the understory in coast oak woodlands with a more open canopy.

Coast oak woodland support a diverse assemblage of wildlife. Amphibians associated with this land cover include ensatina (*Ensatina eschscholtzii*), arboreal salamander (*Aneides lugubris*), and California slender salamander (*Batrachoseps attenuatus*). Typical bird species include Nuttall's woodpecker (*Picoides nuttallii*), acorn woodpecker (*Melanerpes formicivorus*), western scrub-jay (*Aphelocoma californica*), Steller's jay (*Cyanocitta stelleri*), Hutton's vireo (*Vireo huttoni*), oak titmouse (*Baeolophus inornatus*), violet-green swallow (*Tachycineta thalassina*), orange-crowned warbler (*Vermivora celata*), bushtit (*Psaltriparus minimus*), and dark-eyed junco (*Junco hyemalis*). Raptors, including red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), and Swainson's hawk may also occur. Amphibians such as California newt may be found in this land cover,

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<sup>15</sup> Sugihara, N. et al. 2006. Fire in California's Ecosystems. University of California Press. Berkeley and Los Angeles, California.



particularly near streams. Small mammals common to oak woodlands include California mouse (*Peromyscus californicus*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), as well as non-native eastern fox squirrel (*Sciurus niger*). Larger mammals typically found in this land cover include bobcat (*Lynx rufus*), coyote (*Canis latrans*), and California mule deer (*Odocoileus hemionus californicus*).

### **Valley Oak Woodland**

Valley oak (*Quercus lobata*) woodland occurs in and adjacent to multiple maintenance sites. This cover type is found within the Delta, Central Valley, Sierra Nevada Foothill regions of the study area. Valley oak trees form the canopy and dominate this community, which is a natural community of special concern in undisturbed situations<sup>16</sup>. Canopy density ranges from open to almost entire. Associated tree species include Northern California black walnut (*Juglans hindsii*), box elder (*Acer negundo*), California sycamore (*Platanus racemosa*), interior live oak (*Quercus wislizeni*), and blue oak (*Quercus douglasii*). The understory consists of shrub such as western poison oak, California coffeeberry (*Frangula californica*), California wild grape, blue elderberry (*Sambucus nigra* ssp. *caerulea*), toyon (*Heteromeles arbutifolia*), and California blackberry. California annual grassland and the ruderal species typically dominate ground cover. Many of the wildlife species found in coast live oak woodland, with some regional differences, are also found in valley oak woodland.

### **Blue Oak Woodland**

Blue oak woodland occurs in and adjacent to multiple maintenance sites. Blue oak woodland is found within the Sierra Nevada Foothill region of the study area. Blue oak woodland communities include blue oak as the dominant or co-dominant tree in the canopy<sup>16</sup>. Some species associated with blue oak woodland include California buckeye, foothill pine (*Pinus sabiniana*), valley oak, and interior live oak<sup>5</sup>. Many of the wildlife species found in coast live oak and valley oak woodland, with some regional differences, are also found in blue oak woodland.

### **Blue Oak-Foothill Pine Woodland**

Blue oak-foothill pine is found within the Sierra Nevada Foothills region of the study area, within and adjacent to several maintenance sites. This land cover type represents a co-dominant mix of blue oak and foothill pine trees. The tree canopy of this land cover type is relatively open. Associate species in blue oak-foothill pine woodland are similar to species found in blue oak woodland. Many of the wildlife species found in coast live oak and valley oak woodland, with some regional differences, are also found in blue oak woodland.

### **Interior Live Oak Woodland**

Interior live oak forest is found in the Delta, Central Valley, and Sierra Nevada Foothills regions of the study area, within and adjacent to multiple maintenance sites. This land cover type is dominated by interior live oak trees that form various degrees of canopy cover ranging from open to nearly entire. Other associate tree species observed in this land cover type include blue oak, valley oak, foothill pine, California bay, and California buckeye. The understory typically consists of shrubs and/or California annual grassland species when the canopy is relatively open. Other species found in this land cover type include coyote brush (*Baccharis pilularis*), blackberry, western poison oak, California

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<sup>16</sup> Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, 2nd Edition. California Native Plant Society Press. Sacramento, California.

sagebrush (*Artemisia californica*), goldback fern (*Pentagramma triangularis*), and California wood fern. Many of the wildlife species found in other oak woodlands, with some regional differences, are also found in interior live oak woodland.

### **Redwood Forest**

Redwood forest is found in the East Bay Hills region of the study area, within and adjacent to multiple maintenance sites. Coast redwood (*Sequoia sempervirens*) is the dominant tree in this land cover. Subdominant trees include coast live oak and California bay. The understory is dominated by ferns such as western swordfern. Other common understory species include wild ginger (*Asarum caudatum*) and huckleberry (*Vaccinium ovatum*).

Redwood forests provide food, cover, or other habitat elements for a wide variety of wildlife species. Many species associated with coast live oak woodland land cover may also be found in the redwood forest. Bird species typical of this land cover include Steller's Jay, brown creeper (*Certhia americana*), hairy woodpecker (*Picoides villosus*), Pacific wren (*Troglodytes pacificus*), and Pacific-slope flycatcher (*Empidonax difficilis*).

### **4.2.5 Valley Foothill Riparian**

Valley foothill riparian occurs in and adjacent to multiple maintenance sites in the Delta and Central Valley regions along perennial and intermittent streams. California sycamore, valley oak, and Fremont cottonwood (*Populus fremontii*) are dominant tree species that form the canopy of this community. Mid-strata trees include Oregon ash (*Fraxinus latifolia*), box elder, and white alder (*Alnus rhombifolia*). The understory shrub layer typically includes California rose (*Rosa californica*), California blackberry, poison oak, California wild grape (*Vitis californica*), and blue elderberry. Valley foothill riparian is a natural community of special concern in undisturbed situations<sup>6</sup>.

Mature riparian vegetation provides multiple vegetative layers that offer high-value habitat for numerous wildlife species, including foraging opportunities, escape cover, and nesting substrate. This land cover supports many species that occur in other woodlands and many species specific to riparian communities, including warbling vireo (*Vireo gilvus*), Wilson's warbler (*Cardellina pusilla*), Pacific-slope flycatcher, and black-headed grosbeak (*Pheucticus melanocephalus*). Riparian corridors also serve as wildlife corridors for many common species, as this vegetation community offers unique habitat value from otherwise suboptimal habitat (e.g., tree-lined streams within agricultural land). Swainson's hawk may nest in valley foothill riparian habitat.

### **4.2.6 California Annual Grassland**

California annual grassland is a common land cover type in the study area, and is found in the East Bay Hills, Delta, Central Valley, Sierra Nevada Foothills regions. This land cover type occurs in and adjacent to multiple maintenance sites. Dominant vegetation species in this land cover generally include ripgut brome, soft chess (*Bromus hordeaceus*), wild oats, Italian rye, and barley (*Hordeum murinum*). Associated herbaceous species includes forbs such as prickly lettuce (*Lactuca serriola*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), bristly ox-tongue (*Helminthotheca echioides*), shortpod mustard (*Hirschfeldia incana*), yellow star thistle (*Centaurea solstitialis*), and stinkwort (*Dittrichia graveolens*).

A variety of wildlife species use annual grasslands for breeding and/or foraging. Reptiles that breed in annual grassland include western fence lizard and Valley garter snake (*Thamnophis sirtalis*)

*fitchi*)<sup>17</sup>. Mammals typical of this habitat include California ground squirrel, Botta's pocket gopher, western harvest mouse, California vole (*Microtus californicus*), and coyote<sup>6</sup>. Annual grasslands provide foraging habitat for raptors, including barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), red-tailed hawk, and American kestrel. Special-status species typically associated with grasslands include California tiger salamander if near a seasonal wetland, San Joaquin kit fox (*Vulpes macrotis mutica*), burrowing owl (*Athene cunicularia*), and Swainson's hawk.

#### **4.2.7 Ruderal**

This habitat type is found within and adjacent to several maintenance sites throughout the study area. This vegetation type is characterized by early colonizing species of disturbed and degraded areas. Community composition includes non-native annual grasses such as barley, ripgut brome, and red brome (*B. madritensis* ssp. *rubens*). Other species present within this community type include non-native, often invasive thistle species such as spiny sow's thistle (*Sonchus asper*), milk thistle (*Silybum marianum*), star thistles (*Centaurea* spp.) and Italian thistle.

Due to sparse vegetative cover and frequent disturbance, ruderal habitats provide limited value to wildlife. Species such as mourning dove (*Zenaida macroura*) and killdeer forage and nest in this community type. In some instances, burrowing owls may use ruderal lands. Breeding pairs have been observed by EBMUD in the Jones Tract.

#### **4.2.8 Developed (includes landscaped areas)**

This habitat is present throughout the study area. It includes paved and unpaved roads, buildings, median strips, lawns, yards, and landscaped parks. This habitat type consists of a mosaic of different vegetation types<sup>18</sup>. Species composition and vegetative cover in this habitat varies. A variety of bird species may use this habitat, including mourning dove, Anna's hummingbird (*Calypte anna*), American robin (*Turdus migratorius*), western scrub jay, northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), wrentits (*Chamaea fasciata*), bushtits, and oak titmouse<sup>7</sup>. Common wildlife in these areas includes raccoon, opossum, and striped skunk<sup>7</sup>. Mule deer may also be found in this habitat in rural settings. Burrowing owl and Swainson's hawk will forage over areas of low vegetation, such as landscaped areas and mowed lawns.

### **4.3 Potential Jurisdictional Features**

#### **4.3.1 Wetlands and other Waters of the U.S./Waters of the State**

This generally includes most features described above under the "aquatic" and "wetland" land cover types. The USACE uses the term *waters of the United States* as broad term that refers to areas subject to federal regulation under CWA Section 404 that includes wetlands and non-wetland (other waters) features. The information presented in this analysis reflects preliminary research and field reconnaissance efforts, and it does not represent the results of a jurisdiction determination verified

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<sup>17</sup> Kie, J.G. 1988. Urban. In A Guide to Wildlife Habitats of California. 1988. Mayer, K.E. and W.F. Laudenslayer, eds. State of California, Resources Agency, Department of Fish and Game Sacramento, CA. Updated by CWHR staff, April 2005.

<sup>18</sup> McBride, J.R and C. Reid. 1988. Urban. In A Guide to Wildlife Habitats of California. 1988. Mayer, K.E. and W.F. Laudenslayer, eds. State of California, Resources Agency, Department of Fish and Game Sacramento, CA.

by USACE. Wetlands that exhibit hydric soils, wetland hydrology, and dominance of hydrophytic vegetation were identified within the study area and include freshwater marsh, vernal pools, and seasonal wetland.

Inland non-wetland waters of the U.S. are perennial or seasonal water features that include lakes, rivers, streams, drainages, ponds, and other surface water features. These features exhibit an Ordinary High Water Mark (OHWM) but lack one or two of the three wetland parameters required for a features to be considered a wetland (33 C.F.R. 328.4). Non-wetland waters of the U.S. in the study area include an unnamed tributary to Bear Creek, Paddy Creek, Mosher Creek, Calaveras River, San Joaquin River, Whiskey Slough, Middle River, Old River, Indian Slough, Marsh Creek, unnamed intermittent streams, Kirker Creek, Contra Costa Canal, Seal Creek, Greyson Creek, Reliez Creek, Lafayette Creek, Moraga Creek, Walnut Creek, San Leandro Creek, San Pablo Creek, numerous canals, and other minor drainages (Figure 2).

### **4.3.2 Streams and Riparian Habitat Regulated under California Fish and Game Code**

California Fish and Game (CFG) Code Section 89.1 defines waters of the state as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Activities that substantially change or use any material from the bed, channel, or bank of any lake, river, or stream; divert or obstruct the natural flow of any lake river, or stream; or deposit debris, waste, or other materials that could pass into any lake, river, or stream require the project proponent to enter into a Lake or Streambed Alteration Agreement with CDFW under Section 1602 of the CFG Code.

### **4.3.3 Sensitive Natural Communities and other California Department of Fish and Wildlife-Designated Sensitive Habitat**

Special-status or sensitive natural communities are biotic communities that are limited in distribution either statewide or within a region or county. CDFW’s Vegetation Classification and Mapping Program (VegCAMP) maps and classifies the vegetation of California and determines the rarity of limited vegetation types. Vegetation types with a state rarity ranking of S1 through S3 in CDFW’s List of Vegetation Alliances and Associations (Natural Communities List)<sup>16</sup> are considered to be highly imperiled, and impacts on high-quality occurrences of these vegetation types are typically considered significant under CEQA.

Sensitive natural communities within the study area include riparian, wetland, and woodland plant communities. Riparian plant communities are considered sensitive because of widespread habitat loss and their habitat value to a diverse community of plant and wildlife species<sup>6</sup>. Wetlands represent a sensitive community due to their limited distribution and importance to special-status plant and wildlife species. Redwood forest and valley oak woodland are defined as *sensitive* in the Natural Communities List.

## **4.4 Special-Status Species**

### **4.4.1 Plants**

Eighty-nine special-status plant species were identified by the background data review as potentially occurring within the greater region of the maintenance sites. Five of these special-status plant species were determined to potentially occur within maintenance sites based on land cover, aerial

photography, current representative site conditions, and ongoing maintenance practices. The other 82 plant species are not expected to occur or have no potential to occur due to the lack of suitable habitat, the maintenance site locations are outside of the species range, maintenance practices preclude species presence, or no extant occurrence records are known from the region (Appendix B). Special-status plant species with potential to occur within the maintenance sites are described below.

***Southern Mudwort (Limosella acaulis) – California Native Plant Species East Bay***  
**Chapter (EBCNPS) A2**

Southern mudwort is an annual herb species in the Scrophulariaceae family with small typically white flowers that is found in muddy and sandy soils within marshes and streambanks in the Sacramento-San Joaquin Delta region within the study area from sea level to 3,300 meters above mean sea level (amsl). No CNDDDB occurrence records occur within two miles of the maintenance sites<sup>6</sup>, but suitable habitat exists along marshes and sloughs within the Delta. Maintenance activities in such habitat have potential to impact this species if present.

***Delta Mudwort (Limosella australis) – California Rare Plant Rank (CRPR) 2B.1***

Delta mudwort is a perennial herb species in the Scrophulariaceae family with small white to lavender blue flowers. It is found in muddy or sandy intertidal flats, marshes, and streambanks in riparian scrub in the Sacramento-San Joaquin Delta region typically from sea level to 3 meters above amsl. Two CNDDDB occurrence records occur within two miles of the maintenance sites from a channel island in the Middle River and a mudflat at the outfall of Los Medanos Wasteway<sup>6</sup>. Maintenance activities affecting suitable habitat within the Delta have potential to impact this species if present.

***Delta tule pea (Lathyrus jepsonii var. jepsonii) – CRPR 1B.2***

Delta tule pea is a perennial herb species in the pea family with large generally white to purple flowers. It is found in fresh to brackish water marshes usually on slough edges in the Sacramento-San Joaquin Delta region typically from sea level to 5 meters amsl. Fifteen CNDDDB occurrence records occur within two miles of the maintenance sites from Browns Island, Mallard Island, Rough and Ready Island, several locations in Suisun Bay, and the south side of the San Joaquin River near Pittsburgh and Antioch<sup>6</sup>. Maintenance activities affecting suitable habitat within the Delta have potential to impact this species if present.

***Mason’s lilaepsis (Lilaeopsis masonii) – State Rare and CRPR 1B.1***

Mason’s lilaepsis is a perennial herb species in the carrot family with small inconspicuous green peduncles as its fruiting bodies. It is found in fresh to brackish water marshes and riparian scrub in tidal zones, muddy or silty soil deposited by riverbank erosion in the Sacramento-San Joaquin Delta region typically from sea level to 10 meters amsl. Twenty-five CNDDDB occurrence records occur within two miles of the maintenance sites from numerous Delta islands, Suisun Bay, and the south side of the San Joaquin River near Pittsburgh and Antioch<sup>6</sup>. Maintenance activities affecting suitable habitat within the Delta have potential to impact this species if present.

***Woolly rose-mallow (Hibicus lasiocarpus) – CRPR 1B.2***

Woolly rose-mallow is a perennial herb species in the Malvaceae family with large white flowers with red centers. It is found in freshwater riverbanks and low peat islands in sloughs, levees, and riprap in the Sacramento-San Joaquin Delta region typically from sea level to 120 meters amsl. Ten CNDDDB occurrence records occur within two miles of the maintenance sites from several locations along

canals, sloughs, and riverbanks in the upper Delta near Stockton<sup>6</sup>. Maintenance activities affecting suitable habitat within the Delta have potential to impact this species if present.

#### **4.4.2 Wildlife**

Seventy-five special-status wildlife species were identified by the background data review as potentially occurring within the greater region of the maintenance sites. Of these species, 38 special-status wildlife species (one invertebrate, four amphibians, six reptiles, 19 birds, and eight mammals) were determined to potentially occur within maintenance sites based on land cover, aerial photography, current representative site conditions, and ongoing maintenance practices. The other 37 wildlife species are not expected to occur or have no potential to occur due to the lack of suitable habitat, the maintenance site locations are outside of the species range, maintenance practices preclude species presence, or no extant occurrence records are known from the region (Appendix C). Special-status wildlife species with potential to occur within the maintenance sites are discussed by taxon group (i.e., invertebrate, amphibian, reptile, bird, mammal) below. Special-status fish species are discussed separately in *Section 4.4.3*.

##### ***Invertebrates***

Eleven special-status invertebrate species were identified by the background data review as potentially occurring within the greater region of the maintenance sites. One of these species was determined to potentially occur within maintenance sites based on land cover, aerial photography, current representative site conditions, and ongoing maintenance practices.

##### **Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) – Federally Threatened**

Valley elderberry longhorn beetle (VELB) is completely dependent upon its host plant, blue elderberry, which is commonly found in riparian forests and adjacent uplands in the Central Valley and adjacent foothills<sup>19</sup>. Adult VELBs feed on elderberry foliage and are present from March through early June, during which time the adults mate. Females lay their eggs in bark crevices or at the junction of stem/trunk or leaf petiole/stem. After hatching, the larva burrows into the stem to feed and develop into pupa and adult. After transforming into an adult, it chews an exit hole and emerges. The life cycle of VELB ranges from 1 to 2 years<sup>20</sup>. Three occurrence records of the species occur within the study area from San Joaquin and Calaveras counties<sup>6</sup>.

##### ***Amphibians***

Four special-status amphibian species were identified by the background data review as potentially occurring within the greater region of the maintenance sites. All four species were determined to be present or potentially occur within maintenance sites based on land cover, aerial photography, current representative site conditions, and ongoing maintenance practices.

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<sup>19</sup> U.S. Fish and Wildlife Service. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Sacramento Fish and Wildlife Office: Sacramento, CA. Revised July 9.

<sup>20</sup> Barr, C. 1991. The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Sacramento, CA.

### **California Tiger Salamander (*Ambystoma californiense*) (Central Valley Distinct Population Segment [DPS]) – Federally and State Threatened**

California tiger salamander ranges from Yolo County to Tulare County and San Luis Obispo County in the respective Central Valley and Coast Range [both considered the Central Valley Distinct Population Segment (DPS)]. Two other DPS of the species also occur in Sonoma and Santa Barbara Counties. California tiger salamander spends most of the year underground within Botta's pocket gopher or California ground squirrel burrows, typically in grasslands. During the late fall to winter, adults migrate to vernal pools and ephemeral stock ponds to breed and deposit eggs. As the pools and ponds begin to dry, adults and hatched metamorphs migrate back to the rodent burrows in the surrounding uplands. Proximity to vernal pools is generally the limiting habitat factor; therefore, the species has potential to occur within grasslands and other natural (i.e., undeveloped) upland land cover that support rodent burrows within 1.3 miles of suitable aquatic breeding habitat.

There are 32 records of this species within two miles of the maintenance sites, four of which are extirpated or presumed extirpated, located in Contra Costa, San Joaquin, and Calaveras counties<sup>6</sup>. This species has been observed by EBMUD biological staff in Calaveras County near Camanche Reservoir to the San Joaquin County boundary<sup>21</sup>. Suitable habitat occurs within grasslands and other undeveloped upland land cover with ground squirrels or gophers within 1.3 miles of suitable aquatic habitat in the San Francisco Bay area, Central Valley, and Sierra Nevada Foothill regions.

### **Foothill Yellow-legged Frog (*Rana boylei*) – State Candidate Threatened and California Species of Special Concern**

Foothill yellow-legged frog inhabits permanent freshwater streams and rivers in lowlands and foothills in the Coast Ranges from the Oregon border south to Ventura County, and in the northern Sierra Nevada Foothills south to Tulare County. Disjunct populations are located in northern Sutter County and eastern Los Angeles County. This species is a highly aquatic frog that rarely strays from its aquatic habitat, which is frequently bordered by dense riparian shrub and/or emergent vegetation. Foothill yellow-legged frog typically breeds in early spring and lays eggs from mid-April to early July, which hatch in five to 37 days depending on water temperature. Resulting tadpoles metamorphose in three to four months, usually in July through October, and typically migrate upstream from their hatching site.

There are five records of this species within two miles of the maintenance sites, all of which are extirpated or presumed extirpated, located in Alameda and Contra Costa counties<sup>6</sup>. Suitable habitat occurs within perennial streams and rivers, as well as neighboring riparian scrub and emergent marsh vegetation in the San Francisco Bay area and Sierra Nevada Foothill regions.

### **California Red-legged Frog (*Rana draytonii*) – Federally Threatened and California Species of Special Concern**

California red-legged frog inhabits freshwater ponds, streams, other aquatic habitats, and immediately adjacent upland land cover. This species has potential to occur within stock ponds, streams, and riparian habitat; as well as migrate through all undeveloped types of land cover within 1.7 miles of suitable aquatic habitat. The presence of bullfrogs and mosquito fish (*Gambusia affinis*) in aquatic habitat seriously reduces but does not preclude the potential for California red-legged frog to occur at maintenance sites.

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<sup>21</sup> EBMUD. 2018. Special-status Species Observation GIS Data. Lodi, CA.

There are 13 records of this species within two miles of the maintenance sites located in Alameda and Contra Costa counties<sup>6</sup>. Suitable habitat occurs within perennial and intermittent ponds, streams, and rivers, as well as neighboring riparian and emergent marsh vegetation in the San Francisco Bay area and Sierra Nevada Foothill regions.

#### **Western Spadefoot (*Spea hammondi*) – California Species of Special Concern**

Western spadefoot is a small toad that lives underground during the dry season and inhabits seasonal wetlands, ephemeral drainages, and vernal pools during the rainy season. This species occurs throughout much of the Central Valley, from Shasta County to Kern County, and along Central and Southern California Coast. This species has potential to occur within seasonal wetlands, vernal pools, ephemeral drainages, and nearby undeveloped upland areas in the maintenance sites.

There are two records of this species within 2 miles of the maintenance sites located in San Joaquin and Calaveras counties<sup>6</sup>. This species has been observed by EBMUD biological staff in Calaveras County near Camanche Reservoir<sup>23</sup>. Suitable habitat occurs within vernal pools, seasonal wetland, and ephemeral drainages, as well as neighboring grasslands with rodent burrows in the Central Valley and Sierra Nevada Foothill regions.

### **Reptiles**

#### **Silvery Legless Lizard (*Anniella pulchra pulchra*) – California Species of Special Concern**

Silvery legless lizard is an alligator lizard that has no legs and inhabits loose soils and sandy habitat. This species occurs in the Coast, Transverse, and Peninsular mountain ranges within California from Contra Costa County to San Diego County, with periodic records from the San Joaquin Valley. In the study area, this species has potential to occur within habitat with loose soil, sand, thick leaf litter within ephemeral sandy washes and nearby open areas.

There are three records of this species within 2 miles of the maintenance sites, one of which is possibly extirpated, located in central and eastern Contra Costa County<sup>6</sup>. Suitable habitat occurs at maintenance sites with sandy soil eastern Sierra Nevada Foothill regions.

#### **California Glossy Snake (*Arizona elegans occidentalis*) – California Species of Special Concern**

California glossy snake has smooth scales that is nocturnal and primarily preys on lizards. The species ranges from the eastern side of the Coast Range foothills adjacent to the San Joaquin Valley south into the Transverse and Peninsular mountain ranges in the western portion of Southern California. It typically occurs in sandy or loose soils in several land cover types. No species records occur within 2 miles of the maintenance sites<sup>6</sup>, but suitable habitat exists in grasslands and dry drainages with sandy or loose soil in the eastern portion of the San Francisco Bay area region.

#### **Western Pond Turtle (*Actinemys [=Emys] marmorata*) – California Species of Special Concern**

Western pond turtle is an olive-drab turtle that inhabits a wide variety of water bodies, including ponds, marshes, rivers, streams, and irrigation canals. This species can tolerate full-strength sea water for a short period of time, but normally is found in freshwater. Western pond turtle females migrate away from their water bodies into surrounding uplands, where they construct underground nests and lay eggs from April to August.

There are nine records of this species within 2 miles of the maintenance sites located in Contra Costa and San Joaquin county<sup>6</sup>. This species has been observed by EBMUD biological staff in Calaveras



County near maintenance sites in the Camanche Reservoir area and in Alameda County at the Upper San Leandro Reservoir<sup>23</sup>. Suitable habitat occurs at maintenance sites with ponds, marshes, rivers, stream, and irrigation ditches, as well as adjacent grasslands in the San Francisco, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothill regions.

### **Alameda Whipsnake (=Striped Racer) (*Masticophis lateralis euryxanthus*) – Federally and State Threatened**

Alameda whipsnake is a long, fast moving diurnal snake that preys mainly on lizards. It ranges from southeastern Contra Costa County to western Alameda County and is found in chaparral and other scrublands often with rock outcrops, as well as neighboring (typically within 500 feet) grasslands, woodlands, and open areas. This species is located within five specific areas in its range:

- Sobrante Ridge, Tilden/Wildcat Regional Parks to the Briones Hills (Contra Costa County);
- Oakland Hills, Anthony Chabot area to Las Trampas Ridge (Contra Costa County);
- Hayward Hills, Palomares area to Pleasanton Ridge (Alameda County);
- Mount Diablo area and the Black Hills (Contra Costa County); and
- Wauhab Ridge, Del Valle area to the Cedar Mountain Ridge (Alameda County)<sup>22</sup>

There are 103 records of this species within 2 miles of the maintenance sites, two of which are possibly extirpated, located in Alameda and Contra Costa<sup>6</sup>. This species has been routinely observed by EBMUD biological staff in suitable chaparral and scrubland habitat near the southern portion of the Upper San Leandro Reservoir, but maintenance sites typically support mowed ruderal or grassland cover (under four inches tall) due to the ongoing vegetation maintenance of the Aqueduct<sup>24</sup>. Suitable habitat occurs near maintenance sites with grassland, woodland, and open areas within 500 feet of chaparral, scrub, and rock outcrops in the western San Francisco Bay area region. Two maintenance sites, 164 and 175, provide marginally suitable habitat for the species primarily due to the nearby proximity of Critical Habitat; however, they are partially separated by portions of adjoining development.

### **Coast Horned Lizard (*Phrynosoma blainvillii*) – California Species of Special Concern**

Coast horned lizard is a flat-bodied lizard with large spiny scales along its back, head, and sides. This species is found in much of California (throughout the Central Valley to the Sierra Nevada foothills up to 4,000 feet amsl, coastal areas south of San Francisco, and the deserts in southwestern California) and further south into Baja California. This species is associated with a broad variety of habitat types including brush-dominated land cover and coniferous forest, with open areas for exothermic regulation by exposure to sun and relatively friable soils. No species records occur within 2 miles of the maintenance sites<sup>6</sup>. Suitable habitat occurs at maintenance sites with sandy substrate in the San Francisco, Central Valley, and Sierra Nevada Foothill regions.

### **Giant Garter Snake (*Thamnophis gigas*) – Federally and State Threatened**

Giant garter snake inhabits agricultural wetlands (e.g., rice fields) and other waterways, including irrigation and drainage canals, marshes, sloughs, ponds, small lakes, and low-gradient streams, as well as nearby upland areas. It does not occur in large rivers and wetlands with sand, gravel, or rock

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<sup>22</sup> USFWS. 2018. Species Information: Alameda Whipsnake. Sacramento, CA. Available: [https://www.fws.gov/sacramento/es\\_species/Accounts/Amphibians-Reptiles/alameda-whipsnake/](https://www.fws.gov/sacramento/es_species/Accounts/Amphibians-Reptiles/alameda-whipsnake/). Accessed: December 17, 2018.

substrate. Giant garter snake requires permanent water during its active season (early spring through mid-fall) to maintain dense populations of prey fish. The species also requires herbaceous, emergent vegetation for protective cover and foraging habitat and open areas and grassy banks for basking. In addition, higher elevation upland habitats with burrows or crevices for cover and refuge from floodwaters are needed during the winter when the snake is inactive. Riparian woodland generally is considered unsuitable habitat because of the lack of basking sites, excessive shade, and lack of prey. Giant garter snakes begin to search for mates soon after emergence from overwintering sites. The breeding season extends from March through May and females give birth to live young from late July to early September<sup>23</sup>.

There is one record of this species within 2 miles of the maintenance sites located in San Joaquin County within the Sacramento-San Joaquin Delta<sup>6</sup>. This species could occur at maintenance sites within or immediately adjacent to marshes, sloughs, low gradient streams, and wetlands with emergent and/or aquatic vegetation in the Sacramento-San Joaquin Delta region.

## **Birds**

### **Tricolored Blackbird (*Agelaius tricolor*) – California Species of Special Concern**

Tricolored blackbird is a permanent resident of the Central Valley but breeds in a couple scattered coastal locations from Marin County to San Diego. This species nests colonially, with a minimum size of 50 pairs, in dense marsh vegetation such as cattails and bulrush. There are two records of this species within 2 miles of the maintenance sites located in San Joaquin County within the Sacramento-San Joaquin Delta<sup>6</sup>. This species has been observed by EBMUD biological staff approximately 1.9 miles from the nearest maintenance site, in Calaveras County near Camanche Reservoir<sup>23</sup>. This species could occur at maintenance sites within or immediately adjacent to marshes, sloughs, and wetlands with emergent vegetation in the Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

### **Cooper's Hawk (*Accipiter cooperii*) – Migratory Bird Treaty Act**

Cooper's hawk is found throughout California, except high altitudes in the Sierra Nevada. This species winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range. Cooper's hawk inhabits a wide variety of habitats from riparian woodlands, foothill pine-oak woodlands, and mixed coniferous forest. No species records are known within two miles of the maintenance sites<sup>6</sup>. Cooper's hawk has potential to nest at maintenance sites within or near forests and woodlands in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

### **Great Blue Heron (*Ardea herodias*) – Migratory Bird Treaty Act**

Great blue heron is found in many freshwater and calm intertidal habitats throughout the state, and nests primarily in or near suitable habitat except high elevations in the Sierra Nevada and Cascade Ranges. No species records are known within two miles of the maintenance sites<sup>6</sup>. Great blue heron has potential to nest within the trees near freshwater and brackish waterbodies, as well as along reservoirs in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

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<sup>23</sup> U.S. Fish and Wildlife Service. 2015. Revised Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). Sacramento, CA.

### **Short-eared Owl (*Asio flammeus*) – California Species of Special Concern**

Short-eared owls frequent open habitats including fresh and saltwater marshes, lowland meadows and grasslands, and irrigated alfalfa fields from the California Coast to the foothills of the Sierra Nevada Mountain Range, plains of the Cascade Range, and portions of Mono County. This species requires tall grasses or bulrush for nesting substrate and day roosts. There are no records of occurrences of this species within 2 miles of the maintenance sites<sup>6</sup>, but the species is widespread and known to generally occur within regions surrounding the maintenance sites, and has been observed at Camanche Reservoir. Freshwater marshes, wetlands, grassland, and agricultural fields (especially alfalfa) in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and lower Sierra Nevada Foothills regions provide suitable nesting and foraging habitat for short-eared owl.

### **Burrowing Owl (*Athene cunicularia*) – California Species of Special Concern**

Burrowing owl is a small owl that lives in burrows created by ground squirrels and pocket gophers. This species forages over grassland, open areas, and low vegetation for small mammals, insects, and lizards and is most active at dawn and dusk. Burrowing owl ranges throughout lowland portions of California, but is absent from the southern coastal areas of the state. Forty-four occurrence records occur within the two miles of the maintenance sites in Contra Costa and San Joaquin counties<sup>6</sup>, and this species has been observed by EBMUD staff within portions of the Aqueduct right-of-way and/or surrounding areas in the Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions<sup>24</sup>. Therefore, this species is considered present at some maintenance sites in the Central Valley region and has potential to occur at maintenance site with grassland and rodent burrows in the San Francisco Bay area and Sacramento-San Joaquin Delta regions.

### **Swainson's Hawk (*Buteo swainsoni*) – State Threatened**

Swainson's hawk forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of vegetation density<sup>25</sup>. The majority of Swainson's hawks winter in South America, although some winter in the United States. Swainson's hawk arrives in California in early March to establish nesting territories and breed<sup>26</sup>. They usually nest in large, mature trees. Most nest sites (87%) in the Central Valley are found in riparian habitats<sup>27</sup>, primarily because more trees exist in such habitat. Swainson's hawk also nest in mature roadside trees and in isolated trees in agricultural fields and pastures. This species breeds and nests from March through August<sup>8</sup>.

There are 34 records of this species, two of which are possibly extirpated, within 2 miles of the maintenance sites located in San Joaquin and Contra Costa counties<sup>6</sup>. This species has been observed by EBMUD biological staff near sites 90, 91, 113, 114, and 115 and elsewhere in the Sacramento-San Joaquin Delta and Central Valley regions<sup>27</sup>. This species could nest at maintenance sites with or immediately adjacent to tree groves and riparian woodland near marshes, sloughs, ponds, lakes, and

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<sup>24</sup> Jones, J. Personal communication with E. Christensen. Dec. 18, 2018.

<sup>25</sup> California Department of Fish and Game. 1993. 5-Year Status Review: Swainson's hawk (*Buteo swainsoni*). Sacramento, CA.

<sup>26</sup> California Department of Fish and Game. 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California. Sacramento, CA.

<sup>27</sup> Estep, J. A. 1989. In prep. Biology, movements and habitat relationships of the Swainson's Hawk in the Central Valley of California, 1986-87. Report for the California Department of Fish and Game, Nongame Bird and Mammal Section.

reservoirs with in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and lower Sierra Nevada Foothills regions.

### **Northern Harrier (*Circus hudsonius* [formerly *cyaneus*]) – California Species of Special Concern**

Northern harrier is a medium sized raptor that forages primarily for small mammals over open habitats, including grassland, salt marsh, and agricultural fields. This species nests on the ground within grassland habitat. The range of northern harrier encompasses all of lowland California, but this species has occasionally been observed at high elevations. No species records occur within 2 miles of the maintenance sites<sup>6</sup>, but this species' taxonomy recently changed and records do not appear to be linked to its new species name. This species was observed during reconnaissance surveys foraging near sites 42, 82, 113, and 114. This species could nest at maintenance sites with or immediately adjacent to grassland and marsh vegetation in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and lower Sierra Nevada Foothills regions.

### **Snowy Egret (*Egretta thula*) – Migratory Bird Treaty Act**

Snowy egret is found on shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow rivers, irrigation ditches, and wet fields in coastal lowlands and other lowland areas throughout California. This species nests in dense marsh vegetation or at low heights in trees. No species records occur within 2 miles of the maintenance sites<sup>6</sup>, but this species is known to have a broad distribution. This species was observed during reconnaissance surveys foraging near sites 114 and 115. This species could nest at maintenance sites with or immediately adjacent to thick vegetation on islands in the Sacramento-San Joaquin Delta and Central Valley regions.

### **White-tailed Kite (*Elanus leucurus*) – Fully Protected**

White-tailed kite is a small raptor that forages primarily for small mammals over open habitats, including grassland, salt marsh, and agricultural fields. The range of this species includes lowland areas west of the Sierra Nevada Mountain Range from the northern extent of the Sacramento Valley south, including coastal foothills to western San Diego County. This species nests within trees suitable of supporting its nest that offer at least partial shade within the canopy. There are two records of this species within 2 miles of the maintenance sites located in Contra Costa County<sup>6</sup>. This species was observed during reconnaissance surveys foraging near sites 38, 82, and 113. This species could nest at maintenance sites with or immediately adjacent to riparian or oak woodland and densely-topped trees near marshes, sloughs, and grasslands within the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

### **Bald Eagle (*Haliaeetus leucocephalus*) – State Endangered and Fully Protected**

Bald eagle is a relatively large sea eagle that forages for prey, typically fish, over open marine and freshwater along coasts, lakes, and reservoirs. Within California this species primarily breeds in the northern portion of California near the Cascades Range, but past observations of nesting pairs have been documented at Los Vaqueros and San Pablo reservoirs, and adults have been observed at the Briones Reservoir. No occurrence records of the species occur within two miles of the maintenance sites<sup>6</sup>. This species has potential to nest in large trees within one mile of waterbodies, including reservoirs and large rivers, near maintenance sites in the Sierra Nevada Foothills region and at Camanche Reservoir. While the species is known to occur in the San Francisco Bay region, suitable nesting habitat is absent from maintenance sites in this area.

### **Yellow-breasted Chat (*Icteria virens*) – California Species of Special Concern**

Yellow-breasted chat is a warbler that primarily preys upon insects and breeds throughout most of California, except for the northern Sierra Nevada and Cascades ranges. This species inhabits and nests within riparian scrub thickets of willow and brush tangles near water. No species occurrence records occur within two miles of the maintenance sites<sup>6</sup>. Suitable nesting substrate occurs near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

### **Loggerhead Shrike (*Lanius ludovicianus*) – California Species of Special Concern**

Loggerhead shrikes occur in open habitats with scattered trees, shrubs, posts, fences, utility lines, or other types of perches. Nests are built in trees or shrubs with dense foliage and are usually hidden well. Loggerhead shrikes search for prey from perches and frequently impale their prey on thorns, sharp twigs, or barbed-wire. The nesting period for loggerhead shrikes is March through June<sup>28</sup>. No species occurrence records occur within two miles of the maintenance sites<sup>6</sup>. This species was observed by EBMUD biological staff approximately 0.9 miles northwest of Site 32<sup>23</sup>. Suitable nesting trees and shrubs occur near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

### **California Black Rail (*Laterallus jamaicensis conturniculus*) – State Threatened and Fully Protected**

California black rail is a permanent resident of the San Francisco Bay and the Sacramento Delta in San Joaquin and Sacramento Counties. This species also occurs within small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties. California black rail inhabits tidal salt marshes densely vegetated with pickleweed, brackish marshes, freshwater marshes at low elevations. Eleven occurrence records of the species occur within two miles of the maintenance sites in Contra Costa and San Joaquin counties<sup>6</sup>. Suitable dense marsh vegetation occurs near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and lower Sierra Nevada Foothills regions.

### **Song Sparrow (*Melospiza melodia*) (“Modesto” Population) – California Species of Special Concern**

The Modesto Population of song sparrow is a California endemic found in the north-central portion of the Central Valley (from Glenn and Butte Counties to the northern extent of Stanislaus County), with the highest densities occurring in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta<sup>29</sup>. This population of song sparrow is strongly associated with woody riparian habitat<sup>30</sup>. Five occurrence records of the species occur within two miles of the maintenance sites in San Joaquin County<sup>6</sup>. The species could nest in freshwater marsh and riparian

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<sup>28</sup> Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer (eds.). 1990. California’s Wildlife. Volume II: Birds. California Statewide Wildlife Habitat Relationships System. Sacramento, CA: California Department of Fish and Game.

<sup>29</sup> Shuford, D., and T. Gardali, eds. 2008. California Bird Species of Special Concern. Studies of Western Birds 1. Calif. Field Ornithologists, Camarillo, CA, and Calif. Dept. Fish & Game, Sacramento. Smith, J. J. 2013. Northern Santa Clara County fish resources. San Jose State University, San Jose, CA. July.

<sup>30</sup> Point Blue. 2016. Modesto Song Sparrow (*Melospiza melodia mailliardi*). Available: [http://www.prbo.org/cms/docs/ecol/modesto\\_sosp.pdf](http://www.prbo.org/cms/docs/ecol/modesto_sosp.pdf). Accessed: December 12, 2018.

vegetation occurs at or near maintenance sites in the Sacramento-San Joaquin Delta and Central Valley regions.

#### **Black-crowned Night Heron (*Nycticorax nycticorax*) – Migratory Bird Treaty Act**

Black-crowned night heron are year-round residents along the California coast, Coast Ranges, Cascades, and Colorado River. This species nests colonially in trees or tall marsh vegetation and opportunistically forages for prey in freshwater, brackish, and saline water associated with salt marshes, rivers, and wet agricultural fields. No species occurrence records occur within two miles of the maintenance sites<sup>6</sup>. Suitable nesting trees and marsh vegetation occurs near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

#### **Osprey (*Pandion haliaetus*) – Migratory Bird Treaty Act**

Osprey is a large hawk that forages for fish over open water in marine areas, lakes, and reservoirs. This species nests in tall trees, cliffs, and anthropogenic structures near water. No CNDDDB species occurrence records occur within two miles of the maintenance sites<sup>6</sup>, but osprey nesting has been documented by EBMUD along San Pablo Reservoir<sup>22</sup>. Suitable nesting trees and man-made structures near large waterbodies occur near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Sierra Nevada Foothills regions, including at Camanche Reservoir.

#### **Double-crested Cormorant (*Phalacrocorax auritus*)– Migratory Bird Treaty Act**

Double-crested cormorant is a black bird with orange facial coloration that prey on fish. This species nests colonially on anthropogenic structures, trees, and barren areas near open water. In the study area, this species occurs year-round in San Francisco Bay and the Sacramento-San Joaquin Delta. No species occurrence records occur within two miles of the maintenance sites<sup>6</sup>, but this species has been observed roosting in trees along sloughs in the Sacramento-San Joaquin Delta. The species could nest in trees and man-made structures near aquatic foraging habitat near maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta regions.

#### **Yellow Warbler (*Setophaga petechia*) – California Species of Special Concern**

Yellow warbler is a bright yellow bird that prey on insects and is associated with open riparian woodlands. This species breeds along the California coast (except from near Santa Cruz and the San Mateo Peninsula), Cascades, plains east of the Cascades, and the Coast Ranges and Sierra Nevada Foothills surrounding the Sacramento Valley. No species occurrence records occur within two miles of the maintenance sites<sup>6</sup>. Yellow warbler could nest in riparian scrub and woodland near maintenance sites in the Sierra Nevada Foothills region.

#### **Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) – California Species of Special Concern**

Yellow-headed blackbird forages on the ground for insects and seeds. This species is typically found in wetlands, wet meadows, and marshes along rivers, streams, and lakes. Nests are always constructed in live or dead marsh vegetation (typically cattails or bulrush) overhanging water. No species occurrence records occur within two miles of the maintenance sites<sup>6</sup>. Suitable tall emergent marsh nesting substrate near water occurs in or near maintenance sites in the Sacramento-San Joaquin Delta and Central Valley regions.

## **Mammals**

### **Pallid Bat (*Antrozous pallidus*) – California Species of Special Concern and Western Bat Working Group High Priority**

Pallid bat is found throughout most of California at low to middle elevations (6,000 feet). Pallid bats are found in a variety of habitats, including desert, brushy terrain, coniferous forest, and non-coniferous woodlands. In central and northern California, the species is associated with oak, ponderosa pine, redwood, and giant sequoia land cover. Pallid bats forage among vegetation and above the ground surface, eating large ground-dwelling arthropods and large moths. Daytime roost sites include rock outcrops, mines, caves, hollow trees, buildings, and bridges. Hibernation may occur during late November through March. Pallid bats breed from late October through February<sup>31</sup>, and young are born in May or June. Six occurrence records of the species occur within two miles of the maintenance sites in Alameda and Contra Costa counties<sup>6</sup>. Trees offer suitable roosting substrate occur in or near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

### **Townsend's Big-Eared Bat (*Corynorhinus townsendii*) – California Species of Special Concern and Western Bat Working Group High Priority**

Townsend's big-eared bat occurs throughout California in a wide variety of habitats ranging from sea level to 10,800 feet amsl from Del Norte County to Santa Barbara County. This species is typically associated with coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Species distribution is also strongly correlated with availability of caves or cave-like roosting habitat. Townsend's big-eared bats have been observed utilizing buildings, bridges, rock crevices, and hollow trees as roost sites<sup>32</sup>. Townsend's big-eared bats are highly sensitive to disturbance and therefore are highly unlikely to roost within suitable habitat along highly developed portions of the maintenance sites. Two occurrence records of the species occur within two miles of the maintenance sites in Alameda and Contra Costa counties<sup>6</sup>. Trees and crevices in structures offer suitable roosting substrate occur in or near maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta regions.

### **Silver-haired Bat (*Lasionycteris notivangans*)– Western Bat Working Group Medium Priority**

Silver-haired bat ranges from southern Alaska over much of the United States and into northeastern Mexico. This species uses large trees with cavities and large snags with sloughing bark as maternal roosts. No occurrence records of the species occur within two miles of the maintenance sites<sup>6</sup>. Large trees and snags offer suitable roosting substrate occur in or near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

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<sup>31</sup> Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer (eds.). 1990. California's Wildlife. Volume III: Mammals. California Statewide Wildlife Habitat Relationships System. Sacramento, CA: California Department of Fish and Game.

<sup>32</sup> Western Bat Working Group. 2018. Western Bat Species. Available : <http://wbwg.org/western-bat-species/>. Accessed: December 14, 2018.

### **Western Red Bat (*Lasiurus blossevillii*) – California Species of Special Concern and Western Bat Working Group High Priority**

Western red bats occur at lower elevations in the Central Valley and along the central and southern coasts. Historically western red bats used old-growth riparian habitat and are highly tied to riparian vegetation for all life stages. Western red bats use riparian and associated habitat (orchards) for all of their life stages, including roosting and feeding in riparian zones. Mature riparian broadleaf forest in the Central Valley is the primary summer breeding and rearing habitat for the species in California (females and pups). Riverside orchards may also be used as maternity roosts. Western red bats can roost alone or in small family groups in tree foliage and occasionally in shrubs; prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. One occurrence record of the species occurs within two miles of the maintenance sites in Contra Costa County<sup>6</sup>. Trees within coniferous forests and riparian woodland and scrub offer suitable roosting substrate in or near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta regions, Central Valley, and Sierra Nevada Foothills regions.

### **Hoary Bat (*Lasiurus cinereus*)– Western Bat Working Group Medium Priority**

Hoary bat's range covers all of California, as it spans from the tree limit in Canada south to Guatemala and from Brazil to Argentina and Chile in South America<sup>13</sup>. This species roosts in trees that are typically within forests and woodlands of various types. No occurrence records of the species occur within two miles of the maintenance sites<sup>6</sup>. Trees within coniferous forests and woodlands offer suitable roosting substrate in or near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta regions, Central Valley, and Sierra Nevada Foothills regions.

### **San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*) – California Species of Special Concern**

San Francisco Dusky-footed woodrat is endemic to riparian areas, dense oak woodlands, and scrub around the San Francisco Bay area. Two occurrence records of the species occur within two miles of the maintenance sites in Contra Costa County<sup>6</sup>. Maintenance sites near riparian woodland, dense oak woodland, and scrub in the San Francisco Bay area region offer suitable habitat for this species.

### **American Badger (*Taxidea taxus*) – California Species of Special Concern**

American badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub<sup>33</sup>. In California, American badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties<sup>34</sup>. The primary factor that determines whether habitat is suitable for American badger is the presence of a sufficient prey-base, typically consisting of California ground squirrel and/or pocket gopher. Four occurrence records of the species occur within two miles of the maintenance sites in Alameda and Contra Costa counties<sup>6</sup>. American badger has potential to occur within the open areas of grassland and ruderal areas with a squirrel and/or gopher

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<sup>33</sup> Stephenson, J.R.; Calcarone, G.M. 1999. Southern California mountains and foothills assessment: Habitat and species conservation issues. General Technical Report GTR-PSW-172. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture.

<sup>34</sup> Williams, D. F. 1986. Mammalian species of concern in California. California Department of Fish and Game Report 86-1. California Department of Fish and Game, Sacramento, CA.



burrows in or near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta regions, Central Valley, and Sierra Nevada Foothills regions.

### **San Joaquin Kit Fox (*Vulpes macrotis mutica*) – Federally Endangered and State Threatened**

San Joaquin kit foxes occur in a variety of land cover types, including grasslands, scrublands, vernal pool areas, alkali meadows and playas, and an agricultural matrix of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands<sup>35</sup>. San Joaquin foxes occur in some areas of suitable habitat on the floor of the San Joaquin Valley and in the surrounding foothills of the Coast Ranges, Sierra Nevada, and Tehachapi Mountains from Kern County north to Contra Costa, Alameda, and San Joaquin Counties<sup>16</sup>. Two occurrence records of the species occur within two miles of the maintenance sites in Contra Costa County<sup>6</sup>. San Joaquin kit fox has potential to occur within the open areas of grassland and ruderal areas with a suitable prey base at or near maintenance sites in the eastern San Francisco Bay area region southeast of Pittsburgh.

### **4.4.3 Fish**

Eight special-status fish species were identified by the background data review as potentially occurring within the greater region of the maintenance sites. Seven of these special-status fish species were determined to potentially occur within maintenance sites based on land cover, aerial photography, current representative site conditions, and ongoing maintenance practices. The other one fish species is not expected to occur or have no potential to occur due to the lack of suitable habitat and the maintenance site locations are outside of the species range (Appendix D). Special-status fish species with potential to occur within the maintenance sites are discussed below.

### ***Green Sturgeon (Acipenser medirostris) (Southern DPS) – Federally Threatened and California Species of Special Concern***

Green sturgeon is an anadromous fish that can be found from Alaska to Mexico typically in coastal and marine areas. The southern DPS includes individuals that spawn in the Sacramento, Yuba, and Feather rivers. They spawn in rivers typically with large cobble substrate from April to June, after which juveniles spend up to four years in freshwater before entering the estuary and ocean. No occurrence records of the species occur within two miles of the maintenance sites<sup>6</sup>. Suitable migration habitat occurs in the channels of the Sacramento-San Joaquin Delta. Maintenance activities at sites bordering such drainages could affect this species.

### ***Sacramento Perch (Archoplites interruptus) – Federally and State Threatened***

Sacramento perch is a sunfish native to the Sacramento-San Joaquin Delta, Central Valley, Pajaro and Salinas rivers, Clear Lake, Alameda Creek, and Calaveras Reservoir. No occurrence records of the species occur within two miles of the maintenance sites<sup>6</sup>. Suitable habitat occurs in the channels of the Sacramento-San Joaquin Delta and other slow-moving rivers, reservoirs, lakes, and ponds. Maintenance activities at sites bordering such aquatic habitat in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Central Valley could affect this species.

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<sup>35</sup> U.S. Fish and Wildlife Service. 1998. Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp.

***Delta Smelt (*Hypomesus transpacificus*) – Federally Threatened and California Species of Special Concern***

Delta smelt primarily live in the mixing zone between fresh and saltwater in the San Francisco Bay and Sacramento-San Joaquin Delta. Accordingly, they move throughout the system dependent on tidal and freshwater influx. Two occurrence records of the species occur within two miles of the maintenance sites in San Joaquin County within the Delta<sup>6</sup>. Suitable habitat occurs in the channels of the Sacramento-San Joaquin Delta. Maintenance activities at sites bordering such drainages could affect this species.

***Steelhead (*Oncorhynchus mykiss*) Central Valley DPS and Central Coast DPS – Federally Threatened***

The Central Valley DPS includes all naturally spawned populations in the Sacramento and San Joaquin rivers and their tributaries, including the San Francisco Bay/Sacramento-San Joaquin Delta. The Central Coast DPS includes all naturally spawned populations in coastal rivers from the Russian River to and including Aptos Creek, as well as all drainages of the San Francisco Bay. Steelhead require cool, clear freshwater streams with portions of gravel substrate for spawning that connect to the Pacific Ocean to allow migration. Two occurrence records of the Central Valley DPS occur within two miles of the maintenance sites from San Joaquin and Sacramento counties in the Delta. No occurrences of the Central Coast DPS occur within two miles of the maintenance sites in Alameda or Contra Costa counties<sup>6</sup>. The Central Valley DPS is known to occur within the Sacramento-San Joaquin Delta, San Joaquin and Calaveras rivers, as well as their tributaries. Suitable habitat for the Central Coast DPS occurs in Pinole Creek, Pacheco Creek, and Marsh Creek and their unblocked perennial tributaries. Maintenance activities at sites bordering these drainages could affect the species.

***Chinook Salmon (*Oncorhynchus tshawytscha*) Central Valley Spring-run Evolutionary Significant Unit [ESU] – Federally Threatened  
Central Valley Fall/Late Fall-run ESU – California Species of Special Concern***

The Central Valley spring-run ESU and Central Valley fall/late full (fall-run) Chinook salmon ESU occur in the Sacramento and San Joaquin River basins and their tributaries east of Carquinez Strait, California. Central Valley spring- and fall-run Chinook salmon historically spawned in all major tributaries, as well as the mainstem of the Sacramento and San Joaquin Rivers. Fall-run Chinook salmon have been documented in the Mokelumne River<sup>36</sup>. Adult escapement in the San Joaquin River appears to be cyclical and may be related to hydrology during the juvenile rearing and migration period, among other factors<sup>37,38</sup>. No occurrence records of the spring-run or fall-run species occur within two miles of the maintenance sites<sup>6</sup>. Suitable migration habitat occurs in the channels of the Sacramento-San Joaquin Delta; San Joaquin and Calaveras rivers, and their tributaries where barriers do not exist. Maintenance activities at sites bordering such drainages could affect this species in the Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.

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<sup>36</sup> Del Real, C. and Saldade., M. 2015. Lower Mokelumne River Upstream Fish Migration Monitoring Conducted at Woodbridge Irrigation District Dam. East Bay Municipal Utility District. August. Lodi, CA.

<sup>37</sup> San Joaquin River Group Authority. 2010. On Implementation and Monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan. 2009 Annual Technical Report.

<sup>38</sup> California Department of Fish and Game. 2008. San Joaquin River Salmon Population Model Version 1.5. Presented at State Water Quality Resources Control Board September 17, 2008 workshop.

### ***Sacramento Splittail (Pogonichthys macrolepidotus) – California Species of Special Concern***

Sacramento splittail is endemic to Central Valley lakes and rivers, but it is currently limited to the Sacramento-San Joaquin Delta, Suisun Bay, and associated marshes. No occurrence records of the species occur within two miles of the maintenance sites<sup>6</sup>. Suitable habitat occurs in the channels of the Sacramento-San Joaquin Delta. Maintenance activities at sites bordering such drainages could affect this species.

### ***Longfin Smelt (Spirinchus thaleichthys)– Federal Candidate, State Threatened, and California Species of Special Concern***

Longfin smelt is found in bays, estuaries, and nearshore environments from Lake Earl, in Crescent City, to the San Francisco Bay, including Suisun Bay and Marsh. Similar to delta smelt, longfin smelt inhabits the mixing zone of fresh and saltwater but is typically found upstream (towards freshwater inputs) of delta smelt. Eight occurrence records of the species occur within two miles of the maintenance sites in Sacramento, Solano, and Contra Costa counties from the San Francisco Bay/Sacramento-San Joaquin Delta<sup>6</sup>. Suitable habitat occurs in the channels of the Sacramento-San Joaquin Delta. Maintenance activities at sites bordering such drainages could affect this species.

## **4.5 Critical Habitat and Essential Fish Habitat**

Critical habitat for delta smelt was established in 1994 (59 FR 65256-65279). Sixty maintenance sites are located within Critical Habitat for delta smelt (Figure 6), but several of these sites lack primary constituent elements (physical habitat, water, river flow, and salinity concentrations required to maintain delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration) required for the designation.

Essential Fish Habitat (EFH) is present for Chinook salmon within the San Francisco Bay, Sacramento-San Joaquin Delta, the San Joaquin River, its accessible tributaries (including the Calaveras River) throughout the Mokelumne Aqueduct alignment. EFH is also present for Coho salmon in San Francisco Bay and its tributaries east to the Carquinez Strait<sup>7</sup>. Maintenance actions that affect these drainages and potentially EFH would require consultation with NMFS.

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## 5 Summary and Conclusions

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The Mokelumne Aqueduct drainage maintenance sites span several land covers throughout many regions along the 100-mile project alignment. Twenty-nine species with varying degrees of federal, state, and/or other protection have potential to occur within maintenance sites and could be affected by maintenance activities.

### 5.1 Special-Status Species

Twelve federally protected species have potential to occur within certain maintenance sites with suitable habitat and could be affected by maintenance activities potentially (1) affecting the species habitat and/or (2) affecting the species themselves. Further, approximately five maintenance sites are located within Critical Habitat for Alameda whipsnake and approximately 60 sites are located within Critical Habitat for Delta smelt. Several of these sites within Critical Habitat are expected to lack the primary constituent elements for their respective species, but sites that possess primary constituent elements would require formal or informal consultation with USFWS and/or NMFS via ESA Section 7 (if a federal nexus is present) or Section 10 (Habitat Conservation Plan) if it is determined that maintenance activities could result in “take” of the respective species.

Essential Fish Habitat is designated for Coho salmon in San Francisco Bay and its tributaries, and for Chinook salmon from San Francisco Bay, into the Sacramento-San Joaquin Delta, San Joaquin, and Calaveras Rivers. Maintenance actions that affect these drainages and potentially EFH would require consultation with NMFS.

Seven state protected species have potential to occur within certain maintenance sites with suitable habitat and could be affected by maintenance activities potentially affecting the species themselves. If impacts to these species cannot be avoided, then a CESA Incidental Take Permit (CFGC Section 2081) would be required before potential impacts resulting from maintenance activities could occur.

The implementation of best management practices and avoidance measures would eliminate the potential for take of listed species. Recommended measures are identified below.

Thirty CEQA-relevant species have potential to occur within the maintenance sites with suitable habitat and could be affected by maintenance activities potentially. The CEQA process would require avoidance and minimization measures to the extent feasible, and potentially additional mitigation measures to reduce the impact significance level.

### 5.2 Federal and State Waters and Wetlands

Numerous drainages (e.g., waters of the U.S.) and wetlands bordered by the Mokelumne Aqueduct maintenance sites are expected to be subject to USACE and, RWQCB jurisdiction. As such, maintenance activities affecting these features may require a Section 404 Permit from the USACE and a Section 401 Water Quality Certification from the RWQCB (or WDRs for non-federal drainages and wetlands) depending on the nature of the specific impact within jurisdictional areas.

CDFW regulates work (divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; or deposit or dispose of material into any river, stream, or lake) within streambanks and other waters of the State under CFGC Section 1600. Additionally, CDFW also regulates the removal of riparian

habitat associated with such waters of the State. EBMUD currently conducts maintenance activities under existing CDFW LSAAs.

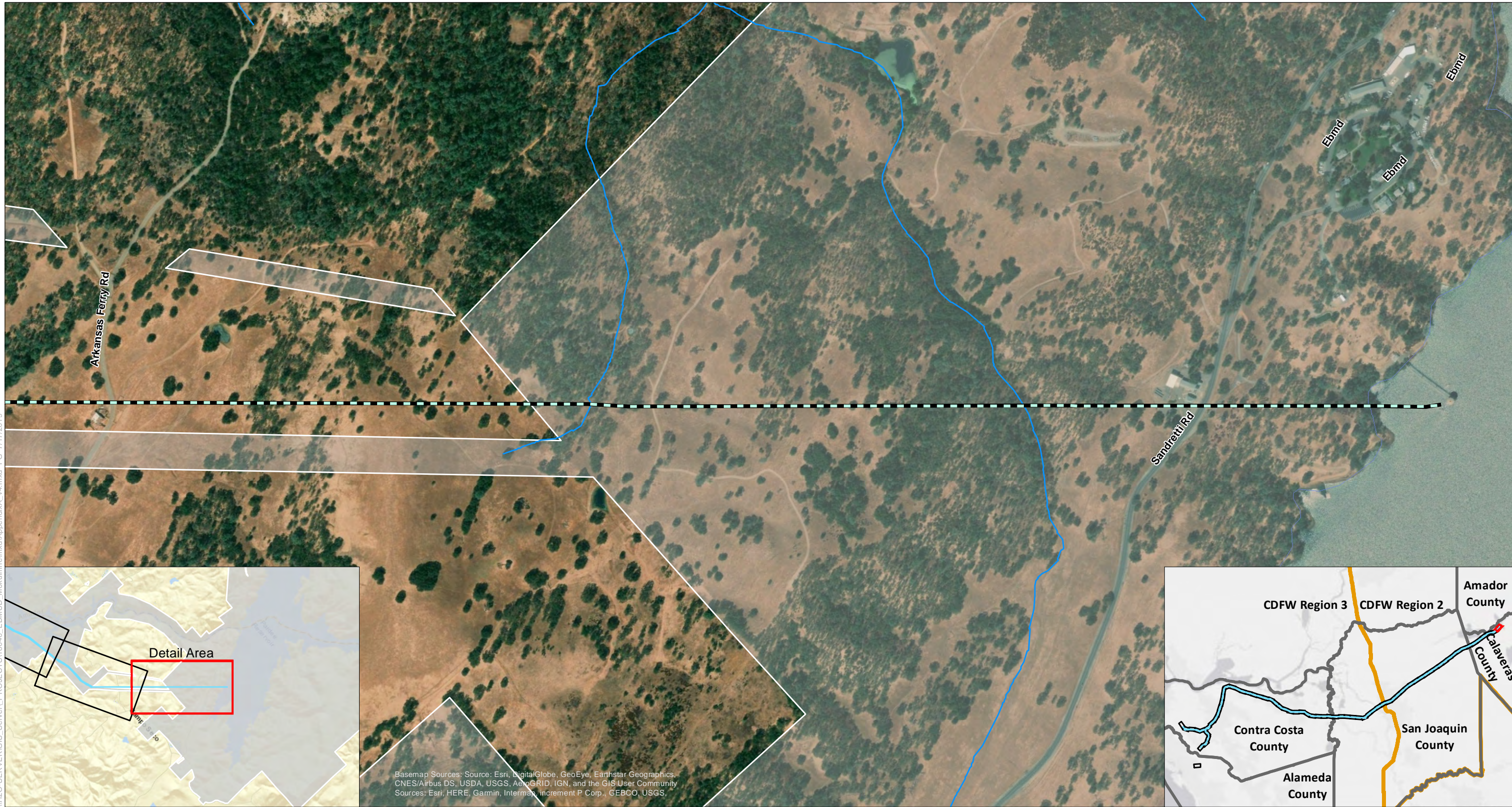
## Appendix A

### Detailed Maintenance Site Location Maps

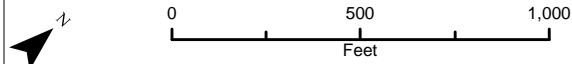
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**Disclaimer:** The maintenance site locations illustrated on the attached maps are approximate and subject to change. Additional drainage locations may be added in any given year based on annual review of field conditions and maintenance needs. Furthermore, the types of maintenance activities shown at each maintenance site location are based on past and current practices, and any of the maintenance activity types could be implemented at any drainage location in response to annual maintenance assessments.

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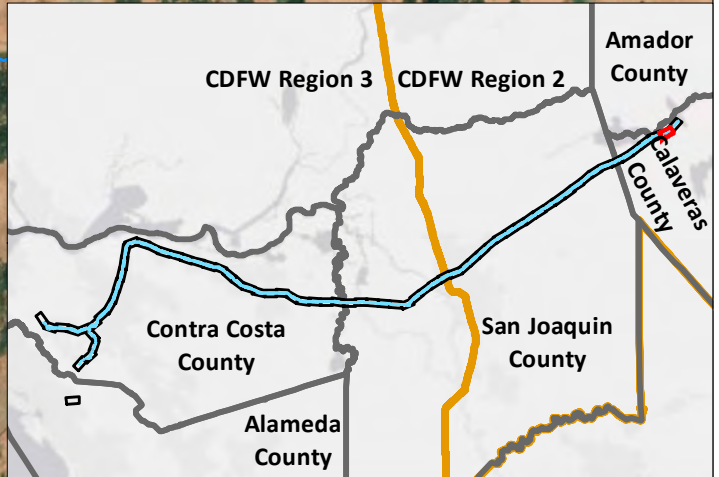
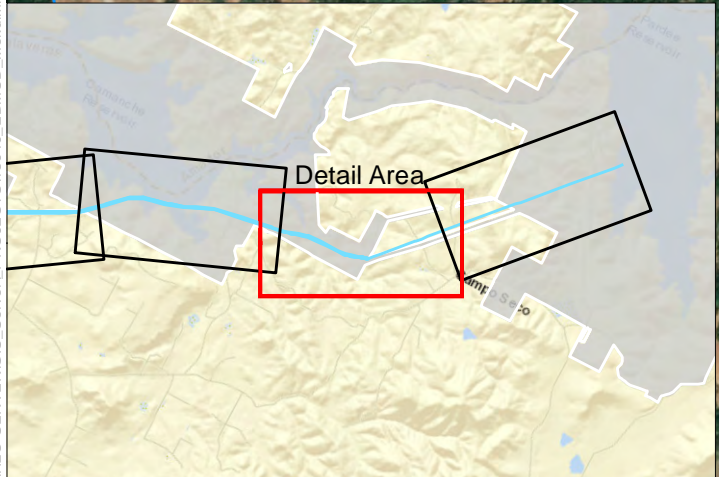


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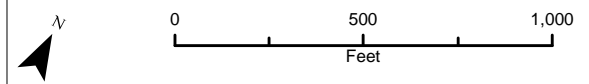
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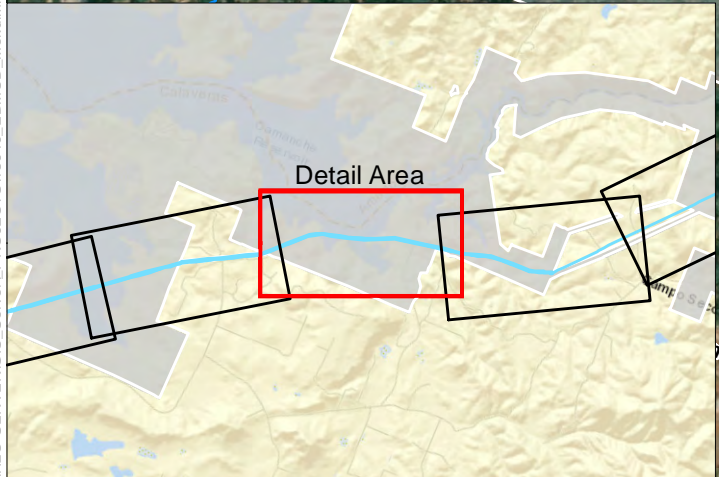
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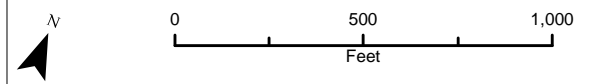
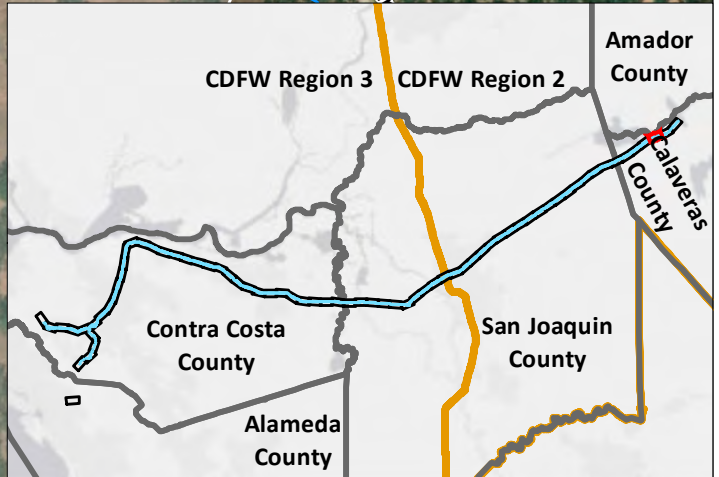
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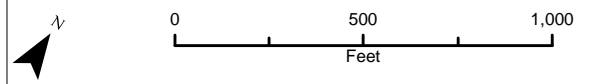
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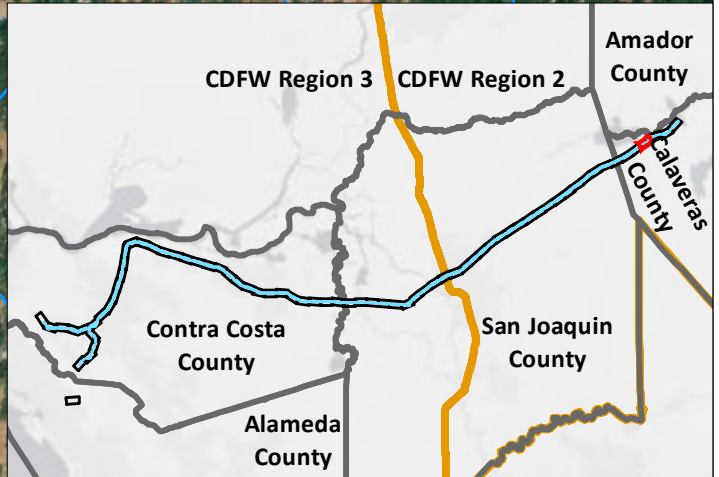
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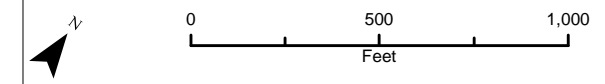
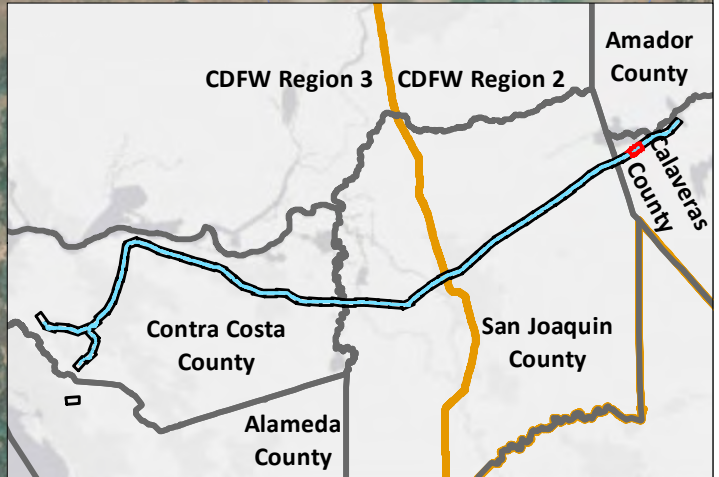
13: Wallace, Calaveras;  
SW of Pattison Rd.  
Seasonal water flow,  
culvert near lake bed

15: Culvert

14: Culvert

16: Culvert

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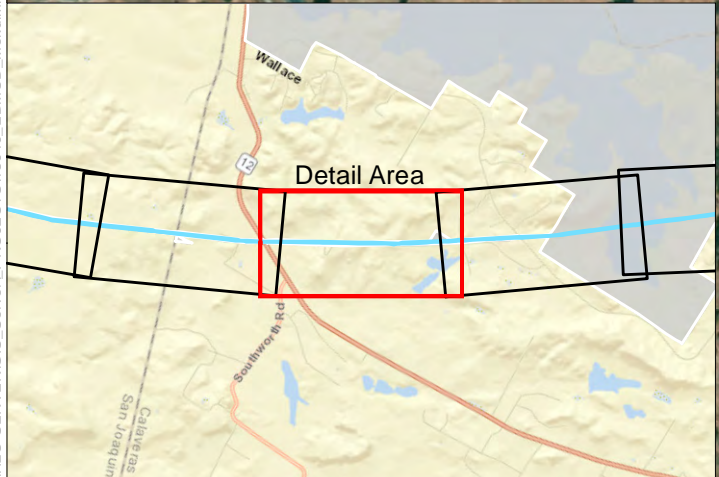
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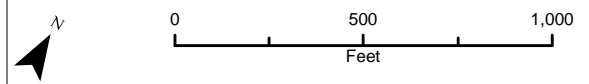
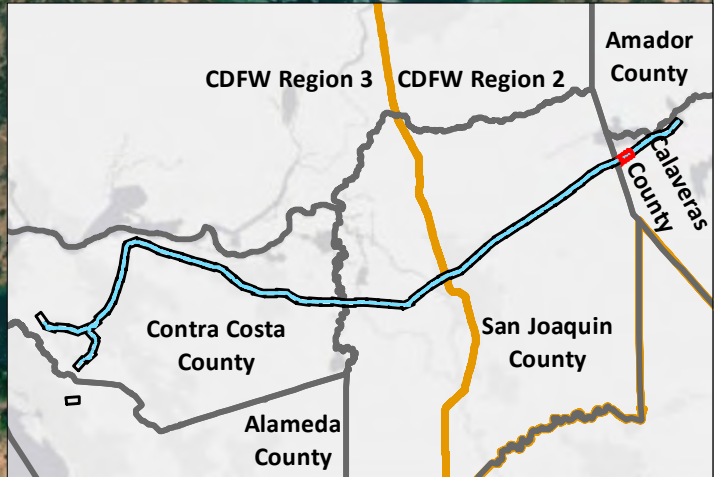
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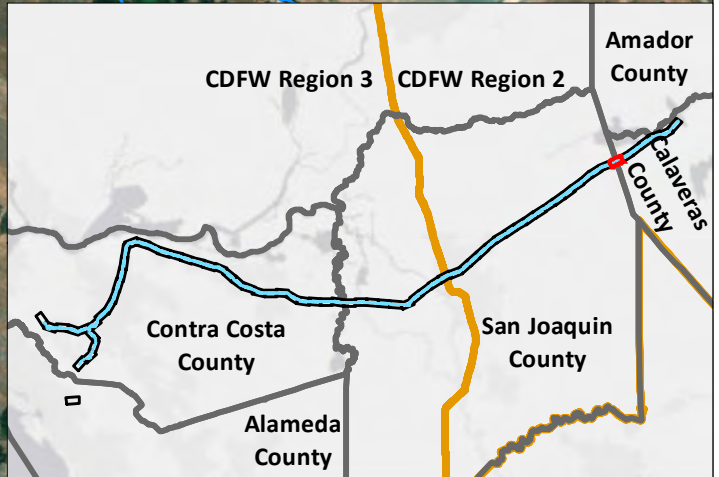
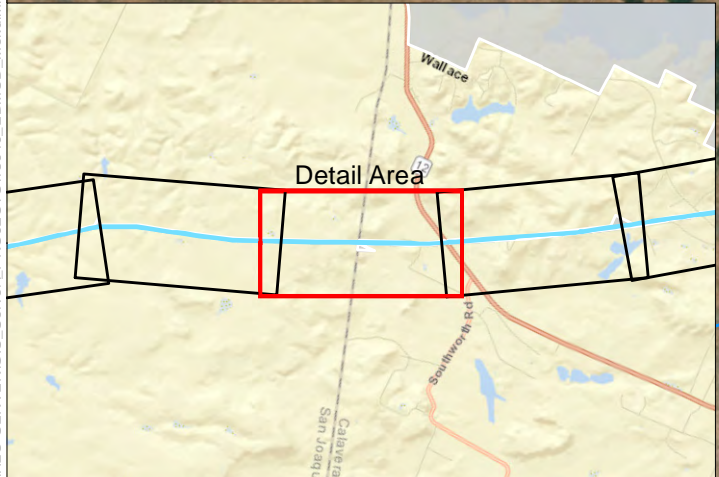
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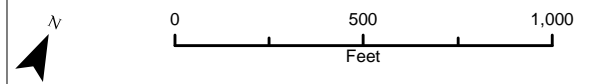
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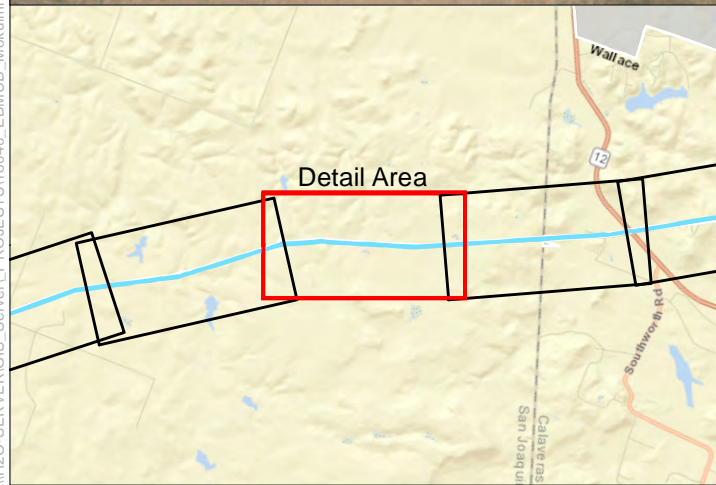
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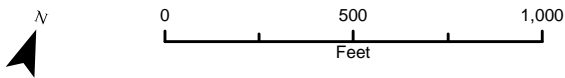
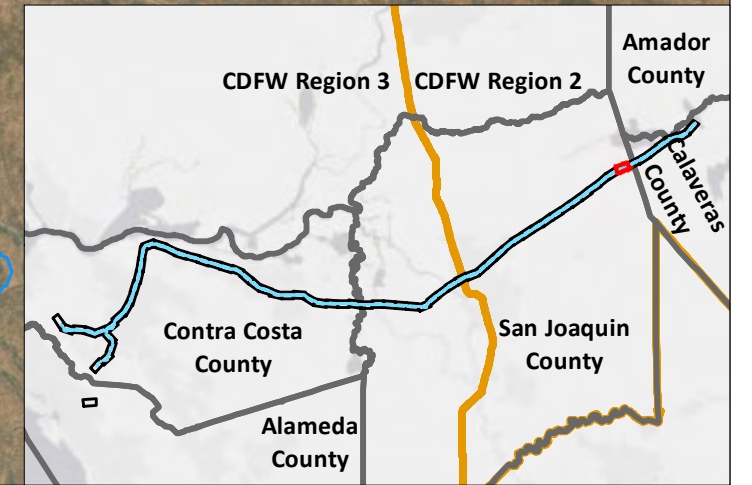
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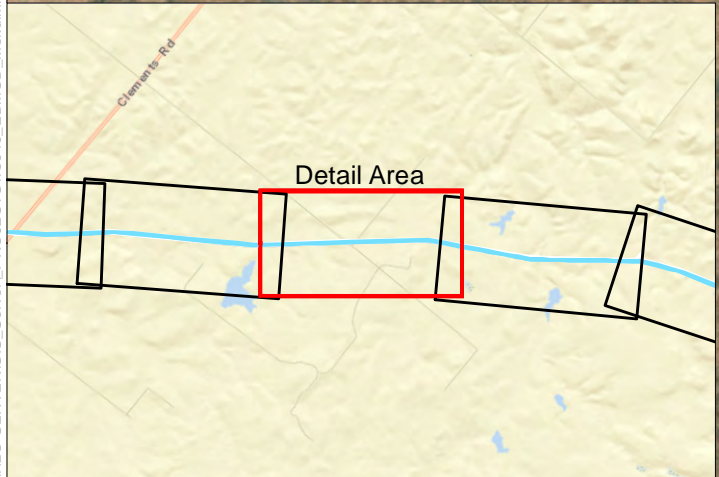
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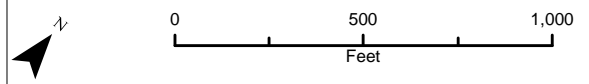




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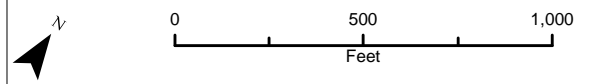
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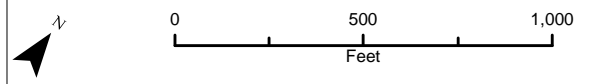
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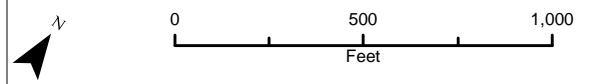
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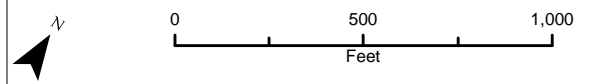
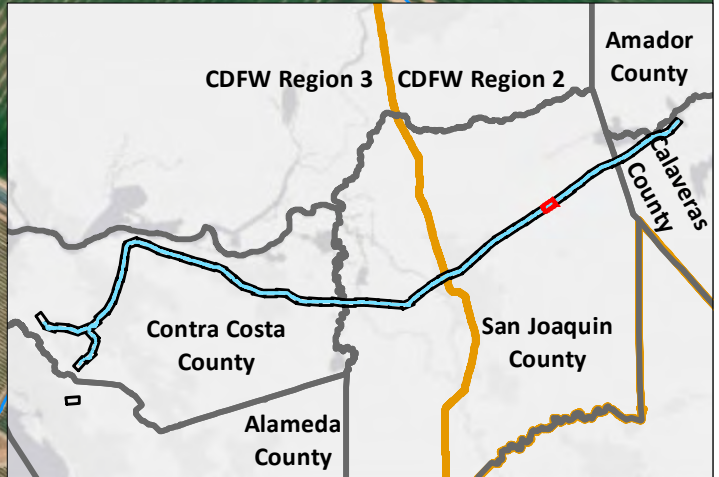
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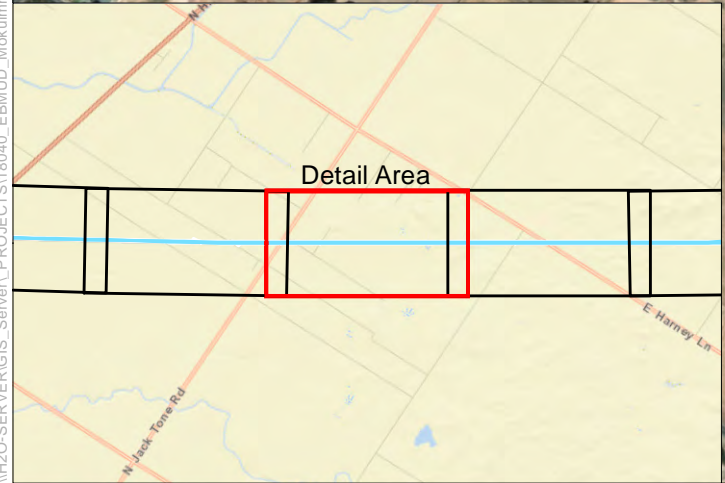
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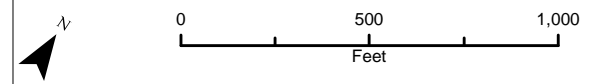
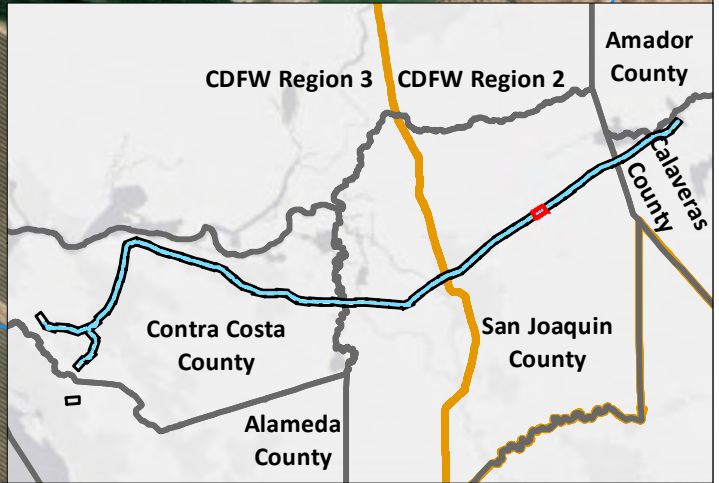
**Mokelumne Aqueduct System  
 Routine Maintenance Project**



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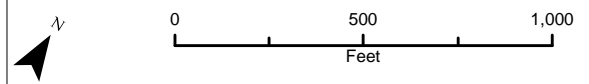
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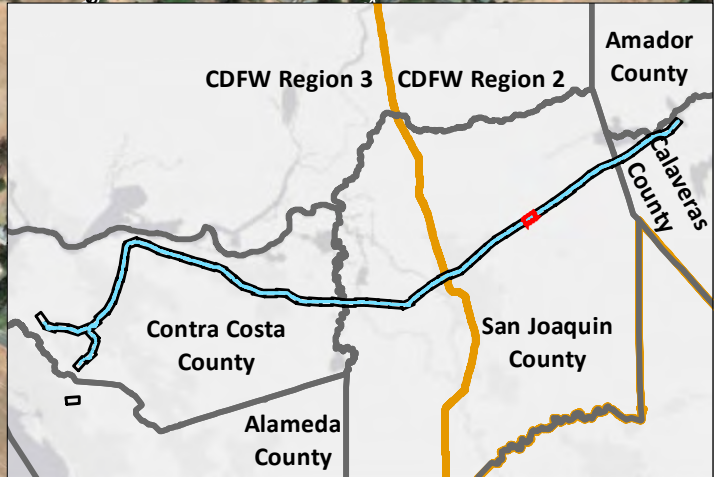


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- County Boundary

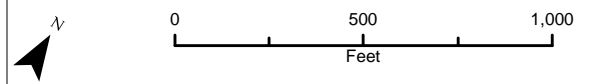


Prepared by:  
 Horizon  
 WATER AND ENVIRONMENT  
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 EBMUD



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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,



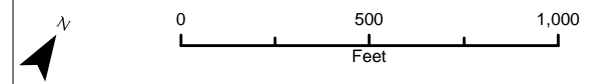
- Maintenance Sites
- ⊕ Stationing
- Creeks
- Water Bodies
- EBMUD Properties
- CDFW Region Boundary
- County Boundary

Prepared by:  
  
 Prepared for:  
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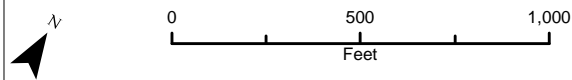
- Maintenance Sites
- ⊕ Stationing
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- Water Bodies
- EBMUD Properties
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS.



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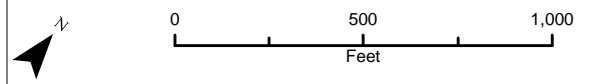


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- Maintenance Sites
- ⊕ Stationing
- Creeks
- Water Bodies
- EBMUD Properties
- CDFW Region Boundary
- County Boundary



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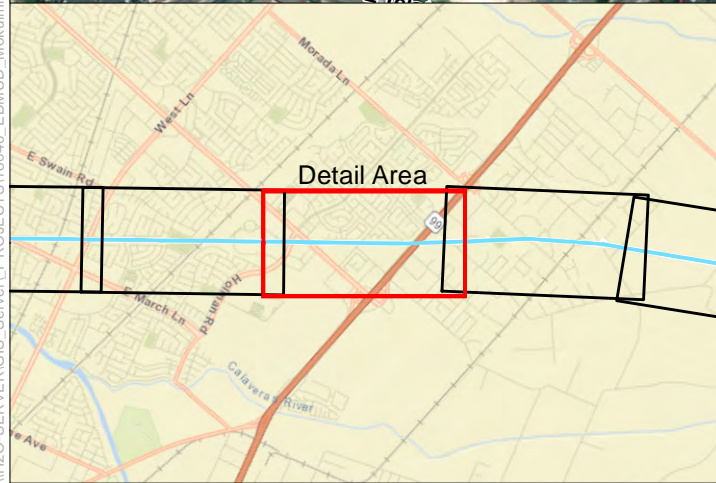


- Maintenance Sites
- ⊕ Stationing
- Creeks
- Water Bodies
- EBMUD Properties
- CDFW Region Boundary
- County Boundary

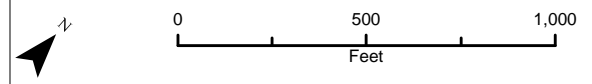
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 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

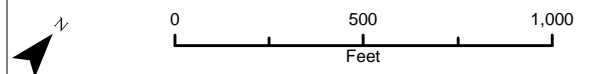


- Maintenance Sites
- ⊕ Stationing
- Creeks
- Water Bodies
- EBMUD Properties
- CDFW Region Boundary
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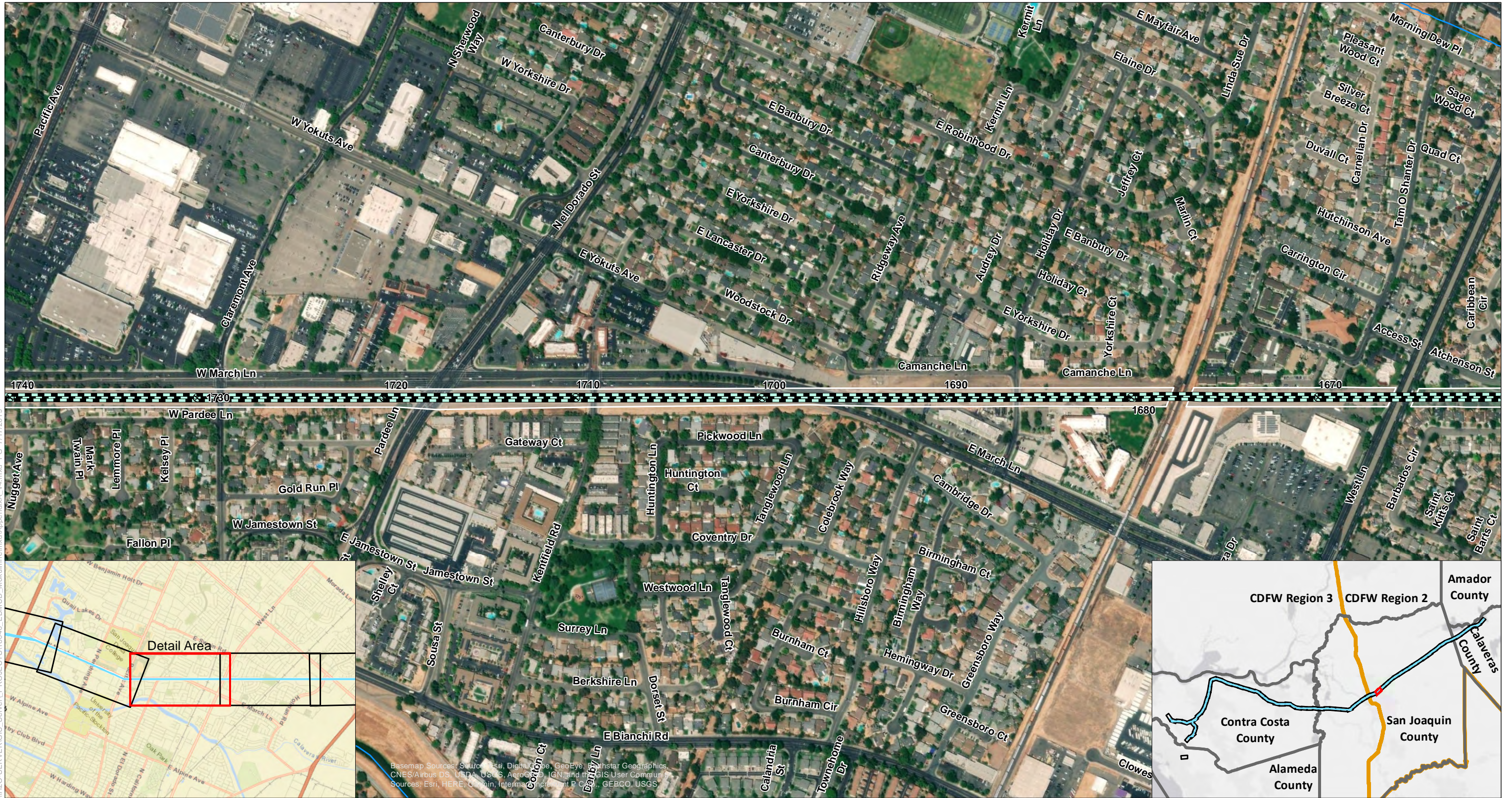


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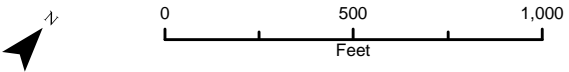
Prepared by:  
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- Maintenance Sites
- ⊕ Stationing
- Creeks
- Water Bodies
- EBMUD Properties
- CDFW Region Boundary
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Basemap Sources: Suro, Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS



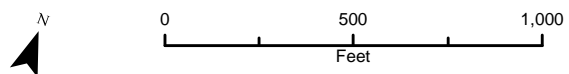
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- Maintenance Sites
- EBMUD Properties
- ⊕ Stationing
- CDFW Region Boundary
- Creeks
- County Boundary
- Water Bodies



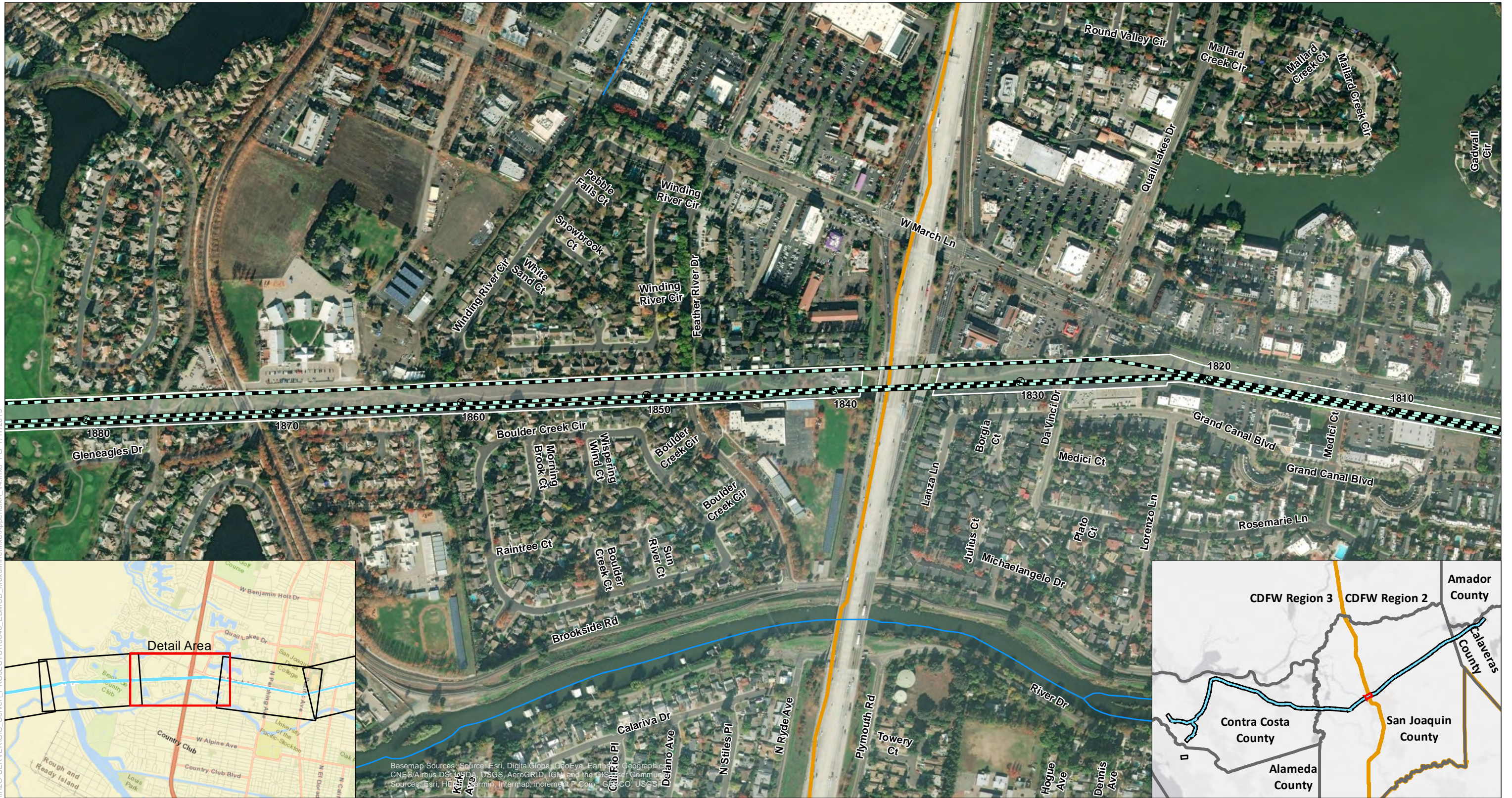
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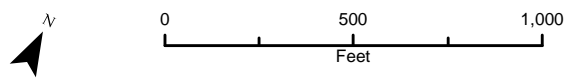
Prepared by:  
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- Maintenance Sites
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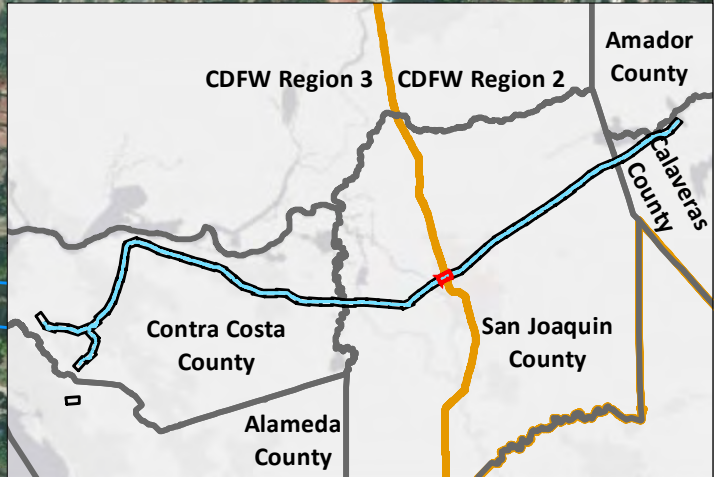


Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar, Geographic  
 CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS

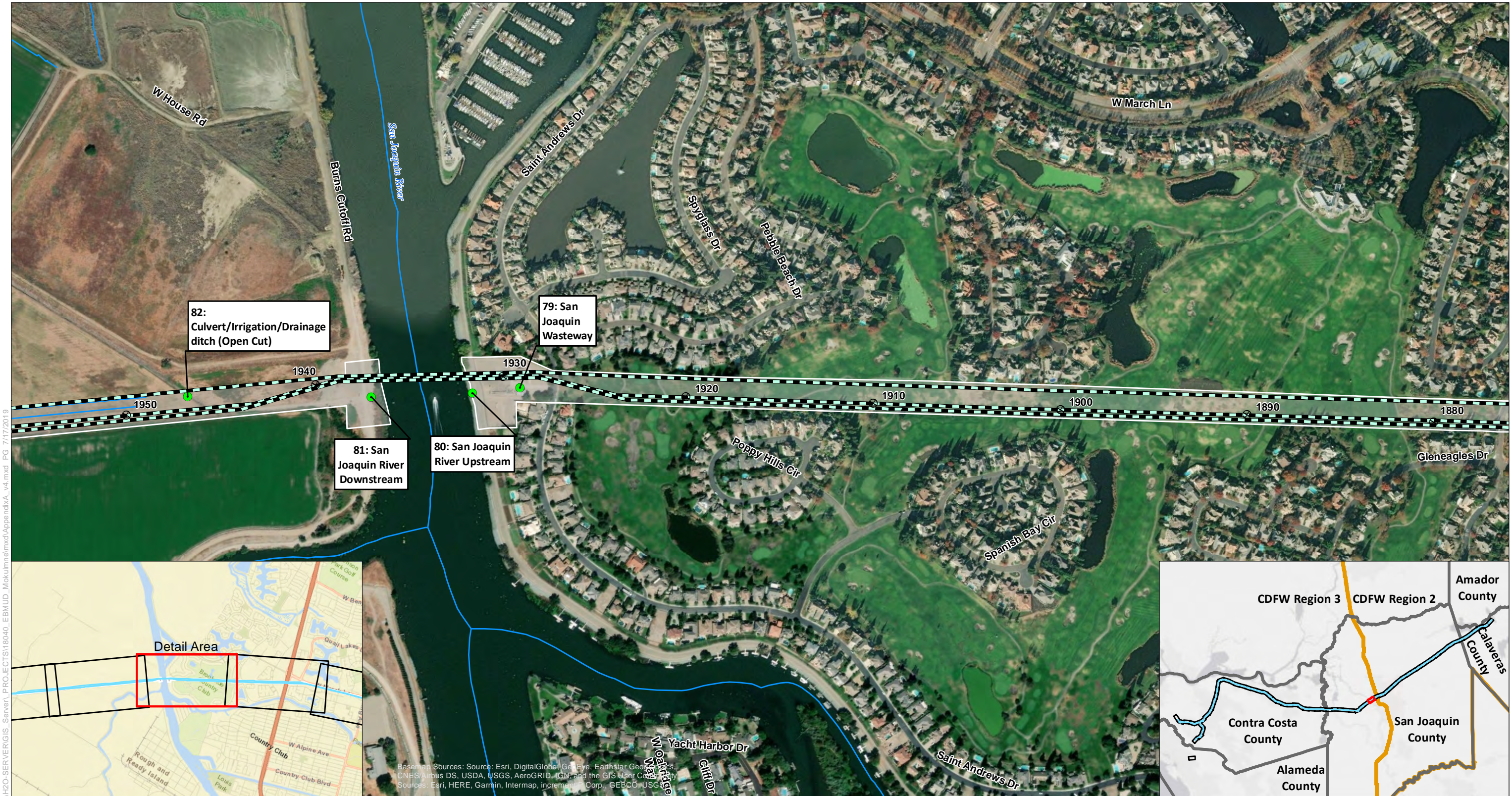


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- Maintenance Sites
- ⊕ Stationing
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- Water Bodies
- EBMUD Properties
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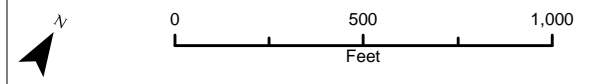






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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS



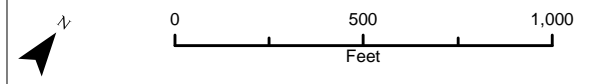
- Maintenance Sites
- EBMUD Properties
- ⊕ Stationing
- CDFW Region Boundary
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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,



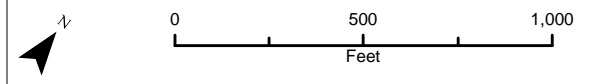
- Maintenance Sites
- ⊕ Stationing
- Creeks
- Water Bodies
- EBMUD Properties
- CDFW Region Boundary
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
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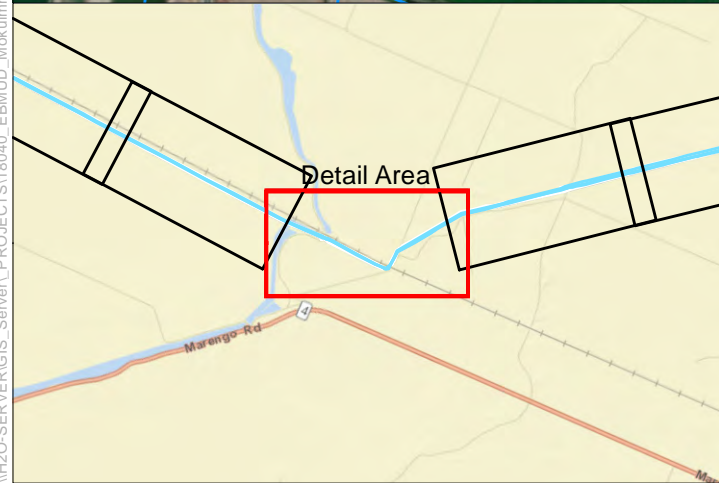


- Maintenance Sites
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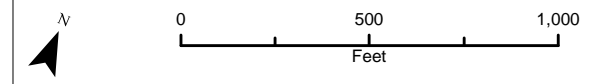
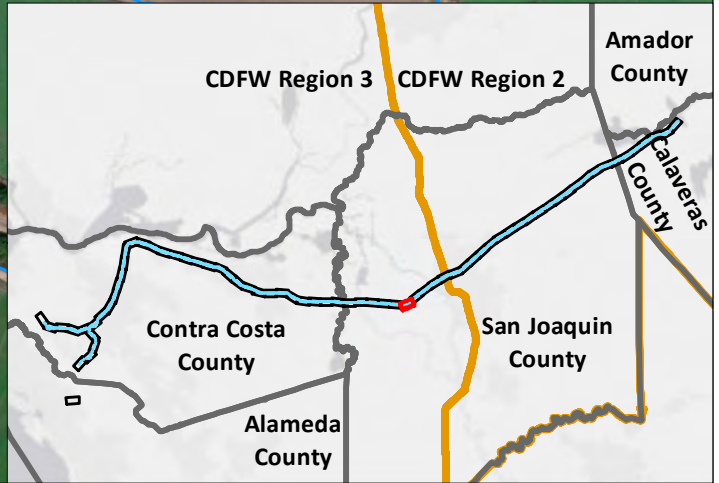
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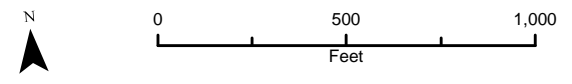
- Maintenance Sites
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- Creeks
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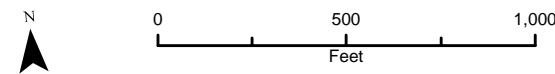
- Maintenance Sites
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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

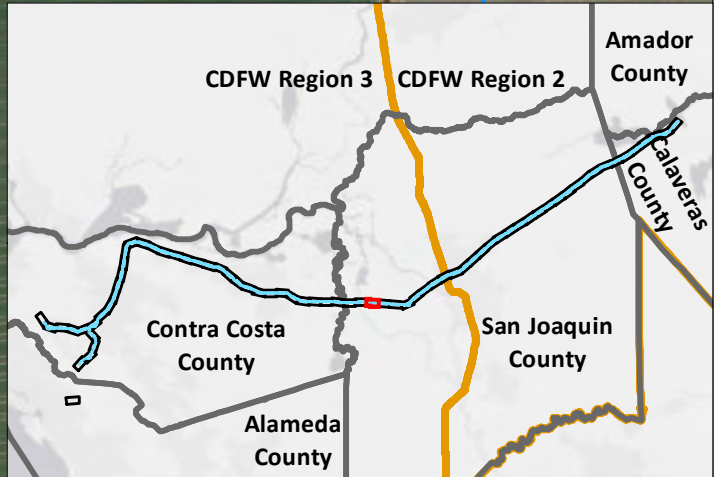
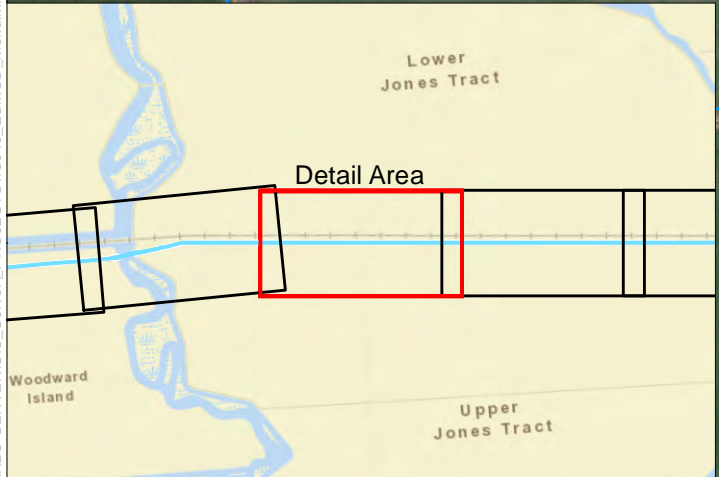


- Maintenance Sites
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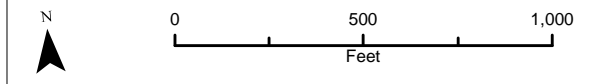
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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,



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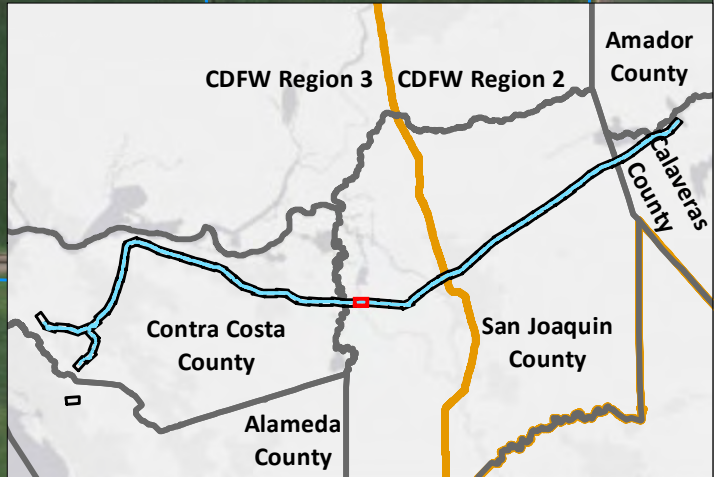
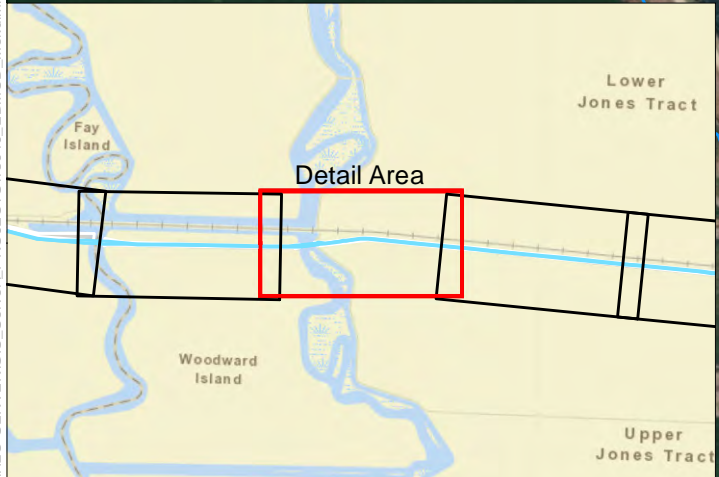
104: Middle River Downstream

103: Middle River Upstream

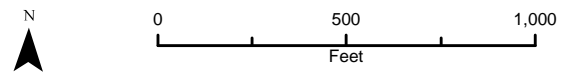
102:

101:

100:



Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,



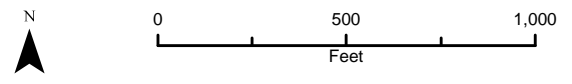
- Maintenance Sites
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- Maintenance Sites
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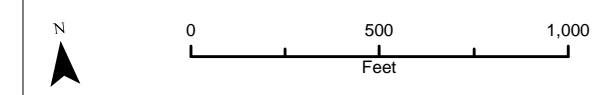
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

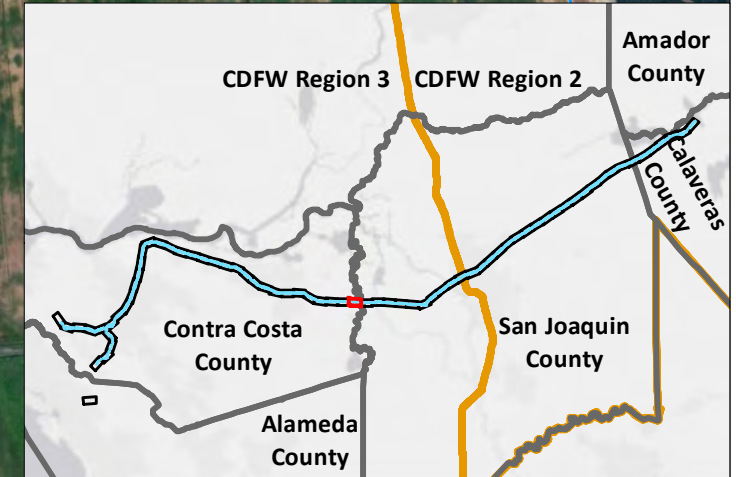
- 110: Drainage channel/culvert 3.23 miles east of the intersection of Bixler Road and Orwood Road, unincorporated Contra Costa County
- 111: Drainage channel/culvert 3.215 miles east of the intersection of Bixler Road and Orwood Road, unincorporated Contra Costa County
- 112:
- 113: Drainage channel on the east side of Orwood Tract, unincorporated Contra Costa County;
- 114:
- 115: Drainage channel immediately west of Site 13;
- 109: Old River Downstream

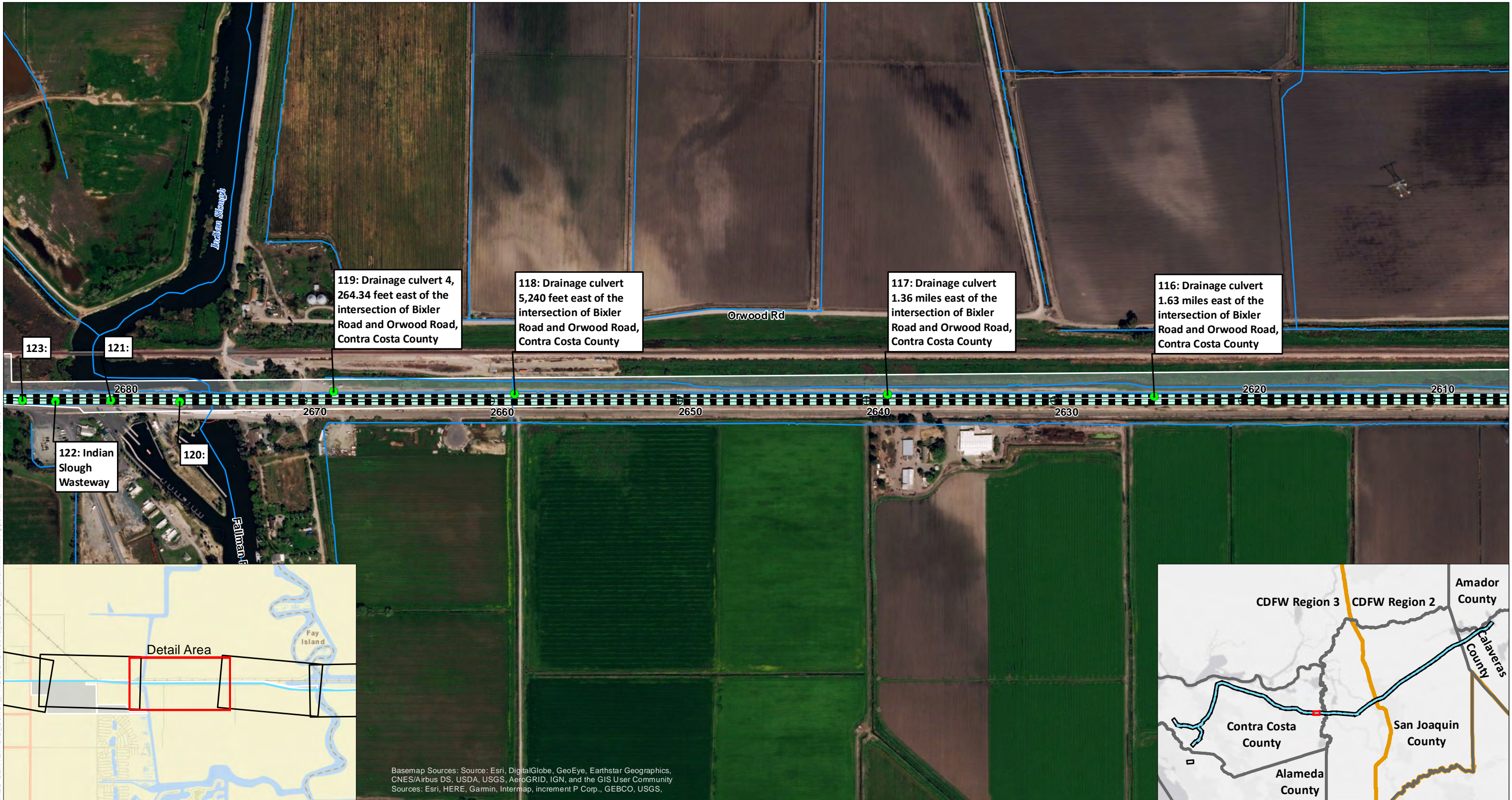
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- Maintenance Sites
- ⊕ Stationing
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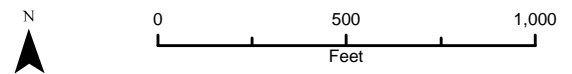
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

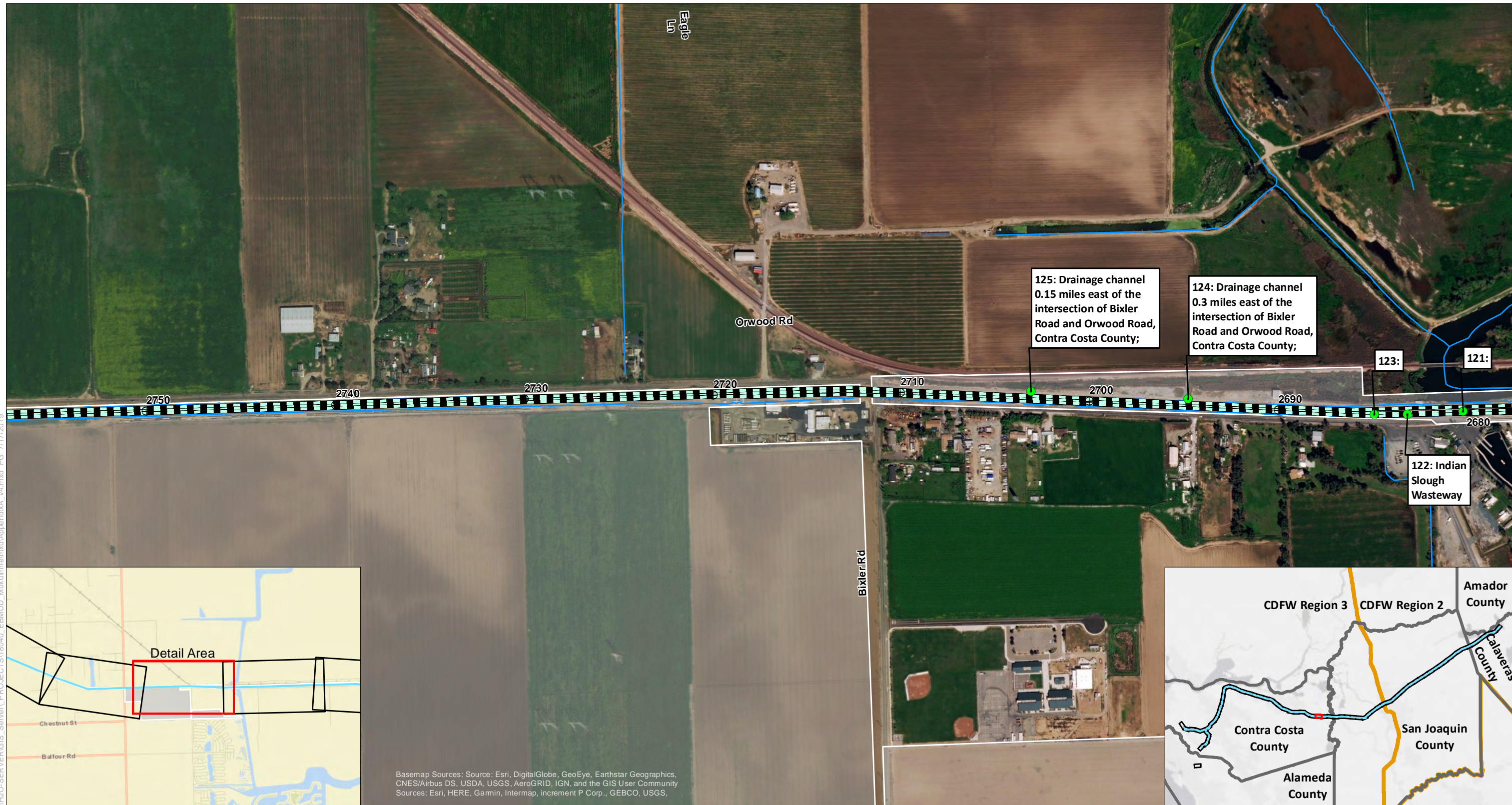
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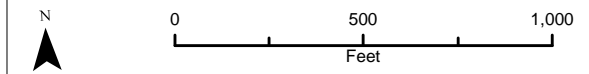
- Maintenance Sites
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,



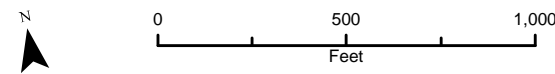
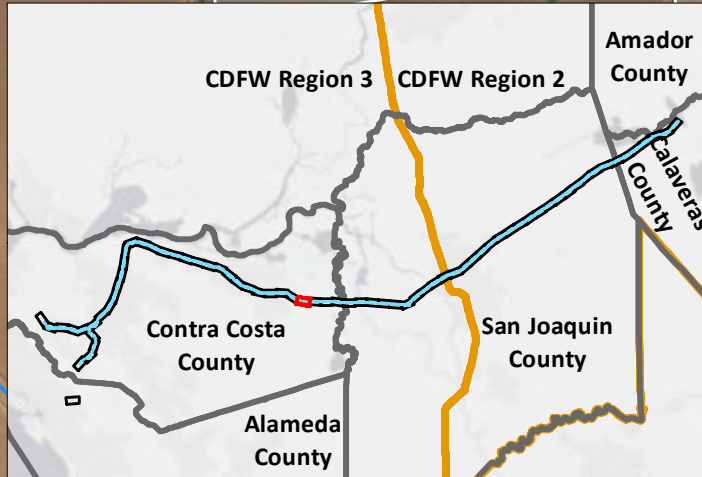
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- Maintenance Sites
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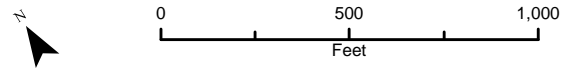
- Maintenance Sites
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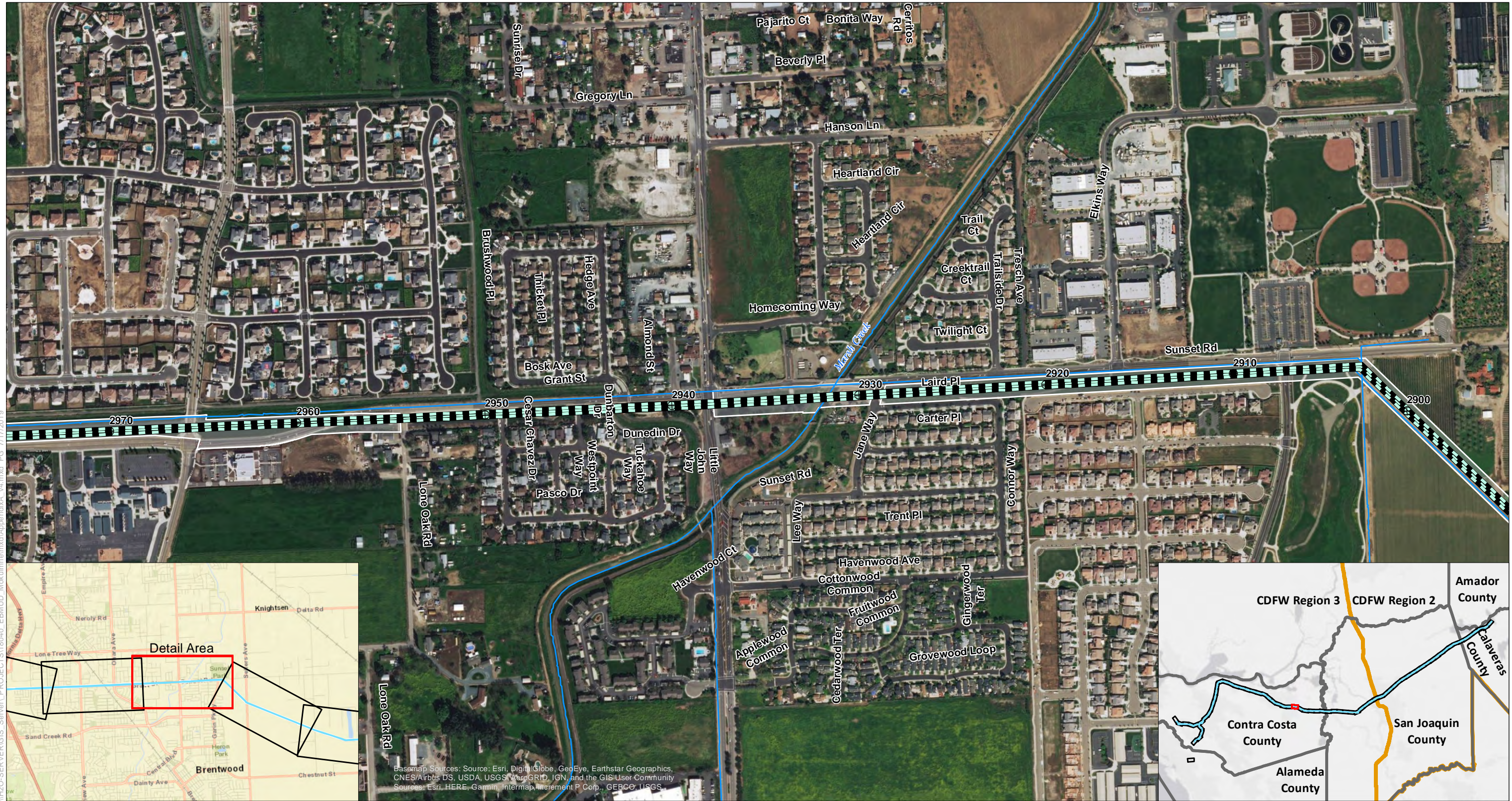
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

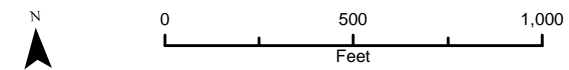


- Maintenance Sites
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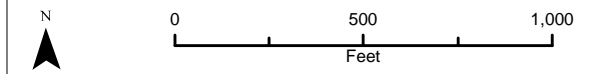
- Maintenance Sites
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126: Drainage channel north of the intersection of Grant Street and Minnesota Avenue, City of Brentwood, Contra Costa County;

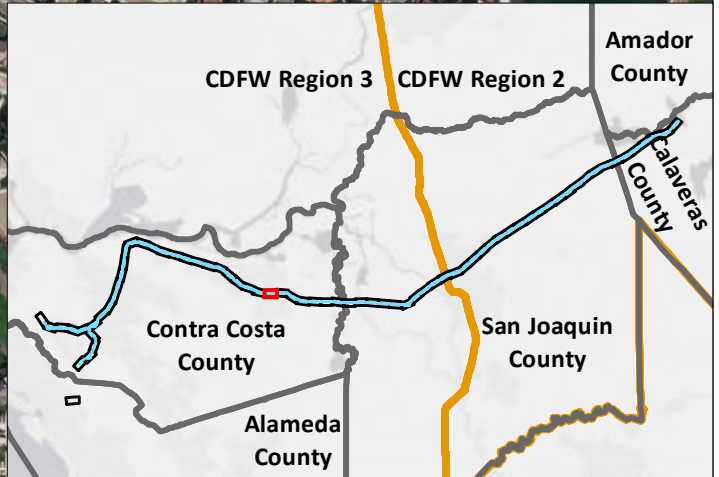
Base map Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

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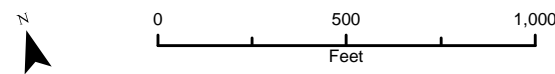






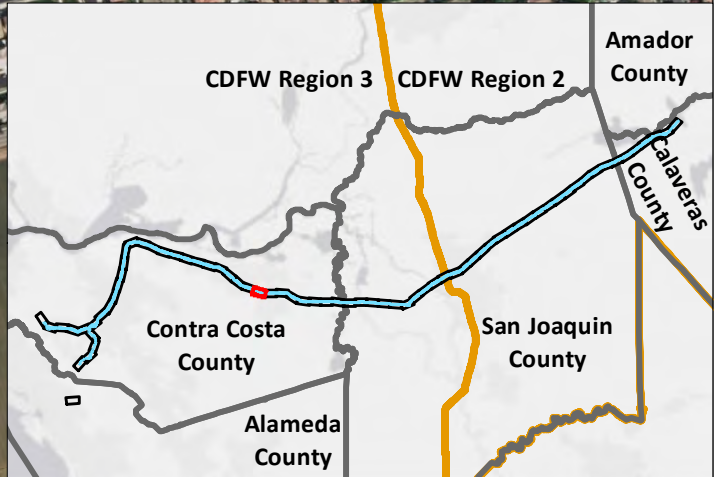
VH20-SERVERIGIS\_Server1\_PROJECTS\18040\_EBMUD\_Mokelumne\AppendixA\_v4.mxd PG 7/17/2019

Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS,



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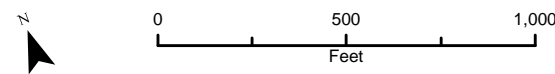


127: Drainage culvert 880 feet west of the intersection of Lone Tree way and Hillcrest Ave, City of Antioch, Contra Costa County

Detail Area

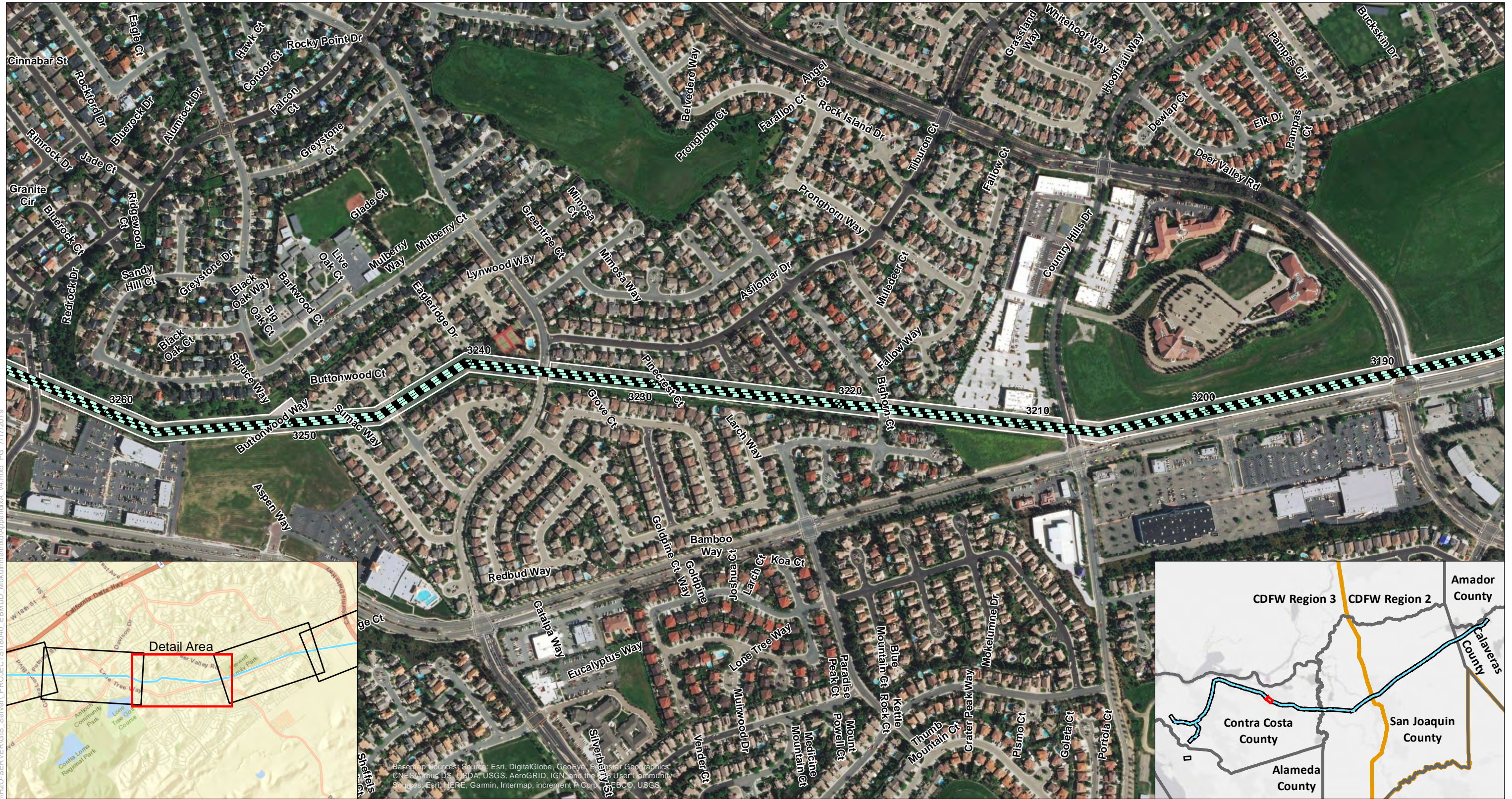
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Base Map Sources: Source: ESRI, DigitalGlobe, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, AeroGRID, IGN, and the GIS User Community  
 Source: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS



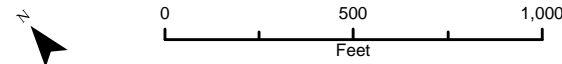
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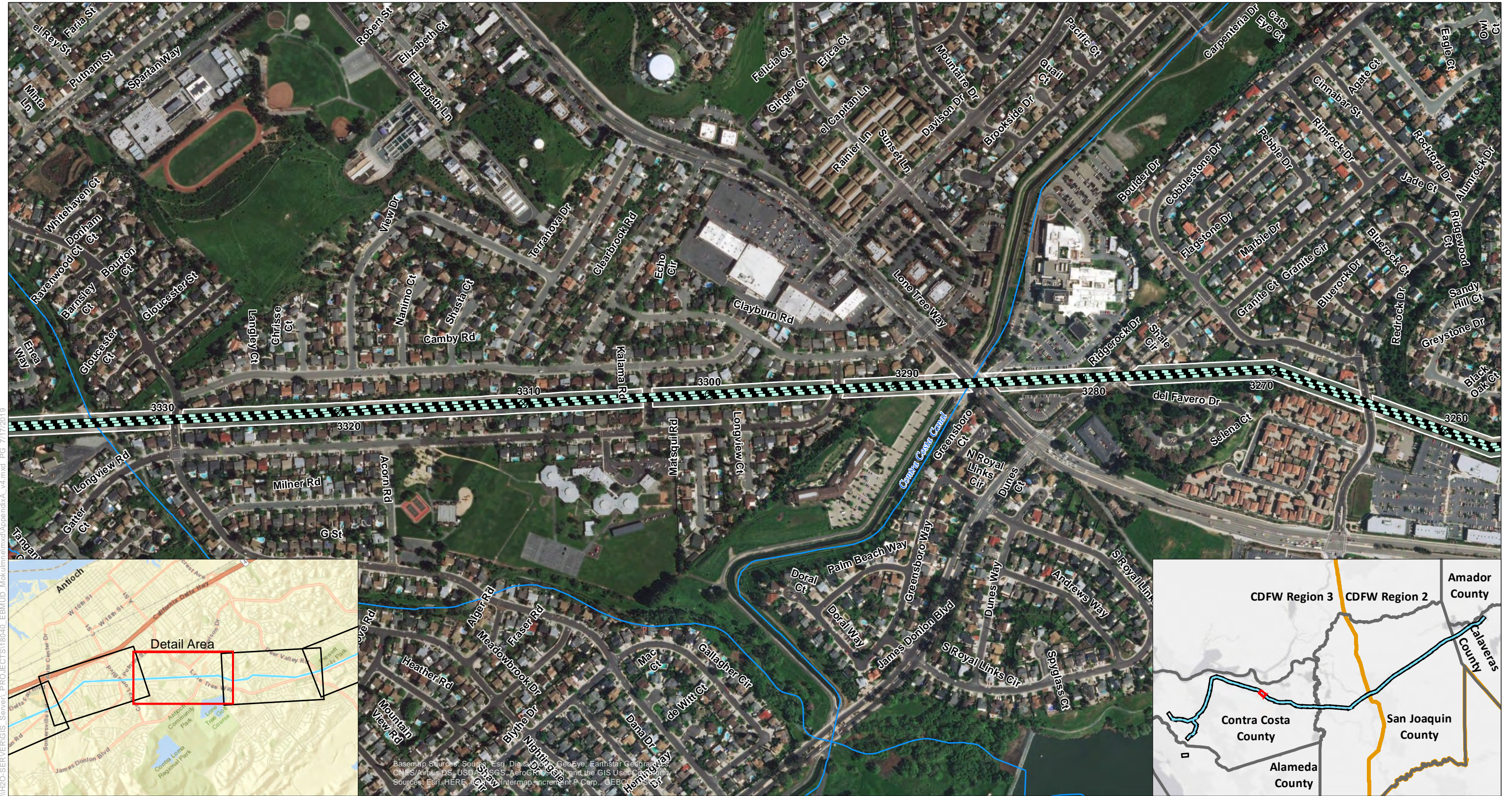
\NH20-SERVER\GIS\_Server\PROJECTS\18040\_EBMUD\_Mokelumne\AppendixA\_v4.mxd PG 7/17/2019

Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS

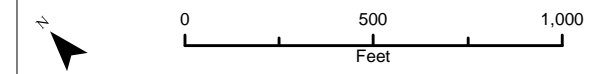


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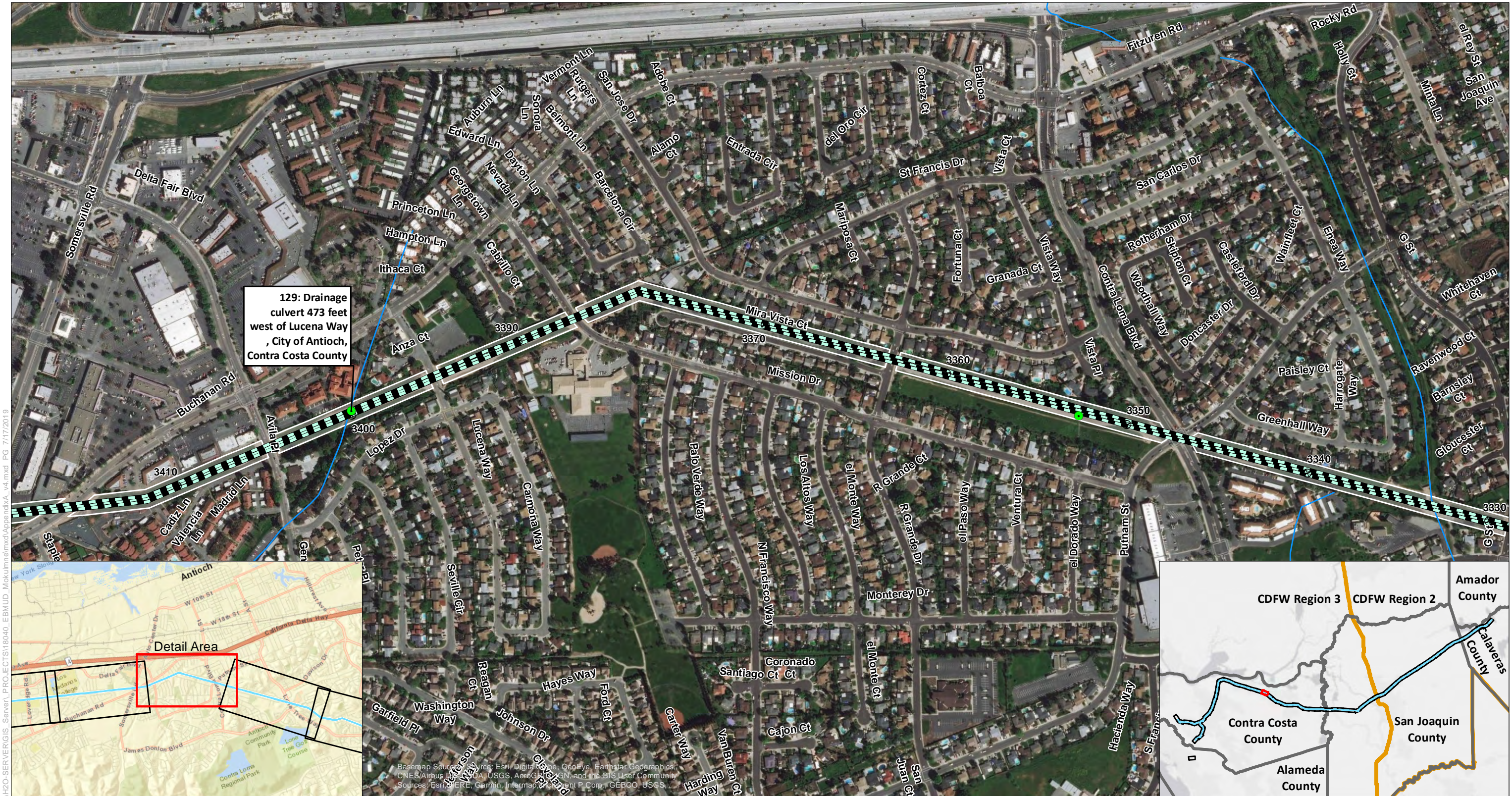


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129: Drainage culvert 473 feet west of Lucena Way, City of Antioch, Contra Costa County

3410

3400

3390

3370

3360

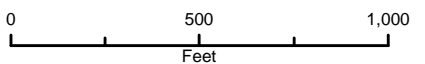
3350

3340

3330

Detail Area

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Mokelumne Aqueduct System  
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Basemap Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, DeLorme, P Corp., GEBCO, USGS



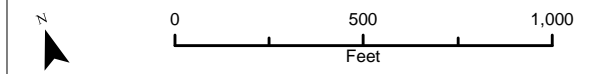
**132: Drainage channel**  
0.2 miles east of Gladstone Drive and north of Norine Drive, City of Pittsburg, Contra Costa County;

**131: Drainage channel**  
0.35 miles east of Gladstone Drive and north of Norine Drive, City of Pittsburg, Contra Costa County;

**130: Drainage culvert on Standard Oil Rd. (837 feet west of Desrys Blvd), City of Pittsburg, Contra Costa County**

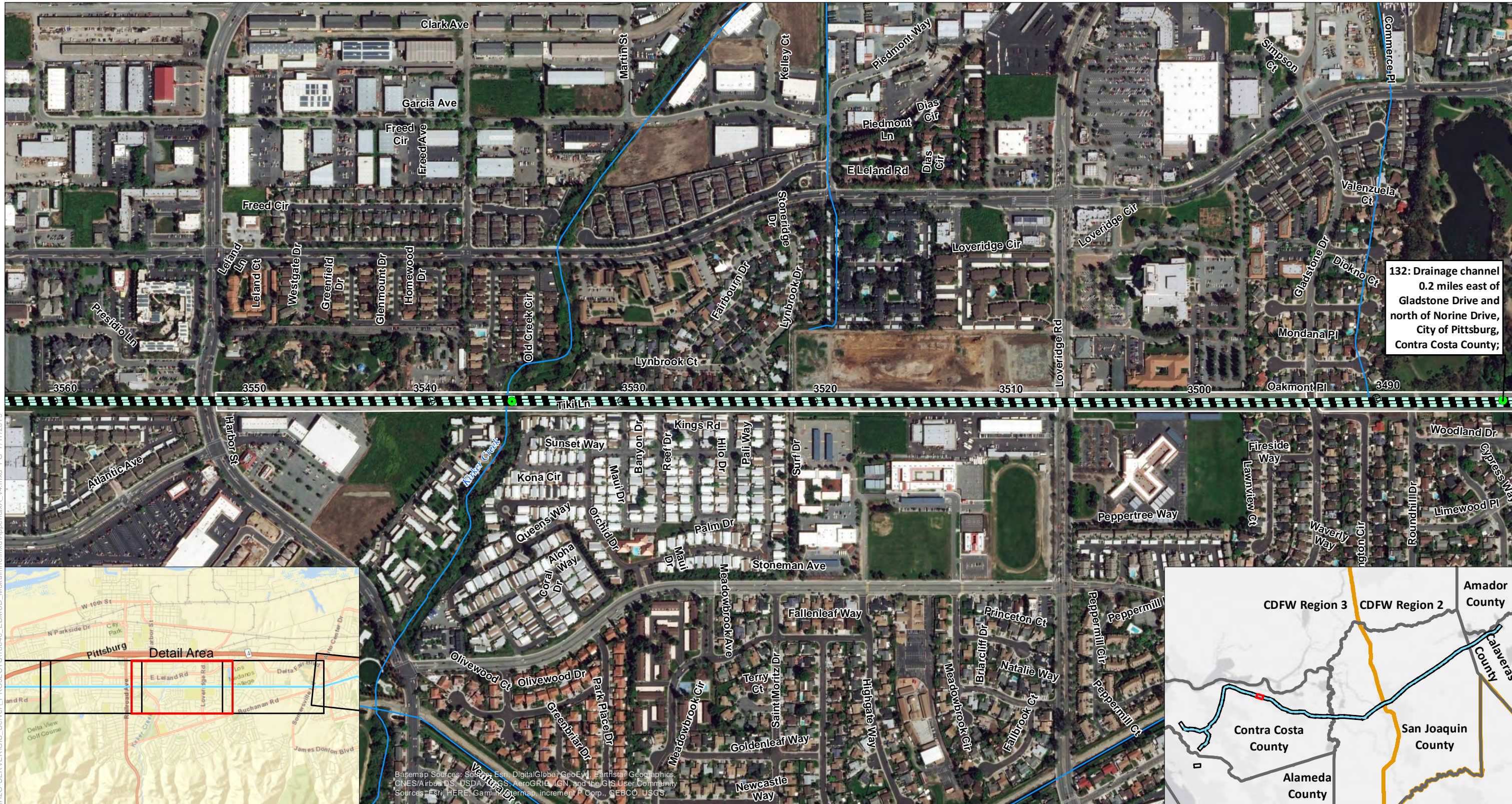
Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS.

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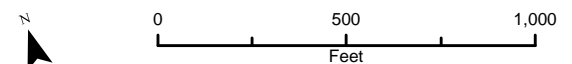
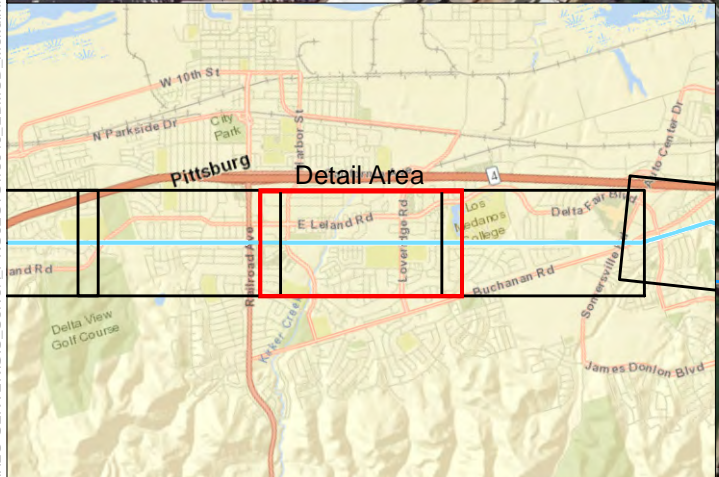
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132: Drainage channel  
0.2 miles east of  
Gladstone Drive and  
north of Norine Drive,  
City of Pittsburg,  
Contra Costa County;

Basemap Sources: Sotera Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Mapbox, DeLorme, Swatchbourn, GEBCO, USGS

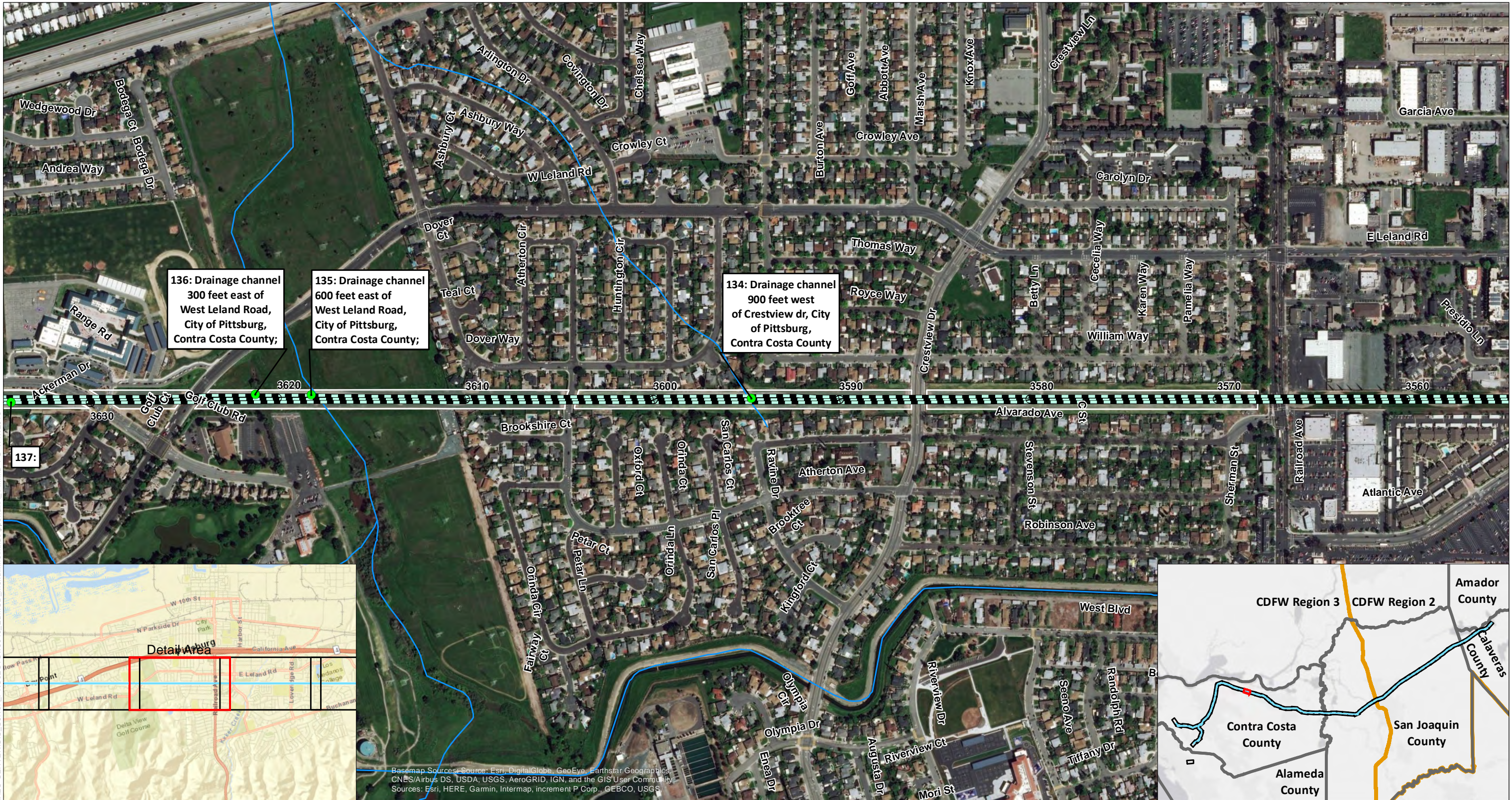
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**Mokelumne Aqueduct System  
Routine Maintenance Project**



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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS

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**140:** Drainage channel near the western terminus of Wedgwood Drive at Hwy 4, City of Pittsburg, Contra Costa County;

**139:** Drainage channel near the western terminus of Birchwood Drive, City of Pittsburg, Contra Costa County;

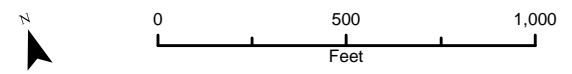
**138:** Drainage culvert 325 feet west of Ackerman Dr, City of Pittsburg, Contra Costa County

**141:** Drainage channel east of Franklin Avenue near the southern terminus of Inglewood Street at Hwy 4, City of Bay Point, Contra Costa County;

**137:**

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Map Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar, GeoGraphics, CNES/Airbus, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment p., GEBCO, USGS



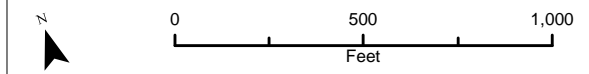
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142: Drainage culvert 680 feet west of Bailey Rd, City of Pittsburg, Contra Costa County

Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS

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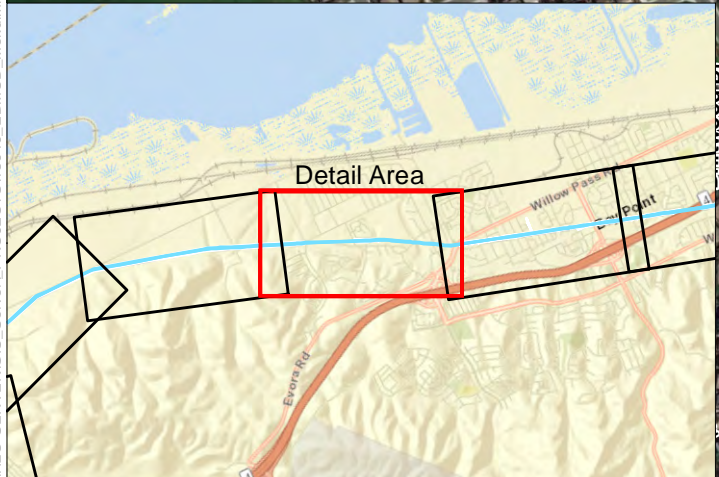
Mokelumne Aqueduct System  
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146: Unnamed stream 500 feet west of Driftwood Drive at Contra Costa Canal, City of Bay Point, Contra Costa County;

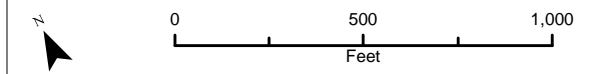
145: Drainage channel 400 feet east of Mariner Cove Drive at Contra Costa Canal, City of Bay Point, Contra Costa County;

144: Drainage channel 100 feet east of Riverside Drive at Contra Costa Canal, City of Bay Point, Contra Costa County;



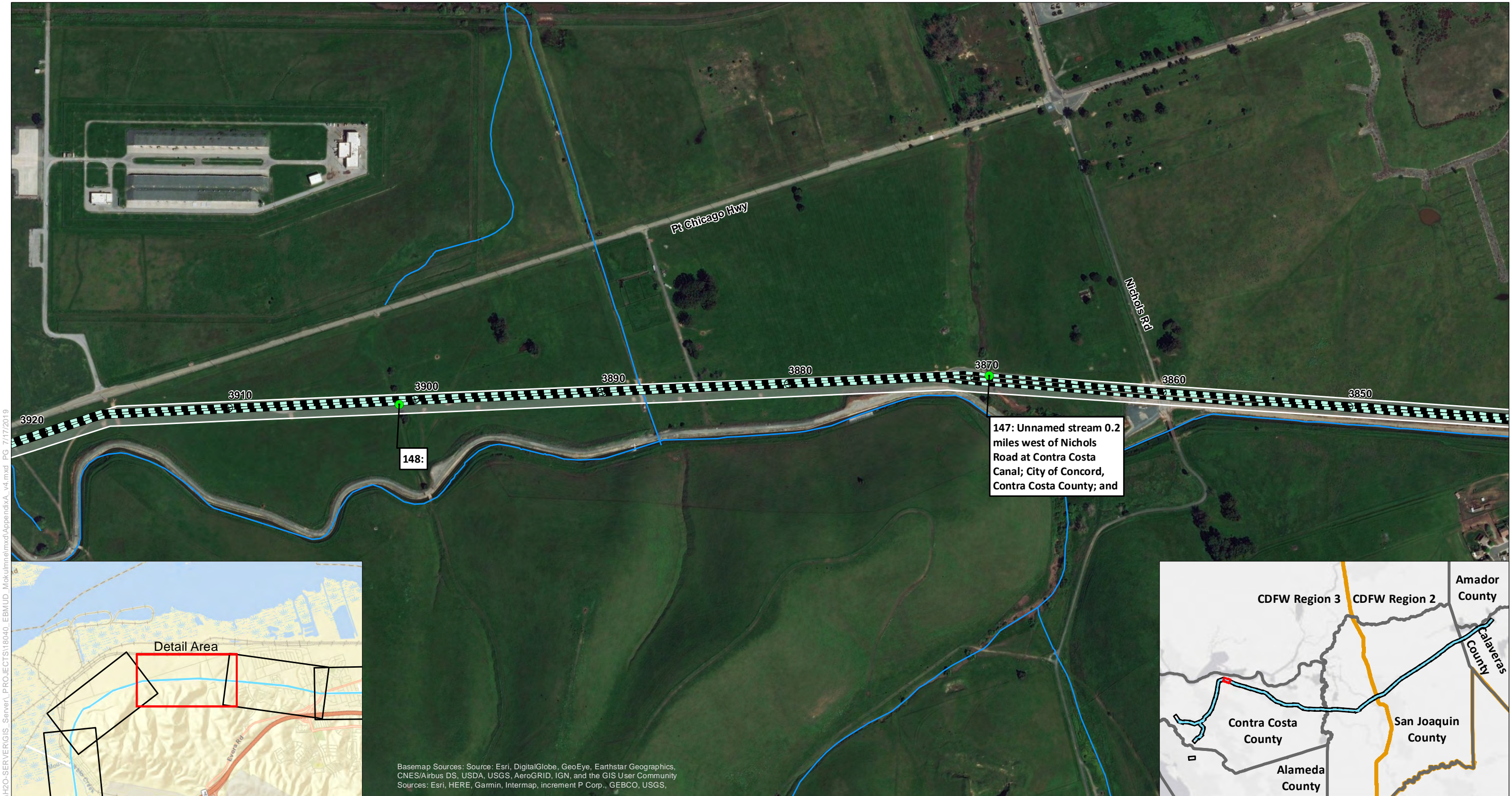
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,



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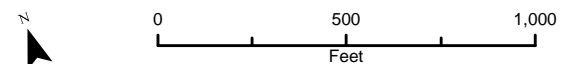
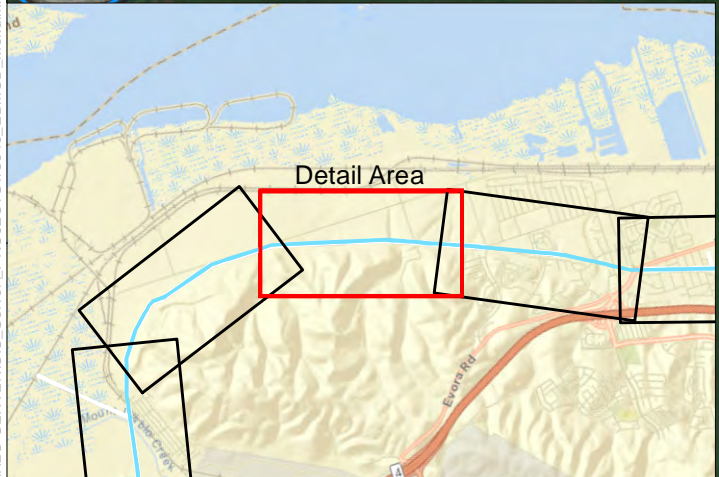
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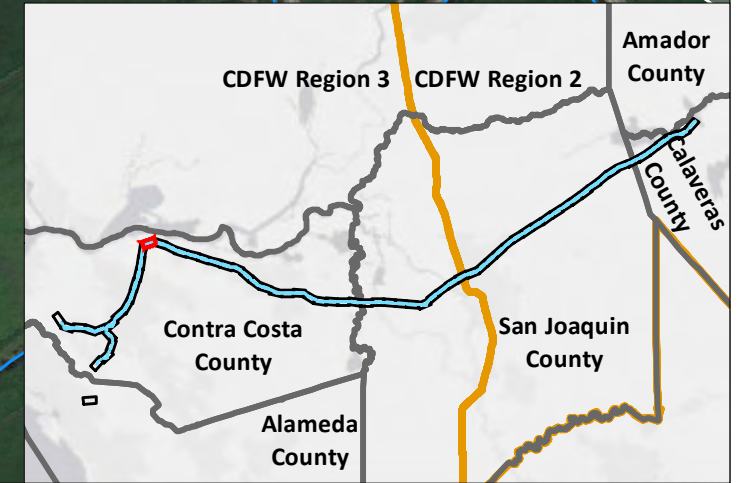
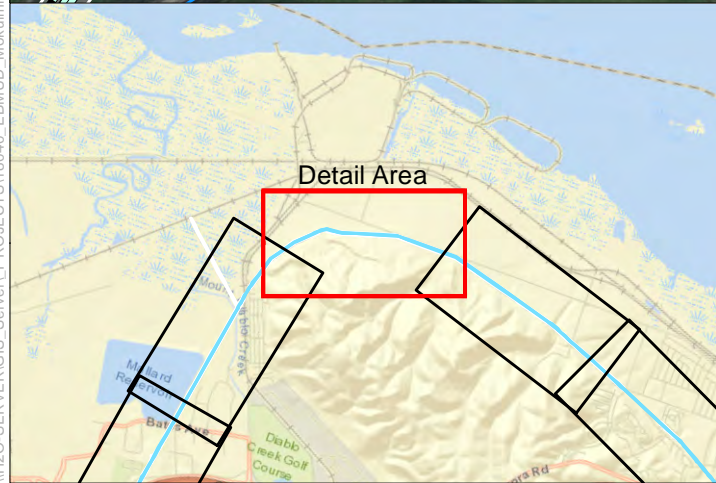
147: Unnamed stream 0.2 miles west of Nichols Road at Contra Costa Canal; City of Concord, Contra Costa County; and

Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

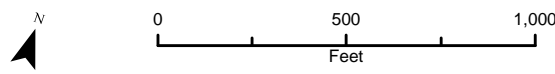


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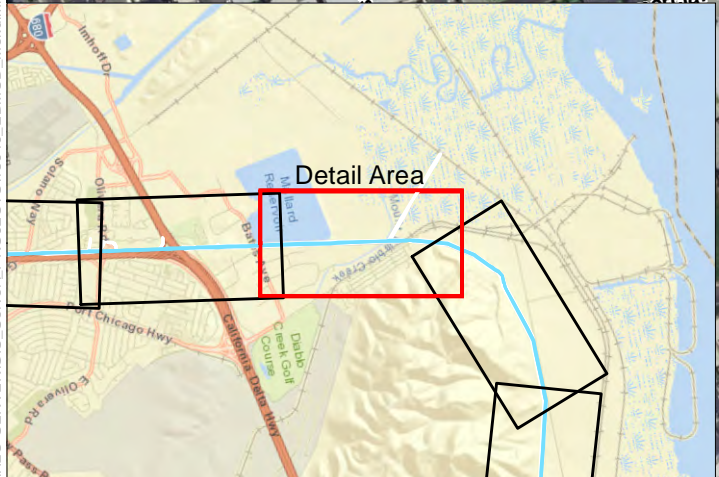
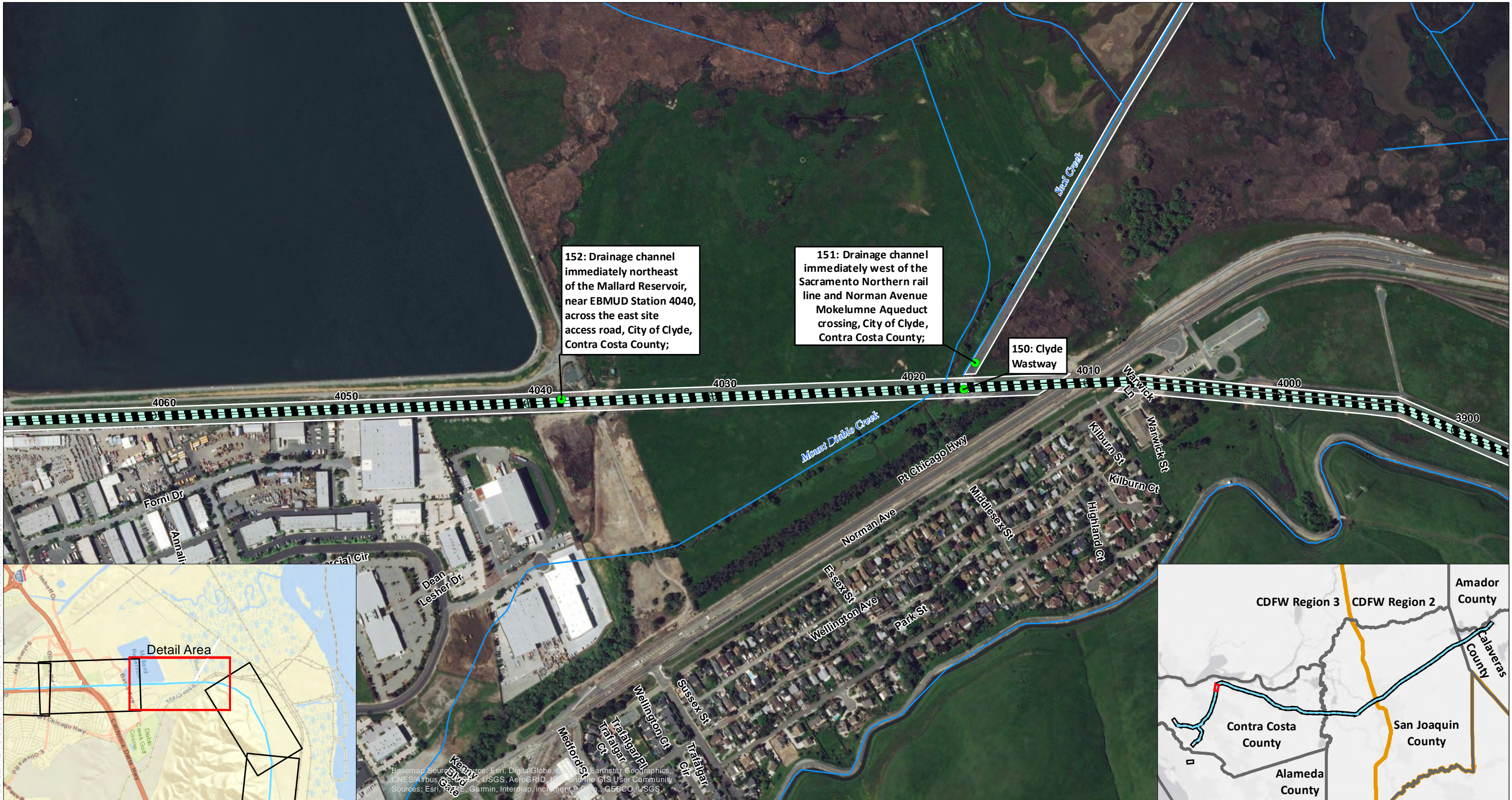


Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

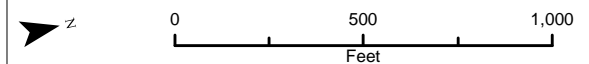


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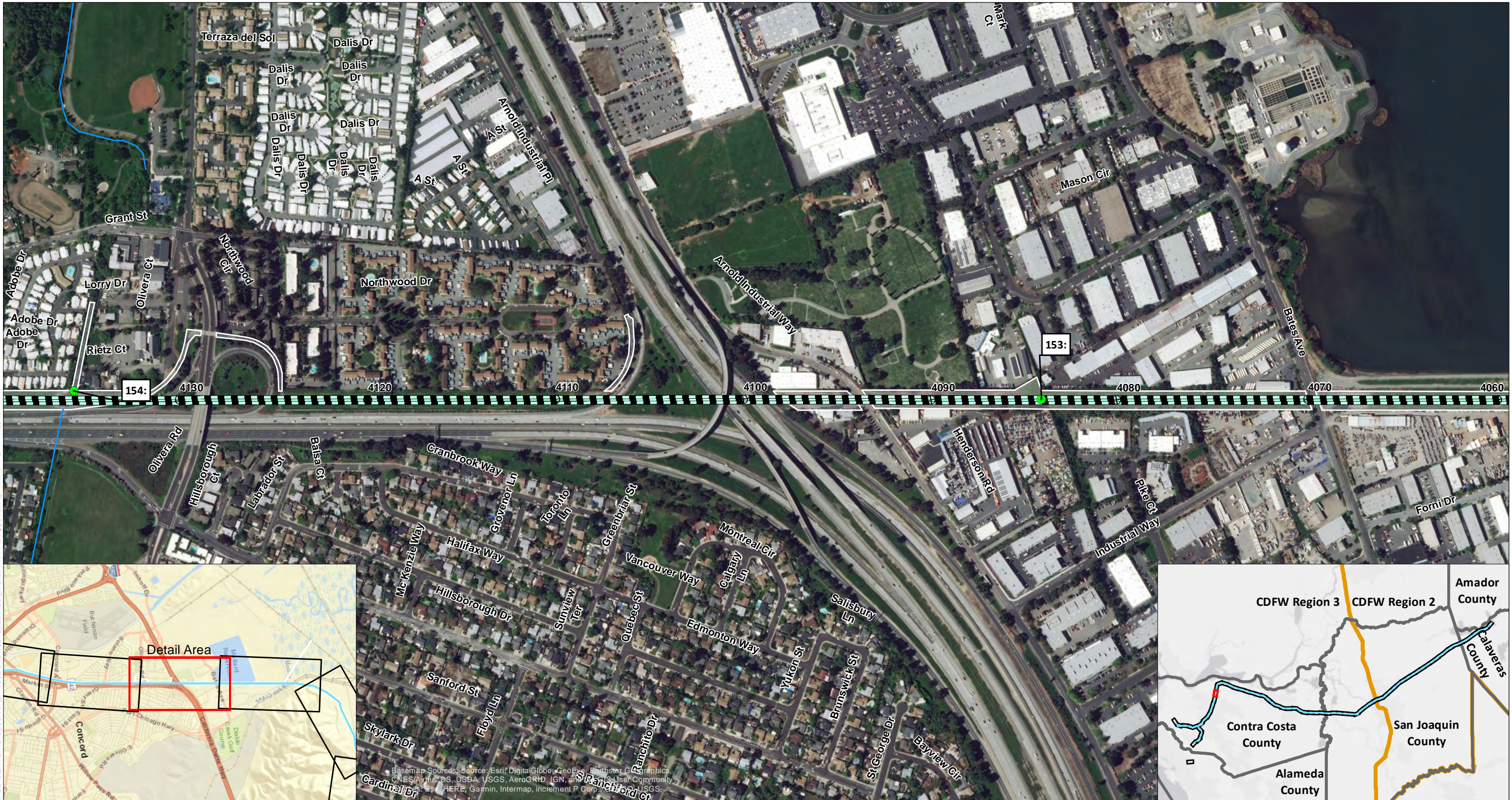


Basemap Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, DeLorme, Garmin, Intermap, increment P Corp., GEBCO, USGS

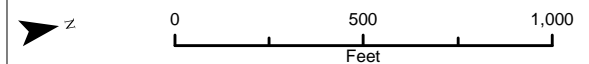


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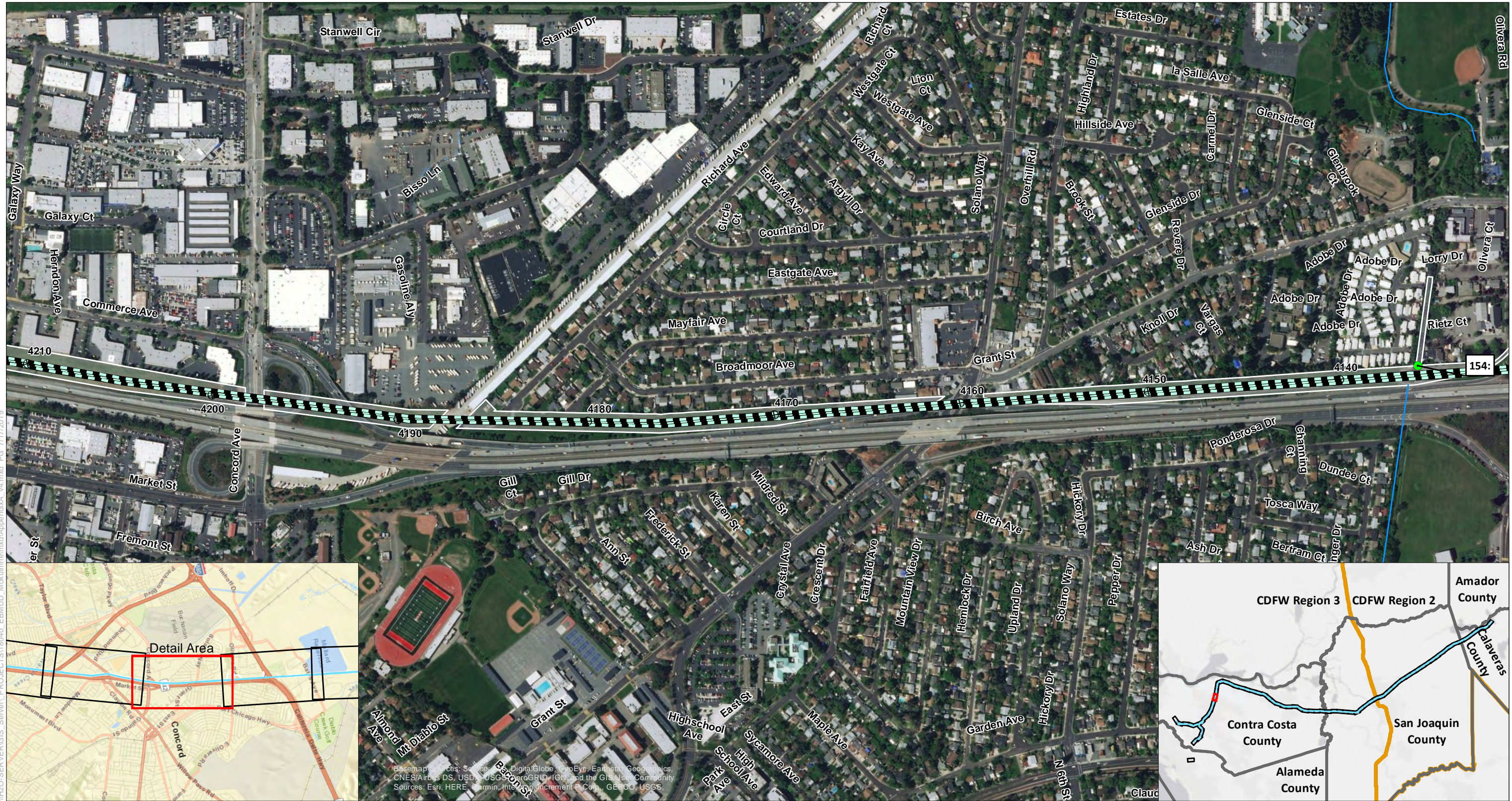


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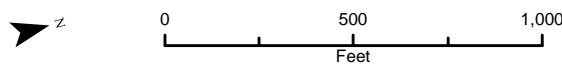
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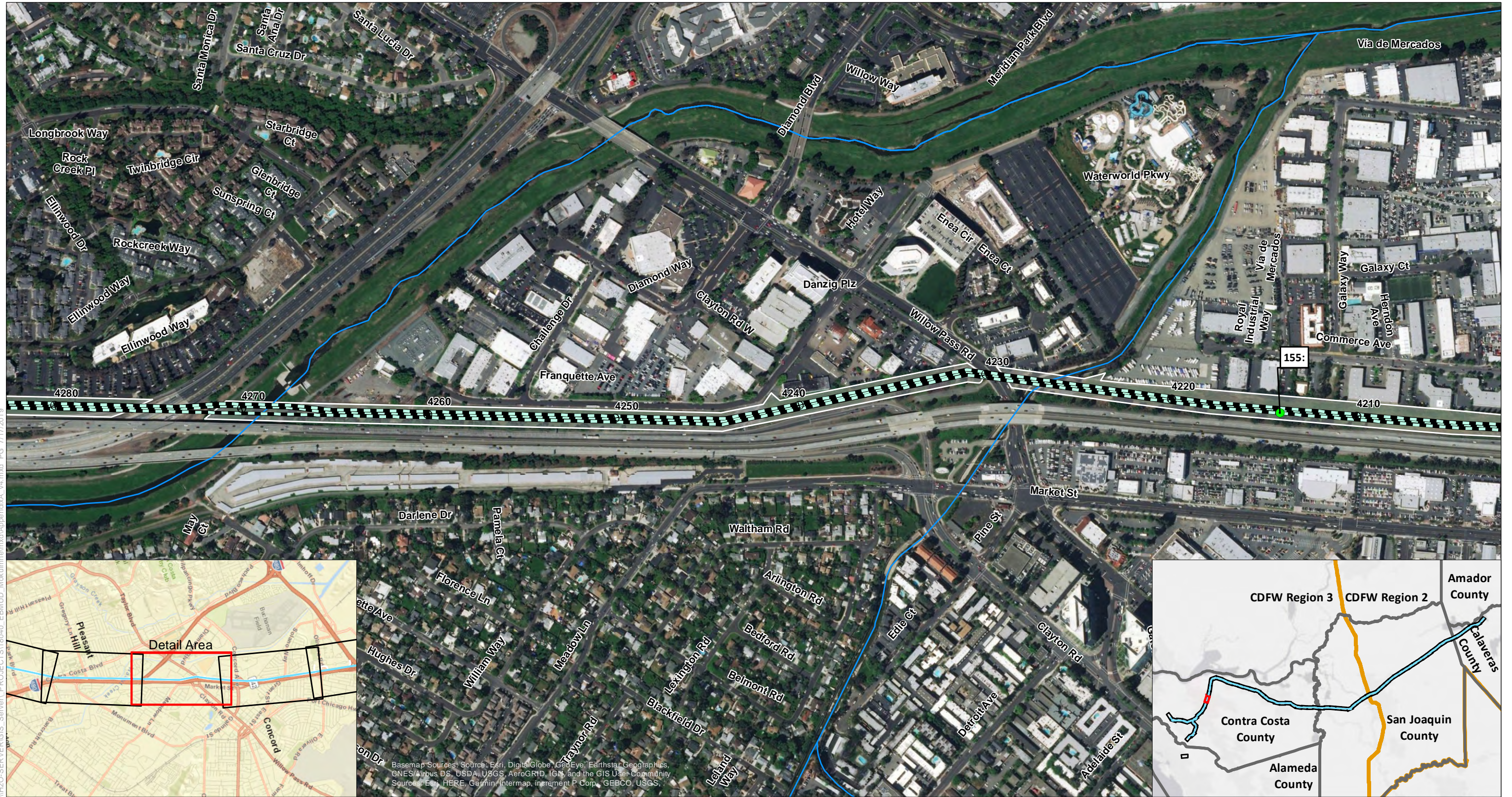
Base map sources: Google Earth, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS



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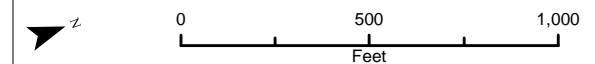
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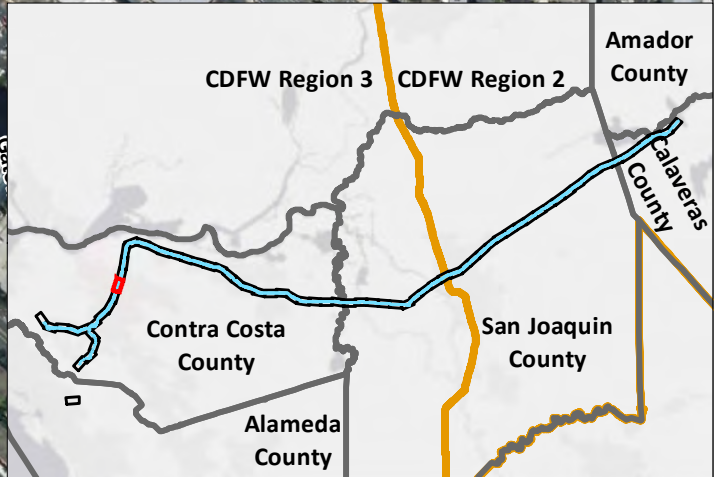


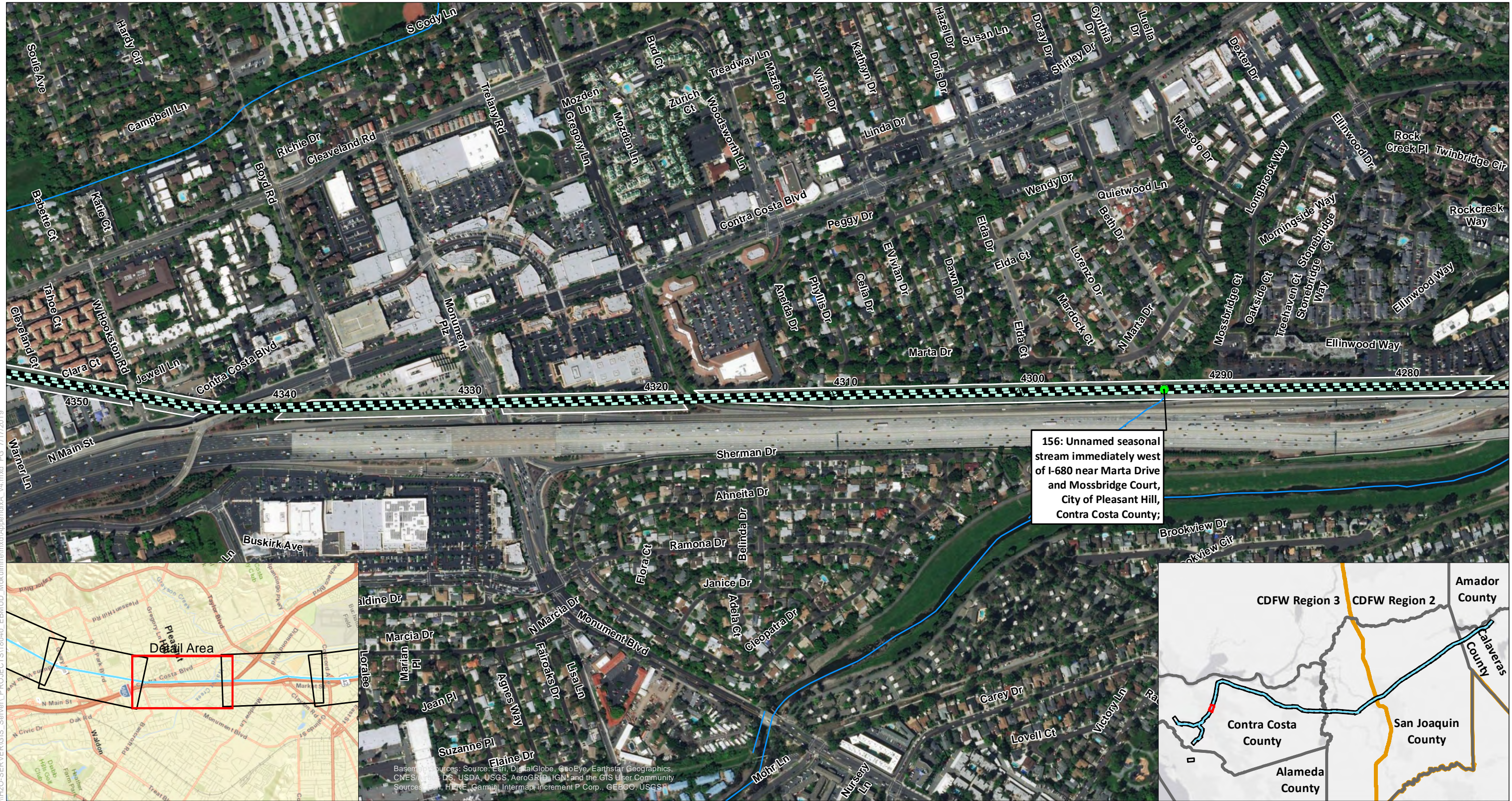
Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
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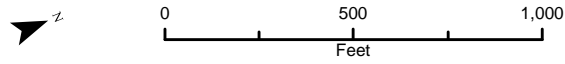




156: Unnamed seasonal stream immediately west of I-680 near Marta Drive and Mossbridge Court, City of Pleasant Hill, Contra Costa County;

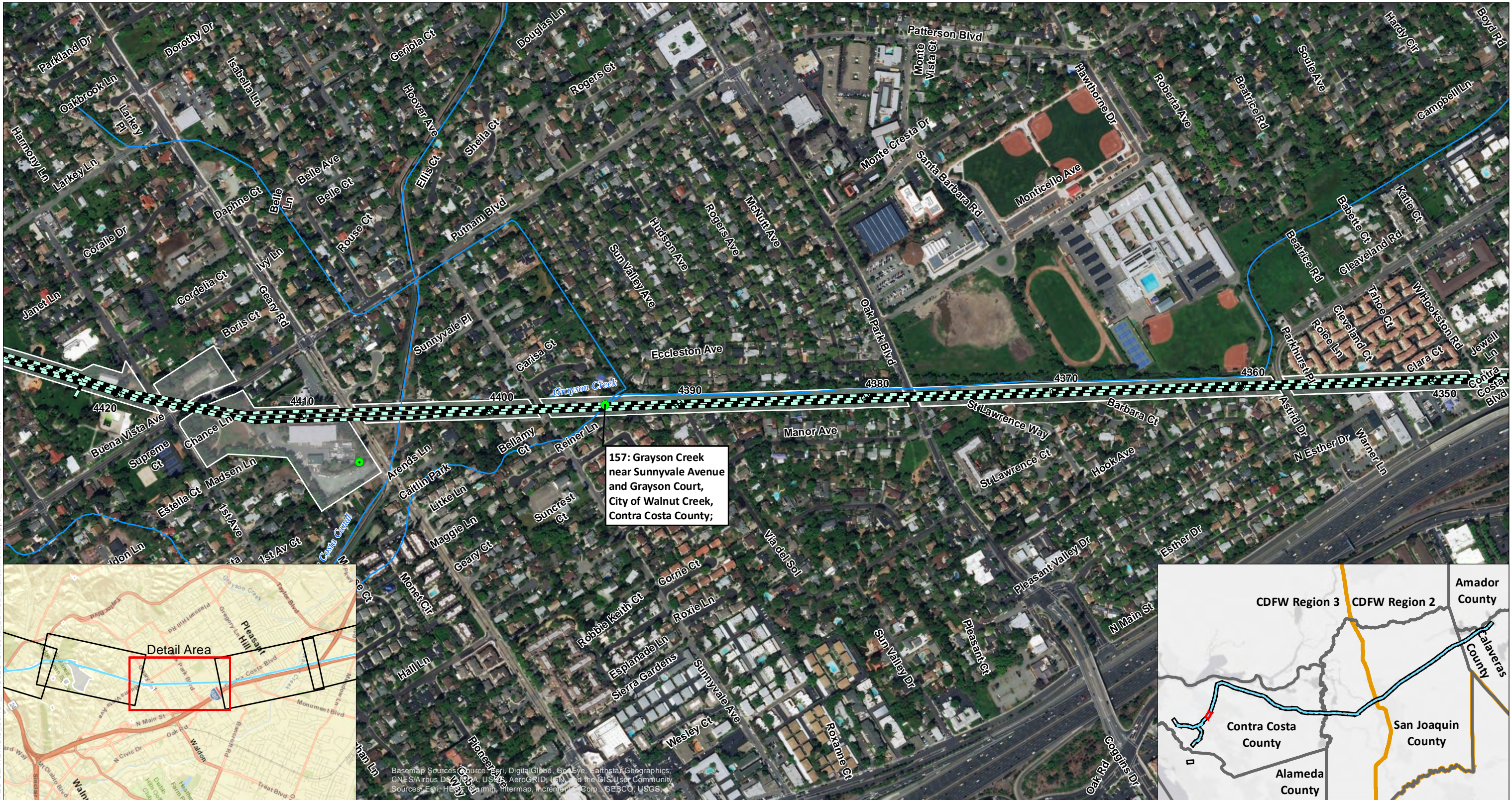
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Base map sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS



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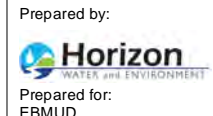
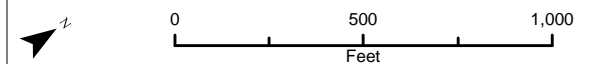
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157: Grayson Creek  
near Sunnyvale Avenue  
and Grayson Court,  
City of Walnut Creek,  
Contra Costa County;

Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DLR/GDF, USDA, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, Garmin, Intermap, increment Corp., GEBCO, USGS

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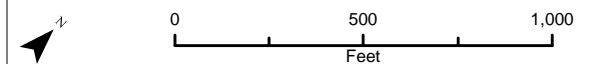
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Base Map Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNR/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Symbols: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS



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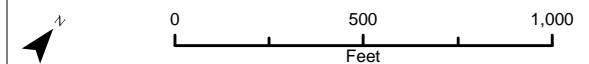
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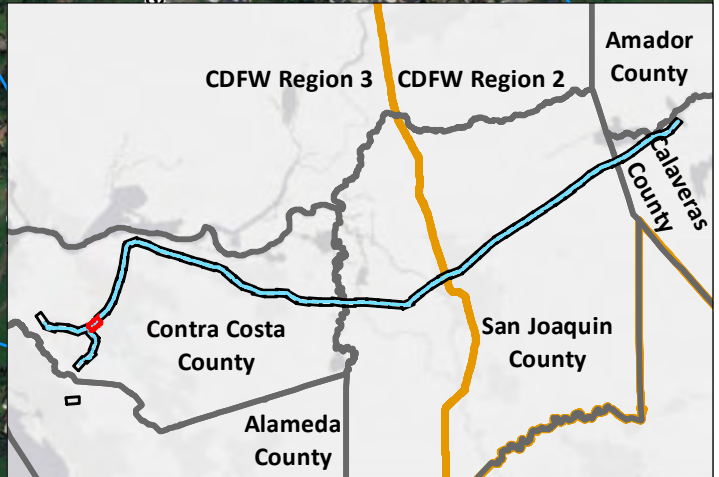
163: Reliez Creek from Stanley Boulevard northwest of wooden bridge at the entrance to the Springbrook Club, east of the Acalanes High School athletic field, City of Walnut Creek, Contra Costa County;

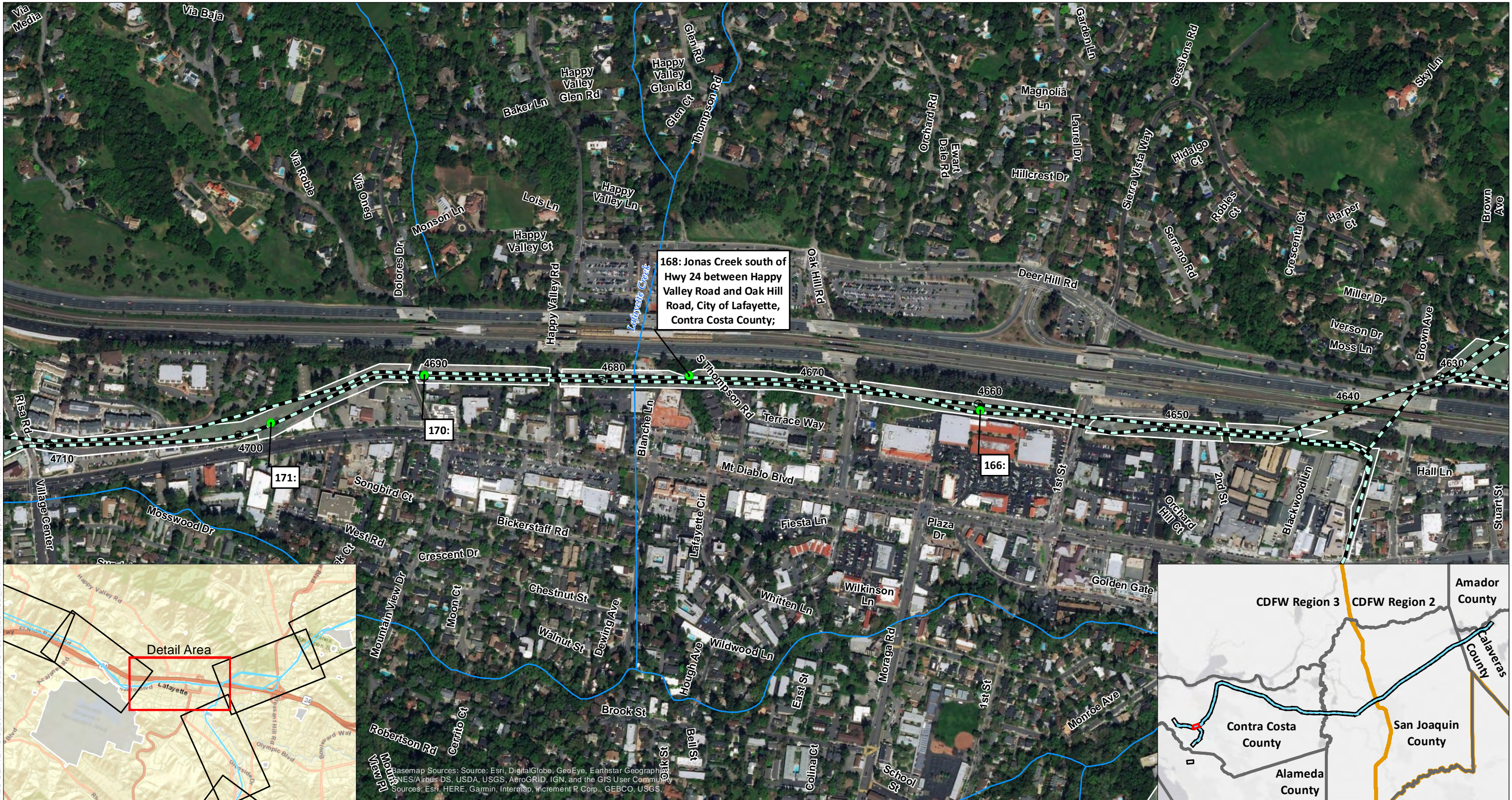
Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

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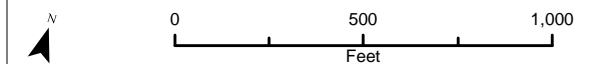
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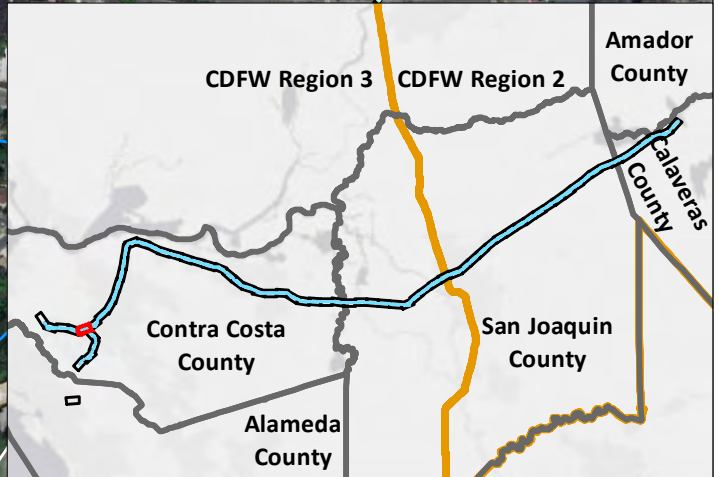


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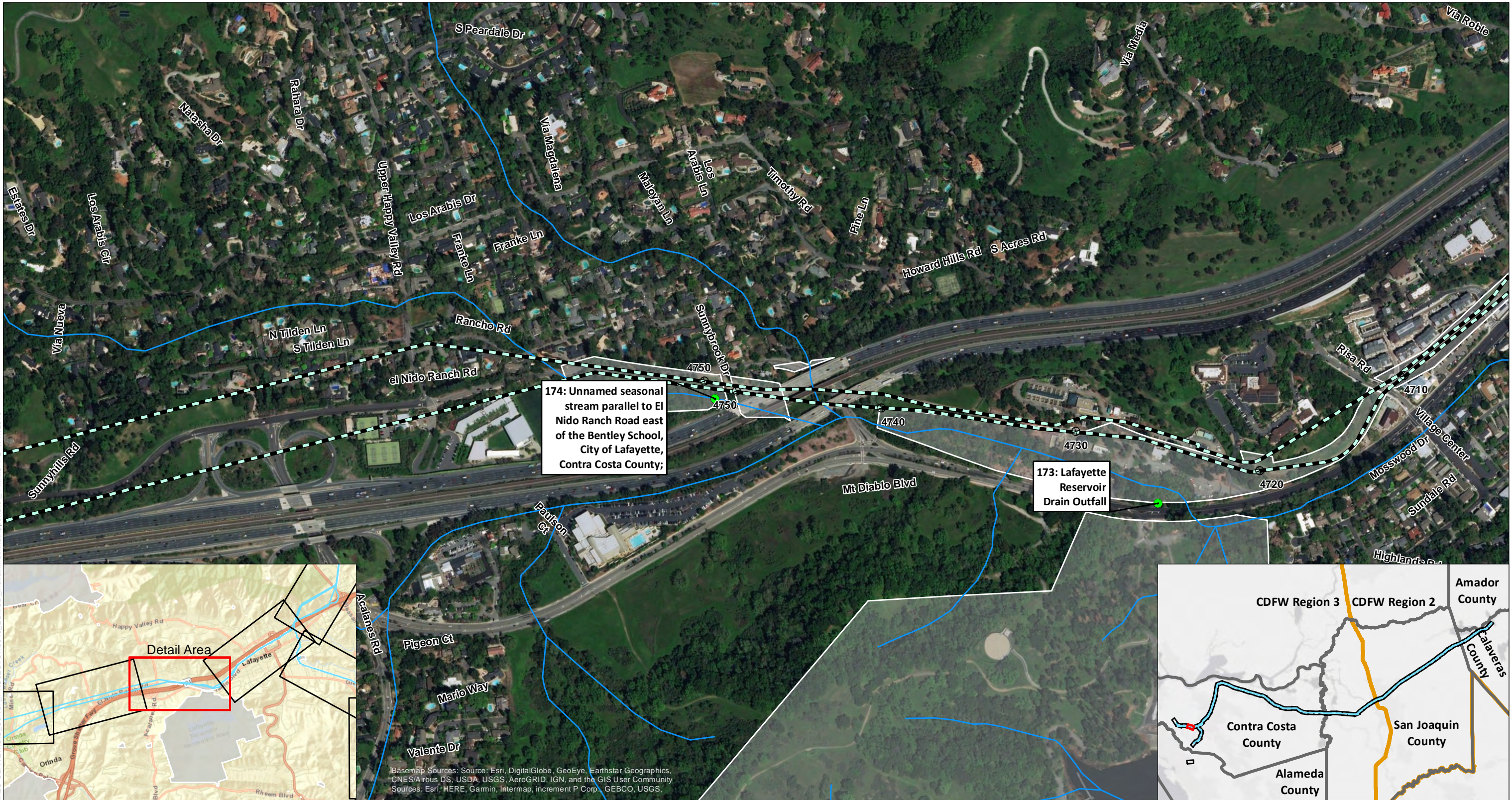
BaseMap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS



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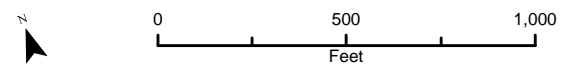
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**174: Unnamed seasonal stream parallel to El Nido Ranch Road east of the Bentley School, City of Lafayette, Contra Costa County;**

**173: Lafayette Reservoir Drain Outfall**

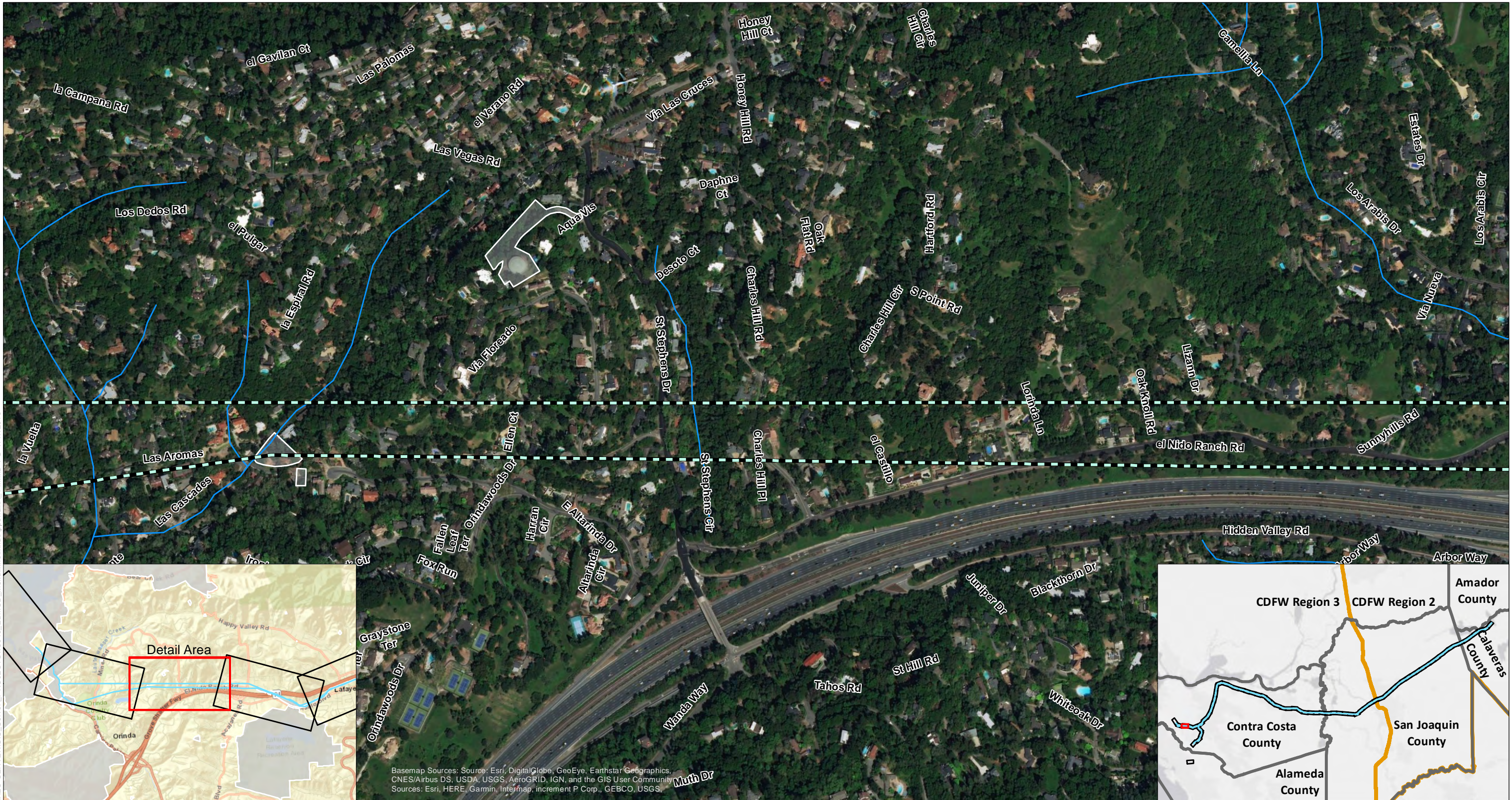
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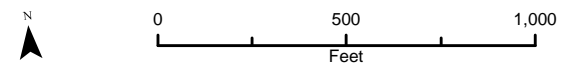
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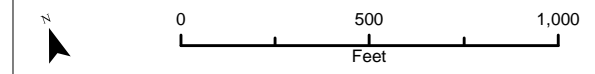
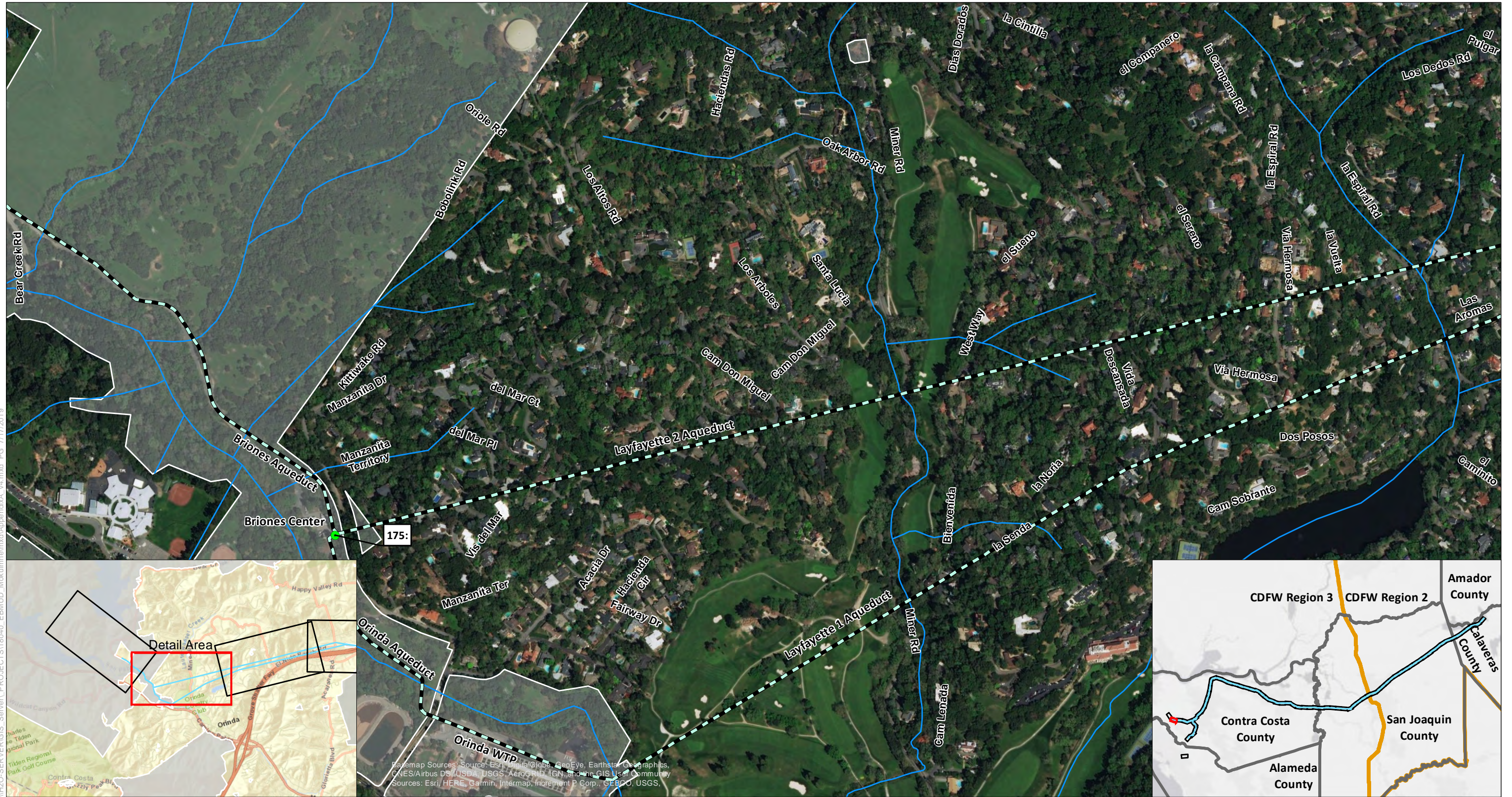
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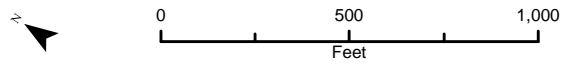
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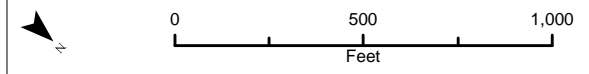
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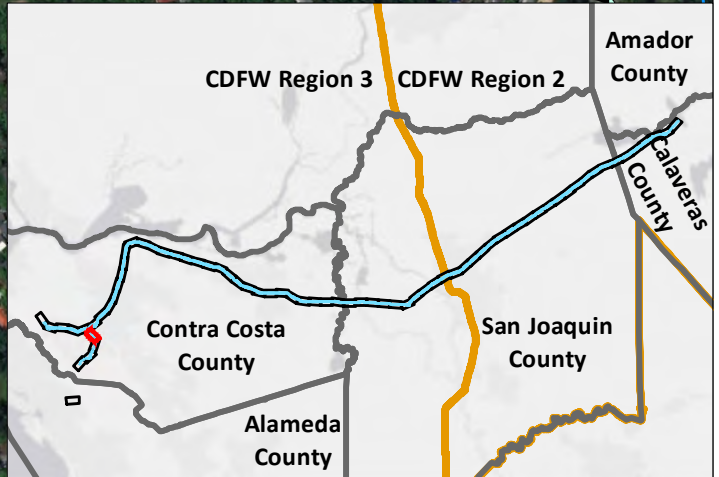


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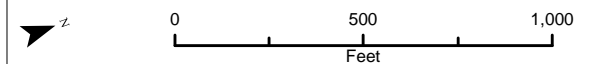
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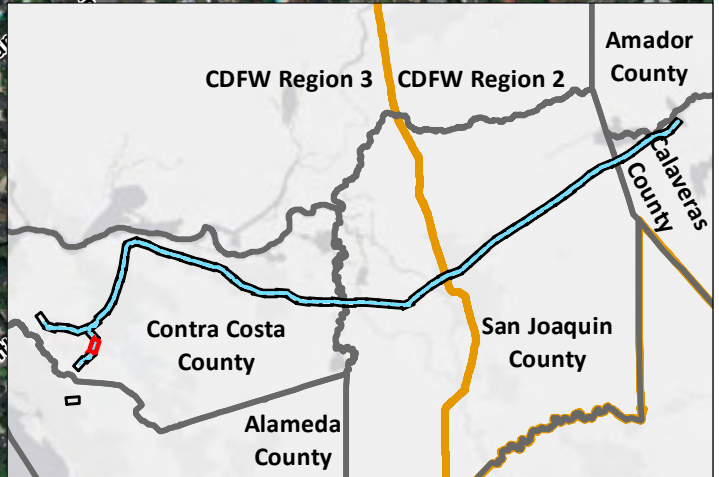
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Basemap Sources: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
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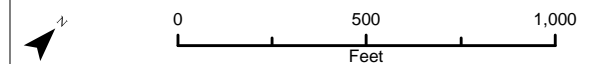
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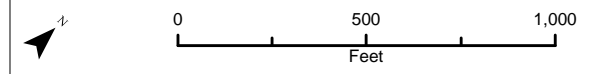
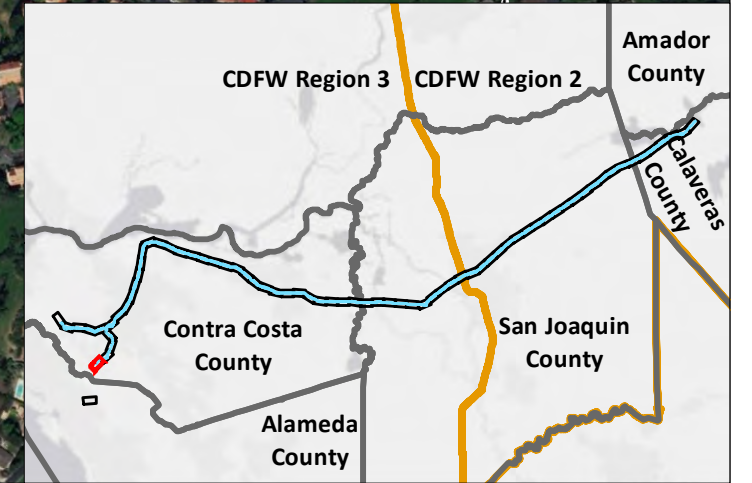
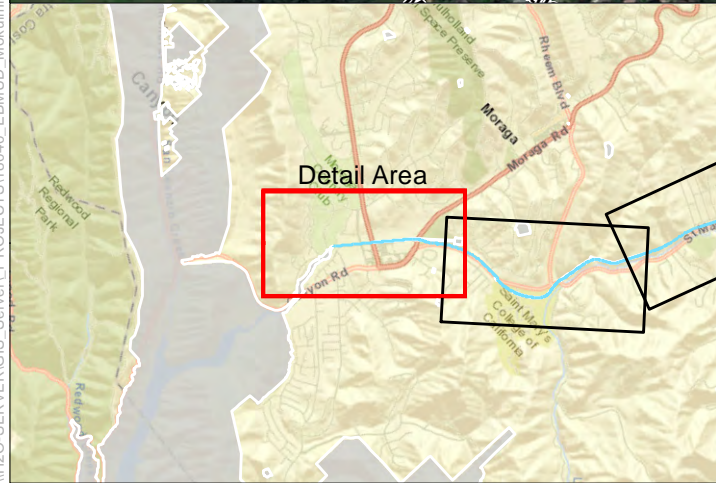
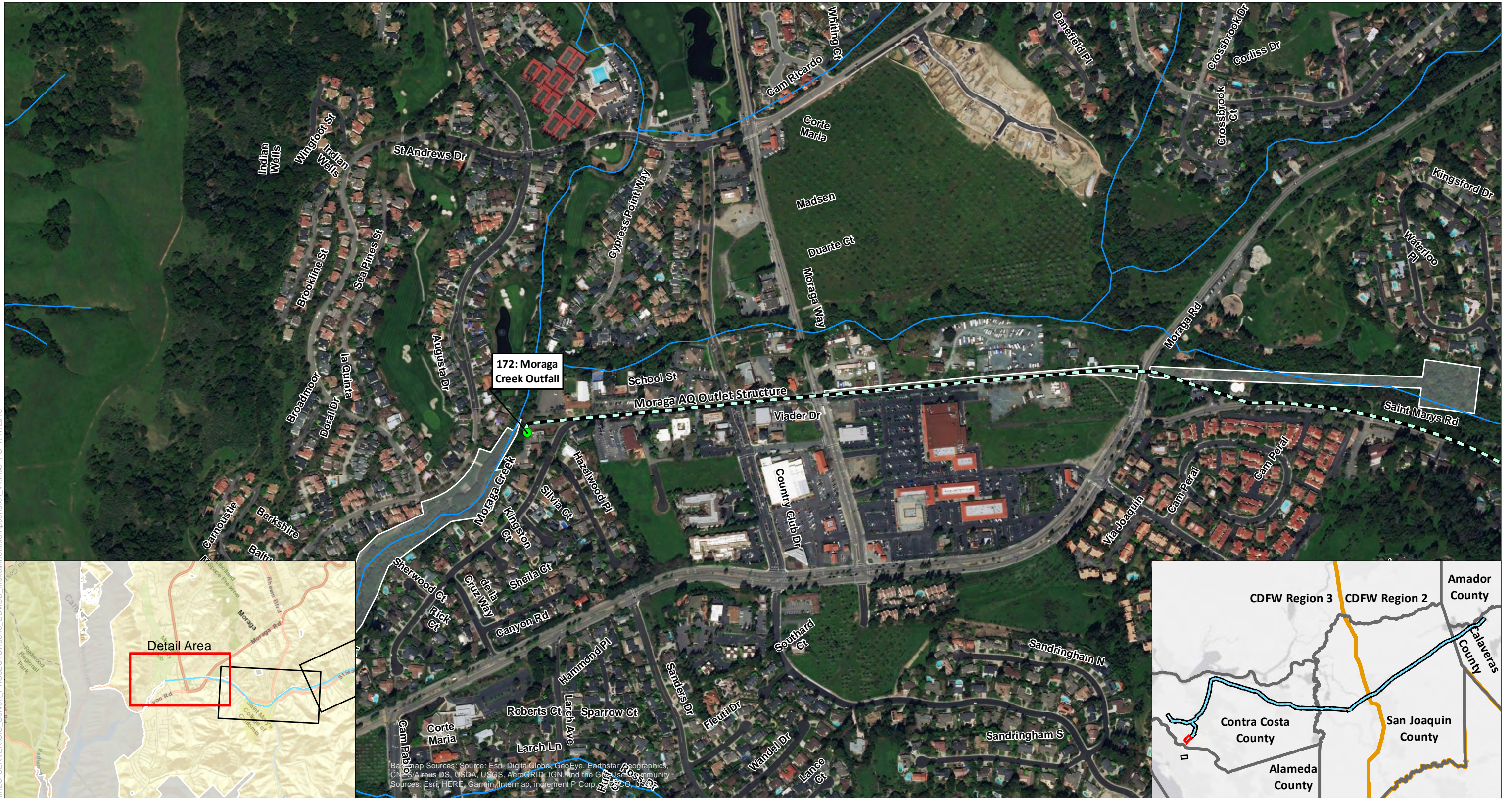
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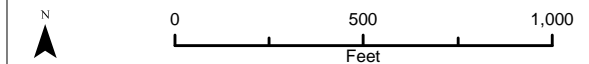
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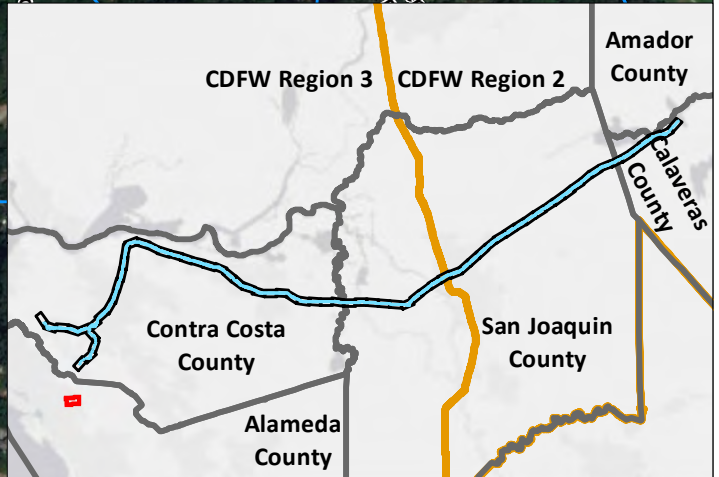


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## **Appendix B**

### **Special-Status Plant Species**

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**Appendix B. Special-Status Plant Species**

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Amsinckia grandiflora</i> Large-flowered Fiddleneck	FE/SE/1B.1	Known from records in Alameda, Contra Costa, Napa, and San Joaquin counties.	Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. 275-550 meters above mean sea level (amsl). Blooms April-May.	<b>Not expected.</b> Marginal mowed grassland habitat present at maintenance sites in San Francisco Bay area.	-
<i>Amsinckia lunaris</i> Bent-flowered fiddleneck	-/-/1B.2	Known from records in Alameda, Contra Costa, Colusa, Fresno, Glenn, Humboldt, Lake, Madera, Merced, Monterey, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, Sonoma, Sutter, and Yolo counties.	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 3-795 meters (amsl). Blooms May-June.	<b>Not expected.</b> Marginal mowed grassland habitat present at maintenance sites in San Francisco Bay area. There are 20 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Arctostaphylos auriculata</i> Mt. Diablo manzanita	-/-/1B.3	Known from records in Contra Costa, Santa Cruz, and Stanislaus counties.	Chaparral, cismontane woodland. In canyons and on slopes. On sandstone. 180-565 meters (amsl). Blooms January-May.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral, woodland) for this species. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Arctostaphylos manzanita ssp. laevigata</i> Contra Costa manzanita	-/-/1B.2	Known from records in Contra Costa, Mendocino, Napa, Sonoma, and Yolo counties.	Chaparral. Rocky slopes. 150-610 meters (amsl). Blooms January-March.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

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Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Arctostaphylos myrtifolia</i> lone manzanita	FT/-/1B.2	Known from records in Amador, Calaveras, and Sacramento counties.	Chaparral, cismontane woodland. On lone clay with chaparral associates. Often comprises 50-80% cover. 75-560 meters (amsl). Blooms November-March.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral, woodland) for this species. There are 4 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Arctostaphylos pallida</i> Pallid manzanita	FT/SE/1B.1	Known from records in Alameda and Contra Costa counties.	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. 180-460 meters (amsl). Blooms December-March.	<b>None.</b> Maintenance sites lack suitable habitat (coastal scrub, woodland, forest) for this species. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Astragalus tener</i> <i>var. tener</i> Alkali milk-vetch	-/-/1B.2	Known from records in Alameda, Contra Costa, Kern, Merced, Monterey, Marin, Napa, San Benito, Santa Clara, San Diego, San Francisco, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, and Yolo counties.	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 1-170 meters (amsl). Blooms March-June.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Central Valley. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Atriplex cordulata</i> <i>var. cordulata</i> Heartscale	-/-/1B.2	Known from records in Alameda, Butte, Contra Costa, Fresno, Glenn, Kern, Madera, Merced, San Joaquin, Solano, Stanislaus, Sutter, Tulare, and Yolo counties.	Alkaline flats and scalds in the Central Valley, sandy soils. 0-560 meters (amsl). Blooms April-October.	<b>None.</b> Maintenance sites lack suitable habitat (alkaline scalds and flats) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Atriplex depressa</i> Brittlescale	-/-/1B.2	Known from records in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Merced, Santa Clara, Solano, Tulare, and Yolo counties.	Usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated w/riparian, marshes, or vernal pools. 1-320 meters (amsl). Blooms April-October.	<b>Not expected.</b> Marginal habitat (mowed grassland, riparian, marsh) for this species. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot	-/-/1B.2	Known from records in Alameda, Amador, Butte, Colusa, El Dorado, Lake, Modoc, Mariposa, Napa, Nevada, Placer, Plumas, Santa Clara, Shasta, Sierra, Solano, Sonoma, Sutter, Tehama, and Tuolumne counties.	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1465 meters (amsl). Blooms March-June.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within maintenance sites in the San Francisco Bay area, Central Valley, and Sierra Nevada foothills. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Blepharizonia plumosa</i> Big tarplant	-/-/1B.1	Known from records in Alameda, Contra Costa, Kern, Monterey, San Benito, San Joaquin, San Luis Obispo, Solano, and Stanislaus counties.	Valley and foothill grassland. Dry hills & plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 60-505 meters (amsl). Blooms July-October.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within maintenance sites in the San Francisco Bay area. There are 6 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Brasenia schreberi</i> Watershield	-/-/2B.3	Known from records in Butte, Calaveras, Colusa, El Dorado, Fresno, Lake, Lassen, Mendocino, Mariposa, Nevada, Plumas, Sacramento, Shasta, Sierra, Siskiyou, San Joaquin, Sonoma, Tehama, Tulare, and Tuolumne counties.	Freshwater marshes and swamps. Aquatic from water bodies both natural and artificial in California. Blooms June-September.	<b>Not expected.</b> Marginal habitat (freshwater marsh and swamp) occurs within maintenance sites in the Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	-/-/1B.2	Known from records in Alameda, Contra Costa, Humboldt, Lake, Mendocino, Napa, Solano, and Sonoma counties.	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 45-915 meters (amsl). Blooms April-June.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within maintenance sites in the San Francisco Bay area. There are 3 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Calycadenia hooveri</i> Hoover's calycadenia	-/-/1B.3	Known from records in Calaveras, Madera, Merced, Mariposa, Stanislaus, and Tuolumne counties.	Cismontane woodland, valley and foothill grassland. On exposed, rocky, barren soil. 60-260 meters (amsl). Blooms July-September.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within maintenance sites in the Sierra Nevada foothills. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Calystegia purpurata</i> ssp. <i>Saxicola</i> Coastal bluff morning-glory	-/-/1B.2	Known from records in Alameda, Contra Costa, El Dorado, Lake, Mendocino, Marin, San Benito, and Sonoma counties.	Coastal dunes, coastal scrub, coastal bluff scrub, north coast coniferous forest. 4-165 meters (amsl). Blooms May-September.	<b>None.</b> Maintenance sites lack suitable habitat (dunes, scrub, forest) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Campanula exigua</i> Chaparral Harebell	-/-/2B.1	Known from records in Alameda, Amador, Butte, Contra Costa, Fresno, Merced, San Benito, Santa Clara, and Stanislaus counties.	Chaparral. Rocky sites, usually on serpentine in chaparral. 90-1375 meters (amsl). Blooms May-June.	<b>None.</b> Maintenance sites lack suitable habitat (dunes, scrub, forest) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Carex comosa</i> bristly sedge	-/-/2B.1	Known from records in Fresno, Lake, Mendocino, Modoc, Sacramento, San Bernardino, Santa Cruz, San Francisco, Shasta, San Joaquin, Sonoma, and Yolo counties.	Marshes and swamps. Lake margins, wet places; site below sea level is on a Delta island. -5-1005 meters (amsl). Blooms May-September.	<b>Not expected.</b> Marginal habitat (marsh, swamp) occurs within maintenance sites in the Sacramento-San Joaquin Delta. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Castilleja campestris</i> <i>ssp. succulenta</i> Fleshy Owl's- clover	FT/CE/1B.2	Known from records in Fresno, Madera, Merced, Mariposa, San Joaquin, Solano, Stanislaus, and Tuolumne counties.	Vernal pools. Moist places, often in acidic soils. 20-705 meters (amsl). Blooms April-May.	<b>None.</b> Maintenance sites lack suitable habitat (vernal pool, moist acidic soil) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Centromadia parryi</i> <i>ssp. congdonii</i> Congdon's tarplant	-/-/1B.1	Known from records in Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, and Solano counties.	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 meters (amsl). Blooms May-October.	<b>Not expected.</b> Marginal habitat (mowed alkaline grassland) occurs within maintenance sites in the east San Francisco Bay area. There are 4 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Chloropyron</i> <i>maritimum ssp.</i> <i>palustre</i> Point Reyes salty bird's beak	-/-/1B.2	Known from records in Alameda, Contra Costa, Humboldt, Marin, Santa Clara, San Francisco, San Luis Obispo, San Mateo, and Sonoma counties.	Coastal salt marsh. Usually in coastal salt marsh with <i>Salicornia</i> , <i>Distichlis</i> , <i>Jaumea</i> , <i>Spartina</i> , etc. 0-115 meters (amsl). Blooms June-October.	<b>None.</b> Maintenance sites lack suitable habitat (salt marsh) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Chloropyron molle</i> ssp. <i>molle</i> [= <i>Cordylanthus mollis</i> ssp. <i>mollis</i> ] Soft bird's-beak	FE/SR/1B	Known from records in Contra Costa, Marin, Napa, Sacramento, San Francisco, Solano, and Sonoma counties.	In coastal salt marsh with saltgrass ( <i>Distichlis</i> ), glasswort ( <i>Salicornia</i> ), and Alkali heath ( <i>Frankenia</i> ). 0-3 meters (amsl). Blooms July-November.	<b>None.</b> Maintenance sites lack suitable habitat (salt marsh) for this species. There are 3 CNDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Chloropyron palmatum</i> (= <i>Cordylanthus palmatus</i> ) Palmate-bracted bird's-beak	FE/SE/1B.1	Known from records in Alameda, Colusa, Fresno, Glen, Madera, San Joaquin, and Yolo counties.	Chenopod scrub, valley and foothill grassland. Usually on Pescadero silty clay which is alkaline, with <i>Distichlis</i> , <i>Frankenia</i> , etc. 5-155 meters (amsl). Blooms May-October.	<b>Not expected.</b> Marginal habitat (mowed alkaline grassland) occurs within maintenance sites in the east San Francisco Bay area and Sacramento-San Joaquin Delta. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	FE/-/1B.1	Known from records in Alameda, Monterey, Marin, Santa Clara, Santa Cruz, and San Mateo counties.	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 9-245 meters (amsl). Blooms April-September.	<b>None.</b> Maintenance sites lack suitable habitat (dunes, scrub, chaparral) for this species. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock	-/-/2B.1	Known from records in Contra Costa, Los Angeles, Monterey, Marin, Napa, Orange, Sacramento, Santa Barbara, San Bernardino, San Luis Obispo, and Solano counties.	Marshes and swamps. Coastal, fresh, or brackish water. 0-200 meters (amsl). Blooms July-September.	<b>Not expected.</b> Marginal habitat (marsh, swamp) occurs within maintenance sites in the east San Francisco Bay area and Sacramento-San Joaquin Delta. There is 1 CNDDB occurrence record within 2 miles of the maintenance sites.	-

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<i>Cirsium andrewsii</i> Franciscan thistle	-/-/1B.2	Known from records in Contra Costa, Humboldt, Kern, Mendocino, Marin, San Francisco, Siskiyou, San Mateo, Sonoma, and Tulare counties.	Coastal bluff scrub, broadleaved upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps. 0-295 meters (amsl). Blooms March-July.	<b>None.</b> Maintenance sites lack suitable habitat (forest, coastal prairie, scrub) for this species. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Clarkia franciscana</i> Presidio Clarkia	FE/SE/1B.1	Known from records in Alameda and San Francisco counties.	Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. 20-305 meters (amsl). Blooms May-July.	<b>None.</b> Maintenance sites lack suitable habitat (serpentine outcrop) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Cordylanthus nidularius</i> Mt. Diablo bird's-beak	-/SR/1B.1	Known from records in Contra Costa County.	Chaparral. Grassy or rocky areas within serpentine chaparral. 485-735 meters (amsl). Blooms July-August.	<b>None.</b> Maintenance sites lack suitable habitat (serpentine outcrop) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Cryptantha hooveri</i> Hoover's cryptantha	-/-/1A	Known from records in Contra Costa, Madera, Merced, Solano, and Stanislaus counties.	Valley and foothill grassland, inland dunes. In coarse sand. 9-150 meters (amsl). Blooms April-May.	<b>Not expected.</b> Marginal habitat (mowed grassland in coarse sand) occurs at maintenance sites in the San Francisco Bay area. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Delphinium californicum</i> ssp. <i>interius</i> Hospital Canyon larkspur	-/-/1B.2	Known from records in Alameda, Contra Costa, Merced, Monterey, San Benito, Santa Clara, San Joaquin, and Stanislaus counties.	Cismontane woodland, chaparral, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. 195-1095 meters (amsl). Blooms April-June.	<b>None.</b> Maintenance sites lack suitable habitat (wet meadow in woodland chaparral, or scrub) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Delphinium recurvatum</i> Recurved larkspur	-/-/1B.2	Known from records in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, Santa Barbara, San Benito, San Joaquin, San Luis Obispo, Solano, Sutter, Tulare, Ventura, and Yuba counties.	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. 3-790 meters (amsl). Blooms March-June.	<b>Not expected.</b> Marginal habitat (mowed grassland in alkaline soil) occurs at maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Central Valley. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Dirca occidentalis</i> Western leatherwood	-/-/1B.2	Known from records in Alameda, Contra Costa, Marin, Santa Clara, Santa Cruz, San Mateo, Solano, and Sonoma counties.	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen & foothill woodland communities. 20-640 meters (amsl). Blooms January-March.	<b>Not expected.</b> Marginal habitat (riparian forest and woodland) occurs within some maintenance sites in the San Francisco Bay area. There are 11 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Downingia pusilla</i> dwarf downingia	-/-/2B.2	Known from records in Calaveras, Fresno, Merced, Mariposa, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Sutter, Tehama, Tuolumne, and Yuba counties.	Vernal pools, vernal lakes, seasonal wetlands, and swales within grasslands and oak woodlands. 1-445 meters (amsl). Blooms March-May.	<b>None.</b> Maintenance sites lack suitable habitat (vernal pools) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-



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Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Eriastrum ertterae</i> Lime Ridge eriastrum	-/-/1B.1	Known from records in Contra Costa County.	Chaparral. Openings or edges; alkaline or semi-alkaline, sandy. 210-275 meters (amsl).	<b>None.</b> Maintenance sites lack suitable habitat (openings in chaparral) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Eriogonum luteolum</i> <i>var. caninum</i> Tiburon buckwheat	-/-/1B.2	Known from records in Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Sierra, San Mateo, Solano, and Sonoma counties.	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie. Serpentine soils; sandy to gravelly sites. 60-640 meters (amsl). Blooms May-September.	<b>None.</b> Maintenance sites lack suitable habitat (woodland, prairie, grassland in serpentine soil) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Eriogonum nudum</i> <i>var. psychicola</i> Antioch Dunes buckwheat	-/-/1B.1	Known from records in Contra Costa and Solano counties.	Grows in inland dunes with silver lupine ( <i>Lupinus albifrons</i> ), snakeweed ( <i>Gutierrezia californica</i> ), and non-native weeds. 3-20 meters (amsl). Blooms July-October.	<b>None.</b> Maintenance sites lack suitable habitat (dunes) for this species. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Eriogonum truncatum</i> Mt. Diablo buckwheat	-/-/1B.1	Known from records in Alameda, Contra Costa, and Solano counties.	Found in exposed clay or sandy soils throughout chaparral, coastal scrub, and valley and foothill grassland. 3-350 meters (amsl). Blooms April-December.	<b>Not expected.</b> Marginal habitat (exposed clay or sandy soil in mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-

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<i>Eryngium jepsonii</i> Jepson's coyote- thistle	-/-/1B.2	Known from records in Alameda, Amador, Calaveras, Contra Costa, Fresno, Napa, Placer, San Joaquin, San Mateo, Solano, Stanislaus, Tuolumne, and Yolo counties.	Vernal pools, valley and foothill grassland. Clay. 3-305 meters (amsl). Blooms April-August.	<b>Not expected.</b> Marginal habitat (mowed grassland with clay soil) occurs within some maintenance sites in the San Francisco Bay area. There are 3 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Eryngium racemosum</i> Delta button- celery	-/-/1B.1	Known from records in Calaveras, Contra Costa, Merced, Marin, San Joaquin, Sonoma, and Stanislaus counties.	Riparian scrub. Seasonally inundated floodplain on clay. 1-335 meters (amsl). Blooms June-October.	<b>Not expected.</b> Marginal habitat (riparian scrub) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Erysimum capitatum</i> <i>var. angustatum</i> Contra Costa wallflower	FE/SE/1B.1	Known from records in Contra Costa and Solano counties.	Stabilized dunes of sand and clay near Antioch along the San Joaquin River. 3-20 meters (amsl). Blooms-July.	<b>None.</b> Maintenance sites lack suitable habitat (dunes) for this species. There is 1 CNDDDB occurrence record of a planted individual within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Eschscholzia rhombipetala</i> Diamond-petaled California poppy	-/-/1B.1	Known from records in Alameda, Contra Costa, Colusa, Kern, San Joaquin, San Luis Obispo, Solano, and Stanislaus counties.	Valley and foothill grassland with alkaline, clayey soils. 0-975 meters (amsl). Blooms March-April.	<b>Not expected.</b> Marginal habitat (mowed grassland with alkaline, clay soil) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Extriplex joaquinana</i> San Joaquin spearscale	-/-/1B.2	Known from records in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, and Yolo counties.	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with saltgrass ( <i>Distichlis spicata</i> ), alkali heath ( <i>Frankenia</i> ), and others. 1-835 meters (amsl). Blooms April-October.	<b>Not expected.</b> Marginal habitat (mowed grassland with alkaline soil) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. There are 9 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Fissidens pauperculus</i> Minute pocket moss	-/-/1B.2	Known from records in Butte, Contra Costa, Del Norte, Humboldt, Mendocino, Plumas, Santa Cruz, San Mateo, Sonoma, and Yuba counties.	North coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 10-1024 meters (amsl).	<b>None.</b> Maintenance sites lack suitable habitat (north coast coniferous forest) for this species. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-

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<i>Fritillaria liliacea</i> Fragrant fritillary	-/-/1B.2	Known from records in Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, Santa Cruz, San Francisco, San Mateo, Solano, and Sonoma counties.	In cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Often associated with serpentine soils. 3-410 meters (amsl). Blooms February-April.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. There are 7 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Gilia millefoliata</i> Dark-eyed gilia	-/-/1B.2	Known from records in Alameda, Contra Costa, Del Norte, Humboldt, Mendocino, Monterey, Marin, Santa Barbara, San Francisco, San Mateo and Sonoma counties.	Coastal dunes. 1-60 meters (amsl). Blooms April-July.	<b>None.</b> Maintenance sites lack suitable habitat (dunes) for this species. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Grimmia torenii</i> Toren's grimmia	-/-/1B.3	Known from records in Contra Costa, Colusa, Lake, Mendocino, Monterey, and Santa Cruz counties.	Cismontane woodland, lower montane coniferous forest, chaparral. Openings, rocky, boulder and rock walls, carbonate, volcanic. 325-1160 meters (amsl).	<b>None.</b> Maintenance sites lack suitable habitat (woodland, forest, chaparral) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Helianthella castanea</i> Diablo helianthella	-/-/1B.2	Known from records in Alameda, Contra Costa, Marin, Santa Clara, San Francisco, and Solano counties.	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 45-1070 meters (amsl). Blooms March-June.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. There are 27 CNDDDB occurrence records within 2 miles of the maintenance sites.	-

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<i>Hesperolinon breweri</i> Brewer's western flax	-/-/1B.2	Known from records in Alameda, Contra Costa, Napa, Solano, and Yolo counties.	Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soil in serpentine chaparral and serpentine grassland. 195-910 meters (amsl). Blooms May-July.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. There is 1 CNDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Hibiscus lasiocarpus var. occidentalis</i> Woolly rose- mallow	-/-/1B.2	Known from records in Alameda, Butte, Contra Costa, Colusa, Glenn, Lake, Riverside, Sacramento, San Joaquin, Solano, Sutter, Tehama, and Yolo counties.	Moist, freshwater-soaked river banks and low peat islands in sloughs; can occur on riprap and levees. In California, known from the Delta watershed. 0-120 meters (amsl). Blooms June-September.	<b>Possible.</b> Marginal habitat (river banks, riprap levees) occurs within some maintenance sites in the Sacramento-San Joaquin Delta. There are 10 CNDDB occurrence records within 2 miles of the maintenance sites.	80 – 89, 103, 104, 108, 109, 120, 124, 125
<i>Hoita strobilina</i> Loma Prieta hoita	-/-/1B.1	Known from records in Alameda, Contra Costa, Santa Clara, Santa Cruz, and San Mateo counties.	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 60-975 meters (amsl). Blooms May-July.	<b>Not expected.</b> Marginal habitat (riparian woodland) occurs within some maintenance sites in the San Francisco Bay area. There is 1 CNDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Holocarpha macradenia</i> Santa Cruz tarplant	FT/SE/1B.1	Known from records in Alameda, Contra Costa, Monterey, Marin, Santa Cruz, Solano, and Sonoma counties.	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 10-220 meters (amsl). Blooms June-October.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. There are 9 CNDDB occurrence records within 2 miles of the maintenance sites.	-

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<i>Horkelia cuneata</i> <i>var. sericea</i> Kellogg's horkelia	-/-/1B.1	Known from records in Alameda, Los Angeles Mono, Monterey, Marin, Santa Barbara, Santa Clara, Santa Cruz, San Francisco, San Luis Obispo, and San Mateo counties.	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 5-430 meters (amsl). Blooms February-July.	<b>None.</b> Maintenance sites lack suitable habitat (scrub, dunes, chaparral) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Horkelia parryi</i> Parry's horkelia	-/-/1B.2	Known from records in Alameda, Calaveras, El Dorado, Los Angeles, Mariposa, Sacramento, San Bernardino, Tuolumne, and Yuba counties.	Chaparral, cismontane woodland. Openings in chaparral or woodland; especially known from the lone formation in Amador County. 85-1115 meters (amsl). Blooms April-September.	<b>Not expected.</b> Marginal habitat (opening in woodland or chaparral) occurs within some maintenance sites in the Sierra Nevada foothills. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Isocoma arguta</i> Carquinez goldenbush	-/-/1B.1	Known from records in Contra Costa and Solano counties.	In alkaline valley and grassland. 1-20 meters (amsl). Blooms August-December.	<b>Not expected.</b> Marginal habitat (mowed grassland with alkaline soil) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Juglans hindsii</i> Northern California black walnut	-/-/1B.1	Known from throughout all of California, except from Alpine, Del Norte, Imperial, Lassen, Modoc, Mono, Plumas, Sierra, and Tulare counties. Considered to currently be present around San Francisco Bay counties, as species has been cultivated with agricultural cultivars elsewhere.	Riparian forest and riparian woodland in deep alluvial soils. Few extant native stands remain in San Francisco Bay area; as widely naturalized elsewhere. Hybridizes with non-native English walnut ( <i>Juglans regia</i> ). 0-440 meters (amsl). Blooms April-May	<b>Not expected.</b> Marginal habitat (mowed grassland in alluvial soil) occurs within some maintenance sites in the San Francisco Bay area. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-

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<i>Lasthenia conjugens</i> Contra Costa goldfields	FE-/1B.1	Known from records in Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma counties.	Vernal pools, swales, low depressions, in open grassy areas. 1-470 meters (amsl). Blooms March-June.	<b>None.</b> Maintenance sites lack suitable habitat (vernal pools, swales, low depressions) for this species. There are 4 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Lathyrus jepsonii</i> <i>var. jepsonii</i> Delta tule pea	-/1B.2	Known from records in Alameda, Contra Costa, Fresno, Marin, Napa, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, and Solano counties.	Freshwater and brackish marshes, usually on marsh and slough edges. Often found with cattails ( <i>Typha</i> spp.), Suisun marsh aster ( <i>Symphotrichum lentum</i> ), California rose ( <i>Rosa californica</i> ), rushes ( <i>Juncus</i> spp.), and bulrushes ( <i>Schoenoplectus</i> spp.). 0-5 meters (amsl). Blooms May-September	<b>Possible.</b> Marginal habitat (marsh and slough edges) occurs within some maintenance sites in the Sacramento-San Joaquin Delta. There are 15 CNDDDB occurrence records within 2 miles of the maintenance sites.	80 – 89, 103, 104, 108, 109, 120, 124, 125
<i>Legenere limosa</i> legenere	-/1B.1	Known from records in Alameda, Calaveras, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties.	Vernal pools below 880 meters (amsl). Blooms April-June.	<b>None.</b> Maintenance sites lack suitable habitat (vernal pools) for this species. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	-/SR/1B.1	Known from records in Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, and Yolo counties.	Freshwater and brackish marshes and riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10 meters (amsl). Blooms April-November	<b>Possible.</b> Marginal habitat (marsh and riparian scrub) occurs within some maintenance sites in the Sacramento-San Joaquin Delta. There are 25 CNDDDB occurrence records within 2 miles of the maintenance sites.	80 – 89, 103, 104, 108, 109, 120, 124, 125

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Limosella acaulis</i> southern mudwort	-/-/ (EBCNPS A2)	Known from records throughout California except from Del Norte, Siskiyou, Humboldt, Trinity, Glenn, Lake, Sutter, Santa Cruz, El Dorado, Amador, Alpine, Calaveras, Stanislaus, Tulare, Kings, Kern, Santa Barbara, Ventura, Orange, and Imperial	Wet muddy to sandy areas along freshwater sloughs marshes and, outside of the Sacramento-San Joaquin River Delta, other wetlands. 0-3,300 meters (amsl). Blooms May-October	<b>Possible.</b> Marginal habitat (marsh and riparian scrub) occurs within some maintenance sites in the Sacramento-San Joaquin Delta. CNDDDB occurrence records absent within 2 miles of the maintenance sites.	80 – 89, 103, 104, 108, 109, 120, 124, 125
<i>Limosella australis</i> Delta mudwort	-/-/2B.1	Known from records in Alameda, Contra Costa, Marin, Plumas, Sacramento, San Joaquin, and Solano counties.	In the Delta in riparian scrub, freshwater marsh, brackish marsh, usually on mud banks; often with <i>Lilaeopsis masonii</i> . Probably the rarest of the suite of Delta rare plants. 0-3 meters (amsl). Blooms May-August	<b>Possible.</b> Marginal habitat (marsh and riparian scrub) occurs within some maintenance sites in the Sacramento-San Joaquin Delta. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	80 – 89, 103, 104, 108, 109, 120, 124, 125
<i>Madia radiata</i> Showy golden madia	-/-/1B.1	Known from records in Alameda, Contra Costa, Fresno, Kings, Kern, Madera, Merced, Monterey, Nevada, San Benito, San Joaquin, San Luis Obispo, San Mateo, Solano, Stanislaus, and Tulare counties.	Valley and foothill grassland, cismontane woodland. Mostly on adobe clay in grassland or among shrubs. 75-1220 meters (amsl). Blooms March-May.	<b>Not expected.</b> Marginal habitat (mowed grassland with adobe clay soil) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. There are 2 CNDDDB occurrence records that occur within 2 miles of the maintenance sites.	-



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<i>Malacothamnus hallii</i> Hall's bush-mallow	-/-/1B.2	Known from records in Alameda, Amador, Contra Costa, Inyo, Kern, Lake, Los Angeles, Mendocino, Merced, Mono, Monterey, Orange, Riverside, Sacramento, Santa Barbara, San Bernardino, San Benito, Santa Clara, Santa Cruz, San Diego, San Joaquin, San Mateo, Stanislaus, Sutter, Tulare, and Ventura counties.	Chaparral, coastal scrub. Some populations on serpentine. 10-735 meters (amsl). Blooms May-September.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral, coastal scrub) for this species. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Meconella oregana</i> Oregon meconella	-/-/1B.1	Known from records in Alameda, Contra Costa, Kern, Monterey, Santa Clara, San Luis Obispo, and Yolo counties.	Coastal prairie, coastal scrub. Open, moist places. 60-640 meters (amsl). Blooms March-April.	<b>Not expected.</b> Marginal habitat (open, moist areas) occurs within some maintenance sites in the San Francisco Bay area. There are 2 CNDDB occurrence records that occur within 2 miles of the maintenance sites.	-
<i>Monolopia gracilens</i> Woodland woollythreads	-/-/1B.2	Known from records in Alameda, Amador, Contra Costa, Kern, Monterey, Santa Clara, Santa Clara, Santa Cruz, San Luis Obispo, and San Mateo counties.	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, North Coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. 120-975 meters (amsl). Blooms March-July.	<b>Not expected.</b> Marginal habitat (mowed grassland with sandy or rocky soil) occurs within some maintenance sites in the San Francisco Bay area. There is 1 CNDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Navarretia gowenii</i> Lime Ridge navarretia	-/-/1B.1	Known from records in Contra Costa, San Benito, and Stanislaus counties.	Chaparral. On calcium carbonate-rich soil with high clay content. 180-305 meters (amsl). Blooms May-June.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral) for this species. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-

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<i>Navarretia nigelliformis</i> ssp. <i>radians</i> Shining navarretia	-/-/1B.2	Known from records in Alameda, Butte, Contra Costa, Colusa, Fresno, Madera, Merced, Monterey, Mariposa, San Benito, San Joaquin, San Luis Obispo, and Tulare counties.	Cismontane woodland, valley and foothill grassland, vernal pools. Apparently in grassland, and not necessarily in vernal pools. 60-975 meters (amsl). Blooms April-July.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area and Central Valley. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	-
<i>Navarretia paradoxiclara</i> Patterson's navarretia	-/-/1B.3	Known from records in Alameda, Amador, Calaveras, and Tuolumne counties.	Meadows and seeps. Serpentine, openings, vernal mesic, often drainages. 150-435 meters (amsl).	<b>Not expected.</b> Marginal habitat (vernal mesic openings) occurs within some maintenance sites in the San Francisco Bay area and Sierra Nevada foothills. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Neostapfia colusana</i> Colusa grass	FT/SE/1B.1	Known from records in Colusa, Glenn, Merced, Mariposa, Solano, Stanislaus, and Yolo counties.	Usually in large, or deep vernal pool bottoms; adobe soils. 5-200 meters (amsl). Blooms May-August.	<b>None.</b> Maintenance sites lack suitable habitat (deep vernal pools) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Oenothera deltoides</i> ssp. <i>howellii</i> Antioch Dunes evening primrose	FE/SE/1B.1	Known from records in Contra Costa, Sacramento, and Solano counties.	Inland dunes on remnant river bluffs and sand dunes east of Antioch. 0-30 meters (amsl). Blooms March-September.	<b>None.</b> Maintenance sites lack suitable habitat (dunes) for this species. There are 3 CNDDDB occurrence records within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Phacelia phacelioides</i> Mt. Diablo phacelia	-/-/1B.2	Known from records in Alameda, Contra Costa, Fresno, San Benito, Santa Clara, and Stanislaus counties.	Chaparral, cismontane woodland. Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. 605-1345 meters (amsl). Blooms April-May.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral, woodland) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	-/-/1B.1	Known from records in Alameda, Humboldt, San Benito, Santa Cruz, San Francisco, and San Mateo counties.	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 45-360 meters (amsl). Blooms March-June.	<b>Not expected.</b> Marginal habitat (mowed grassland with marine influence) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Plagiobothrys glaber</i> Hairless popcornflower	-/-/1A	Known from records in Alameda, Marin, San Benito, and Santa Clara counties.	Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 5-125 meters (amsl). Blooms March-May.	<b>Not expected.</b> Marginal habitat (marsh, swamp) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Plagiobothrys hystriculus</i> Bearded popcornflower	-/-/1B.1	Known from records in Merced, Napa, Solano, and Yolo counties.	Vernal pools and seasonal wetlands within grasslands. 0-275 meters (amsl). Blooms April-May.	<b>None.</b> Maintenance sites lack suitable habitat (vernal pools) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Sagittaria sanfordii</i> Sanford's arrowhead	-/-/1B.2	Known from records in Butte, Colusa, Del Norte, El Dorado, Fresno, Madera, Merced, Mariposa, Marin, Napa, Orange, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Stanislaus, Sutter, Tehama, Tulare, Ventura, Yolo, and Yuba counties.	In standing or slow-moving freshwater ponds, marshes, and ditches. 0-650 meters (amsl). Blooms May-October.	<b>Not expected.</b> Marginal habitat (marsh, ditch) occurs within some maintenance sites in the Sacramento-San Joaquin Delta. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Sanicula maritima</i> adobe sanicle	-/SR/1B.1	Known from records in Alameda, Monterey, Santa Barbara, San Francisco, and San Luis Obispo counties.	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 15-215 meters (amsl). Blooms February-May.	<b>Not expected.</b> Marginal habitat (mowed grassland with moist clay or ultramafic soil) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Sanicula saxatilis</i> rock sanicle	-/SR/1B.2	Known from records in Contra Costa, San Bernardino, and Santa Clara counties.	Broadleafed upland forest, chaparral, valley and foothill grassland. Bedrock outcrops and talus slopes in chaparral or oak woodland habitat. 670-1250 meters (amsl). Blooms April-May.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Scutellaria galericulata</i> marsh skullcap	-/-/2B.2	Known from records in Contra Costa, El Dorado, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Siskiyou, and San Joaquin counties.	Marshes and swamps, lower montane coniferous forest, meadows and seeps. 0-2,100 meters (amsl). Blooms June-September.	<b>Not expected.</b> Marginal habitat (marsh, swamp) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-
<i>Senecio aphanactis</i> Chaparral ragwort	-/-/2B.2	Known from records in Alameda, Butte, Contra Costa, Fresno, Los Angeles, Merced, Monterey, Nevada, Orange, Riverside, Santa Barbara, San Bernardino, San Francisco, Shasta, San Joaquin, San Luis Obispo, San Mateo, Tulare, and Ventura counties.	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 meters (amsl). Blooms January-April.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral, woodland, coastal scrub) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Spergularia macrotheca var. longistyla</i> Long-styled sand- spurrey	-/-/1B.2	Known from records in Alameda, Contra Costa, Napa, and Solano counties.	Marshes and swamps, meadows and seeps. Alkaline. 0-220 meters (amsl). Blooms February-May.	<b>Not expected.</b> Marginal habitat (marsh, swamp) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Streptanthus albidus ssp. peramoenus</i> Most beautiful jewelflower	-/-/1B.2	Known from records in Alameda, Contra Costa, Monterey, Santa Clara, and San Luis Obispo counties.	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 90-1040 meters (amsl). Blooms April-September.	<b>None.</b> Maintenance sites lack suitable habitat (serpentine out) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Streptanthus hispidus</i> Mt. Diablo jewelflower	-/-/1B.3	Known from records in Contra Costa County.	Valley and foothill grassland, chaparral. Talus or rocky outcrops. 245-975 meters (amsl). Blooms March-June.	<b>Not expected.</b> Marginal habitat (mowed grassland) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Stuckenia filiformis</i> <i>ssp. alpina</i> slender-leaved pondweed	-/-/2B.2	Known from records in Alameda, Butte, Contra Costa, El Dorado, Humboldt, Lassen, Merced, Mono, Modoc, Mariposa, Placer, Santa Clara, Shasta, Sierra, San Mateo, Solano, and Sonoma counties.	Marshes and swamps. Shallow, clear water of lakes and drainage channels. 5-2325 meters (amsl). Blooms May-July.	<b>Not expected.</b> Marginal habitat (marsh, swamp) occurs within some maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Suaeda californica</i> California seablite	FE/-/1B.1	Known from records in Alameda, Contra Costa, Kern, Los Angeles, Orange, Santa Barbara, Santa Clara, San Diego, San Francisco, San Luis Obispo, San Mateo, and Ventura counties.	Tidal or coastal Marshes and swamps. Margins of coastal salt marshes. 0-5 meters (amsl). Blooms July-October.	<b>None.</b> Maintenance sites lack suitable habitat (coastal marsh, swamp) for this species. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Symphotrichum lentum</i> Suisun Marsh aster	-/-/1B.2	Known from records in Contra Costa, Napa, Sacramento, San Joaquin, Solano, and Yolo counties.	Brackish and freshwater marshes. Most often seen along sloughs, ponds, and ditches with common reed ( <i>Phragmites australis</i> ), <i>Schoenoplectus</i> spp., Himalayan blackberry ( <i>Rubus armeniacus</i> ), and <i>Typha</i> spp. 0-3 meters (amsl). Blooms May-November.	<b>Not expected.</b> Marginal habitat (freshwater marsh) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. There are 7 CNDDDB occurrence records within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Trifolium hydrophilum</i> Saline cover	-/-/1B.2	Known from records in Alameda, Butte, Calaveras, Contra Costa, Colusa, El Dorado, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Mendocino, Merced, Monterey, Mariposa, Marin, Napa, Orange, Riverside, Sacramento, Santa Barbara, San Bernardino, San Benito, Santa Clara, Santa Cruz, San Diego, San Francisco, Shasta, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Stanislaus, Tehama, Tulare, Tuolumne, Ventura, and Yolo Counties.	Found in freshwater marshes, depressions, and vernal pools. Also, in mesic, alkaline valley and foothill grassland below 300 meters (amsl). Blooms April-June.	<b>Not expected.</b> Marginal habitat (freshwater marsh, mowed alkaline grassland) occurs within some maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Triquetrella californica</i> Coastal triquetrella	-/-/1B.2	Known from records in Contra Costa, Del Norte, Mendocino, Marin, San Diego, San Mateo, and Sonoma counties.	Coastal bluff scrub, coastal scrub. Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. 10-100 meters (amsl).	<b>None.</b> Maintenance sites lack suitable habitat (coastal scrub, rock outcrop) for this species. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Tuctoria mucronata</i> Solano grass (=Crampton's tuctoria)	FE/SE/1B.1	Known from records in Solano and Yolo counties.	Clay bottoms of drying vernal pools and lakes in valley grassland. 5-10 meters (amsl). Blooms April-August.	<b>None.</b> Maintenance sites lack suitable habitat (vernal pools) for this species. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	-

Sci. Name Common Name	Status (Fed/State/ CRPR)	Range	Habitat	Potential to Occur in Maintenance Program area and Rationale	Project Site #(s) with Potential to Occur
<i>Tropidocarpum capparideum</i> Caper-fruited trepidocarpum	-/-/1B.1	Known from records in Alameda, Contra Costa, Fresno, Glenn, Kern, Monterey, Santa Clara, San Joaquin, San Luis Obispo, and San Mateo counties.	Valley and foothill grassland. Alkaline clay. 0-360 meters (amsl). Blooms March-April.	<b>Not expected.</b> Marginal habitat (mowed grassland with alkaline clay soil) occurs within some maintenance sites in the east San Francisco Bay area and Sacramento-San Joaquin Delta. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	-
<i>Viburnum ellipticum</i> Oval-leaved viburnum	-/-/2B.3	Known from records in Alameda, Contra Costa, Colusa, El Dorado, Fresno, Glenn, Humboldt, Lake, Los Angeles, Mendocino, Mariposa, Napa, Nevada, Placer, Shasta, Solano, Sonoma, and Tehama Counties.	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1400 meters (amsl). Blooms March-June.	<b>None.</b> Maintenance sites lack suitable habitat (chaparral, woodland, forest) for the species. There is 1 CNDDDB occurrence record within 2 miles of the maintenance sites.	-

**“Potential to Occur” Categories Definitions**

Possible = record is known from within 2 miles of the maintenance sites or was observed in the maintenance area, and suitable habitat is present in the maintenance area.

Not expected = record known from within 2 miles of the maintenance sites but only marginal habitat exists in the maintenance area, but the occurrence is outside of the maintenance area.

None = maintenance area is outside of species’ range, record is possibly or presumed extirpated, or no marginal habitat present.

**Status Legend**

**Federal**

FE = Federally endangered

FT = Federally threatened

FPE = Federally proposed endangered

**State**

SR = State rare

SE = State endangered

ST = State threatened

**CRPR (California Rare Plant Rank)**

1A = Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere



FPT = Federally proposed threatened  
FC = Federal candidate for listing as threatened or endangered

**Other:**

CNDDDB= California Natural Diversity Database

1B = Plants Rare, Threatened, or Endangered in California and Elsewhere  
2A = Plants Presumed Extirpated in California, But More Common Elsewhere  
2B = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

***EBCNPS (California Native Plant Society East Bay Chapter):***

- \*A: Species in Alameda and Contra Costa counties listed as rare, threatened or endangered statewide by federal or state agencies, or by state CNPS.
- A1: Species known from 2 or less botanical regions in Alameda and Contra Costa Counties, either currently or historically.
- A1x: Species previously known from Alameda or Contra Costa Counties, but now believed to have been extirpated, and no longer occurring here.
- A2: Species currently known from 3 to 5 regions in the two counties, or, if more, meeting other important criteria such as rare statewide, small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc.

## **Appendix C**

### **Special-Status Wildlife Species**

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**Appendix C. Special-Status Wildlife Species**

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<b>Invertebrates</b>					
<i>Apodemia mormo langei</i> Lange's metalmark butterfly	FE/-	Contra Costa County, formerly included dunes on southern bank of Sacramento-San Joaquin River.	Extant population inhabits stabilized dunes in the Antioch Sand Dunes.	<b>None.</b> This species is restricted to the Antioch Dunes, which is outside of the maintenance sites.	
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE/-	California Central Valley from Butte and Tehama counties south to Merced and Stanislaus counties.	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	<b>None.</b> This species is not known from Contra Costa County.	
<i>Branchinecta longiantenna</i> Longhorn fairy shrimp	FE/-	Eastern margin of central Coast Ranges from Contra Costa County to San Luis Obispo County, and one disjunct population in Madera County.	Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	<b>None.</b> Suitable vernal pool habitat is absent from the maintenance sites.	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/-	California Central Valley and southern Coast Range in Santa Barbara County. Isolated populations in Riverside County.	Vernal pools, but also found in sandstone rock outcrop pools.	<b>None.</b> Suitable vernal pool habitat is absent from the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	FE/-	San Mateo Peninsula (San Bruno Mountain, Milagra Ridge, and Montara Mountain), Mount Diablo, and Marin County (near Alpine Lake and Dillon Beach) within the San Francisco Bay area.	Rocky outcrops, cliffs, and coastal scrub typically on north-facing slopes within conglomerations of its host plant, broadleaf stonecrop ( <i>Sedum spathulifolium</i> ), in coastal mountains near the San Francisco Bay.	<b>None.</b> All known locations are restricted to San Mateo County.	
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT/-	California Central Valley and adjacent low foothills.	Occurs only in the California Central Valley in association with blue elderberry ( <i>Sambucus nigra ssp. caerulea</i> ) shrubs with stems 1 inch or greater basal diameter.	<b>Possible.</b> Maintenance sites in the eastern San Francisco Bay area, Sacramento-San Joaquin Delta, and lower Sierra Nevada foothills are within the species' range and suitable elderberry shrubs could occur within some maintenance sites. There are 3 CNDDDB occurrence records in San Joaquin and Calaveras counties within 2 miles of the maintenance sites.	1-14, 16-22, 74-77, 90-91, 119 (where suitable elderberry present)
<i>Elaphrus viridis</i> Delta green ground beetle	FT/-	California Central Valley in Jepson Prairie to Travis AFB within south-central Solano County.	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis AFB.	<b>None.</b> Maintenance sites are located outside of the species' range.	
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	FT/-	Current range includes San Francisco Peninsula, San Mateo County, and Santa Clara County. Formerly San Francisco Bay area to Mount Diablo and Hollister.	Native grasslands on serpentine soils. Larval host plants are <i>Plantago erecta</i> and/or <i>Castilleja exserta ssp. exserta</i> .	<b>None.</b> Maintenance sites are not located within the species' current range. This species historically occurred in Contra Costa County, but its current distribution is restricted to Santa Clara County.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE/-	California Central Valley from Shasta County to Merced County, with isolated populations in Fresno, Alameda, and Tulare counties.	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	<b>None.</b> Suitable vernal pool habitat is absent from the maintenance sites.	
<i>Speyeria callippe</i> Callippe silverspot butterfly	FE/-	Inner coast range of northwest Contra Costa County south to Castro Valley in Alameda County, and San Francisco south to La Honda in San Mateo County.	Coastal dune, bluff, scrub, and prairie typically in areas sheltered from wind below 810 feet above mean sea level (amsl) and within 3 miles of the Coast. Larval hostplants are violets, typically <i>Viola adunca</i> , and adult foodplants are <i>Grindelia hirsutula</i> , <i>Abronia latifolia</i> , mints, <i>Monardella</i> spp., <i>Cirsium vulgare</i> , and <i>Erigeron glaucus</i> .	<b>None.</b> Maintenance sites are not located within the species' current range, and verified populations of this species are currently known only from San Mateo and Solano counties.	
<i>Syncaris pacifica</i> California freshwater shrimp	FE/SE	Endemic to Marin, Napa, and Sonoma counties. Currently known from lower Russian River drainage and tributaries, coastal streams that flow directly into the Pacific Ocean, streams that drain into Tomales Bay, and streams that flow into northern San Pablo Bay.	Found in low elevation (<380 feet amsl), low gradient (<1%) streams where riparian cover is moderate to heavy.	<b>None.</b> Maintenance sites are located outside of this species' range.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<b>Amphibians</b>					
<i>Ambystoma californiense</i> California tiger salamander	FT/ST	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet amsl, and from Sonoma County south to Santa Barbara County along coast.	Need underground refuges, especially ground squirrel burrows & vernal pools or other seasonal water sources for breeding.	<b>Present.</b> The species is known to occur within (observed by EBMUD biological staff) certain Central Valley and Sierra Nevada foothills maintenance sites. Suitable habitat (grassland and oak woodland near vernal pools, ponds, and seasonal wetlands) is present at the maintenance sites in the San Francisco Bay area, Central Valley, and Sierra Nevada foothills. There are 32 CNDDDB occurrence records from Contra Costa, San Joaquin, and Calaveras counties within 2 miles of the maintenance sites.	1-48, 50, 54-58, 64, 135-136, 159, 161
<i>Rana boylei</i> Foothill yellow-legged frog	-/CT, SSC	Coast and coastal mountain ranges from Oregon border south to Ventura County, Sierra Nevada foothills south to Tulare County. Disjunct populations in eastern Los Angeles County and northern Sutter County.	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	<b>Possible.</b> Suitable habitat (freshwater streams) is present within maintenance sites in the San Francisco Bay area and Sierra Nevada foothills. There are 5 CNDDDB occurrences from Alameda and Contra Costa counties within 2 miles of the maintenance sites, but the most recent occurrence record dates from 1950s.	1-14, 16-22, 150-152, 159, 164-165, 172, 175

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Rana draytonii</i> California red- legged frog	FT/SSC	Coast and coastal mountain ranges from Mendocino County to San Diego County, and in the Sierra Nevada Mountains from Butte County south to Stanislaus County.	Streams, freshwater pools, and ponds with emergent vegetation.	<b>Possible.</b> Suitable habitat (freshwater streams and ponds) present within maintenance sites in the San Francisco Bay Area. There are 13 CNDDB occurrence records from Alameda and Contra Costa counties within 2 miles of the maintenance sites.	1-14, 16-22, 150-152, 159, 164-165, 172, 175
<i>Spea hammondi</i> Western spadefoot	-/SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California.	Occurs primarily in grassland habitats, but can be found in oak woodlands. Vernal pools, seasonal wetlands, and shallow streams are essential for breeding and egg-laying.	<b>Present.</b> Species known to occur near certain maintenance sites (observed by EBMUD biological staff) in the Central Valley and Sierra Nevada foothills. Suitable habitat (grassland and oak woodland near vernal pools, seasonal wetlands, and shallow streams) present within maintenance sites in the Central Valley and Sierra Nevada foothills. There are 2 CNDDB occurrence records from Calaveras and San Joaquin counties within 2 miles of the maintenance sites.	1-48, 50, 54-58, 64

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<b>Reptiles</b>					
<i>Anniella pulchra pulchra</i> Silvery legless lizard	-/SSC	Coast, Transverse, and Peninsular ranges from Contra Costa County south to San Diego County with periodic occurrences in the San Joaquin Valley.	Found in chaparral, coastal dunes, and coastal scrub areas with sandy or loose loamy soils under sparse vegetation. Prefer soils with a high moisture content.	<b>Possible.</b> Suitable habitat (sandy soil) exists at maintenance sites in the eastern portion of the San Francisco Bay area. There are 3 CNDDB occurrence records from Contra Costa County within 2 miles of the maintenance sites.	120-127
<i>Arizona elegans occidentalis</i> California glossy snake	-/SCC	Coastal and Peninsular to western Transverse ranges in southern California, north to southern Monterey County, and eastern slope of the Coast Range adjacent to the San Joaquin Valley north to eastern Contra Costa County.	Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	<b>Possible.</b> Suitable grassland habitat with sandy or loose soils occurs at maintenance sites in the eastern San Francisco Bay area. No CNDDB occurrence records are known from the study area.	126



Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Actinemys (=Emys) marmorata</i> Western pond turtle	-/SSC	Oregon border of Del Norte and Siskiyou Counties south along coast to San Francisco Bay, inland through Sacramento Valley, and on the western slope of the Sierra Nevada Mountains.	Found in ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation. Needs basking sites.	<b>Present.</b> Species known to occur near certain maintenance sites (observed by EBMUD biological staff) in the Sierra Nevada foothills. Suitable aquatic and upland nesting habitat for western pond turtles is present at maintenance sites throughout the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills. There are 9 CNDDB occurrence records known from the study area.	1-6, 9-14, 16-44, 49-58, 60-68, 74, 77-129, 132-136, 140-142, 144-154, 156-157, 159, 161, 163-166, 168, 171-175, 184
<i>Masticophis flagellum ruddocki</i> San Joaquin whipsnake (=coachwhip)	-/SSC	San Joaquin Valley and adjacent Coast Range south to include junction of Kern, Ventura, and Santa Barbara counties.	Open, dry habitats with little or no tree cover. Found in valley grassland & saltbush scrub in the San Joaquin Valley.	<b>Not expected.</b> Dry grassland and saltbush scrub habitat are absent from the maintenance sites in the Central Valley. No CNDDB occurrence records are known from within 2 miles of the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	FT/ST	Southwestern to central Contra Costa County and western to central Alameda County.	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats.	<b>Possible.</b> Suitable habitat (chaparral, scrub, grassland, and oak savanna) exists at maintenance sites in the central to western San Francisco Bay area region. There are 103 CNDDB occurrence records known from within 2 miles of the maintenance sites within Alameda and Contra Costa counties.	164, 175
<i>Phrynosoma blainvillii</i> Coast horned lizard	-/SSC	Sacramento Valley, including foothills, south through Transverse and Peninsular Ranges from Ventura to San Diego County in southern California; Coast Ranges south of Sonoma County; below 4,000 feet amsl.	Uses a variety of habitats, most commonly sandy washes with low bushes. It needs open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	<b>Possible.</b> Suitable sandy-substrate habitat exists at maintenance sites in the San Francisco Bay area, Central Valley, and Sierra Nevada foothills.	1-74, 79-126

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Thamnophis gigas</i> Giant garter snake	FT/ST	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno.	Marshes, streams, wetlands, and riparian scrub, and agricultural wetlands, and rice fields. Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. Habitat consists of (1) adequate water during the snake's active season, (2) emergent herbaceous wetland vegetation for escape and foraging habitat, (3) grassy banks and openings in waterside vegetation for basking, and (4) higher elevation upland habitat for cover and refuge from flooding (USFWS 2012e).	<b>Possible.</b> Suitable habitat (marsh, stream, slough, wetlands with emergent or aquatic vegetation) exists at maintenance sites in the Sacramento-San Joaquin Delta. One CNDDDB occurrence record of the species has been documented in San Joaquin County within 2 miles of the maintenance sites.	74, 82-93
<b>Birds</b>					
<i>Agelaius tricolor</i> Tricolored blackbird	-/SSC	Year-round in California primarily along the Coast from Marin County south to Baja California, and throughout Central Valley and adjacent Coast Range.	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 kilometers of the colony. Nests in dense thickets of cattails ( <i>Typha</i> spp.), bulrush ( <i>Schoenoplectus</i> spp.), willow ( <i>Salix</i> spp.), blackberry ( <i>Rubus</i> spp.), wild rose ( <i>Rosa californica</i> ), and other tall vegetation near fresh water.	<b>Present.</b> Species known to occur near certain maintenance sites (observed by EBMUD biological staff) in the Sierra Nevada foothills. Suitable habitat (freshwater marsh) is present within maintenance sites in the Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills. There are 2 CNDDDB occurrence records of the species from San Joaquin County within 2 miles of the maintenance sites.	1-14, 16-22, 74, 82-93, 150-152, 159, 164-165, 168, 172, 175

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Accipiter cooperii</i> Cooper's hawk	-/- (MBTA)	Year-round resident of California. Breeds throughout the state.	Woodland, primarily open, interrupted or marginal quality. Primarily nests in live oak and riparian deciduous woodland, often in canyon bottoms on river floodplains.	<b>Possible.</b> Suitable woodland habitat occurs near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	1-3, 5-11, 19-21, 33-34, 74, 102, 132-133, 144-145, 150-151, 156-157, 159, 163-166, 175, 184
<i>Aquila chrysaetos</i> Golden eagle	-/SFP	Mountains and foothills throughout California. Does not breed in lowlands (e.g., Central Valley).	Rolling foothills, mountain areas, sage-juniper flats, & desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	<b>Not expected.</b> Suitable nesting substrate (cliffs, large isolated trees) is absent from the maintenance sites. CNDDDB occurrence records are absent from within 2 miles of the maintenance sites.	
<i>Ardea herodias</i> Great blue heron	-/- (MBTA)	Year-round resident throughout Central Valley, San Francisco Bay, from Marin County to Yolo County, the Salton Sea, and Colorado River. Nonbreeding resident elsewhere in California.	Freshwater, brackish, and marine wetlands, as well forage in flooded agricultural fields. Nests in colonies in trees located adjacent to waterbodies, rivers, estuaries, and marshes.	<b>Possible.</b> Suitable nesting habitat (trees near aquatic foraging habitat) occurs near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	74, 79-81, 90-93, 102-103, 107-115, 119-124, 150-152, 173, 176, 184

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Asio flammeus</i> Short-eared owl	-/SSC	Permanent resident along the Coast from Del Norte County to Monterey County (rare in summer north of SF Bay), north of Nevada County in Sierra Nevada, plains east of the Cascades, and Mono County.	Grasslands, marshes, and some agricultural lands of the San Joaquin Valley.	<b>Possible.</b> Suitable nesting habitat (grassland) exists at maintenance sites in the Sacramento-San Joaquin Delta and Central Valley. CNDDDB occurrence records are absent from within 2 miles of the maintenance sites.	23-77, 81-125
<i>Athene cunicularia</i> Burrowing owl	-/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast.	Yearlong resident of open, dry grassland and desert habitats, as well as in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel ( <i>Spermophilus beecheyi</i> ).	<b>Present.</b> Species known to occur near certain maintenance sites (observed by EBMUD biological staff) in the Central Valley and western portion of the Sierra Nevada foothills. Suitable habitat (grassland with burrows) exists at maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Central Valley. There are 44 CNDDDB occurrence records within 2 miles of the maintenance sites.	1-4, 17-34, 37-44, 49-53, 55-68, 82-83, 89-101, 116-118, 124-126
<i>Branta canadensis</i> cackling (=Aleutian Canada) goose	-/SSC	Entire California population winters in Butte Sink and migrates to Los Banos, Modesto, the Sacramento-San Joaquin Delta, and East SF Bay reservoirs. Breeds outside of California.	Roosts in large marshes, stock pond edges, flooded agricultural fields, and reservoir edges. Forages in pastures, meadows, and grain fields.	<b>None.</b> This species does not nest in California.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Buteo regalis</i> Ferruginous hawk	-/- (MBTA)	Winter visitor of California, except for North Coast and Sierra Nevada. Breeds in northeastern California east of Cascades, along Nevada border.	Nest on cliffs, rock outcrops, and tree groves. Forage in grasslands, sagebrush, saltbush-greasewood shrublands, edges of pinyon-juniper forests.	<b>None.</b> This species does not breed within the regions where maintenance sites are located.	
<i>Buteo swainsoni</i> Swainson's hawk	-/ST	Lower Sacramento and San Joaquin valleys, Klamath Basin, and Butte Valley. Recent breeding in Santa Clara County and expected elsewhere in greater San Francisco Bay Area.	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	<b>Possible.</b> Suitable nesting habitat (riparian woodland and tree groves) and foraging habitat (grassland and agricultural fields) exists at maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Central Valley. There are 34 CNDDB occurrence records within 2 miles of the maintenance sites.	74, 79-81, 90-93, 102-103, 107-115, 119-124, 129, 130-133, 150-152, 173, 182, 184
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	FT/-	Pacific Coast (including islands, bays, estuaries, coastal rivers, and peninsulas) adjacent to tidal waters of the Pacific Ocean from Damon Point, Washington south to Bahia Magdalena, Baja California.	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	<b>None.</b> Suitable habitat (salt ponds, beaches) is absent from the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Circus hudsonius</i> (formerly <i>cyaneus</i> ) Northern harrier	-/SSC	California coast from Del Norte County south to San Luis Obispo, east of California Cascades, northern 2/3 of Central Valley, and portion of Great Basin within California.	Nests in marshes and moist fields, forages over open areas.	<b>Present.</b> Species observed at certain maintenance sites in the Sacramento-San Joaquin Delta and Central Valley. Suitable nesting and foraging habitat (grasslands, marshes) exists within maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Sierra Nevada foothills. No CNDDB occurrence records are known from within 2 miles of the maintenance sites, but the species' taxonomy recently changed.	1-77, 79-126, 146-152
<i>Coccyzus americanus</i> Yellow-billed cuckoo	FT/ST	Nests along upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado rivers.	Nests in wide, dense well-developed riparian forests, along the broad, lower flood-bottoms of larger river systems. Nests in riparian willows, often mixed with cottonwoods, with an understory of blackberry, nettles, or wild grape. May avoid valley oak riparian where scrub jays are abundant.	<b>None.</b> Suitable habitat is absent from the maintenance sites and there are no CNDDB occurrence records from within 2 miles of the maintenance sites.	
<i>Coturnicops noveboracensis</i> yellow rail	-/SSC	In California, winters in marshes along San Francisco Bay and breeds in Siskiyou and Modoc counties.	Shallow brackish and freshwater marshes, wet meadows, and occasionally rice fields.	<b>Not expected.</b> Suitable foraging habitat (freshwater marsh, rice fields) is present within the maintenance sites, but the maintenance sites are outside of the species' breeding range.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Egretta thula</i> Snowy egret	-/- (MBTA)	Year-round in San Francisco Bay, Sacramento-San Joaquin Delta, Central Valley, Salton Sea, and Colorado River. Winters along the Southern California coast and migrates through the southern 2/3 of the state.	Nest in colonies on thick vegetation on islands in salt and freshwater marshes and swamps. Forages in estuaries, marshes, tidal channels, shallow marine bays, agricultural fields, and other wetlands.	<b>Present.</b> Species observed near certain maintenance sites in the Sacramento-San Joaquin Delta. Suitable nesting substrate (thick vegetation on islands) occurs near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Central Valley. No CNDDDB occurrence records occur within 2 miles of maintenance sites.	74, 79-81, 90-93, 102-103, 107-115, 119-124, 150-152, 173, 182, 184
<i>Elanus leucurus</i> White-tailed kite	-/SFP	Lowlands west of the Sierra Nevada Mountains from Sacramento Valley south to western San Diego County (including coastal foothills and valleys).	Nests in rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	<b>Present.</b> Species observed at certain maintenance sites in the Sacramento-San Joaquin Delta and Central Valley. Suitable foraging habitat (grassland, marsh, oak woodland) and nesting substrate (dense-topped trees) is present at maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills. There are 2 CNDDDB occurrence records within 2 miles of the maintenance sites.	1-77, 79-126, 146-152



Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Falco mexicanus</i> Prairie falcon	-/- (MBTA)	Permanent resident in the south Coast, Transverse, Peninsular, and northern Cascade ranges; southern deserts; Inyo-White Mountains; foothills surrounding the Central Valley; and in the Sierra Nevada Mountains in Modoc, Lassen, and Plumas Counties. Winters in the Central Valley, in Marin County, and along the Coast from Santa Barbara County to San Diego County.	Nests on cliffs or escarpments, typically overlooking dry, open terrain or uplands.	<b>Not expected.</b> Suitable nesting substrate (cliffs or escarpments) is absent from maintenance sites. No CNDDDB occurrence records occur within 2 miles of maintenance sites.	
<i>Falco peregrinus anatum</i> American peregrine falcon	-/SFP	Year-round throughout most of California, except for northern Sierra Nevada, Central Valley, and interior Southern California.	Forages 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, elevated site (cliffs, tall isolated trees, high bridges, and power transmission towers).	<b>Not expected.</b> Suitable foraging habitat (open areas) exists at maintenance sites in the San Francisco Bay area and Sierra Nevada foothills, but suitable nesting substrate is absent from maintenance sites in both regions. One CNDDDB occurrence record occurs within 2 miles of the maintenance sites, and one EBMUD observation record of the species from north end of Pardee Reservoir approximately 4.3 miles from the nearest maintenance site.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	-/SSC	Coastal areas in Marin County and the San Mateo Peninsula, and areas along San Pablo Bay and the southern portion of San Francisco Bay.	Resident of fresh and salt water marsh and swamps throughout San Francisco Bay. Requires thick, continuous cover down to water surface for foraging, and tall grasses, bulrush patches, and/or willows for nesting.	<b>Not expected.</b> Suitable habitat (freshwater and salt marshes) absent from maintenance sites in the San Francisco Bay area. No CNDDDB occurrence records are known from within 2 miles of the maintenance sites.	
<i>Haliaeetus leucocephalus</i> Bald eagle	FD/SE, SFP	Non-breeding resident throughout most of California. Within California, breeds in northern portion of state near Cascades and adjacent plains.	Occurs mainly along coasts, rivers, and lakes; nests in tall trees or in cliffs, usually within 1 mile of water. Nests in large, old-growth, or trees with open branches, especially ponderosa pine. Roosts communally in winter. Feeds mostly on fish.	<b>Possible.</b> This species is known to have previously nested in the higher, more isolated areas near Los Vaqueros, San Pablo, and Briones reservoirs. Suitable foraging habitat occurs at maintenance sites in the San Francisco Bay area and Sierra Nevada foothills. No CNDDDB occurrence records are known from within 2 miles of the maintenance sites, but the species has been observed at several other locations. This species has been documented nesting at Los Vaqueros and San Pablo reservoirs, and adults have been observed at Briones Reservoir.	1-14
<i>Hydroprogne caspia</i> Caspian tern	-/- (MBTA)	Breeds along coastal regions in San Francisco Bay and Monterey Bay, as well as Lake Tahoe and northern Siskiyou and Modoc counties.	Nests in colonies at shorelines of salt marshes, freshwater lake islands, barrier islands, river islands, and dredge spoil islands. Forages in open water areas for fish.	<b>Not expected.</b> Suitable nesting habitat (shorelines and islands) is absent from maintenance sites. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Icteria virens</i> yellow-breasted chat	-/SSC	Breeds throughout California, except for northern Sierra Nevada and Cascades.	Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	<b>Possible.</b> Suitable habitat (riparian thickets) exists at maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills. No CNDDDB occurrence records are known from within 2 miles of the maintenance sites.	74-77, 90-91, 119, 172-173, 175, 182, 184
<i>Lanius ludovicianus</i> Loggerhead shrike	-/SSC	Year-round resident throughout California, except for North Coast, northern Sierra Nevada and Cascades.	Broken woodlands, savannah, pinyon-juniper, Joshua tree, riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	<b>Possible.</b> Suitable foraging habitat (open areas) and nesting substrate (trees and shrubs) exists at maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills. No CNDDDB occurrence records are known from within 2 miles of the maintenance sites.	1-77, 79-126, 146-152
<i>Laterallus jamaicensis coturniculus</i> California black rail	-/ST, SFP	Year-round resident in the Lower Colorado River and greater San Francisco Bay Area.	Inhabits freshwater marshes, wetland meadows, and the shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year & dense vegetation for nesting habitat.	<b>Possible.</b> Suitable habitat (marshes) exists at maintenance sites in the San Francisco Bay area and lower Sacramento-San Joaquin Delta. There are 11 CNDDDB occurrences are known from Contra Costa and San Joaquin counties within 2 miles of the maintenance sites.	82-83, 86-89, 90-104, 107-119, 122-124, 150-152

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Melospiza melodia</i> Song sparrow ("Modesto" population)	-/SSC	Stanislaus, eastern Contra Costa, eastern Alameda, San Joaquin, Sacramento, eastern Solano, Yolo, eastern Colusa, Sutter, western Yuba, and western Placer counties.	Emergent freshwater marshes, riparian willow thickets, riparian forests, and vegetated irrigation. Inhabits cattails ( <i>Typha</i> spp.), bulrush ( <i>Schoenoplectus</i> spp.) and other sedges; also known to frequent tangles bordering sloughs.	<b>Possible.</b> Suitable habitat (freshwater marsh and riparian vegetation) exists at maintenance sites in the Sacramento-San Joaquin Delta and Central Valley regions. There are 5 CNDDDB occurrence records known from San Joaquin County within 2 miles of the study area.	74, 79-81, 90-93, 102-103, 107-115, 119-124
<i>Melospiza melodia maxillaris</i> Suisun song sparrow	-/SSC	Southern Solano County and northern Contra Costa County from Carquinez Strait to Sacramento-San Joaquin River confluence near Antioch.	Resides in tidal marshes surrounding Suisun Bay and requires dense vegetation to nest within. Associated with tidal channels, primarily where pickleweed dominates and gumplank lines channels.	<b>Not expected.</b> Suitable habitat (tidal marsh) is absent from maintenance sites in the San Francisco Bay area. There are 9 CNDDDB occurrence records known from Solano and Contra Costa counties within 2 miles of the maintenance sites.	
<i>Melospiza melodia pusillula</i> Alameda song sparrow	-/SSC	San Francisco Bay fringes in southwestern Contra Costa County, western Alameda County, northern Santa Clara County, eastern San Mateo County, and southeastern San Francisco County.	Resident of tidal salt marshes bordering south arm of San Francisco Bay. Found in pickleweed marshes. Nests in <i>Grindelia</i> along channels.	<b>None.</b> Suitable habitat (tidal marsh) is absent from the maintenance sites, as this species is generally found in the southern portion of the San Francisco Bay.	
<i>Melospiza melodia samuelis</i> San Pablo song Sparrow	-/SSC	Year-round resident fringe of San Pablo Bay, Napa-Sonoma Marsh, Petaluma River, Napa River, and northern edges of San Francisco Bay.	Resides in tidal sloughs of salt marshes along the north side of San Francisco and San Pablo bays. Nests in <i>Grindelia</i> sp. and <i>Baccharis pilularis</i> .	<b>None.</b> Suitable tidal slough habitat is absent from the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Nycticorax nycticorax</i> Black-crowned night heron	-/- (MBTA)	Year-round resident in California Coast and Coast Range, Cascades, and along the Colorado River. Migrates throughout the remainder of the state.	Nests colonially within a tree or cattails over or near water. Forage in freshwater, brackish, and salt marshes; rivers; mud flats; other water bodies; and wet agricultural fields.	<b>Possible.</b> Suitable nesting substrate (trees or marsh near large water bodies) exists at and near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills. No CNDDDB occurrence records occur within 2 miles of the maintenance sites.	1-12, 16, 19-22, 74, 79-81, 90-93, 102-103, 107-115, 119-124, 150-152, , 173, 182, 184
<i>Pandion haliaetus</i> Osprey	-/- (MBTA)	Nests in northern Sierra Nevada, southern Cascades, and plains east of Cascades. Year-round in northern half of California to San Mateo Peninsula. Winters in San Joaquin Valley and central to southern California coast and along Colorado River. Migrates through deserts to southern Mono Basin.	Nests in tall trees, cliffs, or human-derived platforms near water. Forages for fish over a variety of water bodies (rivers, lakes, sea, and marshes).	<b>Possible.</b> Suitable nesting substrate (towers or large trees near large water bodies) exists at and near maintenance sites in the San Francisco Bay area, Sacramento-San Joaquin Delta, and Sierra Nevada Foothills. No CNDDDB occurrence records occur within 2 miles of the maintenance sites, but the species has been observed nesting by EBMUD biologists along the San Pablo Reservoir within 2 miles of the maintenance sites.	1-14, 90-93, 150-152, 182, 184

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Phalacrocorax auratus</i> Double-crested cormorant	-/- (MBTA)	Nests along the Colorado River, California coast north of Humboldt County and south of Los Angeles County, and San Francisco Bay.	Nests colonially in trees, on human-derived structures, and on the ground near water bodies. Forages in open water for fish.	<b>Possible.</b> Suitable nesting substrate (bridges or trees near large water bodies) exists at and near maintenance sites in the San Francisco Bay area and Sacramento-San Joaquin Delta. No CNDDB occurrence records occur within 2 miles of the maintenance sites.	90-93, 102-103, 107-115, 119-124, 150-152, 173, 182, 184
<i>Rallus obsoletus</i> Ridgway's rail	FE/SE	In California, year-round in San Francisco Bay, Southern California coast (from Ventura County south), the Salton Sea, and the lower Colorado River and tributaries.	Saltwater 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.	<b>None.</b> Suitable salt or brackish habitat is absent from the maintenance sites.	
<i>Riparia riparia</i> Bank Swallow	--/ST	Migrates throughout all of California. Year-round resident on the San Mateo Peninsula, Sacramento River, and northern Sierra Nevada to plains east of the Cascades.	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, or ocean to dig nesting hole.	<b>Not expected.</b> Suitable habitat (vertical sandy river banks) is absent from the maintenance sites and no CNDDB occurrence records are known from within 2 miles of the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Rynchops niger</i> black skimmer	-/SSC	Year-round resident breeder in the San Francisco Bay, Salton Sea, Batiquitos Lagoon, Seal Beach National Wildlife Refuge, and Bolsa Chica and Newport Bay ecological reserves. Winters throughout southern California from Santa Barbara south to Baja California.	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	<b>None.</b> Suitable habitat (gravel bars, beaches, islets) is absent from the maintenance sites.	
<i>Setophaga petechia</i> Yellow warbler	-/SSC	Breeds along California coast (except Santa Cruz to San Mateo Peninsula), Cascades, plains east of the Cascades, and Coast Range and Sierra Nevada foothills surrounding the Sacramento Valley. Migrant throughout the rest of California.	Riparian plant associations in close proximity to water. Also nests in montane shrub clusters in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	<b>Possible.</b> Suitable riparian habitat occurs at maintenance sites in the Sierra Nevada foothills region, but no CNDDB occurrences are known from within 2 miles of the maintenance sites.	1-12, 16, 19-22, 74, 79-81, 90-93, 102-103, 107-115, 119-124, 150-152, 173, 182, 184
<i>Sternula antillarum browni</i> California least tern	FE/SE	Nests along the coast from San Francisco Bay south to northern Baja California.	Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas. Forages in open water, marine habitat.	<b>None.</b> Suitable habitat (coastal beaches, flats, barrens) is absent from the maintenance sites.	
<i>Strix occidentalis caurina</i> Northern spotted owl	FT/SSC	Year-round resident north of San Francisco Bay along the Coast north throughout the Coast Range and into the Cascades into Oregon.	Old-growth forests or mixed stands of old-growth & mature trees. Occasionally in younger forests w/patches of big trees.	<b>None.</b> Suitable habitat (old growth forest or components) is absent from the maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Vireo bellii pusillus</i> least Bell's vireo	FE/SE	Southern Inyo, southern San Bernardino, Riverside, San Diego, Orange, Los Angeles, Ventura, and Santa Barbara counties.	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, <i>Baccharis</i> , mesquite.	<b>Not expected.</b> Species has recently been observed in restored riparian habitat at the San Joaquin River National Wildlife Refuge approximately 27 miles south of the Aqueduct <sup>1</sup> , but no CNDDDB occurrence records occur within 2 miles of the maintenance sites. Suitable riparian habitat occurs at maintenance sites in the Sacramento-San Joaquin Delta, but the species is rare in the region and is not expected to breed at maintenance sites.	
<i>Xanthocephalus xanthocephalus</i> Yellow-headed blackbird	-/SSC	Central Valley and southeastern California year-round. Winters in southern Arizona, Texas, New Mexico, and Mexico. Occurs in the Great Basin to Canada during summer.	Nests in freshwater emergent wetlands with dense vegetation & deep water. Often along borders of lakes or ponds. Nests only where large insects such as <i>Odonata</i> are abundant, nesting timed with maximum emergence of aquatic insects.	<b>Possible.</b> Suitable habitat (freshwater marsh) exists at maintenance sites in the Sacramento-San Joaquin Delta and Central Valley. No CNDDDB occurrence records are known from within 2 miles of the maintenance sites.	1-12, 16, 19-22, 74, 79-81, 90-93, 102-103, 107-115, 119-124, 150-152, 173, 182, 184

<sup>1</sup> Howell, C.A., J. Wood, M.D. Dettling, K. Griggs, C. Otte, L. Lina, and T. Gardali. 2010. Least Bell's Vireo breeding records in the Central Valley following decades of extirpation. *Western North American Naturalist* 70(1):105-113.



Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<b>Mammals</b>					
<i>Antrozous pallidus</i> Pallid bat	-/SSC, WBWG: High Priority	Widespread throughout California.	Deserts, grasslands, shrublands, woodlands & 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.	<b>Possible.</b> Trees at maintenance sites provide suitable roosting habitat in San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions. Lacustrine, riparian, and marsh habitats, and to some extent the adjacent ruderal habitats, provide foraging habitat. There are 6 CNDDB occurrence records from Alameda and Contra Costa counties within 2 miles of the maintenance sites.	Any with suitable tree-roosting habitat.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	-/SSC, WBWG: High Priority	Coastal regions from Del Norte County south to Santa Barbara County.	Found throughout California in a wide variety of habitats, including woodlands, forests, chaparral, scrubs, and grasslands. Most common in mesic sites. Roosts on open surfaces in caves, abandoned mines, and buildings. Also uses bridges, rock crevices and hollow trees as roost sites. Roosting sites are limiting. This species is extremely sensitive to human disturbance.	<b>Possible.</b> Trees at maintenance sites provide suitable roosting habitat in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions. Lacustrine, riparian, and marsh habitats, and to some extent the adjacent ruderal habitats, provide foraging habitat. There are 2 CNDDB occurrence records from Alameda and Contra Costa counties within 2 miles of the maintenance sites.	Any with suitable tree-roosting habitat.

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Eumops perotis californicus</i> western mastiff bat	-/SSC, WBWG: High Priority	Southwestern United States to central Mexico.	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	<b>Not expected.</b> The species is known to occur primarily in the southern portion of the State. No CNDDDB occurrence records are known within 2 miles of the maintenance sites.	
<i>Lasionycteris notivangans</i> Silver-haired bat	-/- (WBWG: Medium Priority)	Southern Alaska to most of the United States into northeastern Mexico.	Maternity roosts are in tree cavities or under the bark of large snags. Forages for moths and other insects above tree canopy, over open meadows, and along water courses in riparian zones.	<b>Possible.</b> Suitable maternity roost habitat exists at maintenance sites with large trees offering cavities and large snags in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.	Any with suitable tree-roosting habitat.
<i>Lasiurus blossevillii</i> Western red bat	-/SSC	Year-round range spans the Central Valley, Sierra Nevada foothills, Coast Range, and coast except for Humboldt and Del Norte counties.	Cismontane woodland, lower montane coniferous forest, riparian forest and woodlands. Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	<b>Possible.</b> Riparian areas at the maintenance sites within the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada foothills provide suitable roosting and foraging habitat for this species. One CNDDDB occurrence record is known from Contra Costa County within 2 miles of the maintenance sites.	Any with suitable tree-roosting habitat, including orchards.

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Lasiurus cinereus</i> Hoary bat	-/- (WBWG: Medium Priority)	Tree limit in Canada south to Guatemala, and from Brazil to Argentina and Chile.	Coniferous forests and deciduous woodlands. Roosts are typically near clearings at the ends of branches.	<b>Possible.</b> Suitable roost habitat exists at maintenance sites near woodland and forest in the San Francisco Bay area, Sacramento-San Joaquin Delta, Central Valley, and Sierra Nevada Foothills regions.	1-12, 16, 19-22, 74, 79-81, 90-93, 102-103, 107-115, 119-124, 150-152, 173, 182, 184
<i>Microtus californicus sanpabloensis</i> San Pablo vole	-/SSC	San Pablo Creek, Contra Costa County, on the south shore of San Pablo Bay.	Saltmarshes of San Pablo Creek. Constructs burrows in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow	<b>None.</b> Suitable habitat (salt marsh) is absent from the maintenance sites and no CNDDDB occurrence records are known from within 2 miles of the maintenance sites.	
<i>Neotoma fuscipes annectens</i> San Francisco dusky-footed woodrat	-/SSC	Terrestrial areas surrounding San Francisco Bay.	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub.	<b>Possible.</b> Suitable riparian and oak woodland habitat is present at maintenance sites in the San Francisco Bay area. There are 2 CNDDDB occurrence records known from Contra Costa County within 2 miles of the maintenance sites.	159, 163, 173, 175

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Nyctinomops macrotis</i> Big free-tailed bat	-/SSC; WBWG: Moderate Priority	Primarily across southwestern US north to southern Utah and central Colorado.	Low-lying arid areas in Southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	<b>Not expected.</b> Usually considered a Southern California species. Suitable cliff and rock outcrop roosting habitat is absent from the maintenance sites. A single individual was collected in 1979 in Contra Costa County, but no CNDDDB occurrence records exist within 2 miles of the maintenance sites.	
<i>Reithrodontomys raviventris</i> Salt-marsh harvest mouse	FE/SE	San Francisco Bay Estuary and Suisun Marsh.	Saline emergent wetlands of San Francisco Bay and its tributaries.	<b>None.</b> Suitable habitat is absent from maintenance sites.	
<i>Scapanus latimanus parvus</i> Alameda Island mole	-/SSC	Endemic to Alameda Island.	Only known from Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. Avoids flooded soils.	<b>None.</b> Only known from Alameda Island, which is outside of the maintenance sites.	
<i>Sylvilagus bachmani riparius</i> riparian brush rabbit	FE/SE, FP	Caswell State Park (San Joaquin County) near the confluence of the Stanislaus and San Joaquin rivers, and Paradise Cut.	Native Valley riparian areas with large clumps of dense thickets of wild rose, willows, blackberries, and other shrubs.	<b>None.</b> The maintenance sites are outside of the species' range.	
<i>Sorex vagrans halicoetes</i> Salt-marsh wandering shrew	-/SSC	San Francisco Bay fringe.	Salt marshes within medium to high marsh range vegetated with pickleweed.	<b>None.</b> Suitable habitat is absent from maintenance sites.	

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Taxidea taxus</i> American badger	-/SSC	Majority of northern, western, and central United States south to Baja California.	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.	<b>Possible.</b> Suitable habitat is present at maintenance sites that lack dense vegetation and tree cover in San Francisco Bay area, Central Valley, and Sierra Nevada foothills.	1-77, 79-126, 146-152, 182-183
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST	San Joaquin Valley and adjacent open foothills to the west, records extend from Kern County north to Contra Costa County.	Annual grasslands or grassy open stages with scattered shrubby vegetation (saltbush scrub and oak savanna). Need loose-textured sandy soils for burrowing, and suitable prey base	<b>Possible.</b> Suitable habitat is present in uplands adjacent to maintenance sites in eastern portions of Contra Costa County in the San Francisco Bay area. There are 2 CNDDDB occurrence records from the area south of Antioch within 2 miles of the maintenance sites.	120-125

**“Potential to Occur” Categories Definitions**

Possible = record is known from within 2 miles of the maintenance sites or was observed in the maintenance area, and suitable habitat is present in the maintenance area.

Not expected = record known from within 2 miles of the maintenance sites but only marginal habitat exists in the maintenance area, but the occurrence is outside of the maintenance area.

None = maintenance area is outside of species’ range, record is possibly or presumed extirpated, or no marginal habitat present.

**Status Legend**

**Federal**

FE = federally endangered  
FT = federally threatened  
FPE = federally proposed endangered  
FPT = federally proposed threatened

**State**

SR = state rare  
SE = state endangered  
ST = state threatened  
FP = fully protected

**WBWG (Western Bat Working Group) Priority**

(available: <http://wbwg.org/matrices/species-matrix/>)  
High = species “considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective

FC = federal candidate for listing as threatened or endangered

FD = federally delisted

SSC = species of special concern

SC = state candidate

conservation actions being implemented should a commitment to management exist. Species is imperiled or are at high risk of imperilment.”

Moderate = species warrants “evaluation, more research, and conservation actions of both the specie and possible threats. The lack of meaningful information is a major obstacle in adequately assessing species’ status and should be considered a threat.”

## **Appendix D**

### **Special-Status Fish Species**

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**Appendix D. Special-Status Fish Species**

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<b>Fish</b>					
<i>Acipenser medirostris</i> Green Sturgeon, Southern DPS	FT/SSC	Year-round off Pacific Coast from Graves Harbor, Alaska south to Monterey Bay, including San Francisco Bay and Delta. Spawn within tributaries of Sacramento and Feather Rivers.	Spawns at temperatures between 8–14 degrees Celsius. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock. Occasionally reported in the San Joaquin River upstream from Stockton <sup>1</sup> .	<b>Possible.</b> Suitable migration habitat exists at maintenance sites on the Sacramento-San Joaquin Delta sloughs.	156, 119 –123, 183, 182, 109, 108, 104, 103, 81, 80,
<i>Archoplites interruptus</i> Sacramento perch	FT/ST	Native to Central Valley, Clear Lake, Alameda Creek, and Calaveras Reservoir, but introduced throughout several watershed in California. Known populations in Clear Lake and Alameda Creek/Calaveras Reservoir.	Adults found in vegetated sloughs, pools in slow rivers and lakes, and warm ponds and impoundments.	<b>Possible.</b> Suitable habitat occurs at maintenance sites on freshwater portions of the San Joaquin River, lower Calaveras River, and their tributaries.	78, 80 – 100, 105, 108, 109, 117, 118, 124, 120, 182
<i>Eucyclogobius newberryi</i> Tidewater Goby	FE/SSC	Del Norte County to Del Mar in San Diego County.	Coastal lagoons and brackish bays at freshwater stream mouths.	<b>None.</b> Maintenance sites are located outside of the species range, which is located on the coastal side of San Francisco, San Mateo Peninsula, and Marin County nearest to the maintenance sites.	

<sup>1</sup> Jackson, Z. J., and J. P. Van Eenennaam. 2013. 2012 San Joaquin River sturgeon spawning survey. Stockton Fish and Wildlife Office, Anadromous Fish Restoration Program, U.S. Fish and Wildlife Service, Lodi, California



Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Hypomesus transpacificus</i> Delta smelt	FT/SSC	San Francisco Bay to Sacramento-San Joaquin Delta.	Freshwater streams to tidally influenced sloughs and channels.	<b>Possible.</b> Suitable habitat exists at maintenance sites along tidally influenced sloughs in the Sacramento-San Joaquin Delta.	182, 145, 144, 142, 140, 120, 128 – 133, 118-124, 108, 109, 104, 103, 80 – 100, 78
<i>Oncorhynchus mykiss</i> Steelhead - Central Valley DPS (population 11) Central Coast DPS (population 8)	FT/ FT/-	Sacramento and San Joaquin river systems and tributaries/Russian River to Aptos Creek (includes San Francisco and San Pablo bays). Coastal rivers and stream from the Russian River to and including Aptos Creek, as well as all drainages of San Francisco and San Pablo bays east to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers.	(all DPS) Require clean, cold water with near DO saturation levels over loose silt-free gravel beds with water temperatures between 15 and 24° C for spawning.	<b>Present.</b> Species documented in the Mokelumne River. Suitable habitat exists at maintenance sites located along the San Joaquin River, Calaveras, and their tributaries. <b>Possible.</b> Suitable habitat exists at maintenance sites located along Pinole Creek, Pacheco Creek, Marsh Creek and their unblocked perennial tributaries.	80, 81, 103, 104, 108, 109, 120, 182 156, 157

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Oncorhynchus tshawytscha</i> Chinook Salmon, California coast ESU (population 17); Central Valley spring-run ESU (population 6); Sacramento River winter-run ESU (population 7) Central Valley fall/late fall-run ESU (population 13)	FT/-; FT/ST; FE/SE -/SSC	Coastal rivers and streams south of the Klamath River to and including the Russian River; Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries.; Sacramento River below Keswick Dam, but does not spawn in tributary streams. Sacramento and San Joaquin Rivers and their tributaries.	(all ESUs) Require clean, cold water over loose silt-free gravel beds with water temperatures between 5 and 19° C for spawning.	<b>None.</b> Maintenance sites are located outside of the California coast ESU range. <b>Possible.</b> Maintenance sites are located along the San Joaquin River and its tributaries, but naturally spawned spring-run ESU salmon are extirpated from the San Joaquin River system. Stray individuals from populations in the Sacramento River may occasionally occur in the San Joaquin River drainages <sup>2</sup> . <b>None.</b> Maintenance sites are located outside of the Sacramento River winter-run ESU range. <b>Present.</b> Central Valley fall/late fall-run ESU salmon are known to occur within the Mokelumne River and could occur at maintenance sites along the Calaveras and San Joaquin rivers, and their tributaries.	- 80, 81, 103, 104, 108, 109, 120, 182 - 80, 81, 103, 104, 108, 109, 120, 182

<sup>2</sup> Lindley et. al. 2004. Population Structure of Threatened and Endangered Chinook Salmon ESUs in California’s Central Valley Basin (NOAA-TM-NMFS-SWFSC-360). U.S. Department of Commerce: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center. April.

Sci. Name Common Name	Status (Fed/State)	Range	Habitat	Potential to Occur in Maintenance Program area	Project Site #(s) with Potential to Occur
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	-/SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes.	Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	<b>Possible.</b> Maintenance sites along perennial drainages and streams connected to the Sacramento-San Joaquin Delta provide suitable habitat.	78, 80 – 100, 105, 108, 109, 117, 118, 124, 120, 182, 133
<i>Spirinchus thaleichthys</i> Longfin Smelt	FC/ST, SSC	Bays, estuaries, and nearshore environments from Lake Earl to the San Francisco Bay. Includes Suisun Bay and Marsh, San Pablo Bay, San Francisco Bay, Gulf of the Farallones, and Humboldt Bay. Eastward range limited to upstream of Rio Vista on Sacramento River, Cache Slough and Medford Island on San Joaquin River.	Mid-water to near-bottom of water column in freshwater to saltwater bays, estuaries, and nearshore environments below 22°C	<b>Possible.</b> Suitable habitat exists in the maintenance sites on channels in the Sacramento-San Joaquin Delta.	103, 104, 108, 109, 120, 182

**“Potential to Occur” Categories Definitions**

Possible = record is known from within 2 miles of the maintenance sites or was observed in the maintenance area, and suitable habitat is present in the maintenance area.

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**Status Legend**

***Federal***

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FT = federally threatened  
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FPT = federally proposed threatened

***State***

SR = state rare  
SE = state endangered  
ST = state threatened  
FP = fully protected

FC = federal candidate for listing as threatened or endangered  
FD = federally delisted  
SSC = species of special concern  
SC = state candidate

**Note:** *DO = dissolved oxygen; DPS = Distinct Population Segment; ESU = Evolutionarily Significant Unit; FGC = California Fish and Game Code; MMPA = Marine Mammal Protection Act; ppt = parts per thousand; Delta = Sacrament-San Joaquin River Delta.*

**Appendix E**  
**USFWS, CNDDDB, & CNPS Species Lists**

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# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Sacramento Fish And Wildlife Office  
Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:

April 23, 2019

Consultation Code: 08ESMF00-2019-SLI-0518

Event Code: 08ESMF00-2019-E-05612

Project Name: EBMUD Mokelumne Aqueduct

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

[http://www.nwr.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html)

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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Attachment(s):

- Official Species List



## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

### **Sacramento Fish And Wildlife Office**

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
(916) 414-6600

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

### **San Francisco Bay-Delta Fish And Wildlife**

650 Capitol Mall  
Suite 8-300  
Sacramento, CA 95814  
(916) 930-5603

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## Project Summary

Consultation Code: 08ESMF00-2019-SLI-0518

Event Code: 08ESMF00-2019-E-05612

Project Name: EBMUD Mokelumne Aqueduct

Project Type: WATER SUPPLY / DELIVERY

Project Description: Mokelumne Aqueduct routine drainage maintenance.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.95400023684865N121.79136496488208W>



Counties: Alameda, CA | Calaveras, CA | Contra Costa, CA | San Joaquin, CA

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## Endangered Species Act Species

There is a total of 39 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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

## Mammals

NAME	STATUS
Riparian Brush Rabbit <i>Sylvilagus bachmani riparius</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6189">https://ecos.fws.gov/ecp/species/6189</a>	Endangered
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a>	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2873">https://ecos.fws.gov/ecp/species/2873</a>	Endangered

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## Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/1123">https://ecos.fws.gov/ecp/species/1123</a>	Threatened
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a>	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is <b>proposed</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a>	Threatened

## Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5524">https://ecos.fws.gov/ecp/species/5524</a>	Threatened
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4482">https://ecos.fws.gov/ecp/species/4482</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened
Tidewater Goby <i>Eucyclogobius newberryi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a>	Endangered

## Insects

NAME	STATUS
Bay Checkerspot Butterfly <i>Euphydryas editha bayensis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2320">https://ecos.fws.gov/ecp/species/2320</a>	Threatened
Callippe Silverspot Butterfly <i>Speyeria callippe callippe</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/3779">https://ecos.fws.gov/ecp/species/3779</a>	Endangered
Delta Green Ground Beetle <i>Elaphrus viridis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2319">https://ecos.fws.gov/ecp/species/2319</a>	Threatened
Lange's Metalmark Butterfly <i>Apodemia mormo langei</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/4382">https://ecos.fws.gov/ecp/species/4382</a>	Endangered
San Bruno Elfin Butterfly <i>Callophrys mossii bayensis</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/3394">https://ecos.fws.gov/ecp/species/3394</a>	Endangered
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a> Habitat assessment guidelines: <a href="https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf">https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf</a>	Threatened

## Crustaceans

NAME	STATUS
California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7903">https://ecos.fws.gov/ecp/species/7903</a>	Endangered
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

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## Flowering Plants

NAME	STATUS
<p>Antioch Dunes Evening-primrose <i>Oenothera deltooides ssp. howellii</i>            There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/5970">https://ecos.fws.gov/ecp/species/5970</a></p>	Endangered
<p>California Seablite <i>Suaeda californica</i>            No critical habitat has been designated for this species.            Species profile: <a href="https://ecos.fws.gov/ecp/species/6310">https://ecos.fws.gov/ecp/species/6310</a></p>	Endangered
<p>Colusa Grass <i>Neostapfia colusana</i>            There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/5690">https://ecos.fws.gov/ecp/species/5690</a></p>	Threatened
<p>Contra Costa Goldfields <i>Lasthenia conjugens</i>            There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/7058">https://ecos.fws.gov/ecp/species/7058</a></p>	Endangered
<p>Contra Costa Wallflower <i>Erysimum capitatum var. angustatum</i>            There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/7601">https://ecos.fws.gov/ecp/species/7601</a></p>	Endangered
<p>Fleshy Owl's-clover <i>Castilleja campestris ssp. succulenta</i>            There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/8095">https://ecos.fws.gov/ecp/species/8095</a></p>	Threatened
<p>Ione Manzanita <i>Arctostaphylos myrtifolia</i>            No critical habitat has been designated for this species.            Species profile: <a href="https://ecos.fws.gov/ecp/species/1806">https://ecos.fws.gov/ecp/species/1806</a></p>	Threatened
<p>Keck's Checker-mallow <i>Sidalcea keckii</i>            There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/5704">https://ecos.fws.gov/ecp/species/5704</a></p>	Endangered
<p>Large-flowered Fiddleneck <i>Amsinckia grandiflora</i>            There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.            Species profile: <a href="https://ecos.fws.gov/ecp/species/5558">https://ecos.fws.gov/ecp/species/5558</a></p>	Endangered
<p>Pallid Manzanita <i>Arctostaphylos pallida</i>            No critical habitat has been designated for this species.            Species profile: <a href="https://ecos.fws.gov/ecp/species/8292">https://ecos.fws.gov/ecp/species/8292</a></p>	Threatened
<p>Palmate-bracted Bird's Beak <i>Cordylanthus palmatus</i>            No critical habitat has been designated for this species.            Species profile: <a href="https://ecos.fws.gov/ecp/species/1616">https://ecos.fws.gov/ecp/species/1616</a></p>	Endangered
<p>Presidio Clarkia <i>Clarkia franciscana</i>            No critical habitat has been designated for this species.</p>	Endangered

NAME	STATUS
Species profile: <a href="https://ecos.fws.gov/ecp/species/3890">https://ecos.fws.gov/ecp/species/3890</a>	
Robust Spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/9287">https://ecos.fws.gov/ecp/species/9287</a>	Endangered
Santa Cruz Tarplant <i>Holocarpha macradenia</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6832">https://ecos.fws.gov/ecp/species/6832</a>	Threatened
Soft Bird's-beak <i>Cordylanthus mollis</i> ssp. <i>mollis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8541">https://ecos.fws.gov/ecp/species/8541</a>	Endangered

## Critical habitats

There are 6 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> <a href="https://ecos.fws.gov/ecp/species/5524#crithab">https://ecos.fws.gov/ecp/species/5524#crithab</a>	Final
California Red-legged Frog <i>Rana draytonii</i> <a href="https://ecos.fws.gov/ecp/species/2891#crithab">https://ecos.fws.gov/ecp/species/2891#crithab</a>	Final
Contra Costa Goldfields <i>Lasthenia conjugens</i> <a href="https://ecos.fws.gov/ecp/species/7058#crithab">https://ecos.fws.gov/ecp/species/7058#crithab</a>	Final
Delta Smelt <i>Hypomesus transpacificus</i> <a href="https://ecos.fws.gov/ecp/species/321#crithab">https://ecos.fws.gov/ecp/species/321#crithab</a>	Final
Santa Cruz Tarplant <i>Holocarpha macradenia</i> <a href="https://ecos.fws.gov/ecp/species/6832#crithab">https://ecos.fws.gov/ecp/species/6832#crithab</a>	Final
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> <a href="https://ecos.fws.gov/ecp/species/498#crithab">https://ecos.fws.gov/ecp/species/498#crithab</a>	Final





## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
San Francisco Bay-Delta Fish And Wildlife  
650 Capitol Mall  
Suite 8-300  
Sacramento, CA 95814  
Phone: (916) 930-5603 Fax: (916) 930-5654  
[http://kim\\_squires@fws.gov](http://kim_squires@fws.gov)

In Reply Refer To:

April 23, 2019

Consultation Code: 08FBDT00-2019-SLI-0057

Event Code: 08FBDT00-2019-E-00395

Project Name: EBMUD Mokelumne Aqueduct

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

### **San Francisco Bay-Delta Fish And Wildlife**

650 Capitol Mall

Suite 8-300

Sacramento, CA 95814

(916) 930-5603

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

### **Sacramento Fish And Wildlife Office**

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

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## Project Summary

Consultation Code: 08FBDT00-2019-SLI-0057

Event Code: 08FBDT00-2019-E-00395

Project Name: EBMUD Mokelumne Aqueduct

Project Type: WATER SUPPLY / DELIVERY

Project Description: Mokelumne Aqueduct routine drainage maintenance.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.95400023684865N121.79136496488208W>



Counties: Alameda, CA | Calaveras, CA | Contra Costa, CA | San Joaquin, CA

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## Endangered Species Act Species

There is a total of 26 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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

### Mammals

NAME	STATUS
Riparian Brush Rabbit <i>Sylvilagus bachmani riparius</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6189">https://ecos.fws.gov/ecp/species/6189</a>	Endangered
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a>	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2873">https://ecos.fws.gov/ecp/species/2873</a>	Endangered

### Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered

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## Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5524">https://ecos.fws.gov/ecp/species/5524</a>	Threatened
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4482">https://ecos.fws.gov/ecp/species/4482</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Insects

NAME	STATUS
Delta Green Ground Beetle <i>Elaphrus viridis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2319">https://ecos.fws.gov/ecp/species/2319</a>	Threatened
Lange's Metalmark Butterfly <i>Apodemia mormo langei</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/4382">https://ecos.fws.gov/ecp/species/4382</a>	Endangered
San Bruno Elfin Butterfly <i>Callophrys mossii bayensis</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/3394">https://ecos.fws.gov/ecp/species/3394</a>	Endangered
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a>	Threatened

## Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Longhorn Fairy Shrimp <i>Branchinecta longiantenna</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/4294">https://ecos.fws.gov/ecp/species/4294</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Flowering Plants

NAME	STATUS
Antioch Dunes Evening-primrose <i>Oenothera deltoides ssp. howellii</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5970">https://ecos.fws.gov/ecp/species/5970</a>	Endangered
Colusa Grass <i>Neostapfia colusana</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5690">https://ecos.fws.gov/ecp/species/5690</a>	Threatened
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/7058">https://ecos.fws.gov/ecp/species/7058</a>	Endangered
Contra Costa Wallflower <i>Erysimum capitatum var. angustatum</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/7601">https://ecos.fws.gov/ecp/species/7601</a>	Endangered
Fleshy Owl's-clover <i>Castilleja campestris ssp. succulenta</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8095">https://ecos.fws.gov/ecp/species/8095</a>	Threatened
Large-flowered Fiddleneck <i>Amsinckia grandiflora</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5558">https://ecos.fws.gov/ecp/species/5558</a>	Endangered
Palmate-bracted Bird's Beak <i>Cordylanthus palmatus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1616">https://ecos.fws.gov/ecp/species/1616</a>	Endangered
Soft Bird's-beak <i>Cordylanthus mollis ssp. mollis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8541">https://ecos.fws.gov/ecp/species/8541</a>	Endangered

## Critical habitats

There are 3 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Antioch Dunes Evening-primrose <i>Oenothera deltoides ssp. howellii</i> <a href="https://ecos.fws.gov/ecp/species/5970#crithab">https://ecos.fws.gov/ecp/species/5970#crithab</a>	Final
Contra Costa Wallflower <i>Erysimum capitatum var. angustatum</i> <a href="https://ecos.fws.gov/ecp/species/7601#crithab">https://ecos.fws.gov/ecp/species/7601#crithab</a>	Final
Delta Smelt <i>Hypomesus transpacificus</i>	Final



NAME

STATUS

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<https://ecos.fws.gov/ecp/species/321#crithab>

CALIFORNIA DEPARTMENT OF  
**FISH and WILDLIFE** *RareFind*

**Query Summary:**

Quad **IS** (San Leandro (3712262) **OR** Hayward (3712261) **OR** Oakland East (3712272) **OR** Las Trampas Ridge (3712271) **OR** Richmond (3712283) **OR** Briones Valley (3712282) **OR** Walnut Creek (3712281) **OR** Clayton (3712188) **OR** Vine Hill (3812211) **OR** Honker Bay (3812118) **OR** Antioch North (3812117) **OR** Antioch South (3712187) **OR** Brentwood (3712186) **OR** Woodward Island (3712185) **OR** Holt (3712184) **OR** Stockton East (3712182) **OR** Stockton West (3712183) **OR** Lodi South (3812113) **OR** Waterloo (3812112) **OR** Linden (3812111) **OR** Clements (3812121) **OR** Wallace (3812028) **OR** Valley Springs (3812027))

Print

Close

**CNDDDB Element Query Results**

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
<i>Accipiter cooperii</i>	Cooper's hawk	Birds	ABNKC12040	117	2	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
<i>Accipiter striatus</i>	sharp-shinned hawk	Birds	ABNKC12020	22	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
<i>Agelaius tricolor</i>	tricolored blackbird	Birds	ABPBXB0020	952	11	None	Candidate Endangered	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
<i>Agrostis hendersonii</i>	Henderson's bent grass	Monocots	PMPOA040K0	26	1	None	None	G2Q	S2	3.2	null	Valley & foothill grassland, Vernal pool, Wetland
Alkali Meadow	Alkali Meadow	Herbaceous	CTT45310CA	8	1	None	None	G3	S2.1	null	null	Meadow & seep, Wetland
Alkali Seep	Alkali Seep	Herbaceous	CTT45320CA	10	1	None	None	G3	S2.1	null	null	Meadow & seep, Wetland
<i>Ambystoma californiense</i>	California tiger salamander	Amphibians	AAAAA01180	1188	97	Threatened	Threatened	G2G3	S2S3	null	CDFW_WL-Watch List, IUCN_VU-Vulnerable	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	Dicots	PDBOR01050	8	3	Endangered	Endangered	G1	S1	1B.1	SB_UCBBG-UC Berkeley Botanical Garden	Cismontane woodland, Valley & foothill grassland
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	Dicots	PDBOR01070	93	27	None	None	G3	S3	1B.2	BLM_S-Sensitive	Cismontane woodland, Coastal bluff scrub, Valley & foothill grassland
<i>Andrena blennospermatis</i>	Blennosperma vernal pool andrenid bee	Insects	IIIHYM35030	15	1	None	None	G2	S2	null	null	Vernal pool

<i>Andrena subapasta</i>	An andrenid bee	Insects	IIHYM35210	5	1	None	None	G1G2	S1S2	null	null	null
<i>Anniella pulchra</i>	northern California legless lizard	Reptiles	ARACC01020	375	7	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Chaparral, Coastal dunes, Coastal scrub
<i>Anomobryum julaceum</i>	slender silver moss	Bryophytes	NBMUS80010	13	1	None	None	G5?	S2	4.2	null	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest
<i>Anthicus antiochensis</i>	Antioch Dunes anthicid beetle	Insects	IICOL49020	6	1	None	None	G1	S1	null	null	Interior dunes
<i>Antrozous pallidus</i>	pallid bat	Mammals	AMACC10010	416	17	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
<i>Apodemia mormo langei</i>	Lange's metalmark butterfly	Insects	IILEPH7012	1	1	Endangered	None	G5T1	S1	null	XERCES_CI-Critically Imperiled	Interior dunes
<i>Aquila chrysaetos</i>	golden eagle	Birds	ABNKC22010	321	3	None	None	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland
<i>Archoplites interruptus</i>	Sacramento perch	Fish	AFCQB07010	5	3	None	None	G2G3	S1	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern	Aquatic, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters
<i>Arctostaphylos auriculata</i>	Mt. Diablo manzanita	Dicots	PDERI04040	17	9	None	None	G2	S2	1B.3	null	Chaparral, Cismontane woodland
<i>Arctostaphylos manzanita</i> ssp. <i>laevigata</i>	Contra Costa manzanita	Dicots	PDERI04273	10	3	None	None	G5T2	S2	1B.2	null	Chaparral
<i>Arctostaphylos myrtifolia</i>	lone manzanita	Dicots	PDERI04240	15	4	Threatened	None	G1	S1	1B.2	null	Chaparral, Cismontane woodland, lone formation
<i>Arctostaphylos pallida</i>	pallid manzanita	Dicots	PDERI04110	9	9	Threatened	Endangered	G1	S1	1B.1	null	Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub

<i>Ardea herodias</i>	great blue heron	Birds	ABNGA04010	155	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
<i>Arizona elegans occidentalis</i>	California glossy snake	Reptiles	ARADB01017	260	1	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern	null
<i>Asio flammeus</i>	short-eared owl	Birds	ABNSB13040	11	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Great Basin grassland, Marsh & swamp, Meadow & seep, Valley & foothill grassland, Wetland
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	Dicots	PDFAB0F8R1	65	9	None	None	G2T1	S1	1B.2	null	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland
<i>Athene cunicularia</i>	burrowing owl	Birds	ABNSB10010	1984	100	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	Dicots	PDCHE040B0	66	1	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub, Meadow & seep, Valley & foothill grassland
<i>Atriplex depressa</i>	brittlescale	Dicots	PDCHE042L0	60	2	None	None	G2	S2	1B.2	null	Alkali playa, Chenopod scrub, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	Dicots	PDAST11061	51	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
<i>Blepharizonia plumosa</i>	big tarplant	Dicots	PDAST1C011	53	28	None	None	G1G2	S1S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland
<i>Bombus caliginosus</i>	obscure bumble bee	Insects	IIHYM24380	181	6	None	None	G4?	S1S2	null	IUCN_VU-Vulnerable	null
<i>Bombus crotchii</i>	Crotch bumble bee	Insects	IIHYM24480	234	3	None	None	G3G4	S1S2	null	null	null
<i>Bombus occidentalis</i>	western bumble bee	Insects	IIHYM24250	282	23	None	None	G2G3	S1	null	USFS_S-Sensitive, XERCES_IM-Imperiled	null
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	Crustaceans	ICBRA03010	43	1	Endangered	None	G2	S2	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Crustaceans	ICBRA03030	767	13	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
<i>Branchinecta mesoallensis</i>	midvalley fairy shrimp	Crustaceans	ICBRA03150	128	3	None	None	G2	S2S3	null	null	Vernal pool, Wetland

<i>Branta hutchinsii leucopareia</i>	cackling (=Aleutian Canada) goose	Birds	ABNJB05035	19	1	Delisted	None	G5T3	S3	null	null	Artificial standing waters, Sacramento/San Joaquin standing waters, Valley & foothill grassland
<i>Brasenia schreberi</i>	watershield	Dicots	PDCAB01010	43	1	None	None	G5	S3	2B.3	null	Marsh & swamp, Wetland
<i>Buteo regalis</i>	ferruginous hawk	Birds	ABNKC19120	107	1	None	None	G4	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Great Basin scrub, Pinon & juniper woodlands, Valley & foothill grassland
<i>Buteo swainsoni</i>	Swainson's hawk	Birds	ABNKC19070	2473	166	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	Monocots	PMLIL0D160	52	33	None	None	G2	S2	1B.2	null	Chaparral, Cismontane woodland, Riparian woodland, Valley & foothill grassland
<i>Calycadenia hooveri</i>	Hoover's calycadenia	Dicots	PDAST1P040	37	2	None	None	G2	S2	1B.3	BLM_S-Sensitive	Cismontane woodland, Valley & foothill grassland
<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	coastal bluff morning-glory	Dicots	PDCON040D2	42	1	None	None	G4T2T3	S2S3	1B.2	null	Coastal bluff scrub, Coastal dunes, Coastal scrub, North coast coniferous forest
<i>Campanula exigua</i>	chaparral harebell	Dicots	PDCAM020A0	50	4	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Ultramafic
<i>Carex comosa</i>	bristly sedge	Monocots	PMCYP032Y0	29	1	None	None	G5	S2	2B.1	null	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley & foothill grassland, Wetland
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant	Dicots	PDAST4R0P1	98	10	None	None	G3T1T2	S1S2	1B.1	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	Birds	ABNNB03031	138	2	Threatened	None	G3T3	S2S3	null	CDFW_SSC-Species of Special Concern, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Great Basin standing waters, Sand shore, Wetland
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	Dicots	PDSCR0J0C3	68	2	None	None	G4?T2	S2	1B.2	BLM_S-Sensitive	Marsh & swamp, Salt marsh, Wetland

Chloropyron molle ssp. molle	soft salty bird's-beak	Dicots	PDSCR0J0D2	27	5	Endangered	Rare	G2T1	S1	1B.2	null	Marsh & swamp, Salt marsh, Wetland
Chloropyron palmatum	palmate-bracted bird's-beak	Dicots	PDSCR0J0J0	25	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chenopod scrub, Meadow & seep, Valley & foothill grassland, Wetland
Chorizanthe robusta var. robusta	robust spineflower	Dicots	PDPGN040Q2	20	1	Endangered	None	G2T1	S1	1B.1	BLM_S-Sensitive	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal dunes
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Dicots	PDAP10M051	17	4	None	None	G5T4T5	S2?	2B.1	null	Marsh & swamp, Salt marsh, Wetland
Circus hudsonius	northern harrier	Birds	ABNKC11011	53	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Coastal scrub, Great Basin grassland, Marsh & swamp, Riparian scrub, Valley & foothill grassland, Wetland
Cirsium andrewsii	Franciscan thistle	Dicots	PDAST2E050	31	2	None	None	G3	S3	1B.2	null	Broadleaved upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Ultramafic
Cismontane Alkali Marsh	Cismontane Alkali Marsh	Marsh	CTT52310CA	4	1	None	None	G1	S1.1	null	null	Marsh & swamp, Wetland
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Dicots	PDONA050A1	20	1	None	None	G5?T3	S3	4.3	null	Chaparral, Cismontane woodland
Clarkia franciscana	Presidio clarkia	Dicots	PDONA050H0	4	1	Endangered	Endangered	G1	S1	1B.1	SB_UCBBG-UC Berkeley Botanical Garden	Coastal scrub, Ultramafic, Valley & foothill grassland
Coastal Brackish Marsh	Coastal Brackish Marsh	Marsh	CTT52200CA	30	11	None	None	G2	S2.1	null	null	Marsh & swamp, Wetland
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	3	None	None	G3	S2.1	null	null	Marsh & swamp, Wetland
Coelus gracilis	San Joaquin dune beetle	Insects	IICOL4A020	11	1	None	None	G1	S1	null	BLM_S-Sensitive, IUCN_VU-Vulnerable	Interior dunes
Cordylanthus nidularius	Mt. Diablo bird's-beak	Dicots	PDSCR0J0F0	2	2	None	Rare	G1	S1	1B.1	BLM_S-Sensitive	Chaparral, Ultramafic
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	628	4	None	None	G3G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous

												forest, Valley & foothill grassland
Coturnicops noveboracensis	yellow rail	Birds	ABNME01010	45	4	None	None	G4	S1S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Meadow & seep
Cryptantha hooveri	Hoover's cryptantha	Dicots	PDBOR0A190	4	1	None	None	GH	SH	1A	null	Interior dunes, Valley & foothill grassland
Danaus plexippus pop. 1	monarch - California overwintering population	Insects	IILEPP2012	383	8	None	None	G4T2T3	S2S3	null	USFS_S-Sensitive	Closed-cone coniferous forest
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Dicots	PDRAN0B0A2	28	6	None	None	G3T3	S3	1B.2	null	Chaparral, Cismontane woodland, Coastal scrub, Meadow & seep
Delphinium recurvatum	recurved larkspur	Dicots	PDRAN0B1J0	100	1	None	None	G2?	S2?	1B.2	BLM_S-Sensitive	Chenopod scrub, Cismontane woodland, Valley & foothill grassland
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	10	Threatened	None	G3T2	S2	null	null	Riparian scrub
Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	Mammals	AMAFD03061	7	5	None	None	G3G4T1	S1	null	null	Chaparral, Cismontane woodland
Dirca occidentalis	western leatherwood	Dicots	PDTHY03010	71	25	None	None	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North coast coniferous forest, Riparian forest, Riparian woodland
Downingia pusilla	dwarf downingia	Dicots	PDCAM060C0	132	2	None	None	GU	S2	2B.2	null	Valley & foothill grassland, Vernal pool, Wetland
Efferia antiochi	Antioch efferian robberfly	Insects	IIDIP07010	4	2	None	None	G1G2	S1S2	null	null	Interior dunes
Egretta thula	snowy egret	Birds	ABNGA06030	20	1	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp, Meadow & seep, Riparian forest, Riparian woodland, Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	179	7	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland

<i>Emys marmorata</i>	western pond turtle	Reptiles	ARAAD02030	1362	34	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
<i>Eriastrum erterae</i>	Lime Ridge eriastrum	Dicots	PDPLM030F0	2	2	None	None	G1	S1	1B.1	null	Chaparral
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	Dicots	PDPGN083S1	26	3	None	None	G5T2	S2	1B.2	null	Chaparral, Cismontane woodland, Coastal prairie, Ultramafic, Valley & foothill grassland
<i>Eriogonum nudum</i> var. <i>psychicola</i>	Antioch Dunes buckwheat	Dicots	PDPGN0849Q	1	1	None	None	G5T1	S1	1B.1	null	Interior dunes
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat	Dicots	PDPGN085Z0	7	5	None	None	G1	S1	1B.1	null	Chaparral, Coastal scrub, Valley & foothill grassland
<i>Eryngium jepsonii</i>	Jepson's coyote-thistle	Dicots	PDAPI0Z130	19	4	None	None	G2	S2	1B.2	null	Valley & foothill grassland, Vernal pool
<i>Eryngium racemosum</i>	Delta button-celery	Dicots	PDAPI0Z0S0	26	1	None	Endangered	G1	S1	1B.1	null	Riparian scrub, Wetland
<i>Erysimum capitatum</i> var. <i>angustatum</i>	Contra Costa wallflower	Dicots	PDBRA16052	4	4	Endangered	Endangered	G5T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Interior dunes
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy	Dicots	PDPAP0A0D0	12	1	None	None	G1	S1	1B.1	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland
<i>Eucerceris ruficeps</i>	redheaded sphecid wasp	Insects	IIHYM18010	4	1	None	None	G1G3	S1S2	null	null	Interior dunes
<i>Eucyclogobius newberryi</i>	tidewater goby	Fish	AFCQN04010	127	1	Endangered	None	G3	S3	null	AFS_EN-Endangered, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters
<i>Eumops perotis californicus</i>	western mastiff bat	Mammals	AMACD02011	296	1	None	None	G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly	Insects	IILEPK4055	30	2	Threatened	None	G5T1	S1	null	XERCES_C1-Critically Imperiled	Coastal dunes, Ultramafic, Valley & foothill grassland
<i>Extriplex joaquinana</i>	San Joaquin spearscale	Dicots	PDCHE041F3	127	19	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa	Alkali playa, Chenopod scrub, Meadow & seep, Valley &



											Ana Botanic Garden	foothill grassland
Falco mexicanus	prairie falcon	Birds	ABNKD06090	460	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	57	1	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Sensitive, CDFW_FP-Fully Protected, USFWS_BCC-Birds of Conservation Concern	null
Fissidens pauperculus	minute pocket moss	Bryophytes	NBMUS2W0U0	22	1	None	None	G3?	S2	1B.2	USFS_S-Sensitive	North coast coniferous forest, Redwood
Fritillaria agrestis	stinkbells	Monocots	PMLILOV010	32	3	None	None	G3	S3	4.2	null	Chaparral, Cismontane woodland, Pinon & juniper woodlands, Ultramafic, Valley & foothill grassland
Fritillaria liliacea	fragrant fritillary	Monocots	PMLILOV0C0	82	14	None	None	G2	S2	1B.2	USFS_S-Sensitive	Cismontane woodland, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	Birds	ABPBX1201A	112	11	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Marsh & swamp
Gilia millefoliata	dark-eyed gilia	Dicots	PDPLM04130	54	1	None	None	G2	S2	1B.2	BLM_S-Sensitive	Coastal dunes
Grimmia torenii	Toren's grimmia	Bryophytes	NBMJS32330	13	2	None	None	G2	S2	1B.3	null	Chaparral, Cismontane woodland, Limestone, Lower montane coniferous forest
Haliaeetus leucocephalus	bald eagle	Birds	ABNKC10010	327	2	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Lower montane coniferous forest, Oldgrowth
Helianthella castanea	Diablo helianthella	Dicots	PDAST4M020	107	77	None	None	G2	S2	1B.2	BLM_S-Sensitive	Broadleaved upland forest, Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland

Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband	Mollusks	IMGASC2362	6	6	None	None	G3T1	S1S2	null	IUCN_DD-Data Deficient	Valley & foothill grassland
Hesperolinon breweri	Brewer's western flax	Dicots	PDLIN01030	29	11	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Dicots	PDMAL0H0R3	173	30	None	None	G5T3	S3	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
Hoita strobilina	Loma Prieta hoita	Dicots	PDFAB5Z030	34	2	None	None	G2?	S2?	1B.1	null	Chaparral, Cismontane woodland, Riparian woodland, Ultramafic
Holocarpha macradenia	Santa Cruz tarplant	Dicots	PDAST4X020	37	14	Threatened	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal prairie, Coastal scrub, Valley & foothill grassland
Horkelia cuneata var. sericea	Kellogg's horkelia	Dicots	PDROS0W043	58	1	None	None	G4T1?	S1?	1B.1	USFS_S-Sensitive	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub
Horkelia parryi	Parry's horkelia	Dicots	PDROS0W0C0	44	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, lone formation
Hydroprogne caspia	Caspian tern	Birds	ABNNM08020	3	1	None	None	G5	S4	null	IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	null
Hygrotus curvipes	curved-foot hygrotus diving beetle	Insects	IICOL38030	21	1	None	None	G1	S1	null	null	Aquatic
Hypomesus transpacificus	Delta smelt	Fish	AFCHB01040	27	6	Threatened	Endangered	G1	S1	null	AFS_TH-Threatened, IUCN_EN-Endangered	Aquatic, Estuary
Icteria virens	yellow-breasted chat	Birds	ABPBX24010	97	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Idiostatus middlekauffi	Middlekauff's shieldback katydid	Insects	IORT31010	1	1	None	None	G1G2	S1	null	IUCN_CR-Critically Endangered	Interior dunes
lone Chaparral	lone Chaparral	Scrub	CTT37D00CA	12	5	None	None	G1	S1.1	null	null	Chaparral
Isocoma arguta	Carquinez goldenbush	Dicots	PDAST57050	14	1	None	None	G1	S1	1B.1	null	Valley & foothill grassland
Juglans hindsii	Northern California black walnut	Dicots	PDJUG02040	5	1	None	None	G1	S1	1B.1	SB_USDA-US Dept of Agriculture	Riparian forest, Riparian woodland
Lanius ludovicianus	loggerhead shrike	Birds	ABPBR01030	109	1	None	None	G4	S4	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest, Desert wash, Joshua tree woodland, Mojavean desert scrub, Pinon & juniper woodlands, Riparian woodland, Sonoran desert scrub

<i>Lasionycteris noctivagans</i>	silver-haired bat	Mammals	AMACC02010	139	2	None	None	G5	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest
<i>Lasiurus blossevillii</i>	western red bat	Mammals	AMACC05060	128	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
<i>Lasiurus cinereus</i>	hoary bat	Mammals	AMACC05030	238	6	None	None	G5	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
<i>Lasthenia conjugens</i>	Contra Costa goldfields	Dicots	PDAST5L040	36	4	Endangered	None	G1	S1	1B.1	SB_UCBBG-UC Berkeley Botanical Garden	Alkali playa, Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland
<i>Laterallus jamaicensis coturniculus</i>	California black rail	Birds	ABNME03041	303	41	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	Dicots	PDFAB250D2	133	45	None	None	G5T2	S2	1B.2	SB_BerrySB-Berry Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
<i>Legenere limosa</i>	legenere	Dicots	PDCAM0C010	83	6	None	None	G2	S2	1B.1	BLM_S-Sensitive	Vernal pool, Wetland
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	325	3	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	Dicots	PDAP119030	197	73	None	Rare	G2	S2	1B.1	null	Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
<i>Limosella australis</i>	Delta mudwort	Dicots	PDSCR10030	59	15	None	None	G4G5	S2	2B.1	null	Brackish marsh, Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
<i>Linderiella occidentalis</i>	California linderiella	Crustaceans	ICBRA06010	438	12	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
<i>Lytta molesta</i>	molestan blister beetle	Insects	ILCOL4C030	17	2	None	None	G2	S2	null	null	Vernal pool, Wetland
<i>Madia radiata</i>	showy golden madia	Dicots	PDAST650E0	100	2	None	None	G3	S3	1B.1	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Cismontane woodland, Valley & foothill grassland

Malacothamnus hallii	Hall's bush-mallow	Dicots	PDMAL0Q0F0	36	6	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral, Coastal scrub, Ultramafic
Masticophis lateralis euryxanthus	Alameda whipsnake	Reptiles	ARADB21031	164	103	Threatened	Threatened	G4T2	S2	null	null	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Meconella oregana	Oregon meconella	Dicots	PDPAP0G030	9	4	None	None	G2G3	S2	1B.1	null	Coastal prairie, Coastal scrub
Melospiza melodia	song sparrow ("Modesto" population)	Birds	ABPBXA3010	92	13	None	None	G5	S3?	null	CDFW_SSC-Species of Special Concern	null
Melospiza melodia maxillaris	Suisun song sparrow	Birds	ABPBXA301K	36	21	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Marsh & swamp, Wetland
Melospiza melodia pusillula	Alameda song sparrow	Birds	ABPBXA301S	38	11	None	None	G5T2?	S2S3	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Salt marsh
Melospiza melodia samuelis	San Pablo song sparrow	Birds	ABPBXA301W	41	4	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Salt marsh
Metapogon hurdi	Hurd's metapogon robberfly	Insects	IIDIP08010	3	1	None	None	G1G2	S1S2	null	null	Interior dunes
Microcina leei	Lee's micro-blind harvestman	Arachnids	ILARA47040	2	2	None	None	G1	S1	null	null	Valley & foothill grassland
Microcina lumi	Lum's micro-blind harvestman	Arachnids	ILARA47050	2	2	None	None	G1	S1	null	null	Ultramafic, Valley & foothill grassland
Microtus californicus sanpabloensis	San Pablo vole	Mammals	AMAFF11034	8	7	None	None	G5T1T2	S1S2	null	CDFW_SSC-Species of Special Concern	Marsh & swamp, Valley & foothill grassland, Wetland
Monolopia gracilens	woodland woollythreads	Dicots	PDAST6G010	68	6	None	None	G3	S3	1B.2	null	Broadleaved upland forest, Chaparral, Cismontane woodland, North coast coniferous forest, Ultramafic, Valley & foothill grassland
Myrmosula pacifica	Antioch multilid wasp	Insects	IIHYM15010	3	1	None	None	GH	SH	null	null	Interior dunes
Navarretia gowenii	Lime Ridge navarretia	Dicots	PDPLM0C120	3	2	None	None	G1	S1	1B.1	null	Chaparral
Navarretia nigelliformis ssp. radians	shining navarretia	Dicots	PDPLM0C0J2	103	3	None	None	G4T2	S2	1B.2	BLM_S-Sensitive	Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland
Navarretia paradoxiclara	Patterson's navarretia	Dicots	PDPLM0C150	11	3	None	None	G2	S2	1B.3	null	Meadow & seep, Ultramafic

Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	Mammals	AMAFF08082	38	4	None	None	G5T2T3	S2S3	null	CDFW_SSC-Species of Special Concern	Chaparral, Redwood
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	Marsh	CTT52110CA	53	4	None	None	G3	S3.2	null	null	Marsh & swamp, Wetland
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	1	None	None	G3	S3.1	null	null	Vernal pool, Wetland
Northern Maritime Chaparral	Northern Maritime Chaparral	Scrub	CTT37C10CA	17	3	None	None	G1	S1.2	null	null	Chaparral
Nycticorax nycticorax	black-crowned night heron	Birds	ABNGA11010	37	1	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp, Riparian forest, Riparian woodland, Wetland
Nyctinomops macrotis	big free-tailed bat	Mammals	AMACD04020	32	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_MH-Medium-High Priority	null
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Dicots	PDONA0C0B4	10	8	Endangered	Endangered	G5T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Interior dunes
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	3	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Pandion haliaetus	osprey	Birds	ABNKC01010	500	1	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Perdita scitula antiochensis	Antioch andrenid bee	Insects	IIHYM01031	2	2	None	None	G1T1	S1	null	null	Interior dunes
Perognathus inornatus	San Joaquin Pocket Mouse	Mammals	AMAFD01060	126	5	None	None	G2G3	S2S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Cismontane woodland, Mojavean desert scrub, Valley & foothill grassland
Phacelia phacelioides	Mt. Diablo phacelia	Dicots	PDHYD0C3Q0	16	5	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic
Phalacrocorax auritus	double-crested cormorant	Birds	ABNFD01020	39	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Philanthus nasalis	Antioch specid wasp	Insects	IIHYM20010	4	1	None	None	G1	S1	null	null	Interior dunes
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	775	3	None	None	G3G4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Plagiobothrys diffusus	San Francisco popcornflower	Dicots	PDBOR0V080	17	1	None	Endangered	G1Q	S1	1B.1	null	Coastal prairie, Valley & foothill grassland

Plagiobothrys glaber	hairless popcornflower	Dicots	PDBOR0V0B0	9	1	None	None	GH	SH	1A	null	Marsh & swamp, Salt marsh, Vernal pool, Wetland
Plagiobothrys hystriculus	bearded popcornflower	Dicots	PDBOR0V0H0	14	1	None	None	G2	S2	1B.1	null	Valley & foothill grassland, Vernal pool, Wetland
Pogonichthys macrolepidotus	Sacramento splittail	Fish	AFCJB34020	15	3	None	None	GNR	S3	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered	Aquatic, Estuary, Freshwater marsh, Sacramento/San Joaquin flowing waters
Polygonum marinense	Marin knotweed	Dicots	PDPGN0L1C0	32	1	None	None	G2Q	S2	3.1	null	Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Rallus obsoletus obsoletus	California Ridgway's rail	Birds	ABNME05011	99	26	Endangered	Endangered	G5T1	S1	null	CDFW_FP-Fully Protected, NABCI_RWL-Red Watch List	Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2366	12	None	Candidate Threatened	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1516	59	Threatened	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Reithrodontomys raviventris	salt-marsh harvest mouse	Mammals	AMAFF02040	144	39	Endangered	Endangered	G1G2	S1S2	null	CDFW_FP-Fully Protected, IUCN_EN-Endangered	Marsh & swamp, Wetland
Riparia riparia	bank swallow	Birds	ABPAU08010	298	1	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Rynchops niger	black skimmer	Birds	ABNNM14010	7	1	None	None	G5	S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern,	Alkali playa, Sand shore

												NABCI_YWL- Yellow Watch List, USFWS_BCC- Birds of Conservation Concern	
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	126	2	None	None	G3	S3	1B.2	BLM_S-Sensitive	Marsh & swamp, Wetland	
Sanicula maritima	adobe sanicle	Dicots	PDAP11Z0D0	17	1	None	Rare	G2	S2	1B.1	USFS_S-Sensitive	Chaparral, Coastal prairie, Meadow & seep, Ultramafic, Valley & foothill grassland	
Sanicula saxatilis	rock sanicle	Dicots	PDAP11Z0H0	9	4	None	Rare	G2	S2	1B.2	BLM_S-Sensitive	Broadleaved upland forest, Chaparral, Valley & foothill grassland	
Scapanus latimanus parvus	Alameda Island mole	Mammals	AMABB02031	8	2	None	None	G5THQ	SH	null	CDFW_SSC-Species of Special Concern	Valley & foothill grassland	
Scutellaria galericulata	marsh skullcap	Dicots	PDLAM1U0J0	39	1	None	None	G5	S2	2B.2	null	Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Wetland	
Senecio aphanactis	chaparral ragwort	Dicots	PDAST8H060	82	1	None	None	G3	S2	2B.2	null	Chaparral, Cismontane woodland, Coastal scrub	
Serpentine Bunchgrass	Serpentine Bunchgrass	Herbaceous	CTT42130CA	22	3	None	None	G2	S2.2	null	null	Valley & foothill grassland	
Setophaga petechia	yellow warbler	Birds	ABPBX03010	72	1	None	None	G5	S3S4	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Riparian forest, Riparian scrub, Riparian woodland	
Sidalcea keckii	Keck's checkerbloom	Dicots	PDMAL110D0	16	1	Endangered	None	G2	S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Cismontane woodland, Ultramafic, Valley & foothill grassland	
Sorex vagrans halicoetes	salt-marsh wandering shrew	Mammals	AMABA01071	12	5	None	None	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Marsh & swamp, Wetland	
Spea hammondii	western spadefoot	Amphibians	AAABF02020	818	10	None	None	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland	
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Dicots	PDCAR0W062	22	3	None	None	G5T2	S2	1B.2	null	Marsh & swamp, Meadow & seep	
Sphecodogastra antiochensis	Antioch Dunes halciticid bee	Insects	IIHYM78010	1	1	None	None	G1	S1	null	XERCES_CI-Critically Imperiled	Interior dunes	
Spirinchus thaleichthys	longfin smelt	Fish	AFCHB03010	46	15	Candidate	Threatened	G5	S1	null	CDFW_SSC-Species of Special Concern	Aquatic, Estuary	
Stabilized Interior Dunes	Stabilized Interior Dunes	Dune	CTT23100CA	2	1	None	None	G1	S1.1	null	null	Interior dunes	
Sternula antillarum browni	California least tern	Birds	ABNNM08103	75	6	Endangered	Endangered	G4T2T3Q	S2	null	CDFW_FP-Fully Protected, NABCI_RWL-	Alkali playa, Wetland	

											Red Watch List	
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	Dicots	PDBRA2G012	103	10	None	None	G2T2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Streptanthus hispidus	Mt. Diablo jewelflower	Dicots	PDBRA2G0M0	8	8	None	None	G2	S2	1B.3	null	Chaparral, Valley & foothill grassland
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Monocots	PMPOT03091	21	2	None	None	G5T5	S2S3	2B.2	null	Marsh & swamp, Wetland
Suaeda californica	California seablite	Dicots	PDCHE0P020	18	4	Endangered	None	G1	S1	1B.1	null	Freshwater marsh, Marsh & swamp, Wetland
Symphytotrichum lentum	Suisun Marsh aster	Dicots	PDASTE8470	175	54	None	None	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Brackish marsh, Freshwater marsh, Marsh & swamp, Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	588	5	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, lone formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane



												coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
<i>Thamnophis gigas</i>	giant gartersnake	Reptiles	ARADB36150	366	8	Threatened	Threatened	G2	S2	null	IUCN_VU-Vulnerable	Marsh & swamp, Riparian scrub, Wetland
<i>Trifolium hydrophilum</i>	saline clover	Dicots	PDFAB400R5	49	6	None	None	G2	S2	1B.2	null	Marsh & swamp, Valley & foothill grassland, Vernal pool, Wetland
<i>Triquetrella californica</i>	coastal triquetrella	Bryophytes	NBMUS7S010	13	1	None	None	G2	S2	1B.2	USFS_S-Sensitive	Coastal bluff scrub, Coastal scrub
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum	Dicots	PDBRA2R010	18	3	None	None	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Valley & foothill grassland
<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	Mollusks	IMGASJ7040	39	2	None	None	G2	S2	null	IUCN_DD-Data Deficient	Aquatic, Brackish marsh, Estuary, Lagoon, Marsh & swamp, Salt marsh, Wetland
Valley Needlegrass Grassland	Valley Needlegrass Grassland	Herbaceous	CTT42110CA	45	2	None	None	G3	S3.1	null	null	Valley & foothill grassland
Valley Oak Woodland	Valley Oak Woodland	Woodland	CTT71130CA	91	1	None	None	G3	S2.1	null	null	Cismontane woodland
<i>Viburnum ellipticum</i>	oval-leaved viburnum	Dicots	PDCPR07080	38	4	None	None	G4G5	S3?	2B.3	null	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Vireo bellii pusillus</i>	least Bell's vireo	Birds	ABPBW01114	497	1	Endangered	Endangered	G5T2	S2	null	IUCN_NT-Near Threatened, NABCI_YWL-Yellow Watch List	Riparian forest, Riparian scrub, Riparian woodland
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	Mammals	AMAJA03041	1017	9	Endangered	Threatened	G4T2	S2	null	null	Chenopod scrub, Valley & foothill grassland
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	Birds	ABPBXB3010	13	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Marsh & swamp, Wetland

## Plant List

## Inventory of Rare and Endangered Plants

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Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
<a href="#">Agrostis hendersonii</a>	Henderson's bent grass	Poaceae	annual herb	Apr-Jun	3.2	S2	G2Q
<a href="#">Amsinckia grandiflora</a>	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
<a href="#">Amsinckia lunaris</a>	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
<a href="#">Androsace elongata ssp. acuta</a>	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
<a href="#">Anomobryum julaceum</a>	slender silver moss	Bryaceae	moss		4.2	S2	G5?
<a href="#">Arabis blepharophylla</a>	coast rockcress	Brassicaceae	perennial herb	Feb-May	4.3	S4	G4
<a href="#">Arctostaphylos auriculata</a>	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.3	S2	G2
<a href="#">Arctostaphylos manzanita ssp. laevigata</a>	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar(Apr)	1B.2	S2	G5T2
<a href="#">Arctostaphylos myrtifolia</a>	lone manzanita	Ericaceae	perennial evergreen shrub	Nov-Mar	1B.2	S1	G1
<a href="#">Arctostaphylos pallida</a>	pallid manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	1B.1	S1	G1
<a href="#">Astragalus tener var. tener</a>	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
<a href="#">Atriplex cordulata var. cordulata</a>	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
<a href="#">Atriplex coronata var. coronata</a>	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
<a href="#">Atriplex depressa</a>	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
<a href="#">Balsamorhiza macrolepis</a>	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
<a href="#">Blepharizonia plumosa</a>	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S1S2	G1G2

<a href="#"><u>Brasenia schreberi</u></a>	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
<a href="#"><u>Brodiaea rosea ssp. vallicola</u></a>	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr- May(Jun)	4.2	S3	G5T3
<a href="#"><u>Calandrinia breweri</u></a>	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar- Jun	4.2	S4	G4
<a href="#"><u>Calochortus pulchellus</u></a>	Mt. Diablo fairy- lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
<a href="#"><u>Calochortus umbellatus</u></a>	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S3?	G3?
<a href="#"><u>Calycadenia hooveri</u></a>	Hoover's calycadenia	Asteraceae	annual herb	Jul-Sep	1B.3	S2	G2
<a href="#"><u>Calystegia purpurata ssp. saxicola</u></a>	coastal bluff morning-glory	Convolvulaceae	perennial herb	(Mar)Apr- Sep	1B.2	S2S3	G4T2T3
<a href="#"><u>Campanula exigua</u></a>	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
<a href="#"><u>Carex comosa</u></a>	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
<a href="#"><u>Castilleja ambigua var. ambigua</u></a>	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	4.2	S3S4	G4T4
<a href="#"><u>Centromadia parryi ssp. congdonii</u></a>	Congdon's tarplant	Asteraceae	annual herb	May- Oct(Nov)	1B.1	S1S2	G3T1T2
<a href="#"><u>Centromadia parryi ssp. rudis</u></a>	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
<a href="#"><u>Chloropyron maritimum ssp. palustre</u></a>	Point Reyes bird's- beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	1B.2	S2	G4?T2
<a href="#"><u>Chloropyron molle ssp. molle</u></a>	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	1B.2	S1	G2T1
<a href="#"><u>Chloropyron palmatum</u></a>	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
<a href="#"><u>Chorizanthe robusta var. robusta</u></a>	robust spineflower	Polygonaceae	annual herb	Apr-Sep	1B.1	S1	G2T1
<a href="#"><u>Cicuta maculata var. bolanderi</u></a>	Bolander's water- hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2?	G5T4T5
<a href="#"><u>Cirsium andrewsii</u></a>	Franciscan thistle	Asteraceae	perennial herb	Mar-Jul	1B.2	S3	G3
<a href="#"><u>Clarkia concinna ssp. automixa</u></a>	Santa Clara red ribbons	Onagraceae	annual herb	(Apr)May- Jun(Jul)	4.3	S3	G5?T3
<a href="#"><u>Clarkia franciscana</u></a>	Presidio clarkia	Onagraceae	annual herb	May-Jul	1B.1	S1	G1
<a href="#"><u>Collomia diversifolia</u></a>	serpentine collomia	Polemoniaceae	annual herb	May-Jun	4.3	S4	G4
<a href="#"><u>Convolvulus simulans</u></a>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
<a href="#"><u>Cordylanthus nidularius</u></a>	Mt. Diablo bird's- beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Aug	1B.1	S1	G1
<a href="#"><u>Cryptantha hooveri</u></a>	Hoover's cryptantha	Boraginaceae	annual herb	Apr-May	1A	SH	GH

<a href="#">Delphinium californicum ssp. interius</a>	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
<a href="#">Delphinium recurvatum</a>	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
<a href="#">Dirca occidentalis</a>	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	1B.2	S2	G2
<a href="#">Downingia pusilla</a>	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
<a href="#">Eleocharis parvula</a>	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	4.3	S3	G5
<a href="#">Eriastrum ertterae</a>	Lime Ridge eriastrum	Polemoniaceae	annual herb	Jun-Jul	1B.1	S1	G1
<a href="#">Eriogonum luteolum var. caninum</a>	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	1B.2	S2	G5T2
<a href="#">Eriogonum nudum var. psychicola</a>	Antioch Dunes buckwheat	Polygonaceae	perennial herb	Jul-Oct	1B.1	S1	G5T1
<a href="#">Eriogonum truncatum</a>	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	1B.1	S1	G1
<a href="#">Eriophyllum jepsonii</a>	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	4.3	S3	G3
<a href="#">Eryngium jepsonii</a>	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
<a href="#">Eryngium racemosum</a>	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
<a href="#">Erysimum capitatum var. angustatum</a>	Contra Costa wallflower	Brassicaceae	perennial herb	Mar-Jul	1B.1	S1	G5T1
<a href="#">Eschscholzia rhombipetala</a>	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
<a href="#">Extriplex joaquinana</a>	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
<a href="#">Fissidens pauperculus</a>	minute pocket moss	Fissidentaceae	moss		1B.2	S2	G3?
<a href="#">Fritillaria agrestis</a>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
<a href="#">Fritillaria liliacea</a>	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
<a href="#">Galium andrewsii ssp. gatense</a>	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	Apr-Jul	4.2	S3	G5T3
<a href="#">Gilia millefoliata</a>	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2
<a href="#">Grimmia torenii</a>	Toren's grimmia	Grimmiaceae	moss		1B.3	S2	G2
<a href="#">Helianthella castanea</a>	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
<a href="#">Hesperevax caulescens</a>	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
<a href="#">Hesperolinon breweri</a>	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2	G2
<a href="#">Hibiscus lasiocarpus var. occidentalis</a>	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3

<a href="#">Hoita strobilina</a>	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-Oct)	1B.1	S2?	G2?
<a href="#">Holocarpha macradenia</a>	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	1B.1	S1	G1
<a href="#">Horkelia cuneata var. sericea</a>	Kellogg's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.1	S1?	G4T1?
<a href="#">Horkelia parryi</a>	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.2	S2	G2
<a href="#">Iris longipetala</a>	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May	4.2	S3	G3
<a href="#">Isocoma arguta</a>	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	1B.1	S1	G1
<a href="#">Juglans hindsii</a>	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
<a href="#">Lasthenia conjugens</a>	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
<a href="#">Lathyrus jepsonii var. jepsonii</a>	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
<a href="#">Legenere limosa</a>	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
<a href="#">Leptosiphon acicularis</a>	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	4.2	S4?	G4?
<a href="#">Lilaeopsis masonii</a>	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
<a href="#">Limosella australis</a>	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
<a href="#">Madia radiata</a>	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S3	G3
<a href="#">Malacothamnus hallii</a>	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2
<a href="#">Meconella oregana</a>	Oregon meconella	Papaveraceae	annual herb	Mar-Apr	1B.1	S2	G2G3
<a href="#">Micropus amphibolus</a>	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4
<a href="#">Monardella antonina ssp. antonina</a>	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	3	S1S3	G4T1T3Q
<a href="#">Monolopia gracilens</a>	woodland woolythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3
<a href="#">Navarretia gowenii</a>	Lime Ridge navarretia	Polemoniaceae	annual herb	May-Jun	1B.1	S1	G1
<a href="#">Navarretia heterandra</a>	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	4.3	S4	G4
<a href="#">Navarretia nigelliformis ssp. nigelliformis</a>	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
<a href="#">Navarretia nigelliformis ssp. radians</a>	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
<a href="#">Navarretia paradoxiclara</a>	Patterson's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	1B.3	S2	G2
<a href="#">Neostapfia colusana</a>	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
<a href="#">Oenothera deltoides ssp. howellii</a>	Antioch Dunes evening-primrose	Onagraceae	perennial herb	Mar-Sep	1B.1	S1	G5T1

<a href="#">Phacelia phacelioides</a>	Mt. Diablo phacelia	Hydrophyllaceae	annual herb	Apr-May	1B.2	S2	G2
<a href="#">Piperia michaelii</a>	Michael's rein orchid	Orchidaceae	perennial herb	Apr-Aug	4.2	S3	G3
<a href="#">Plagiobothrys diffusus</a>	San Francisco popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.1	S1	G1Q
<a href="#">Plagiobothrys glaber</a>	hairless popcornflower	Boraginaceae	annual herb	Mar-May	1A	SH	GH
<a href="#">Plagiobothrys hystriculus</a>	bearded popcornflower	Boraginaceae	annual herb	Apr-May	1B.1	S2	G2
<a href="#">Polygonum marinense</a>	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	3.1	S2	G2Q
<a href="#">Ranunculus lobbii</a>	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
<a href="#">Sagittaria sanfordii</a>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
<a href="#">Sanicula maritima</a>	adobe sanicle	Apiaceae	perennial herb	Feb-May	1B.1	S2	G2
<a href="#">Sanicula saxatilis</a>	rock sanicle	Apiaceae	perennial herb	Apr-May	1B.2	S2	G2
<a href="#">Scutellaria galericulata</a>	marsh skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G5
<a href="#">Senecio aphanactis</a>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
<a href="#">Senecio hydrophiloides</a>	sweet marsh ragwort	Asteraceae	perennial herb	May-Aug	4.2	S3	G5
<a href="#">Spergularia macrotheca var. longistyla</a>	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	1B.2	S2	G5T2
<a href="#">Streptanthus albidus ssp. peramoenus</a>	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	1B.2	S2	G2T2
<a href="#">Streptanthus hispidus</a>	Mt. Diablo jewelflower	Brassicaceae	annual herb	Mar-Jun	1B.3	S2	G2
<a href="#">Stuckenia filiformis ssp. alpina</a>	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S2S3	G5T5
<a href="#">Suaeda californica</a>	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	1B.1	S1	G1
<a href="#">Symphyotrichum lentum</a>	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
<a href="#">Trifolium hydrophilum</a>	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
<a href="#">Triquetrella californica</a>	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2
<a href="#">Tropidocarpum capparideum</a>	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
<a href="#">Viburnum ellipticum</a>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

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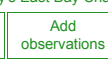

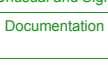

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**Appendix F**  
**CNPS East Bay Chapter's Rare, Unusual, & Significant**  
**Plants of Alameda and Contra Costa Counties**

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California Native Plant Society's East Bay Chapter's Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties


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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Nyctaginaceae	<a href="#">Abronia latifolia</a>	(historical-1894)	A1x	CEQA	Coastal Strand	Presumed EXTIRPATED	Limited/Threatened Habitat	yellow sand-verbena	<328	ALA	May-Oct		2013-06-15	
Nyctaginaceae	<a href="#">Abronia umbellata var. umbellata</a>	(historical-1937)	A1x	CEQA	Coastal Strand	Presumed EXTIRPATED	Limited/Threatened Habitat	beach sand-verbena	<328	ALA	-			
Lamiaceae	<a href="#">Acanthomintha lanceolata</a>		*A2	4.2 S3.2(CEQA) G3	Chaparral, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Santa Clara thornmint	<3937	ALA	Mar-Jun	PDLAM01020		
	<a href="#">Achnatherum lemmonii</a>		A1	CEQA	Forest, Scrub (Coastal or Interior)	Current name is Stipa lemmonii			0-0	ALA	-		2016-01-28	2016-01-28
Fabaceae	<a href="#">Acemispion denticulatus</a>	(historical-1945)	A1x	CEQA	Riparian, Miscellaneous	Presumed EXTIRPATED		meadow trefoil	<4593	CCA?	May-Jul			
Fabaceae	<a href="#">Acemispion junceus var. biolettii</a>	(historical-1945)	A1x	CEQA	Chaparral, Sand, Sandstone	Presumed EXTIRPATED		rush lotus	<1640	CCA?	Apr-Jul			
Fabaceae	<a href="#">Acemispion strigosus</a>		A2	CEQA	Chaparral, Scrub (Coastal or Interior)	Overlooked?	Small Populations	strigose trefoil	<7546	ALA, CCA	Mar-Jun			
Pteridaceae	<a href="#">Adiantum aleuticum</a>	(A. jordanii is more common)	A2	CEQA	Riparian		Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	five-finger fern	<11155	ALA, CCA	-			
Asteraceae	<a href="#">Agoseris apargioides var. apargioides</a>		A2	CEQA	Forest, Grassland (Annual or Perennial), Sand, Sandstone, Scrub (Coastal or Interior)			seaside agoseris	<328	ALA	Apr-May		2015-03-04	
Poaceae	<a href="#">Agrostis hallii</a>		A2	CEQA	Forest, Woodland			Hall's bent grass	<5906	CCA	May-Jul			2004-09-08
Chenopodiaceae	<a href="#">Allenrofea occidentalis</a>		A2	CEQA	Alkali Areas	More than 5 regions but: Threatened by grazing & hydrology changes Monitor condition of populations	Limited/Threatened Habitat Narrow Range in ALA & CCA Declining N Limit	iodine bush	<4757	ALA, CCA	Jun-Aug			
Alliaceae	<a href="#">Allium acuminatum</a>		A1	CEQA	Rock, Tallus, Scree	Loose, often stony, sometimes alluvial soil. Not common on Diablo	Limited/Threatened Habitat Disjunct	Hooker's onion	<6234	CCA	Apr-Jul			
Alliaceae	<a href="#">Allium amplexens</a>		A2	CEQA	Open Dry Slope, Serpentine or Serpentine-derived soils, Woodland, Miscellaneous		Small Populations	narrow-leaved onion	<5906	ALA, CCA	Apr-Jul			
Alliaceae	<a href="#">Allium bolanderi var. bolanderi</a>		A1	CEQA	Chaparral, Serpentine or Serpentine-derived soils, Woodland			Bolander's onion	<3281	ALA	May-Aug			
Alliaceae	<a href="#">Allium crispum</a>		A1	CEQA	Open Dry Slope, Serpentine or Serpentine-derived soils, Miscellaneous		Small Populations N Limit	crinkled onion	<2625	ALA, CCA	Mar-Jun			
Alliaceae	<a href="#">Allium falcifolium</a>		A1	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat Small Populations	sickle-leaved onion	328-6890	ALA, CCA	Apr-Jun			
Alliaceae	<a href="#">Allium peninsulare var. peninsulare</a>	(historical-1954)	A1	CEQA	Miscellaneous, Open Dry Slope			peninsular onion	<3609	ALA	Apr-May		2017-01-10	
Alliaceae	<a href="#">Allium sharsmithiae</a>		*A1	1B.3 S2.3(CEQA) G2	Serpentine or Serpentine-derived soils	*Relatively uncommon, could become	Limited/Threatened Habitat Narrow Range in	Sharsmith's onion	1312-3937	ALA	Apr-May	PMLIL02310		

						threatened locally" - John Game, 1991	ALA & CCA Small Geographical Range										
Polemoniaceae	<a href="#">Allophyllum divaricatum</a>		A2	CEQA	Chaparral, Sand, Sandstone, Woodland		Small Populations	straggling gilia	984-5906	ALA, CCA	Apr-Jun						
Polemoniaceae	<a href="#">Allophyllum gilioides subsp. violaceum</a>	(ssp. gilioides is more common)	A1	CEQA	Grassland (Annual or Perennial), Sand, Sandstone, Miscellaneous			straggling gilia	3937-9514	ALA, CCA	May-Jul						1999-09-23
Betulaceae	<a href="#">Alnus rubra</a>	(A. rhombifolia is more common)	A2	CEQA	Riparian	Also planted at JqnMlr & Tidn		red alder	<3281	ALA	Feb-Mar						
Amaranthaceae	<a href="#">Amaranthus californicus</a>		A2	CEQA	Miscellaneous Wetlands	Overlooked?		Californian amaranth	<9186	ALA, CCA	Jul-Oct						
Amaranthaceae	<a href="#">Amaranthus palmeri</a>		A1	CEQA	Miscellaneous	Also reported in Valley section of B. Ertter checklist but site unknown		Palmer's amaranth	<3937	ALA	Aug-Nov						
Amaranthaceae	<a href="#">Amaranthus powellii</a>		A2	CEQA	Miscellaneous			Powell's amaranth	<4921	ALA, CCA	Jun-Oct						
Asteraceae	<a href="#">Ambrosia chamissonis</a>		A2	CEQA	Coastal Strand, Sand, Sandstone	Includes former A. bipinnatisecta	Limited/Threatened Habitat	beach bur-sage, beach-bur	<82	ALA, CCA	May-Oct						
Lythraceae	<a href="#">Ammannia coccinea</a>		A1	CEQA	Riparian, Miscellaneous Wetlands		Limited/Threatened Habitat	long-leaved ammannia	<984	ALA, CCA	Jun-Aug						
Boraginaceae	<a href="#">Amsinckia douglasiana</a>	(historical-1938)	*A1x	4.2 S3.2(CEQA) G3	Open Dry Slope, Rock, Tallus, Scree	ID confusion? Presumed EXTIRPATED		Douglas' fiddleneck	492-5249	ALA?, CCA?	Mar-Jun	PDBOR01010	2012-09-29				
Boraginaceae	<a href="#">Amsinckia eastwoodiae</a>		A2	CEQA	Grassland (Annual or Perennial), Miscellaneous		Small Populations Declining	Eastwood's fiddleneck	33-4921	ALA, CCA	Mar-May						
Boraginaceae	<a href="#">Amsinckia grandiflora</a>		*A1	1B.1 S1(CEQA) G1 CE FE	Grassland (Annual or Perennial), Sand, Sandstone, Miscellaneous	Only 2 current natural populations here, but some planted ones	Small Geographical Range	large-flowered fiddleneck	<984	ALA, CCA	Mar-May	PDBOR01050					
Boraginaceae	<a href="#">Amsinckia lunaris</a>		*A2	1B.2 S2(CEQA) G2?	Grassland (Annual or Perennial), Woodland, Miscellaneous	More than 5 regions but: Rare, Threatened or Endangered statewide		bent-flowered fiddleneck	164-2625	ALA, CCA	Mar-Jun	PDBOR01070					
Boraginaceae	<a href="#">Amsinckia tessellata var. gloriosa</a>	(historical-1954)	A1x	CEQA	Sand, Sandstone, Miscellaneous			carrizo fiddleneck, tessellate fiddleneck	164-6398	ALA, CCA?	Mar-Jun						
Boraginaceae	<a href="#">Amsinckia tessellata var. tessellata</a>		A2	CEQA	Grassland (Annual or Perennial), Miscellaneous			desert fiddleneck, devil's lettuce	164-7480	ALA, CCA	Feb-Jun						
Boraginaceae	<a href="#">Amsinckia vernicosa</a>		A1x	CEQA	Open Dry Slope, Rock, Tallus, Scree			waxy fiddleneck, forked fiddleneck	164-4593	ALA	Mar-May						2016-03-01
Myrsinaceae	<a href="#">Anagallis minima</a>	(formerly Centunculus minimus)	A1	CEQA	Vernal Pool, Miscellaneous Wetlands			chaffweed	<3117	ALA?, CCA	Mar-May						
Primulaceae	<a href="#">Androsace elongata subsp. acuta</a>		*A2	4.2 S3.2?(CEQA) G5?T3T4	Open Dry Slope, Grassland (Annual or Perennial)	More than 2 regions but: Overlooked?	Small Populations Declining	California androsace	<3937	ALA, CCA	Feb-Apr	PDPRI02031					
Asteraceae	<a href="#">Anisocarpus madioides</a>	(formerly Madia m.)	A2	CEQA	Forest, Redwood Forest, Woodland	CqnzSt, DIVlle, & SunIP very questionable	Narrow Range in ALA & CCA Small Populations	woodland tarweed, woodland madia	<4265	ALA, CCA	Apr-Sep						
Poaceae	<a href="#">Anthoxanthum occidentale</a>	(historical-198? but not seen)	A1x	CEQA	Forest, Redwood Forest	Not found in recent attempts to relocate. Only 1 plant originally seen by Bert Johnson. Presumed EXTIRPATED		California sweet grass, vanilla grass	<2461	CCA?	Jan-Jul						
Plantaginaceae	<a href="#">Antirrhinum kelloggii</a>		A1	CEQA	Burns		Fire Follower	lax snapdragon	<4265	ALA	Apr-Jun						2015-03-04
Plantaginaceae	<a href="#">Antirrhinum multiflorum</a>		A1	CEQA	Burns, Gravel, Rock, Tallus, Scree		Narrow Range in ALA & CCA Small Populations Fire Follower	withered snapdragon	<7218	ALA	Apr-Aug						

	<a href="#">Aphyllon californicum subsp. jepsonii</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone	Taxonomic difficulties Hard to monitor as they move around and don't come up every year.	Limited/Threatened Habitat Small Populations	Jepson broom-rape	<7218	ALA, CCA	Jul-Sep			
	<a href="#">Aphyllon pinorum</a>		A1	CEQA	Open Dry Slope, Forest, Rock, Tallus, Scree			pine broom-rape	<6890	CCA	Jul-Sep			2002-05-09
	<a href="#">Aphyllon tuberosum</a>		A2	CEQA	Chaparral	5 regions but: Hard to monitor as they move around and don't come up every year Parasitic on Adenostoma	Small Populations	bulbous broom-rape	<5577	ALA, CCA	Apr-Jun			
	<a href="#">Aphyllon vallicolum</a>		A2	CEQA	Forest, Woodland	Uncommon acc. to Jepson Parasitic on Sambucus	Small Populations	California broom-rape	<984	ALA, CCA	Jul-Sep			
Ranunculaceae	<a href="#">Aquilegia eximia</a>	(A. formosa is more common)	A2	CEQA	Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Van Houtte's columbine	328-5906	ALA, CCA	May-Oct			
Brassicaceae	<a href="#">Arabis blepharophylla</a>		*A1x	4.3 S3.3?(CEQA) G3	Coastal Bluff, Rock, Tallus, Scree		Limited/Threatened Habitat Narrow Range in ALA & CCA Small Geographical Range	coast rockcross	164-984	CCA	Mar-Apr	PDBRA06040	2016-03-01	
Ericaceae	<a href="#">Arctostaphylos auriculata</a>		*A2	1B.3 S2.2(CEQA) G2	Chaparral, Sand, Sandstone	(does not occur outside of CCA county)	Small Geographical Range	Mount Diablo manzanita	492-2133	CCA	Feb-Mar	PDERI04040		
Ericaceae	<a href="#">Arctostaphylos crustacea subsp. rosei</a>	(historical-1913)	A1x	CEQA	Chaparral, Sand, Sandstone	Old record for Indian Rock. Presumed EXTIRPATED		Rose's manzanita	<1640	ALA?, CCA?	Feb-Apr			
Ericaceae	<a href="#">Arctostaphylos glandulosa subsp. cushingiana</a>		A1x	CEQA	Chaparral			CUSHING MANZANITA	538-20453	CCA	Jan-Apr		2016-03-01	2012-10-10
Ericaceae	<a href="#">Arctostaphylos manzanita subsp. laevigata</a>		*A2	1B.2 S2(CEQA) G5T2	Chaparral, Sand, Sandstone	(does not occur outside of CCA county)	Small Geographical Range	Contra Costa manzanita	787-3609	CCA	Feb-May	PDERI04273		
Ericaceae	<a href="#">Arctostaphylos pallida</a>		*A1	1B.1 S1(CEQA) G1 CE FT	Chaparral, Sand, Sandstone	More than 2 regions but: (does not occur outside of ALA and CCA counties) Populations aging. Regeneration?	Small Geographical Range	pallid manzanita	656-1509	ALA, CCA	Jan-Mar	PDERI04110		
Papaveraceae	<a href="#">Argemone munita</a>		A1	CEQA	Burns, Miscellaneous		Disjunct Fire Follower	chicalote, prickly poppy	230-9843	CCA	-			
Poaceae	<a href="#">Aristida oligantha</a>	(?)	A1?	CEQA	Open Dry Slope, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland	ID Questions May not occur in ALA or CCA	Disjunct	oldfield three-awn	<3281	CCA	Jul-Nov			
Asteraceae	<a href="#">Artemisia dracunculus</a>		A1	CEQA	Miscellaneous			tarragon	<11155	ALA	-			
Asteraceae	<a href="#">Artemisia pycnocephala</a>	(historical-1936)	A1x	CEQA	Coastal Strand, Sand, Sandstone	Not found in recent attempts. Presumed EXTIRPATED	Limited/Threatened Habitat	coastal sagewort	<656	ALA?	Jun-Sep			
Chenopodiaceae	<a href="#">Arthrocnemum subterminale</a>		A2	CEQA	Alkali Areas, Salt Marsh	Confused with S. virginica Probably more. Needs study & surveys	Limited/Threatened Habitat	Parish's glasswort	<2625	ALA, CCA	Apr-Sep			
Aristolochiaceae	<a href="#">Asarum caudatum</a>		A2	CEQA	Forest, Redwood Forest	Only 4 regions but several populations. S	Narrow Range in ALA & CCA E Limit	wild-ginger	<7218	ALA, CCA	Mar-Aug			
Apocynaceae	<a href="#">Asclepias cordifolia</a>	(A. californica is more common)	A1	CEQA	Chaparral, Grassland (Annual or Perennial), Rock, Tallus, Scree, Woodland	Range extension	S Limit	purple milkweed	164-6562	CCA	May-Jul			
Apocynaceae	<a href="#">Asclepias speciosa</a>	(A. californica is more common)	A2	CEQA	Miscellaneous	- Range extension	Narrow Range in ALA & CCA Small Populations	showy milkweed, milkweed	<6234	ALA, CCA	May-Sep			

						S Limit								
Pteridaceae	<a href="#">Aspidotis californica</a>		A2	CEQA	Rock, Tallus, Scree			California lace fern	66-4265	ALA, CCA	-			
Pteridaceae	<a href="#">Aspidotis carlotta-halliae</a>		*A1	4.2 S3.2(CEQA) G3	Serpentine or Serpentine-derived soils	Limited/Threatened Habitat	Narrow Range in ALA & CCA	Carlotta Hall's lace fern	328-4593	ALA	-			
Pteridaceae	<a href="#">Aspidotis densa</a>		A1x	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils			dense lace fern, Indian's dream	328-11155	ALA	-		2016-03-01	
Fabaceae	<a href="#">Astragalus breweri</a>		*A1	4.2 S3.2(CEQA) G3	Open Dry Slope, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils		Narrow Range in ALA & CCA	Brewer's milkvetch	<3117	ALA	Mar-Jun	PDFAB0F1J0		
Fabaceae	<a href="#">Astragalus didymocarpus var. didymocarpus</a>	(A. gambelianus is more common)	A1	CEQA	Grassland (Annual or Perennial)	Confusion with A. gambelianus	Declining	two-seeded milkvetch	<4429	ALA, CCA?	Feb-May			
Fabaceae	<a href="#">Astragalus nuttallii var. nuttallii</a>	(historical-1866)	*A1x	4.2 S3.2(CEQA) G3T3	Rock, Tallus, Scree, Sand, Sandstone	Presumed EXTIRPATED		ocean bluff milkvetch, Nuttall's milkvetch	<820	ALA?	-	PDFAB0F641		
Fabaceae	<a href="#">Astragalus nuttallii var. virgatus</a>	(historical-1881)	A1x	CEQA	Coastal Bluff, Sand, Sandstone	Presumed EXTIRPATED		Nuttall's milkvetch	<492	ALA?	-			
Fabaceae	<a href="#">Astragalus oxyphysus</a>	(?) (A. asymmetricus is more c	A1?	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior)	Confused with A. asymmetricus All Populations are suspect	Small Populations N Limit	Stanislaus milkvetch, Diablo locoweed	328-3937	ALA?, CCA?	Mar-Jun			
Fabaceae	<a href="#">Astragalus tener var. tener</a>		*A2	1B.2 S2(CEQA) G2T2	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands, Vernal Pool		Limited/Threatened Habitat	alkali milkvetch	<197	ALA	Mar-Jun	PDFAB0F8R1	2016-03-01	
Brassicaceae	<a href="#">Athysanus unilateralis</a>	(formerly Heterodraba unilateralis)	A1	CEQA	Grassland (Annual or Perennial)			heterodraba	328-2953	ALA	Feb-May		2015-03-04	
Chenopodiaceae	<a href="#">Atriplex argentea var. expansa</a>		A2	CEQA	Alkali Areas	N Limit?	Limited/Threatened Habitat	silverscale	<4921	ALA, CCA	Jul-Nov			
Chenopodiaceae	<a href="#">Atriplex cordulata var. cordulata</a>		*A1	1B.2 S2.2?(CEQA) G2?	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands				<230	ALA, CCA	Jun-Jul		2012-03-24	2012-03-24
Chenopodiaceae	<a href="#">Atriplex cordulata var. erecticaulis</a>		*A1	1B.2 S2.2(CEQA) G2	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands			Earlimart orach	<328	ALA, CCA	Aug-Sep	PDCHE042V0	2012-03-24	2012-03-24
Chenopodiaceae	<a href="#">Atriplex cordulata var. unknown</a>		*A1	1B.2 S2.2?(CEQA) G2?	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands			heartscale	<1076	ALA, CCA	Jun-Sep		2012-03-24	
Chenopodiaceae	<a href="#">Atriplex coronata var. coronata</a>		*A2	4.2 S3.2(CEQA) G4T3	Alkali Areas, Grassland (Annual or Perennial), Vernal Pool	More than 5 regions but: Rare, Threatened or Endangered statewide	Limited/Threatened Habitat	crownscale	<656	ALA, CCA	Mar-Oct	PDCHE040C3	2016-02-29	
Chenopodiaceae	<a href="#">Atriplex coronata var. vallicola</a>		*A1	1B.2 S2(CEQA) G4T2	Alkali Areas			LOST HILLS CROWNSCALE	-10-4629	ALA	Apr-Sep	PDCHE04250	2015-05-28	2015-05-28
Chenopodiaceae	<a href="#">Atriplex depressa</a>		*A2	1B.2 S2.2(CEQA) G2Q	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands	More than 5 regions but: Rare, Threatened or Endangered statewide	Limited/Threatened Habitat	brittlescale	<1050	ALA, CCA	Jun-Oct	PDCHE042L0	2016-02-29	
Chenopodiaceae	<a href="#">Atriplex dioica</a>	(formerly A. subspicata)	A1	CEQA	Alkali Areas		Limited/Threatened Habitat	thickleaf orach, saltbush	<656	ALA	Jul-Nov			
Chenopodiaceae	<a href="#">Atriplex gmelinii var. gmelinii</a>	(historical-1897)	A1x	CEQA	Alkali Areas	Presumed EXTIRPATED		Gmelin's saltbush, spear saltbush	<164	ALA?	Jun-Aug			

Chenopodiaceae	<a href="#">Atriplex lentiformis</a>		A2	CEQA	Alkali Areas, Scrub (Coastal or Interior)	Also planted at Emyvi, Mtnz, ShiRdg & SFBay Wildlife Refuge	Limited/Threatened Habitat Small Populations	big saltbush	<3937	CCA	Jul-Oct			
Chenopodiaceae	<a href="#">Atriplex leucophylla</a>		A2	CEQA	Coastal Strand, Sand, Sandstone		Limited/Threatened Habitat	beach saltbush	<197	ALA, CCA	Apr-Oct			
Chenopodiaceae	<a href="#">Atriplex minuscula</a>		*A1	1B.1 S1.1(CEQA) G1	Alkali Areas			LESSER SALTSCALE	-10-1076	ALA	Apr-Oct	PDCHE042M0	2015-03-04	2012-11-13
Chenopodiaceae	<a href="#">Atriplex serenana var. serenana</a>		A1	CEQA	Alkali Areas, Coastal Bluff			bractscale	<6890	ALA, CCA	Apr-Oct			
Asteraceae	<a href="#">Balsamorhiza deltoidea</a>		A2	CEQA	Forest, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone, Woodland	Only 2 regions but several populations	Narrow Range in ALA & CCA	deltoid balsamroot	<7874	CCA	Apr-Jul			
Asteraceae	<a href="#">Balsamorhiza macrolepis</a>		*A1	1B.2 S2(CEQA) G3G4T2	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	big-scale balsamroot	<4593	ALA	-	PDAST11061		
Berberidaceae	<a href="#">Berberis aquifolium var. dictyota</a>		A2	CEQA	Chaparral, Forest, Rock, Tallus, Scree, Scrub (Coastal or Interior), Woodland	Confusion with other vars	Small Populations	Jepson's mahonia	295-7218	ALA, CCA	Mar-May			
Berberidaceae	<a href="#">Berberis nervosa</a>	(B. pinnata is more common)	A1	CEQA	Forest			Oregon grape	<6562	ALA	Mar-Jun			
Asteraceae	<a href="#">Bidens laevis</a>		A1	CEQA	Freshwater Marsh, Miscellaneous Wetlands		Limited/Threatened Habitat Narrow Range in ALA & CCA	bur-marigold	<6562	ALA?, CCA	Aug-Nov			
Asteraceae	<a href="#">Blepharizonia laxa</a>	(formerly B. plumosa ssp. visc)	A2	CEQA	Chaparral, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland		Small Populations	big tarplant	<4921	ALA, CCA	Jul-Nov			
Asteraceae	<a href="#">Blepharizonia plumosa</a>		*A2	1B.1 S1(CEQA) G1	Grassland (Annual or Perennial), Scrub (Coastal or Interior)	More than 5 regions but: Rare, Threatened or Endangered statewide	S Limit W Limit Small Geographical Range	big tarplant	<1640	ALA, CCA	Jul-Nov	PDAST1C011	2016-02-29	
Brassicaceae	<a href="#">Boechera breweri subsp. breweri</a>	(formerly Arabis breweri)	A1	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils			Brewer's rockcress	984-7546	ALA, CCA	Mar-Jul		2015-03-04	
Cyperaceae	<a href="#">Bolboschoenus fluviatilis</a>	(formerly Scirpus f.)	A1	CEQA	Miscellaneous Wetlands	Widely scattered in interior. Rare in coast ranges. ID confusion (Note: Genus name may change to Bolboschoenus)	Limited/Threatened Habitat	river bulrush	<4265	ALA, CCA	-			
Poaceae	<a href="#">Bromus maritimus</a>	(historical-1935) (var. carina)	A1x	CEQA	Coastal Bluff, Grassland (Annual or Perennial), Sand, Sandstone	Presumed EXTIRPATED		maritime brome, seaside brome grass	<656	ALA?	Apr-Jul			
Poaceae	<a href="#">Calamagrostis koelerioides</a>	(?)	A1?	CEQA	Open Dry Slope, Grassland (Annual or Perennial), Miscellaneous	ID Questions May not occur in ALA or CCA	Small Populations	tufted pine grass	<7546	ALA	Jun-Aug			
Poaceae	<a href="#">Calamagrostis nutkaensis</a>	(historical-18??)	A1x	CEQA	Coastal Strand, Freshwater Marsh, Forest, Redwood Forest	Presumed EXTIRPATED		Pacific reed grass	<3510	ALA?	May-Aug			
Montiaceae	<a href="#">Calandrinia breweri</a>		*A2	4.2 S3.2?(CEQA) G4	Burns, Chaparral, Scrub (Coastal or Interior)		Small Populations Fire Follower	Brewer's calandrinia	<3937	CCA	Feb-May	PDPOR01020		
Geraniaceae	<a href="#">California macrophylla</a>	(formerly Erodium macrophyllum)	*A2	1B.1 S2(CEQA) G2	Grassland (Annual or Perennial),	More than 5 regions but: Rare,	Small Populations Declining	round-leaved filaree	<3937	ALA, CCA	Mar-Jul	PDGER01070	2016-02-29	

					Scrub (Coastal or Interior)	Threatened or Endangered statewide - used to be common Recent attempts to relocate most sites unsuccessful								
Liliaceae	<a href="#">Calochortus clavatus var. pallidus</a>		A1	CEQA	Chaparral, Open Dry Slope, Rock, Tallus, Scree, Serpentine or Serpentine-derived soils, Woodland		Narrow Range in ALA & CCA Small Geographical Range N Limit	club-haired mariposa-lily	<4265	ALA	Apr-Jul			
Liliaceae	<a href="#">Calochortus invenustus</a>		A1	CEQA	Open Dry Slope, Miscellaneous	in Coast Ranges	N Limit	plain mariposa-lily	4921-9843	ALA, CCA?	May-Aug			
Liliaceae	<a href="#">Calochortus pulchellus</a>		*A2	1B.2 S2.1(CEQA) G2	Chaparral, Serpentine or Serpentine-derived soils, Woodland	More than 5 regions but: Rare, Threatened or Endangered statewide (does not occur outside of ALA and CCA counties)	Small Geographical Range	Mount Diablo fairy-lantern	656-2625	ALA?, CCA	Apr-Jun	PMLIL0D160		
Liliaceae	<a href="#">Calochortus splendens</a>		A1	CEQA	Chaparral, Open Dry Slope, Grassland (Annual or Perennial)			splendid mariposa-lily	<9186	CCA	May-Jul			
Liliaceae	<a href="#">Calochortus umbellatus</a>		*A2	4.2 S3.2(CEQA) G3	Chaparral, Scrub (Coastal or Interior), Woodland	More than 5 regions but: Rare, Threatened or Endangered statewide	Small Geographical Range	Oakland star-tulip	328-2297	ALA, CCA	Mar-May	PMLIL0D1E0		

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## California Native Plant Society's East Bay Chapter's Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties

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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Asteraceae	<a href="#">Calycadenia multiglandulosa</a>		A1	CEQA	Rock, Tallus, Scree, Scrub (Coastal or Interior), Serpentine or Serpentine-derived soils	S	Narrow Range in ALA & CCA E Limit	sticky calycadenia	164-3609	ALA, CCA	May-Oct			
Convolvulaceae	<a href="#">Calystegia malacophylla subsp. pedicellata</a>		A2	CEQA	Chaparral, Serpentine or Serpentine-derived soils, Scrub (Coastal or Interior)	ID Confusion	N Limit	woolly morning-glory	984-6234	ALA, CCA	Apr-Jul			
Convolvulaceae	<a href="#">Calystegia purpurata subsp. saxicola</a>	(historical-1893) (ssp. purpur)	*A1x	1B.2 S2.2(CEQA) G4T2	Scrub (Coastal or Interior)			coastal bluff morning-glory	<328	CCA?	May-Jun	PDCON040D2		2003-11-11
Convolvulaceae	<a href="#">Calystegia sepium subsp. limnophila</a>		A2	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	hedge bindweed	<1640	ALA, CCA	May-Jul			
Convolvulaceae	<a href="#">Calystegia soldanella</a>	(historical-1893)	A1x	CEQA	Coastal Strand	Presumed EXTIRPATED	Limited/Threatened Habitat	beach morning-glory	<164	ALA?	Apr-Aug			
Onagraceae	<a href="#">Camissonia campestris subsp. campestris</a>	(historical-1940)	A1x	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone	Presumed EXTIRPATED	Narrow Range in ALA & CCA	Mojave suncup	<6562	CCA?	Mar-May			
Onagraceae	<a href="#">Camissonia strigulosa</a>		A1x	CEQA	Grassland (Annual or Perennial), Sand, Sandstone			contorted primrose	<6890	ALA, CCA	Mar-May		2016-06-12	
Onagraceae	<a href="#">Camissoniopsis cheiranthifolia subsp. cheiranthifolia</a>		A1	CEQA	Coastal Strand, Sand, Sandstone		Limited/Threatened Habitat	dune suncup	<328	ALA, CCA?	-			
Onagraceae	<a href="#">Camissoniopsis hirtella</a>		A1	CEQA	Burns, Scrub (Coastal or Interior)		Fire Follower	small primrose	<7546	ALA, CCA	Mar-Aug			
Onagraceae	<a href="#">Camissoniopsis intermedia</a>		A2	CEQA	Burns, Scrub (Coastal or Interior)		Fire Follower	small primrose	984-2625	ALA, CCA	Mar-May			
Onagraceae	<a href="#">Camissoniopsis micrantha</a>		A2	CEQA	Coastal Strand, Dry Wash, Sand, Sandstone			small primrose	<984	ALA, CCA	Mar-May			
Campanulaceae	<a href="#">Campanula exigua</a>		*A1	1B.2 S2.2(CEQA) G2	Chaparral, Rock, Tallus, Scree, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	chaparral harebell	984-4101	ALA, CCA	May-Jun	PDCAM020A0		
Campanulaceae	<a href="#">Campanula griffinii</a>		A1	CEQA	Chaparral, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Griffin's campanula	98-4429	ALA, CCA	May-Jun			
Campanulaceae	<a href="#">Campanula sharsmithiae</a>		A1	1B.2 S1.2(CEQA) G1	Rock, Tallus, Scree			SHARSMITH'S HAREBELL	4304-10764	ALA	Apr-Jun	PDCAM02100	2018-02-03	2018-02-03
Cyperaceae	<a href="#">Carex aquatilis var. dives</a>		A1	CEQA	Miscellaneous Wetlands	ID confusion E Limit?	Limited/Threatened Habitat	Sitka sedge	<3609	CCA	Jun-Sep			
Cyperaceae	<a href="#">Carex brevicaulis</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone			short-stemmed sedge	<1312	ALA	Apr-May			
Cyperaceae	<a href="#">Carex comosa</a>		*A1	2.1 S2?(CEQA) G5	Forest, Grassland (Annual or Perennial), Miscellaneous Wetlands			bristly sedge	<1312	CCA	Jul-Sep	PMCPY032Y0		2003-02-17
Cyperaceae	<a href="#">Carex densa</a>		A2	CEQA	Miscellaneous, Miscellaneous Wetlands			dense sedge	<4921	ALA?, CCA?	Apr-Jul			
Cyperaceae	<a href="#">Carex globosa</a>		A1	CEQA	Miscellaneous	Declining?		round-fruited sedge	<5906	ALA?, CCA	Apr-Jun			

Cyperaceae	<a href="#">Carex gracilior</a>		A1	CEQA	Forest, Grassland (Annual or Perennial), Miscellaneous, Miscellaneous Wetlands	Confused with C. praegracilis		slender sedge	<2789	ALA	Apr-Jun		2015-03-04
Cyperaceae	<a href="#">Carex harfordii</a>		A1	CEQA	Miscellaneous Wetlands			Harford's sedge, Monterey sedge	<2953	CCA	Feb-Sep		2002-08-18
Cyperaceae	<a href="#">Carex heteroneura</a>		A1x	CEQA	Forest, Grassland (Annual or Perennial), Rock, Tallus, Scree			various-nerved sedge	4265-13123	ALA	-		2016-03-01
Cyperaceae	<a href="#">Carex laeviculmis</a>		A1	CEQA	Woodland			smooth-stemmed sedge	2297-5906	CCA	Jun-Sep		2002-04-30
Cyperaceae	<a href="#">Carex lenticularis var. lipocarpa</a>		A1	CEQA	Miscellaneous Wetlands			few-ribbed sedge	<11811	CCA	Jun-Oct		2012-03-24 2002-04-30
Cyperaceae	<a href="#">Carex leporina</a>	(formerly Carex ovalis)	A1	CEQA	Miscellaneous Wetlands			hare sedge, oval sedge, mountain hare sedge	<3937	ALA	May-Aug		2015-03-10
Cyperaceae	<a href="#">Carex leptopoda</a>	(formerly Carex deweyana subsp leptopoda)	A1	CEQA	Miscellaneous, Miscellaneous Wetlands			slender-footed sedge, short-scaled sedge	<7874	ALA	May-Aug		2015-03-04
Cyperaceae	<a href="#">Carex multcostata</a>		A2	CEQA	Miscellaneous			many-ribbed sedge	6234-11483	ALA, CCA	Jul-Sep		
Cyperaceae	<a href="#">Carex nudata</a>		A2	CEQA	Rock, Tallus, Scree, Riparian, Sand, Sandstone		Narrow Range in ALA & CCA	torrent sedge	<5249	ALA, CCA	Apr-Jul		
Cyperaceae	<a href="#">Carex obnupta</a>		A2	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat	slough sedge	<3609	ALA, CCA	Jun-Sep		
Cyperaceae	<a href="#">Carex pellita</a>	(formerly C. lanuginosa)	A1	CEQA	Miscellaneous Wetlands	Large range. More but hard to ID?		woolly sedge	197-10827	CCA	May-Sep		
Cyperaceae	<a href="#">Carex senta</a>		A2	CEQA	Riparian, Miscellaneous Wetlands	Large range	Limited/Threatened Habitat	western rough sedge, rough sedge	<9514	ALA, CCA	Apr-Aug		
Cyperaceae	<a href="#">Carex unilateralis</a>		A1	CEQA	Miscellaneous			one-sided sedge	<3281	CCA	Jun-Aug		2004-08-27
Orobanchaceae	<a href="#">Castilleja ambigua subsp. ambigua</a>		*A1	4.2 S3(CEQA) G4T3T4	Coastal Bluff, Grassland (Annual or Perennial)			Johnny-nip	<1640	ALA?, CCA?	May-Aug	PDSCR0D401	
Orobanchaceae	<a href="#">Castilleja applegatei subsp. martinii</a>		A2	CEQA	Chaparral, Scrub (Coastal or Interior)		Disjunct	wavy-leaved indian paintbrush	984-9186	ALA, CCA	May-Sep		
Orobanchaceae	<a href="#">Castilleja exserta subsp. latifolia</a>		A1	CEQA	Coastal Bluff, Sand, Sandstone			owl's-clover	<1640	ALA	Mar-May		2015-03-04
Orobanchaceae	<a href="#">Castilleja subinclusa subsp. franciscana</a>		A1	CEQA	Chaparral, Scrub (Coastal or Interior)	Declining?	Small Populations	Franciscan indian paintbrush	<328	ALA, CCA	Mar-Jul		2002-10-17
Orobanchaceae	<a href="#">Castilleja subinclusa subsp. subinclusa</a>		A1	CEQA	Chaparral, Scrub (Coastal or Interior)			long-leaved indian paintbrush	<7218	ALA	Apr-Jul		
Brassicaceae	<a href="#">Caulanthus flavescens</a>		A2	CEQA	Serpentine or Serpentine-derived soils	Declining?	Limited/Threatened Habitat	yellow-flowered thelypodium	262-2461	ALA, CCA	Mar-May		
Brassicaceae	<a href="#">Caulanthus lemmonii</a>	(formerly C. coulteri var. l.)	*A1x	1B.2 S2.2(CEQA) G2	Open Dry Slope	Presumed EXTIRPATED		Lemmon's jewelflower	262-3609	ALA?	Mar-May	PDBRA0M0E0	
Rhamnaceae	<a href="#">Ceanothus leucodermis</a>		A2	CEQA	Open Dry Slope, Rock, Tallus, Scree, Sand, Sandstone	Only 1 Region (current) but several sites	Narrow Range in ALA & CCA N Limit	chaparral whitethorn	886-7054	ALA	Apr-Jun		2018-02-28
Asteraceae	<a href="#">Centromadia parryi subsp. congdonii</a>	(formerly Hemizonia p. ssp. c.)	*A2	1B.2 S2(CEQA) G4T2	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands	More than 5 regions but: Rare, Threatened or Endangered statewide	Limited/Threatened Habitat	Congdon's tarplant	<984	ALA, CCA	Jun-Oct	PDAST4R0P1	2016-02-29
Rubiaceae	<a href="#">Cephalanthus occidentalis</a>		A2	CEQA	Miscellaneous Wetlands, Riparian	Regeneration?	Limited/Threatened Habitat Small Populations	button bush	<3281	CCA	-		2016-03-01
Fabaceae	<a href="#">Cercis occidentalis</a>		A1x	CEQA	Chaparral, Open Dry Slope,	1888 reference in Behr for Sunol indicates	Disjunct Small Populations	western redbud	328-4921	ALA	Mar-May		2016-03-01



					Riparian, Woodland	natural rather than planted as previously thought. Also planted at Mt. Diablo, Joaquin Miller Park and along Hwy 13											
Asteraceae	<a href="#">Chaenactis glabriuscula var. glabriuscula</a>		A1	CEQA	Open Dry Slope, Sand, Sandstone	- Used to be more common	Declining	yellow pincushion	328-7546	ALA, CCA?	Feb-Jul						
Asteraceae	<a href="#">Chaenactis glabriuscula var. heterocarpha</a>		A1	CEQA	Open Dry Slope, Serpentine or Serpentine-derived soils	Changes in key-ID confusion		inner coast range pincushion, yellow pincushion	328-4921	ALA	Mar-Jun						
Asteraceae	<a href="#">Chaenactis glabriuscula var. megacephala</a>		A1	CEQA	Open Dry Slope, Sand, Sandstone	- Used to be more common	Declining N Limit	yellow pincushion	984-4921	ALA, CCA?	Mar-Jun						
Chenopodiaceae	<a href="#">Chenopodium rubrum var. humile</a>		A1	CEQA	Alkali Areas	Added due to Split in the 2011 Jepson Manual			<3609	ALA, CCA	Aug-Oct			2012-03-24		2012-03-24	
Chenopodiaceae	<a href="#">Chenopodium rubrum var. rubrum</a>		A1	CEQA	Alkali Areas	Added due to Split in the 2011 Jepson Manual			<3609	ALA, CCA	Aug-Oct			2012-03-24		2012-03-24	
Chenopodiaceae	<a href="#">Chenopodium rubrum</a>		A1	CEQA	Alkali Areas	More?		red pigweed, red goosefoot	<11841	ALA, CCA	Aug-Oct			2015-03-05			
Orobanchaceae	<a href="#">Chloropyron maritimum subsp. palustre</a>	(historical-1917)	*A1x	1B.2 S2.2(CEQA) G4?T2	Salt Marsh	Presumed EXTIRPATED	Limited/Threatened Habitat	Point Reyes salty bird's-beak	<33	ALA, CCA	May-Oct			PDSCR0J0C3			
Orobanchaceae	<a href="#">Chloropyron molle subsp. hispidum</a>		*A1	1B.1 S2.1(CEQA) G2T2	Alkali Areas, Grassland (Annual or Perennial)		Limited/Threatened Habitat	hispid salty bird's-beak, hispid bird's-beak	<427	ALA	Jun-Jul			PDSCR0J0D1			
Orobanchaceae	<a href="#">Chloropyron molle subsp. molle</a>		*A2	1B.2 S1.1(CEQA) G2T1 CR FE	Brackish Marsh, Salt Marsh		Limited/Threatened Habitat Small Geographical Range	soft salty bird's-beak, soft bird's-beak	<33	CCA	Jul-Nov			PDSCR0J0D2			
Orobanchaceae	<a href="#">Chloropyron palmatum</a>		*A1	1B.1 S1(CEQA) G1 CE FE	Alkali Areas, Grassland (Annual or Perennial)		Limited/Threatened Habitat	palmate salty bird's-beak, palmate-bracted bird's-beak	<197	ALA	Jun-Aug			PDSCR0J0J0			
Polygonaceae	<a href="#">Chorizanthe cuspidata var. cuspidata</a>	(historical-1881)	*A1x	1B.2 S2.2(CEQA) G2T2	Coastal Strand, Sand, Sandstone	Presumed EXTIRPATED	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Geographical Range	San Francisco Bay spineflower	<984	ALA?	Apr-Jul			PDPGN04081			
Polygonaceae	<a href="#">Chorizanthe membranacea</a>		A2	CEQA	Chaparral, Open Dry Slope, Grassland (Annual or Perennial), Woodland, Miscellaneous		Limited distribution though plentiful at some sites	pink spineflower	131-4593	ALA, CCA	Apr-Jul						
Polygonaceae	<a href="#">Chorizanthe polygonoides var. polygonoides</a>		A1	CEQA	Gravel, Sand, Sandstone			knotweed spineflower	328-4921	ALA, CCA?	Apr-Jun						
Polygonaceae	<a href="#">Chorizanthe robusta var. robusta</a>	(historical-1913)	*A1x	1B.1 S1.1(CEQA) G2T1 FE	Coastal Strand, Sand, Sandstone	Presumed EXTIRPATED	Limited/Threatened Habitat	robust spineflower	33-984	ALA?	May-Sep			PDPGN040Q2			
Polygonaceae	<a href="#">Chorizanthe uniaristata</a>	(historical-1884)	A1x	CEQA	Open Dry Slope, Rock, Tallus, Scree, Sand, Sandstone, Serpentine or Serpentine-derived soils	Presumed EXTIRPATED	Disjunct	one-awn spineflower	2625-6234	CCA?	Apr-Jul						
Fagaceae	<a href="#">Chrysolepis chrysophylla var. minor</a>		A2	CEQA	Chaparral, Forest, Sand, Sandstone	Regeneration?	Narrow Range in ALA & CCA Small Populations	golden chinquapin	<5906	ALA, CCA	Jun-Sep						
Apiaceae	<a href="#">Cicuta maculata var. bolanderi</a>		*A1	2.1 S2(CEQA) G5T3T4	Brackish Marsh, Salt Marsh			Bolander's water-hemlock, water hemlock	<656	CCA	Jul-Sep			PDAP10M051			
Asteraceae	<a href="#">Cirsium andrewsii</a>		*A1	1B.2 S2.2(CEQA) G2	Freshwater Marsh, Serpentine or Serpentine-derived soils,		Limited/Threatened Habitat	Franciscan thistle	<328	ALA	May-Sep			PDAST2E050			

					Miscellaneous													
Asteraceae	<a href="#">Cirsium douglasii var. douglasii</a>		A1	CEQA	Freshwater Marsh, Serpentine or Serpentine-derived soils	C. breweri in 1944 Diablo Flora by M. Bowerman	S Limit	swamp thistle	<4593	CCA	Jun-Aug							
Asteraceae	<a href="#">Cirsium fontinale var. campylon</a>		*A1	1B.2 S2(CEQA) G2T2	Freshwater Marsh, Serpentine or Serpentine-derived soils			Mount Hamilton fountain thistle	<2461	ALA	Mar-Oct	PDAST2E163						
Asteraceae	<a href="#">Cirsium occidentale var. californicum</a>	(var. venustum is more common)	A1	CEQA	Forest, Woodland			California thistle	<7546	CCA	Apr-Jul							2000-10-06
Asteraceae	<a href="#">Cirsium occidentale var. coulteri</a>		A1x	CEQA	Miscellaneous		Small Populations	COULTER'S THISTLE	-10-7536	ALA	Mar-Jun						2016-03-01	2015-02-08
Asteraceae	<a href="#">Cirsium occidentale var. occidentale</a>		A1x	CEQA	Miscellaneous			COBWEBBY THISTLE	-10-2152	ALA, CCA	Mar-Jul						2016-03-01	2015-02-08
Asteraceae	<a href="#">Cirsium quercetorum</a>		A2	CEQA	Grassland (Annual or Perennial), Woodland		Small Populations	brownie thistle	<1640	ALA, CCA	Apr-Aug							
Asteraceae	<a href="#">Cirsium remotifolium var. odontolepis</a>		A1	CEQA	Forest, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Woodland	ID confusion		remote-leaved thistle	<6070	ALA	Jun-Sep							2012-03-24
Onagraceae	<a href="#">Clarkia biloba subsp. biloba</a>		A2	CEQA	Serpentine or Serpentine-derived soils, Woodland	More than 2 regions but:	Disjunct Small Populations	lobed godetia	<3281	CCA	May-Aug							
Onagraceae	<a href="#">Clarkia breweri</a>		*A1	4.2 S3.2(CEQA) G3	Chaparral, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Brewer's clarkia	<3281	ALA	Apr-Jun	PDONA05080						
Onagraceae	<a href="#">Clarkia concinna subsp. automixa</a>	(ssp. concinna is more common)	*A1	4.3 S3.3(CEQA) G5?T3	Woodland			Santa Clara red ribbons	<4921	ALA, CCA	Apr-Jun	PDONA050A1						
Onagraceae	<a href="#">Clarkia franciscana</a>		*A1	1B.1 S1.1(CEQA) G1 CE FE	Serpentine or Serpentine-derived soils		Limited/Threatened Habitat Narrow Range in ALA & CCA Small Geographical Range	Presidio clarkia	164-164	ALA	May-Jun	PDONA050H0						2012-06-11
Onagraceae	<a href="#">Clarkia modesta</a>		A2	CEQA	Woodland	Former ID - C. rhomboidea at Dbo	Small Populations	modest clarkia	<3281	ALA, CCA	-							
Onagraceae	<a href="#">Clarkia purpurea subsp. purpurea</a>	(ssp. quadrivulnera is more co	A2	CEQA	Grassland (Annual or Perennial)			purple clarkia	<328	ALA, CCA	Apr-Jun							
Onagraceae	<a href="#">Clarkia purpurea subsp. viminea</a>	(ssp. quadrivulnera is more co	A2	CEQA	Miscellaneous	More?		large godetia	<4921	ALA, CCA	May-Jul							
Onagraceae	<a href="#">Clarkia tembloriensis subsp. tembloriensis</a>		A1	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior)			temblor clarkia	328-1640	ALA	Apr-May							
Montiaceae	<a href="#">Claytonia exigua subsp. glauca</a>	(ssp. exigua is more common)	A1	CEQA	Open Dry Slope, Serpentine or Serpentine-derived soils, Sand, Sandstone, Miscellaneous			claytonia	<3281	CCA	Apr-Jul							
Montiaceae	<a href="#">Claytonia gypsophilooides</a>		A2	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	coast range montia	<4265	ALA, CCA	Mar-May							
Montiaceae	<a href="#">Claytonia rubra subsp. depressa</a>		A1	CEQA	Scrub (Coastal or Interior)			miner's lettuce	<8202	CCA	Feb-Apr							
Liliaceae	<a href="#">Clintonia andrewsiana</a>		A1	CEQA	Redwood Forest	E Limit?	Limited/Threatened Habitat	red clintonia	<1312	ALA	May-Jul							
Plantaginaceae	<a href="#">Collinsia bartsiiifolia var. bartsiiifolia</a>		A1	CEQA	Sand, Sandstone	Declining?		white Chinese houses	<1969	ALA, CCA	Mar-Jun							
Plantaginaceae	<a href="#">Collinsia bartsiiifolia var. stricta</a>		A1	CEQA	Sand, Sandstone		N Limit	white Chinese houses	2297-4265	ALA	May-Jul							

Plantaginaceae	<a href="#">Collinsia bartsiiifolia var. unknown</a>		A1	CEQA	Sand, Sandstone			white Chinese houses		ALA?, CCA?	-			
Plantaginaceae	<a href="#">Collinsia parviflora</a>		A2	CEQA	Miscellaneous	Overlooked? Confused with C. sparsiflora?		blue-eyed Mary	2625-11483	ALA, CCA	Mar-Jul			
Plantaginaceae	<a href="#">Collinsia tinctoria</a>		A1	CEQA	Forest, Rock, Tallus, Scree, Woodland		Disjunct	iodine collinsia	328-8202	CCA	May-Aug			
Polemoniaceae	<a href="#">Collomia diversifolia</a>		*A1	4.3 S3.3(CEQA) G3	Chaparral, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	serpentine collomia	197-2953	CCA	Apr-Jul	PDPLM02020		
Polemoniaceae	<a href="#">Collomia heterophylla</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone		Limited/Threatened Habitat Small Populations	variable-leaf collomia	<6562	ALA, CCA	-			
Convolvulaceae	<a href="#">Convolvulus simulans</a>		*A1	4.2 S3.2(CEQA) G3	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Miscellaneous			small-flowered morning-glory	98-2871	CCA	Apr-Jun	PDCON05060		
Orchidaceae	<a href="#">Corallorhiza maculata var. maculata</a>	(forma immaculata is more comm)	A2	CEQA	Forest, Woodland	Some could be forma immaculata Needs field-checking	Narrow Range in ALA & CCA Small Populations	spotted coralroot	<9186	ALA, CCA	May-Aug			
Orchidaceae	<a href="#">Corallorhiza striata</a>	(C. maculata is more common)	A1	CEQA	Forest, Woodland	Some could be C. maculata except RdwdP Needs field-checking	Narrow Range in ALA & CCA Small Populations	striped coralroot	328-7218	ALA, CCA?	Feb-Jul			
Orobanchaceae	<a href="#">Cordylanthus nidularius</a>		*A1	1B.1 S1.2(CEQA) G1 CR	Chaparral, Serpentine or Serpentine-derived soils	(Endemic to Mt. Diablo)	Limited/Threatened Habitat Small Geographical Range	Mount Diablo bird's-beak	1969-2625	CCA	Jul-Aug	PDSCR0J0F0		
Orobanchaceae	<a href="#">Cordylanthus rigidus subsp. rigidus</a>		A1	CEQA	Chaparral, Forest, Woodland		N Limit	stiffly-branched bird's-beak	<8858	ALA	Jul-Sep			
Cornaceae	<a href="#">Cornus glabrata</a>		A1	CEQA	Riparian		Limited/Threatened Habitat	brown dogwood	<5085	ALA, CCA	May-Jun			
Crassulaceae	<a href="#">Crassula solieri</a>	(C. connata and aquatica are more common)	A1x	CEQA	Vernal Pool		Limited/Threatened Habitat	pygmy-weed	<6890	CCA	Mar-Jun		2016-03-01	
Asteraceae	<a href="#">Crocidium multicaule</a>		A1	CEQA	Grassland (Annual or Perennial), Sand, Sandstone, Woodland			spring gold	<5249	ALA	Feb-Jun			
Euphorbiaceae	<a href="#">Croton californicus</a>		A2	CEQA	Sand, Sandstone		Limited/Threatened Habitat N Limit E Limit	California croton	<2953	CCA	Apr-Jul			
Boraginaceae	<a href="#">Cryptantha clevelandii var. florosa</a>		A1	CEQA	Chaparral, Rock, Tallus, Scree, Sand, Sandstone, Serpentine or Serpentine-derived soils	ID confusion		Cleveland's cryptantha	16-4921	ALA, CCA	Mar-Jun		2012-03-24	
Boraginaceae	<a href="#">Cryptantha decipiens</a>		A2	CEQA	Grassland (Annual or Perennial), Sand, Sandstone, Scrub (Coastal or Interior)			GRAVEL CRYPTANTHA	646-15069	ALA, CCA	Mar-May		2015-02-14	2015-02-14
Boraginaceae	<a href="#">Cryptantha hooveri</a>	(historical-1908)	*A1x	1A SH(CEQA) GH	Grassland (Annual or Perennial), Sand, Sandstone	Presumed EXTIRPATED		Hoover's cryptantha	<262	CCA?	-	PDBOR0A190		
Boraginaceae	<a href="#">Cryptantha intermedia var. intermedia</a>		A1	CEQA	Forest, Rock, Tallus, Scree, Sand, Sandstone, Woodland	Munz says common. More but hard to ID?		common cryptantha	<7546	ALA, CCA	May-Jul		2012-03-24	

Query: whatShow=Species records;sorting=Scientific Name;ebrarity=any A  
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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Boraginaceae	<a href="#">Cryptantha micromeres</a>		A1	CEQA	Burns, Chaparral, Woodland	Munz says frequent. More but hard to ID?	Fire Follower	minute-flowered cryptantha	<4429	ALA, CCA?	Mar-Jul			
Boraginaceae	<a href="#">Cryptantha microstachys</a>		A1	CEQA	Chaparral, Woodland	ID confusion Declining?		Tejon cryptantha	164-6398	ALA, CCA	Apr-Jun			
Boraginaceae	<a href="#">Cryptantha muricata var. jonesii</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone	Added due to Split in the 2011 Jepson Manual		Jones' cryptantha	<6562	ALA, CCA	Mar-Jun		2016-03-01	2012-03-24
Boraginaceae	<a href="#">Cryptantha muricata var. muricata</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone	Added due to Split in the 2011 Jepson Manual	N Limit	showy prickly-nut cryptantha	82-6988	ALA, CCA	Mar-Jul		2016-03-01	2012-03-24
Boraginaceae	<a href="#">Cryptantha muricata var. unknown</a>		A2	CEQA	Rock, Tallus, Scree, Sand, Sandstone	Confused with C. flaccida? Only 1 region, but the 2 locally rare subsp. are both A2, so this should be too.	N Limit	prickly cryptantha	<22927	ALA, CCA	Mar-Jul		2012-03-24	
Boraginaceae	<a href="#">Cryptantha nemaclada</a>		A1	CEQA	Chaparral, Woodland			Colusa cryptantha	656-5249	ALA	Apr-Jun			2002-11-28
Boraginaceae	<a href="#">Cryptantha nevadensis var. rigida</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone	ID confusion	N Limit	Nevada cryptantha	262-7808	ALA	Mar-Jul		2012-03-24	
Boraginaceae	<a href="#">Cryptantha rattanii</a>		*A2	4.3 S3.3(CEQA) G3	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone	ID confusion	Disjunct N Limit	Rattan's cryptantha, gravel cryptantha	492-2559	ALA, CCA	Apr-Jul	PDBOR0A2H0		
Boraginaceae	<a href="#">Cryptantha torreyana var. pumila</a>		A2	CEQA	Forest, Open Dry Slope			Torrey's cryptantha	492-4199	ALA, CCA	Apr-Jun		2012-03-24	
Cucurbitaceae	<a href="#">Cucurbita foetidissima</a>		A1	CEQA	Gravel, Rock, Tallus, Scree, Sand, Sandstone		N Limit?	buffalo gourd, calabazilla, calabazilla	<4265	ALA, CCA	Jun-Aug			
Convolvulaceae	<a href="#">Cuscuta californica var. californica</a>		A2	CEQA	Chaparral, Grassland (Annual or Perennial), Miscellaneous			California dodder	<8202	ALA, CCA	May-Sep			
Convolvulaceae	<a href="#">Cuscuta campestris</a>	(historical-1897)	A1x	CEQA	Miscellaneous	ID Questions May not occur in ALA or CCA		field dodder	<1640	ALA?, CCA?	-			
Convolvulaceae	<a href="#">Cuscuta indecora var. indecora</a>		A1	CEQA	Miscellaneous			large-seeded dodder, pretty dodder	<4921	ALA	Jun-Nov			
Convolvulaceae	<a href="#">Cuscuta occidentalis</a>	(formerly C. californica var.)	A1	CEQA	Chaparral, Grassland (Annual or Perennial), Miscellaneous			California dodder	<6562	ALA, CCA	Mar-Sep			
Cyperaceae	<a href="#">Cyperus erythrorhizos</a>		A2	CEQA	Riparian			red-rooted cyperus	<1640	ALA, CCA	Jul-Oct			
Cyperaceae	<a href="#">Cyperus niger</a>		A2	CEQA	Miscellaneous, Miscellaneous Wetlands	C. melanostachyus in 1944 Diablo Flora by M. Bowerman		black sedge	<4921	ALA?, CCA	Jul-Nov			
Cyperaceae	<a href="#">Cyperus odoratus</a>		A1	CEQA	Miscellaneous Wetlands			coarse cyperus	<1640	ALA	Jul-Oct			
Cyperaceae	<a href="#">Cyperus strigosus</a>		A1	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat	false nutsedge, straw-colored cyperus	<3281	CCA	Jul-Oct			
Datisceae	<a href="#">Datisca glomerata</a>		A2	CEQA	Dry Wash, Riparian		Limited/Threatened Habitat	durango root	<6562	ALA, CCA	May-Jul			
Asteraceae	<a href="#">Deinandra bacigalupii</a>	(formerly Hemizonia increscens)	*A1	1B.2 S1.2(CEQA) G1	Alkali Areas			Livermore tarplant	328-656	ALA	Jun-Oct	PDAST4R0V0		2000-11-09
Asteraceae	<a href="#">Deinandra corymbosa</a>	(formerly Hemizonia corymbosa)	A2	CEQA	Coastal Bluff, Grassland (Annual or Perennial)			coast tarweed	<1969	ALA, CCA	-			
Ranunculaceae	<a href="#">Delphinium californicum subsp. interius</a>		*A2	1B.2 S2?(CEQA) G3T2?	Serpentine or Serpentine-derived soils, Woodland			Hospital Canyon larkspur	984-3281	ALA, CCA	Apr-Jun	PDRAN0B0A2	2016-03-01	

Ranunculaceae	<a href="#">Delphinium gracilentum</a>		A1x	CEQA	Forest	- Confused with <i>D. patens</i> ? May not occur in ALA or CCA (Note: Vchr at Cal Acad should be examined)	Disjunct	slender larkspur, Greene's larkspur, meadow larkspur	492-8858	ALA	Mar-Jun		2016-03-01
Ranunculaceae	<a href="#">Delphinium gypsophilum</a>		*A1	4.2 S3.2(CEQA) G4T3	Grassland (Annual or Perennial), Woodland			gypsum-loving larkspur	295-3937	ALA	Feb-Jun	PDRAN0B0S2	
Ranunculaceae	<a href="#">Delphinium hansenii subsp. hansenii</a>		A2	CEQA	Chaparral, Woodland			Hansen's larkspur	492-9843	CCA	May-Jul		2012-03-25 2004-08-22
Ranunculaceae	<a href="#">Delphinium parryi subsp. parryi</a>		A1	CEQA	Chaparral, Woodland			Parry's larkspur	656-5577	ALA, CCA?	Apr-Jun		
Ranunculaceae	<a href="#">Delphinium recurvatum</a>		*A1	1B.2 S2.2(CEQA) G2	Alkali Areas, Grassland (Annual or Perennial), Vernal Pool			recurved larkspur	98-1969	CCA	Mar-Jun	PDRAN0B1J0	
Papaveraceae	<a href="#">Dendromecon rigida</a>		A2	CEQA	Burns, Chaparral, Scrub (Coastal or Interior)		Fire Follower	bush poppy	<6234	ALA?, CCA	Apr-Jun		
Poaceae	<a href="#">Deschampsia cespitosa subsp. holciformis</a>		A2	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat Small Populations	tufted hairgrass	<2789	ALA, CCA	May-Jul		
Brassicaceae	<a href="#">Descurainia pinnata subsp. menziesii</a>		A1	CEQA	Chaparral, Rock, Tallus, Scree			tansy mustard		ALA?, CCA?	-		
Papaveraceae	<a href="#">Dicentra formosa</a>		A2	CEQA	Forest, Redwood Forest, Miscellaneous		Narrow Range in ALA & CCA	Pacific bleeding heart, bleeding heart	<7874	ALA, CCA	Mar-Jul		
Themidaceae	<a href="#">Dichelostemma multiflorum</a>		A1	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland			wild hyacinth, many-flowered brodiaea	<6562	CCA	May-Jun		1998-11-07
Themidaceae	<a href="#">Dichelostemma volubile</a>	(?)	A1?	CEQA	Scrub (Coastal or Interior), Woodland	Not clear if planted or natural		twining brodiaea, snake lily	328-5249	ALA	May-Jun		
Convolvulaceae	<a href="#">Dichondra donnelliana</a>		A1	CEQA	Miscellaneous			dichondra	<1394	CCA	Mar-Jun		
Thymelaeaceae	<a href="#">Dirca occidentalis</a>		*A2	1B.2 S2S3(CEQA) G2G3	Forest, Riparian, Scrub (Coastal or Interior)	More than 5 regions but: Rare, Threatened or Endangered statewide	Small Geographical Range	western leatherwood	164-1312	ALA, CCA	Nov-Mar	PDTHY03010	
Campanulaceae	<a href="#">Downingia bella</a>		A1x	CEQA	Vernal Pool		Limited/Threatened Habitat	Hoover's downingia	>1969	ALA	Mar-May		2016-03-01
Campanulaceae	<a href="#">Downingia cuspidata</a>		A2	CEQA	Vernal Pool		Limited/Threatened Habitat	cuspidate downingia	<5577	ALA, CCA	Mar-Jun		
Campanulaceae	<a href="#">Downingia insignis</a>		A2	CEQA	Vernal Pool		Limited/Threatened Habitat Narrow Range in ALA & CCA Declining	cupped downingia	<5413	ALA, CCA	Mar-May		
Campanulaceae	<a href="#">Downingia ornaticissima var. eximia</a>	(historical-1956)	A1x	CEQA	Miscellaneous Wetlands, Vernal Pool	Presumed EXTIRPATED	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Geographical Range	Solano downingia	<525	CCA	Apr-May		2012-07-04
Brassicaceae	<a href="#">Draba cuneifolia</a>		A1	CEQA	Miscellaneous			Sonora draba	<6890	ALA	Jan-May		2015-03-04
Crassulaceae	<a href="#">Dudleya cymosa subsp. cymosa</a>	(ssp. paniculata is more common)	A1	CEQA	Rock, Tallus, Scree, Woodland	ID Questions	S Limit Small Populations	spreading dudleya	328-8858	CCA	May-Jul		2015-03-04
Crassulaceae	<a href="#">Dudleya farinosa</a>		A1	CEQA	Rock, Tallus, Scree		Narrow Range in ALA & CCA	bluff lettuce, powdery dudleya		ALA, CCA	Jun-Aug		
Asteraceae	<a href="#">Eastwoodia elegans</a>		A1	CEQA	Miscellaneous			yellow mock aster	197-4265	ALA	Apr-Jul		
Alismataceae	<a href="#">Echinodorus berteroi</a>		A2	CEQA	Freshwater Marsh		Limited/Threatened Habitat	burhead	<984	ALA, CCA	-		
Asteraceae	<a href="#">Eclipta prostrata</a>		A1	CEQA	Miscellaneous Wetlands			false daisy	<4429	ALA, CCA	-		
Papaveraceae	<a href="#">Ehrenborferia chrysantha</a>	(formerly <i>Dicentra chrysantha</i> )	A2	CEQA	Burns, Open Dry Slope, Miscellaneous		Fire Follower	golden ear-drops	<7546	ALA, CCA	Apr-Sep		

Elatinaceae	<a href="#">Elatine brachysperma</a>		A1	CEQA	Freshwater Marsh, Miscellaneous Wetlands		Limited/Threatened Habitat	waterwort	164-1640	ALA?, CCA	Apr-Sep			
Elatinaceae	<a href="#">Elatine californica</a>		A1	CEQA	Freshwater Marsh		Limited/Threatened Habitat	waterwort	164-6234	ALA, CCA	Mar-Aug			
Cyperaceae	<a href="#">Eleocharis parishii</a>		A2	CEQA	Sand, Sandstone, Miscellaneous Wetlands		Limited/Threatened Habitat	Dombey's spike-rush	1640-7546	ALA, CCA	-			
Cyperaceae	<a href="#">Eleocharis parvula</a>		*A1	4.3 S3.3(CEQA) G5	Brackish Marsh		Limited/Threatened Habitat	small spikerush	<164	CCA	-	PMCY091G0		
Cyperaceae	<a href="#">Eleocharis rostellata</a>	(historical-1933)	A1x	CEQA	Alkali Areas, Miscellaneous Wetlands	Presumed EXTIRPATED	Limited/Threatened Habitat	beaked spike-rush	164-7874	CCA?	-			
Poaceae	<a href="#">Elymus elymoides var. elymoides</a>		A2	CEQA	Grassland (Annual or Perennial)			squirreltail	820-14108	ALA, CCA	Jul-Aug			
Poaceae	<a href="#">Elymus mollis subsp. mollis</a>	(historical-1896)	A1x	CEQA	Coastal Strand	Presumed EXTIRPATED	Limited/Threatened Habitat	American dune grass, sea lyme grass	<33	ALA?	May-Jul			
Poaceae	<a href="#">Elymus stebbinsii</a>		A2	CEQA	Chaparral, Open Dry Slope, Forest			Stebbins' wheat grass, Parish's wheat-grass	<7316	ALA, CCA	Jun-Jul			
Poaceae	<a href="#">Elymus xhanseni</a>		A2	CEQA	Grassland (Annual or Perennial)	More than 5 Regions but: Hybrids of E. glaucus with E. elymoides or E. multisetus	Limited/Threatened Habitat Small Populations	Hansen squirreltail	>5741	ALA, CCA	-			
Poaceae	<a href="#">Elymus xsaundersii</a>		A1x	CEQA	Grassland (Annual or Perennial)	E. trachycaulis X E. elymoides			>11647	CCA?	-			2003-01-11
Boraginaceae	<a href="#">Emmenanthe penduliflora var. penduliflora</a>		A2	CEQA	Burns, Chaparral, Rock, Tallus, Scree, Scrub (Coastal or Interior), Serpentine or Serpentine-derived soils, Sand, Sandstone		Fire Follower	whispering bells	<7218	ALA, CCA	Apr-Jul			
Boraginaceae	<a href="#">Emmenanthe rosea</a>		A1	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils				0-0	ALA	-		2018-02-03	2018-02-03
Ranunculaceae	<a href="#">Enemion occidentale</a>	(formerly Isopyrum o.)	A1	CEQA	Chaparral, Forest, Woodland			western rue-anemone	656-4921	ALA	Mar-May			
Ranunculaceae	<a href="#">Enemion stipitatum</a>	(formerly Isopyrum s.)	A1	CEQA	Chaparral, Forest, Woodland		Narrow Range in ALA & CCA	Siskiyou rue-anemone	656-4921	ALA	Feb-Apr			
Ephedraceae	<a href="#">Ephedra californica</a>	(?)	A1?	CEQA	Chaparral, Open Dry Slope, Grassland (Annual or Perennial), Rock, Tallus, Scree	ID's Correct? Confusion with E. viridis? May not occur in ALA or CCA	N Limit	desert tea, Mormon tea	230-4265	ALA?	Mar-Apr			
Ephedraceae	<a href="#">Ephedra viridis</a>	(?)	A1?	CEQA	Scrub (Coastal or Interior)	Possible mis-ID of E. californica?	N Limit	green ephedra	2953-7546	CCA?	Feb-Jun			
Onagraceae	<a href="#">Epilobium cleistogamum</a>		A1	CEQA	Vernal Pool		Limited/Threatened Habitat	cleistogamous boisduvalia	<984	CCA	May-Jul			
Onagraceae	<a href="#">Epilobium torreyi</a>		A2	CEQA	Riparian	Overlooked?	Limited/Threatened Habitat	narrow-leaved boisduvalia	164-8530	ALA, CCA	May-Aug			
Orchidaceae	<a href="#">Epipactis gigantea</a>		A1	CEQA	Freshwater Marsh, Riparian	Dbo seen 1994. LySpG may be robust E. helleborine	Limited/Threatened Habitat	stream orchid	<8530	ALA?, CCA	Mar-Oct			
Poaceae	<a href="#">Eragrostis mexicana subsp. virescens</a>		A1	CEQA	Riparian, Sand, Sandstone, Miscellaneous			Orcutt's eragrostis	<8104	ALA, CCA	May-Oct			
Malvaceae	<a href="#">Eremalche exilis</a>		A1	CEQA	Scrub (Coastal or Interior)			WHITE MALLOW	-10-16145	ALA	Mar-May		2018-01-24	2018-01-24
Malvaceae	<a href="#">Eremalche parryi subsp. parryi</a>	(historical-1940)	A1x	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland	Presumed EXTIRPATED		Parry's mallow	98-1312	ALA?	Mar-May			
Onagraceae	<a href="#">Eremothera boothii subsp. decorticans</a>	(formerly Camissonia boothii subsp.)	A1	CEQA	Open Dry Slope, Rock, Tallus, Scree			shredding evening-primrose	<6070	ALA	Mar-Jun		2015-03-04	

		decorticans)													
Polemoniaceae	<a href="#">Eriastrum abramsii</a>		A2	CEQA	Open Dry Slope			Abram's eriastrum	<3937	ALA, CCA	Apr-Jun				
Polemoniaceae	<a href="#">Eriastrum brandegeae (c.f. hooveri)</a>		A1	CEQA	Sand, Sandstone			BRANDEGEE'S ERIASTRUM	4304-10764	CCA	May-Aug	PDPLM03020	2015-02-13	2015-02-13	
Polemoniaceae	<a href="#">Eriastrum erterae</a>		*A1	CEQA	Chaparral, Woodland		Narrow Range in ALA & CCA	Erter's eriastrum		CCA	-		2015-02-13	2003-11-11	
Polemoniaceae	<a href="#">Eriastrum pluriflorum subsp. pluriflorum</a>		A1	CEQA	Chaparral, Forest, Woodland			many-flowered eriastrum	<6562	ALA, CCA	May-Jul		2012-03-24		
Polemoniaceae	<a href="#">Eriastrum sapphirinum</a>	(historical-1889)	A1x	CEQA	Miscellaneous	Although its based on a Brandegeee collection at UC/JEPS, the label data of Judsonville is clearly wrong, as the plant was probably collected in San Diego or possibly Riverside Co. This is a southern California plant only. It is one of many Brandegeee collections with faulty location data. She also has a collection of it from Madera Co., also wrong.		sapphire eriastrum		CCA	Jan-Jan		2012-03-24	2004-01-30	
Asteraceae	<a href="#">Ericameria arborescens</a>		A2	CEQA	Chaparral, Forest, Woodland	More than 5 regions but: Any in MnRd area?	Small Populations	golden-fleece	>3281	ALA, CCA	Aug-Nov				
Asteraceae	<a href="#">Ericameria nauseosa var. mohavensis</a>		A2	CEQA	Scrub (Coastal or Interior)	NW Limit?	Small Populations	Mojave rabbitbrush, rubber rabbitbrush	1312-7874	ALA, CCA	Aug-Oct				
Asteraceae	<a href="#">Erigeron petrophilus var. petrophilus</a>		A2	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils	Common on Mt. Diablo?	Small Populations	rock daisy	1640-6890	ALA, CCA	May-Sep				
Asteraceae	<a href="#">Erigeron reductus var. angustatus</a>		A1	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils, Woodland			California rayless daisy	1969-4593	ALA	Jun-Aug			2000-10-04	
Polygonaceae	<a href="#">Eriogonum angulosum</a>		A2	CEQA	Sand, Sandstone, Miscellaneous	Limited distribution though plentiful at some sites	N Limit	angle-stem wild buckwheat, angle-stemmed eriogonum	<2625	ALA, CCA	-				
Polygonaceae	<a href="#">Eriogonum covilleum</a>		A1	CEQA	Gravel, Sand, Sandstone		N Limit	Coville's wild buckwheat, Coville's eriogonum	656-4593	ALA, CCA	Apr-Aug				
Polygonaceae	<a href="#">Eriogonum deserticola</a>		A1	CEQA	Sand, Sandstone		Disjunct	Colorado desert wild buckwheat, desert eriogonum	213-656	CCA	Jul-Jan				
Polygonaceae	<a href="#">Eriogonum fasciculatum var. foliolosum</a>		A1	CEQA	Open Dry Slope	Also planted at many other sites	N Limit	leafy California buckwheat, California buckwheat	197-4265	ALA	-		2016-03-01		
Polygonaceae	<a href="#">Eriogonum fasciculatum var. polifolium</a>		A1	CEQA	Open Dry Slope, Dry Wash, Scrub (Coastal or Interior)		N Limit	Mojave desert California buckwheat, California buckwheat	984-8202	ALA	-				
Polygonaceae	<a href="#">Eriogonum inerme var. inerme</a>		A1	CEQA	Sand, Sandstone		Disjunct	unarmed buckwheat	1969-7218	CCA	May-Aug		2012-03-24		
Polygonaceae	<a href="#">Eriogonum latifolium</a>	(?) Mis-identification. Moved to Rejected 8/31/15	A1?	CEQA	Coastal Bluff, Scrub (Coastal or Interior)			seaside wild buckwheat, coast buckwheat	<262	CCA	-		2015-08-31	2000-10-04	
Polygonaceae	<a href="#">Eriogonum luteolum var. caninum</a>		*A1	1B.2 S2(CEQA) G5T2	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Tiburon buckwheat	<2297	ALA	May-Oct	PDPGN083S1			



Polygonaceae	<a href="#">Eriogonum luteolum var. luteolum</a>		A2	CEQA	Gravel, Serpentine or Serpentine-derived soils, Sand, Sandstone			golden-carpet wild buckwheat, golden carpet	164-5249	ALA, CCA	Jul-Nov			
Polygonaceae	<a href="#">Eriogonum nudum var. pauciflorum</a>		A1	CEQA	Open Dry Slope, Miscellaneous	ID Confusion	Narrow Range in ALA & CCA	little-flower wild buckwheat	3609-9186	ALA	Jun-Oct			2003-11-16
Polygonaceae	<a href="#">Eriogonum nudum var. psychicola</a>		*A1	1B.1 S1.1(CEQA) G5T1	Miscellaneous		Narrow Range in ALA & CCA	Antioch Dunes buckwheat		CCA	Jul-Oct		2015-03-04	2001-09-13
Polygonaceae	<a href="#">Eriogonum nudum var. pubiflorum</a>		A1x	CEQA	Miscellaneous, Open Dry Slope	ID Confusion	Narrow Range in ALA & CCA	Fremont's wild buckwheat, naked-stemmed buckwheat	164-7218	ALA	Jun-Oct		2016-03-01	
Polygonaceae	<a href="#">Eriogonum truncatum</a>		*A1	1B.1 S1.1(CEQA) G1	Chaparral, Grassland (Annual or Perennial), Miscellaneous, Sand, Sandstone		Small Geographical Range	Mount Diablo buckwheat	656-1312	ALA?, CCA	Apr-Aug	PDPGN085Z0		
Polygonaceae	<a href="#">Eriogonum umbellatum var. smallianum</a>		*A2	4.2 S3.2(CEQA) G5T3	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Small's sulphur flower, bay buckwheat	2297-6562	ALA, CCA	Jul-Sep	PDPGN086UB		
Polygonaceae	<a href="#">Eriogonum wrightii var. trachygonum</a>		A2	CEQA	Gravel		Narrow Range in ALA & CCA	rough-node bastard-sage, Wright's eriogonum	131-2625	ALA	Jul-Oct			
Asteraceae	<a href="#">Eriophyllum jepsonii</a>		*A2	4.3 S3(CEQA) G3	Chaparral, Serpentine or Serpentine-derived soils, Woodland		Limited/Threatened Habitat N Limit	Jepson's woolly sunflower	656-3281	ALA, CCA	Apr-Jun	PDAST3N040		
Asteraceae	<a href="#">Eriophyllum staechadifolium</a>		A2	CEQA	Coastal Bluff, Scrub (Coastal or Interior)			seaside woolly sunflower, lizard-tail	<328	ALA, CCA	Apr-Sep			
Asteraceae	<a href="#">Eriophyllum wallacei</a>	(?)	A1?	CEQA	Chaparral, Woodland	ID Questionable May not occur in ALA or CCA		Wallace's woolly daisy	98-7874	ALA	Dec-Jul			
Apiaceae	<a href="#">Eryngium aristulatum var. hooveri</a>		*A1	1B.1 S2.1(CEQA) G5T2	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat	Hoover's button-celery	<164	ALA	-	PDAPI0Z043		1999-09-26
Apiaceae	<a href="#">Eryngium armatum</a>		A2	CEQA	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat	coastal button-celery, coast coyote-thistle	<656	ALA, CCA	May-Aug			
Apiaceae	<a href="#">Eryngium articulatum</a>		A2	CEQA	Freshwater Marsh, Miscellaneous Wetlands, Riparian		Limited/Threatened Habitat	beethistle, coyote-thistle	<5906	ALA	Jun-Aug		2016-03-12	
Apiaceae	<a href="#">Eryngium castrense</a>		A1	CEQA	Freshwater Marsh, Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat Disjunct	great valley coyote-thistle, Vasey's coyote-thistle	<2953	CCA	Apr-Jul			

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Apiaceae	<a href="#">Eryngium racemosum</a>		*A1	1B.1 S2.1(CEQA) G2Q CE	Riparian, Scrub (Coastal or Interior), Miscellaneous Wetlands			delta button-celery	10-98	CCA	Jun-Aug	PDAPI0Z0S0		2002-05-09
Apiaceae	<a href="#">Eryngium spinosepalum</a>		*A1	1B.2 S2.2(CEQA) G2	Grassland (Annual or Perennial), Vernal Pool				1076-13671	CCA	Apr-Jun	PDAPI0Z0Y0	2015-03-04	2015-03-04
Apiaceae	<a href="#">Eryngium vaseyi var. vallicola</a>		A2	CEQA	Alkali Areas, Vernal Pool			coyote-thistle, Vasey's coyote-thistle	33-1099	ALA, CCA	May-Jul		2012-03-24	
Brassicaceae	<a href="#">Erysimum capitatum var. angustatum</a>	(ssp. capitatum is more common)	*A1	1B.1 S1.1(CEQA) G5T1 CE FE	Sand, Sandstone, Scrub (Coastal or Interior)	(Endemic to Antioch Dunes)	Limited/Threatened Habitat Small Geographical Range	Contra Costa wallflower	0-13123	CCA	Mar-Sep	PDBRA16057	2012-09-29	
Papaveraceae	<a href="#">Eschscholzia caespitosa</a>		A2	CEQA	Chaparral		Small Populations Declining	tufted poppy	<5906	ALA, CCA	Mar-Jun			
Papaveraceae	<a href="#">Eschscholzia rhombipetala</a>		*A1	1B.1 S1.1(CEQA) G1	Open Dry Slope, Grassland (Annual or Perennial)	ID very questionable for AntchD and current ByrnAr		diamond-petaled California poppy	<984	ALA, CCA?	Mar-Apr	PDPAP0A0D0		
Celastraceae	<a href="#">Euonymus occidentalis var. occidentalis</a>		A1	CEQA	Riparian			burning bush	66-5249	ALA	Apr-Jun			
	<a href="#">Extriplex californica</a>	(historical-1921)	A1x	CEQA	Coastal Strand, Salt Marsh, Sand, Sandstone, Scrub (Coastal or Interior)	Presumed EXTIRPATED		California orach, California saltbush	<656	ALA	Apr-Oct		2016-02-29	
	<a href="#">Extriplex joaquinana</a>		*A2	CEQA	Alkali Areas, Grassland (Annual or Perennial), Miscellaneous Wetlands	More than 5 regions but: Rare, Threatened or Endangered statewide	Limited/Threatened Habitat	San Joaquin spearscale, San Joaquin saltbush	<1148	ALA, CCA	Apr-Sep	PDCHE041F3	2016-02-29	
Poaceae	<a href="#">Festuca elmeri</a>		A2	CEQA	Riparian			Elmer's fescue	<6004	ALA, CCA	May-Jul			
Oleaceae	<a href="#">Fraxinus dipetala</a>		A2	CEQA	Chaparral, Woodland, Miscellaneous	W limit?	Narrow Range in ALA & CCA Small Populations	California ash, flowering ash	328-4265	ALA?, CCA	Apr-Jun			
Malvaceae	<a href="#">Fremontodendron californicum</a>		A1x	CEQA	Chaparral, Rock, Tallus, Scree, Woodland	Planted at many other sites		flannelbush	591-7612	CCA	Apr-Jul		2016-03-01	
Liliaceae	<a href="#">Fritillaria agrestis</a>		*A2	4.2 S3.2(CEQA) G3	Alkali Areas, Grassland (Annual or Perennial)	More than 5 regions but: Rare, Threatened or Endangered statewide		stinkbells	<1640	ALA, CCA	Mar-Jun	PMLIL0V010		
Liliaceae	<a href="#">Fritillaria falcata</a>		*A1	1B.2 S2.2(CEQA) G2	Chaparral, Rock, Tallus, Scree, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	talus fritillary	984-3937	ALA	Mar-May	PMLIL0V070		
Liliaceae	<a href="#">Fritillaria liliacea</a>		*A1	1B.2 S2.2(CEQA) G2	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Vernal Pool	Wldct populations not found in recent years		fragrant fritillary	<656	ALA, CCA	Feb-Apr	PMLIL0V0C0		
Rubiaceae	<a href="#">Galium andrewsii subsp. gatense</a>		*A2	4.2 S3.2(CEQA) G5T3	Chaparral, Serpentine or Serpentine-derived soils, Woodland	More than 5 regions but: Rare, Threatened or Endangered statewide		phlox-leaf serpentine bedstraw, serpentine bedstraw	722-4757	ALA, CCA	Apr-Jun			
Rubiaceae	<a href="#">Galium porrigens var. tenue</a>	(var. porrigens is more common)	A1	CEQA	Chaparral, Forest	More? Rarely ID'd to var.		climbing bedstraw	492-3445	ALA	Feb-Jul			

Rubiaceae	<a href="#">Galium trifidum subsp. columbianum</a>		A1	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat	trifid bedstraw	<9941	ALA, CCA	Jul-Aug			
Garryaceae	<a href="#">Garrya congdonii</a>		A1	CEQA	Chaparral			Congdon's silk-tassel	591-2461	ALA	Feb-Apr			
Garryaceae	<a href="#">Garrya flavescens</a>		A2	CEQA	Chaparral, Woodland	Confusion with G. fremontii. Mt. Diablo specimens have been redet. as G. flavescens		silk tassel bush	2133-7710	ALA, CCA	Feb-Apr			
Garryaceae	<a href="#">Garrya fremontii</a>		A1	CEQA	Chaparral, Woodland	Confusion with G. flavescens Mt. Diablo specimens have been redet as G. flavescens.		silk tassel bush	984-7546	ALA, CCA	Jan-Apr			
Ericaceae	<a href="#">Gaultheria shallon</a>		A1	CEQA	Forest, Redwood Forest	E Limit?		salal	<3478	ALA	Apr-Jul			
Polemoniaceae	<a href="#">Gilia achilleifolia subsp. unknown</a>		A2	CEQA	Miscellaneous			California gilia		ALA, CCA	-			2000-11-20
Polemoniaceae	<a href="#">Gilia capitata subsp. capitata</a>		A1	CEQA	Rock, Tallus, Scree	Formerly misidentified as C. capitata staminea		blue field gilia	98-7874	CCA	-			
Polemoniaceae	<a href="#">Gilia capitata subsp. unknown</a>		A2	CEQA	Rock, Tallus, Scree, Sand, Sandstone		Limited/Threatened Habitat	blue field gilia		ALA, CCA	-			
Campanulaceae	<a href="#">Githopsis diffusa subsp. robusta</a>		A2	CEQA	Burns, Miscellaneous		Fire Follower	southern bluecup	164-6562	ALA, CCA	Apr-Jun			
Poaceae	<a href="#">Glyceria leptostachya</a>		A2	CEQA	Freshwater Marsh, Riparian			narrow manna grass, Davy's mannagrass	<2625	CCA	May-Jun			2015-03-05
Poaceae	<a href="#">Glyceria occidentalis</a>		A2	CEQA	Miscellaneous Wetlands			western manna grass	<4265	ALA, CCA	Jun-Aug			1999-10-08
Plantaginaceae	<a href="#">Gratiola ebracteata</a>		A1	CEQA	Miscellaneous Wetlands			bractless hedge-hyssop	<7874	CCA	Apr-Jun			2000-10-07
Asteraceae	<a href="#">Grindelia stricta var. platyphylla</a>	(var. angustifolia is more com)	A1	CEQA	Coastal Bluff, Sand, Sandstone	Changes in key	Limited/Threatened Habitat	Pacific grindelia	<984	CCA	-			
Asteraceae	<a href="#">Helenium bigelovii</a>	(H. puberulum is more common)	A2	CEQA	Brackish Marsh, Freshwater Marsh		Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	Bigelow's sneezeweed	<11155	ALA?, CCA	Jul-Aug			
Asteraceae	<a href="#">Helianthella californica var. californica</a>		A1	CEQA	Grassland (Annual or Perennial), Woodland	Vchr for LsTrmps at Cal Acad should be examined		California helianthella	<3281	ALA	Apr-Jun			
Asteraceae	<a href="#">Helianthella castanea</a>		*A2	1B.2 S2(CEQA) G2	Chaparral, Grassland (Annual or Perennial), Woodland	More than 5 regions but: Rare, Threatened or Endangered statewide Occurs in transition areas between habitats Populations in southern ALA are intermediate to H. californica	Small Geographical Range Small Populations	Diablo helianthella	656-4265	ALA, CCA	Apr-Jun			PDAST4M020
Asteraceae	<a href="#">Helianthus gracilentus</a>		A1	CEQA	Burns, Open Dry Slope		Fire Follower N Limit E Limit	slender sunflower	<6562	CCA	Apr-Oct			
Asteraceae	<a href="#">Hesperevax acaulis var. ambusticola</a>	(H. sparsiflora is more common)	A2	CEQA	Burns, Open Dry Slope, Miscellaneous		Fire Follower	fire evax	656-4265	CCA	Apr-Jun			
Asteraceae	<a href="#">Hesperevax caulescens</a>	(H. sparsiflora is more common)	*A2	4.2 S3.2(CEQA) G3	Vernal Pool		Limited/Threatened Habitat	hogwallow starfish	<984	ALA?, CCA	Mar-Jun			PDASTE5020
Cupressaceae	<a href="#">Hesperocyparis sargentii</a>	(formerly Cupressus s.)	A1	CEQA	Serpentine or Serpentine-derived soils	(Also planted at San Leandro Hill)	Limited/Threatened Habitat Disjunct	Sargent cypress	197-4495	ALA	-			
Linaceae	<a href="#">Hesperolinon breweri</a>		*A2	1B.2 S2.2(CEQA) G2	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils		Limited/Threatened Habitat Small Geographical Range	Brewer's western flax	98-2297	CCA	May-Jun			PDLIN01030

Linaceae	<a href="#">Hesperolinon californicum</a>		A2	CEQA	Grassland (Annual or Perennial), Rock, Tallus, Scree, Serpentine or Serpentine-derived soils			California dwarf flax	98-4265	ALA, CCA	Apr-Jul			
Linaceae	<a href="#">Hesperolinon clevelandii</a>		A1	CEQA	Serpentine or Serpentine-derived soils		Limited/Threatened Habitat Narrow Range in ALA & CCA Disjunct	Cleveland's dwarf flax	492-4593	ALA	May-Jul			
Linaceae	<a href="#">Hesperolinon disjunctum</a>		A1	CEQA	Chaparral, Serpentine or Serpentine-derived soils			dwarf flax	328-3281	ALA	Apr-Jul			
Linaceae	<a href="#">Hesperolinon micranthum</a>		A1	CEQA	Serpentine or Serpentine-derived soils, Woodland, Miscellaneous			small-flowered dwarf flax	164-6562	CCA	Mar-Aug			
Linaceae	<a href="#">Hesperolinon serpentinum</a>		*A1	1B.1 S2.1(CEQA) G2	Chaparral, Serpentine or Serpentine-derived soils	Significant range extension to the South Not to be recognized in new edition of Jepson Manual		Napa western flax		ALA	-			
Papaveraceae	<a href="#">Hesperomecon linearis</a>	(formerly Meconella l.) (hist	A1x	CEQA	Dry Wash, Grassland (Annual or Perennial), Sand, Sandstone			narrow-leaved meconella	<3281	ALA?, CCA	Mar-Jun			
Campanulaceae	<a href="#">Heterocodon rariflorum</a>		A2	CEQA	Miscellaneous Wetlands	Overlooked?		heterocodon	<8202	CCA	Apr-Jul			
Asteraceae	<a href="#">Heterotheca oregona var. rudis</a>		A1	CEQA	Dry Wash, Riparian			Oregon goldenaster	<1640	ALA	Jul-Oct			2000-10-04
Asteraceae	<a href="#">Heterotheca oregona var. scaberrima</a>		A1	CEQA	Dry Wash	More than 2 regions but: Declining?	Small Geographical Range N Limit	Oregon goldenaster	328-2297	ALA	Jul-Oct			
Asteraceae	<a href="#">Heterotheca sessiliflora var. bolanderioides</a>		A1	CEQA	Serpentine or Serpentine-derived soils			golden aster		CCA	-			
Malvaceae	<a href="#">Hibiscus lasiocarpus var. occidentalis</a>		*A1	1B.2 S2.2(CEQA) G4	Freshwater Marsh		Limited/Threatened Habitat	rose-mallow	<328	CCA	-			
Fabaceae	<a href="#">Hoita orbicularis</a>	(historical-1936)	A1x	CEQA	Riparian, Miscellaneous	Presumed EXTIRPATED		round-leaved psoralea	<7382	ALA?	Apr-Aug			
Fabaceae	<a href="#">Hoita strobilina</a>	(historical-1865)	*A1x	1B.1 S2(CEQA) G2	Chaparral, Woodland	Presumed EXTIRPATED	Small Geographical Range	Loma Prieta hoita	<1969	ALA?, CCA?	Jun-Aug	PDFAB5Z030		
Asteraceae	<a href="#">Holocarpha macradenia</a>		*A1	1B.1 S1.1(CEQA) G1 CE FT	Grassland (Annual or Perennial)	All natural sites here have been EXTIRPATED 22 populations planted by Neil Havlik 1982-85, BkyHills	Small Geographical Range	Santa Cruz tarplant	<656	ALA?, CCA	Jun-Nov	PDAST4X020		
Asteraceae	<a href="#">Holozonia filipes</a>		A1	CEQA	Dry Wash, Riparian	More common? Overlooked? Grows late in season		whitescrown, holozonia	98-3281	ALA	Jun-Oct			
Poaceae	<a href="#">Hordeum jubatum subsp. jubatum</a>		A2	CEQA	Miscellaneous	Munz says common. Should be more?		foxtail barley, squirreltail barley	66-11483	ALA, CCA	May-Jul			2016-03-01
Rosaceae	<a href="#">Horkelia californica var. californica</a>		A1	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior)	E Limit?		California horkelia	<1312	ALA, CCA	Mar-Sep			
Rosaceae	<a href="#">Horkelia californica var. elata</a>		A2	CEQA	Riparian, Miscellaneous Wetlands			tall horkelia	164-6004	ALA, CCA	Jun-Sep			
Rosaceae	<a href="#">Horkelia cuneata var. sericea</a>	(historical-1894)	*A1x	1B.1 S1.1(CEQA) G4T1	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone	Presumed EXTIRPATED		Kellogg's horkelia	<656	ALA?	Apr-Aug	PDROS0W043		
Brassicaceae	<a href="#">Hornungia procumbens</a>		A2	CEQA	Alkali Areas	Overlooked?	Limited/Threatened Habitat Small Populations	prostrate hutchinsia	<9514	ALA, CCA	Feb-Jul			

Fabaceae	<a href="#">Hosackia crassifolia var. crassifolia</a>		A1	CEQA	Chaparral, Woodland, Miscellaneous			broad-leaved lotus	984-6890	ALA, CCA	May-Aug			
Fabaceae	<a href="#">Hosackia oblongifolia var. oblongifolia</a>	(?)	A1?	CEQA	Freshwater Marsh	ID Questions May not occur in ALA or CCA	Limited/Threatened Habitat Disjunct	narrow-leaved lotus	656-7874	CCA	May-Sep			
Fabaceae	<a href="#">Hosackia stipularis var. stipularis</a>		A1	CEQA	Chaparral			stipulate lotus	656-3281	ALA, CCA	Apr-Jun			
Araliaceae	<a href="#">Hydrocotyle ranunculoides</a>		A1	CEQA	Riparian			floating marsh pennywort	<4921	CCA	Mar-Aug			
Araliaceae	<a href="#">Hydrocotyle verticillata</a>		A2	CEQA	Freshwater Marsh		Limited/Threatened Habitat Narrow Range in ALA & CCA	whorled marsh pennywort	<4593	CCA	Apr-Sep			
Boraginaceae	<a href="#">Hydrophyllum occidentale</a>		A1	CEQA	Chaparral, Miscellaneous, Riparian, Woodland		Disjunct	western waterleaf	1969-9843	ALA, CCA	May-Jul			
Hypericaceae	<a href="#">Hypericum scouleri</a>		A1x	CEQA	Freshwater Marsh, Riparian			Scouler's st. john's wort, Scouler's St. John's wort	<9646	ALA	Jun-Sep		2016-03-01	
Brassicaceae	<a href="#">Idahoia scapigera</a>		A1	CEQA	Miscellaneous Wetlands			flat-pod	656-5577	ALA	Mar-May			
Iridaceae	<a href="#">Iris douglasiana</a>		A2	CEQA	Miscellaneous	E Limit?	Narrow Range in ALA & CCA	Douglas iris	<656	ALA, CCA	May-Jul			
Iridaceae	<a href="#">Iris longipetala</a>		*A1	4.2 S3.2(CEQA) G3	Miscellaneous	Wldct site is Nimitz Way by corrals	Small Populations	coast iris	<1969	ALA?, CCA	Mar-Jun	PMIRI092E0		
Asteraceae	<a href="#">Isocoma arguta</a>	(historical-date unknown)	*A1x?	1B.1 S1.1(CEQA) G1	Brackish Marsh	Unclear if in CCA or SOL County Presumed EXTIRPATED	Limited/Threatened Habitat Small Geographical Range	Carquinez goldenbush	<66	CCA?	Aug-Dec	PDAST57050		
Isoetaceae	<a href="#">Isoetes howellii</a>		A2	CEQA	Miscellaneous Wetlands	More common but overlooked? Very small and hard to ID	Limited/Threatened Habitat	Howell's quillwort	<4921	ALA?, CCA	-			
Cyperaceae	<a href="#">Isolepis carinata</a>	(formerly Scirpus koilepis)	A1	CEQA	Woodland			dwarf club-rush	<2625	ALA, CCA	-			1998-12-02
Juglandaceae	<a href="#">Juglans hindsii</a>	(formerly J. californica var.)	*A2	1B.1 S1.1(CEQA) G1	Riparian	More than 5 regions but: Rare, Threatened or Endangered statewide Most sites are planted. Confusion about how many natural populations exist Only natural populations are protected	Limited/Threatened Habitat	northern California black walnut, Northern California black	<984	ALA, CCA	Apr-May	PDJUG02040		
Juncaceae	<a href="#">Juncus ambiguus</a>		A1	CEQA	Alkali Areas, Brackish Marsh, Salt Marsh	Confused with J. bufonius	Limited/Threatened Habitat	frog rush, toad-rush	<1640	ALA, CCA	Apr-Sep			
Juncaceae	<a href="#">Juncus articulatus subsp. articulatus</a>		A2	CEQA	Miscellaneous	Uncommon acc. to Jepson. Unclear if this plant is actually native in the East Bay since there are no historical records of it here before 1982 - Barbara Ertter email 2/26/2018	Disjunct	jointed rush	<6562	ALA, CCA	-		2018-02-27	
Juncaceae	<a href="#">Juncus bufonius var. occidentalis</a>	(historical-1895) (vars. bufon)	A1x	CEQA	Riparian, Miscellaneous Wetlands, Vernal Pool	Formerly J. sphaerocarpus Presumed EXTIRPATED?	Limited/Threatened Habitat	western toad rush, toad rush	<6562	CCA?	Apr-Jun			
Juncaceae	<a href="#">Juncus dubius</a>		A1	CEQA	Miscellaneous Wetlands, Miscellaneous			mariposa rush, Mariposa rush	<6562	ALA, CCA	Jul-Sep			
Juncaceae	<a href="#">Juncus ensifolius</a>	(?)	A1?	CEQA	Miscellaneous Wetlands	- or Range extension if IDs correct Confused with J. phaeocephalus	Disjunct S Limit	dagger rush, swordleaved rush, three-stamened rush	<9186	ALA?, CCA?	Jul-Sep			

					or xiphoides May not occur in ALA or CCA														
Juncaceae	<a href="#">Juncus lescurii</a>		A2	CEQA	Freshwater Marsh, Salt Marsh		Limited/Threatened Habitat	San Francisco rush, salt rush	<328	ALA? CCA	Aug- Sep								
Juncaceae	<a href="#">Juncus oxymeris</a>		A1	CEQA	Scrub (Coastal or Interior), Miscellaneous			pointed rush	<6890	ALA, CCA	Jul-Aug								
Juncaceae	<a href="#">Juncus phaeocephalus var. unknown</a>		A2	CEQA	Miscellaneous Wetlands	Confused with J. xiphoides?	Limited/Threatened Habitat	brown- headed rush		ALA, CCA	-							2000-10-08	
Plantaginaceae	<a href="#">Keckiella brevipflora var. brevipflora</a>		A2	CEQA	Rock, Tallus, Scree	in Coast Ranges.	N Limit	gaping penstemon	656-6562	ALA	May-Jul								
Plantaginaceae	<a href="#">Keckiella corymbosa</a>		A1	CEQA	Rock, Tallus, Scree			redwood penstemon	328-6562	ALA, CCA	Jun-Oct								
Orobanchaceae	<a href="#">Kopsiopsis strobilacea</a>	(formerly Boschniakia strobilacea)	A2	CEQA	Chaparral, Sand, Sandstone, Woodland	Parasitic on Arctostaphylos, Arbutus	Small Populations	California ground-cone	<9843	CCA	Apr-Jun							2015-03-05	
Asteraceae	<a href="#">Laennecia coulteri</a>	(formerly Conyza c.)	A1	CEQA	Miscellaneous			Coulter's horseweed, Coulter's conyza	<4265	ALA	May- Nov							2000-10-04	
Polygonaceae	<a href="#">Lastarriaea coriacea</a>		A1	CEQA	Chaparral, Gravel, Scrub (Coastal or Interior), Sand, Sandstone			leather- spineflower, lastarriaea	<2625	CCA	Feb- Jun								
Asteraceae	<a href="#">Lasthenia conjugens</a>		*A1	1B.1 S1.1(CEQA) G1 FE	Alkali Areas, Vernal Pool, Miscellaneous Wetlands	Thought to be extinct here, but populations found at Warm Springs and Rodeo in 1995 and 1996	Limited/Threatened Habitat	Contra Costa goldfields	<328	ALA, CCA	Mar- Jun							PDAST5L040	
Asteraceae	<a href="#">Lasthenia ferrisiae</a>		*A2	4.2 S3.2(CEQA) G3	Alkali Areas, Vernal Pool	NW Limit?	Narrow Range in ALA & CCA	Ferris' goldfields	<2297	ALA, CCA	Feb- May								PDAST5L070
Asteraceae	<a href="#">Lasthenia fremontii</a>		A2	CEQA	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat Narrow Range in ALA & CCA	Fremont's goldfields	<2297	ALA, CCA	Mar- May								
Asteraceae	<a href="#">Lasthenia maritima</a>		A1	CEQA	Rock, Tallus, Scree, Sand, Sandstone		Limited/Threatened Habitat E Limit	maritime goldfields, seaside goldfields, Farallon weed	<328	CCA	May-Jul								
Asteraceae	<a href="#">Lasthenia minor</a>		A2	CEQA	Grassland (Annual or Perennial)	Declining?		coastal goldfields, woolly goldfields	<2297	ALA, CCA	Mar- Jun								
Asteraceae	<a href="#">Lasthenia platycarpha</a>		A1	CEQA	Alkali Areas, Grassland (Annual or Perennial)	W Limit? Byrn site is Armstrong Rd. SW of Byrn. J. Jokerst says this is more common in alkali areas than L. calif.	Limited/Threatened Habitat Narrow Range in ALA & CCA	alkali goldfields	<394	CCA	Mar-Apr								
Fabaceae	<a href="#">Lathyrus jepsonii var. jepsonii</a>		*A2	1B.2 S2.2(CEQA) G5T2	Brackish Marsh, Freshwater Marsh		Limited/Threatened Habitat	delta tule pea, Delta tule pea	<98	ALA? CCA	Apr- Aug								PDFAB250D2
Asteraceae	<a href="#">Layia chrysanthemoides</a>		A2	CEQA	Grassland (Annual or Perennial)	Declining? Confusion with other Layia?		smooth layia	<2625	ALA, CCA	Mar- Jun								
Asteraceae	<a href="#">Layia gaillardoides</a>		A2	CEQA	Scrub (Coastal or Interior), Woodland	More than 5 regions but: Small Populations? Declining? Confusion with other Layia?		woodland layia	<4265	ALA, CCA	Mar- Aug								2012-07-23
Asteraceae	<a href="#">Layia glandulosa</a>	(historical-1983 but not seen)	A1x	CEQA	Sand, Sandstone	in Coast Ranges Presumed EXTIRPATED	Limited/Threatened Habitat N Limit	white layia	<8858	ALA? CCA	Feb-Jul								
Poaceae	<a href="#">Leersia oryzoides</a>		A1	CEQA	Freshwater Marsh, Riparian, Miscellaneous Wetlands			rice cutgrass	<3937	CCA	Aug- Oct								
Campanulaceae	<a href="#">Legenere limosa</a>		*A1	1B.1 S2.2(CEQA)	Vernal Pool, Miscellaneous		Limited/Threatened Habitat	legenere	<3117	ALA	May- Jun								2000-10-04

				G2	Wetlands									
Brassicaceae	<a href="#">Lepidium acutidens</a>		A2	<u>CEQA</u>	Alkali Areas	Overlooked?	Limited/Threatened Habitat	sharp-toothed pepper-grass	<4921	ALA, CCA	Feb-Apr			
Brassicaceae	<a href="#">Lepidium dictyotum</a>		A2	<u>CEQA</u>	Alkali Areas	Overlooked?	Limited/Threatened Habitat	alkali pepper-grass	<5249	ALA, CCA	Mar-Jun			
Brassicaceae	<a href="#">Lepidium oblongum</a>	(historical-1937)	A1x	<u>CEQA</u>	Miscellaneous	Presumed EXTIRPATED		wayside pepper-grass	656-1640	ALA?	Mar-Aug			

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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Asteraceae	<a href="#">Lepidospartum squamatum</a>	(historical-1933)	A1x	CEQA	Rock, Tallus, Scree, Sand, Sandstone	Presumed EXTIRPATED	N Limit	California broom-shrub	<6234	ALA?	Aug-Nov			
Poaceae	<a href="#">Leptochloa fusca subsp. fascicularis</a>		A2	CEQA	Miscellaneous Wetlands	Road E of Bethany Rsvr		bearded sprangletop	<3937	ALA, CCA	Jun-Oct			
Poaceae	<a href="#">Leptochloa fusca subsp. uninervia</a>		A1	CEQA	Miscellaneous Wetlands			mexican sprangletop, dense-flowered sprangle-top	<3281	ALA	Mar-Dec			2000-11-24
Polemoniaceae	<a href="#">Leptosiphon acicularis</a>	(formerly Linanthus a.)	*A1	4.2 S3.2(CEQA) G3	Chaparral, Grassland (Annual or Perennial), Woodland			bristly leptosiphon, bristly linanthus	<2297	ALA	Apr-May	PDPLM09010		1998-10-20
Polemoniaceae	<a href="#">Leptosiphon ambiguus</a>	(formerly Linanthus a.)	*A2	4.2 S3.2(CEQA) G3	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils		Limited/Threatened Habitat N Limit	serpentine leptosiphon, serpentine linanthus	<3281	ALA, CCA	Apr-May	PDPLM09020		1998-10-20
Polemoniaceae	<a href="#">Leptosiphon bolanderi</a>	(formerly Linanthus b.)	A1	CEQA	Chaparral, Woodland			Bolander's linanthus, Bolander's leptosiphon	656-5577	CCA	Mar-Jul			1999-09-24
Polemoniaceae	<a href="#">Leptosiphon grandiflorus</a>	(formerly Linanthus g.)	*A1	4.2 S3.2(CEQA) G3	Grassland (Annual or Perennial), Gravel, Scrub (Coastal or Interior), Sand, Sandstone			large-flowered leptosiphon, large-flowered linanthus	<3937	ALA?, CCA?	Apr-Jul	PDPLM090K0		1998-10-20
Polemoniaceae	<a href="#">Leptosiphon liniflorus</a>	(formerly Linanthus l.)	A1	CEQA	Scrub (Coastal or Interior), Serpentine or Serpentine-derived soils, Woodland, Miscellaneous	Munz says common. More here?		flax-flowered linanthus, flax-flowered leptosiphon	<5577	ALA, CCA	Apr-Jun			1998-10-20
Polemoniaceae	<a href="#">Leptosiphon pygmaeus subsp. continentalis</a>	(formerly Linanthus p. ssp. c.)	A2	CEQA	Miscellaneous	Overlooked?		pygmy linanthus, pygmy leptosiphon	<5577	CCA	Mar-Jun			1998-10-20
Asteraceae	<a href="#">Leptosyne calliopsidea</a>	(formerly Coreopsis c.)	A1x	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior)			leafy-stemmed coreopsis	328-3609	ALA	Feb-Jun		2016-03-01	
Asteraceae	<a href="#">Leptosyne hamiltonii</a>	(formerly Coreopsis h.)	*A1	1B.2 S2.2(CEQA) G2	Open Dry Slope			Mount Hamilton coreopsis	1969-4265	ALA	Mar-May	PDAST2L0C0		
Asteraceae	<a href="#">Leptosyne stillmanii</a>	(formerly Coreopsis s.)	A1	CEQA	Chaparral, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Woodland		W Limit	Stillman's coreopsis	<2953	ALA, CCA?	Mar-May			
Asteraceae	<a href="#">Lessingia hololeuca</a>	(historical-1940)	*A1x	3 S3(CEQA) G3	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils	Presumed EXTIRPATED	Limited/Threatened Habitat	woolly-headed lessingia	33-1969	ALA?	Jun-Oct	PDAST5S030		
Asteraceae	<a href="#">Lessingia nana</a>		A1	CEQA	Miscellaneous	Not in Munz.		dwarf lessingia	164-2953	CCA	Jun-Oct			
Asteraceae	<a href="#">Lessingia nemaclada</a>		A1	CEQA	Open Dry Slope, Miscellaneous, Rock, Tallus, Scree, Woodland			slender-stemmed lessingia	164-6890	ALA, CCA?	Jul-Oct			
Asteraceae	<a href="#">Lessingia pectinata var. tenuipes</a>		A2	CEQA	Forest, Sand, Sandstone	in Coast Ranges.	N Limit	valley lessingia	49-5249	ALA, CCA	May-Oct			



Asteraceae	<a href="#">Lessingia tenuis</a>		*A1	4.3 S3.3(CEQA) G3	Open Dry Slope			spring lessingia	164-7218	ALA	May-Jul	PDAST5S0B0		
Montiaceae	<a href="#">Lewisia rediviva var. rediviva</a>		A2	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils	Limited/Threatened Habitat Small Populations		bitterroot	197-6234	ALA, CCA	Mar-Jun			
Apiaceae	<a href="#">Ligusticum apiifolium</a>		A1	CEQA	Coastal Bluff, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland	Confusion with Lomatium californicum?		Pacific lovage	<6070	ALA, CCA	Jun-Jul			
Apiaceae	<a href="#">Lilaeopsis masonii</a>		*A2	1B.1 S2(CEQA) G2 CR	Brackish Marsh, Freshwater Marsh	Limited/Threatened Habitat Small Geographical Range		Mason's lilaeopsis	<118	CCA	Jun-Aug	PDAP19030		
Liliaceae	<a href="#">Lilium pardalinum subsp. pardalinum</a>		A2	CEQA	Freshwater Marsh, Riparian	AntchSh & FlickrRdg populations not seen in recent years	Limited/Threatened Habitat Small Populations Declining	leopard lily	<5577	ALA, CCA	May-Aug			
Limnanthaceae	<a href="#">Limnanthes douglasii subsp. douglasii</a>		A1	CEQA	Vernal Pool, Miscellaneous Wetlands	Presumed EXTIRPATED		meadowfoam	<2297	ALA, CCA?	Mar-May			
Limnanthaceae	<a href="#">Limnanthes douglasii subsp. nivea</a>		A1	CEQA	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat	meadowfoam	<3281	CCA	Mar-May			
Limnanthaceae	<a href="#">Limnanthes douglasii subsp. rosea</a>		A1	CEQA	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat	meadowfoam	<2625	CCA	Mar-May			
Scrophulariaceae	<a href="#">Limosella acaulis</a>		A2	CEQA	Miscellaneous Wetlands	Overlooked?	Limited/Threatened Habitat	southern mudwort	<10827	ALA	May-Oct			
Scrophulariaceae	<a href="#">Limosella aquatica</a>		A1	CEQA	Miscellaneous Wetlands			northern mudwort	<10499	CCA	Jun-Sep			
Polemoniaceae	<a href="#">Linanthus dichotomus subsp. dichotomus</a>		A2	CEQA	Gravel, Rock, Tallus, Scree, Sand, Sandstone, Serpentine or Serpentine-derived soils	Added due to Split in the 2011 Jepson Manual	Small Populations	evening snow	<5906	ALA, CCA	Apr-Jun		2012-03-24	2012-03-24
Polemoniaceae	<a href="#">Linanthus dichotomus subsp. meridianus</a>		A2	CEQA	Gravel, Rock, Tallus, Scree, Sand, Sandstone, Serpentine or Serpentine-derived soils	Added due to Split in the 2011 Jepson Manual	Small Populations		<5577	ALA, CCA	Apr-Jun		2012-03-24	2012-03-24
Polemoniaceae	<a href="#">Linanthus dichotomus var. unknown</a>		A2	CEQA	Gravel, Rock, Tallus, Scree, Sand, Sandstone, Serpentine or Serpentine-derived soils	Only 1 region, but the 2 locally rare subsp. are both A2, so this should be too.	Small Populations	evening snow	<18297	ALA	Apr-Jun		2012-03-24	1998-10-20
Linaceae	<a href="#">Linum lewisii</a>	(historical-1936)	A1x	CEQA	Open Dry Slope	Presumed EXTIRPATED. Unable to relocate in recent attempts		western blue flax	<12008	ALA?	-			
Saxifragaceae	<a href="#">Lithophragma bolanderi</a>		A2	CEQA	Miscellaneous	ID confusion		Bolander starflower	<6562	ALA?, CCA	Feb-Jul			
Saxifragaceae	<a href="#">Lithophragma cymbalaria</a>	(historical-1895)	A1x	CEQA	Forest, Riparian, Woodland	Presumed EXTIRPATED		mission star	<3937	CCA?	Mar-May			
Apiaceae	<a href="#">Lomatium nudicaule</a>		A2	CEQA	Rock, Tallus, Scree, Woodland			pestle lomatium	591-6562	ALA, CCA	Apr-Jun			
Onagraceae	<a href="#">Ludwigia hexapetala</a>	(?)	A1?	CEQA	Miscellaneous Wetlands	ID Questions May not occur in ALA or CCA		uruguayan primrose-willow, ludwigia	<984	CCA?	May-Dec			
Onagraceae	<a href="#">Ludwigia palustris</a>		A1	CEQA	Freshwater Marsh		Limited/Threatened Habitat	American marsh purslane	<3281	CCA	Jun-Sep			
Fabaceae	<a href="#">Lupinus affinis</a>		A1x	CEQA	Miscellaneous	Confusion with L. succulentus?		lupine	<2625	ALA	Mar-May		2016-03-01	
Fabaceae	<a href="#">Lupinus arboreus</a>		A2	CEQA	Coastal Bluff, Coastal Strand, Sand, Sandstone	Also planted in Bky, Brion Rsvr, Chbt & Tidn	Limited/Threatened Habitat	yellow bush lupine	<328	ALA?, CCA	Apr-Jul			
Fabaceae	<a href="#">Lupinus benthamii</a>	(historical-1955)	A1x	CEQA	Grassland (Annual or Perennial),	Presumed EXTIRPATED		spider lupine	<4921	CCA?	Mar-May			

					Rock, Tallus, Scree, Woodland												
Fabaceae	<a href="#">Lupinus chamissonis</a>	(historical-1963)	A1x	CEQA	Coastal Strand, Sand, Sandstone		Limited/Threatened Habitat	Chamisso's bush lupine	<33	CCA	Mar-Jul						
Fabaceae	<a href="#">Lupinus concinnus</a>		A1	CEQA	Burns, Gravel, Sand, Sandstone			Bajada lupine	<5577	ALA, CCA	Mar-May						2003-11-11
Fabaceae	<a href="#">Lupinus luteolus</a>		A1x	CEQA	Miscellaneous	Presumed EXTIRPATED		butter lupine	<6234	ALA	May-Aug						2016-03-01
Fabaceae	<a href="#">Lupinus varicolor</a>		A1?	CEQA	Coastal Strand, Grassland (Annual or Perennial), Sand, Sandstone		Narrow Range in ALA & CCA	bluff lupine	<1640	ALA	Apr-Jul						2016-12-26
Lamiaceae	<a href="#">Lycopus americanus</a>		A1	CEQA	Freshwater Marsh, Riparian		Limited/Threatened Habitat	cutleaf bugleweed	<3281	ALA, CCA	Aug-Sep						
Lamiaceae	<a href="#">Lycopus asper</a>		A1	CEQA	Freshwater Marsh		Limited/Threatened Habitat	bugleweed	<4593	CCA	Jun-Oct						
Myrsinaceae	<a href="#">Lysimachia maritima</a>		A1	CEQA	Alkali Areas, Miscellaneous Wetlands, Salt Marsh			sea-milkwort	<6890	CCA	May-Jul						2016-02-29
Asteraceae	<a href="#">Madia anomala</a>		A1	CEQA	Grassland (Annual or Perennial)	Dbo reference in Abrams	S Limit	plump-seeded madia	<1640	ALA, CCA	Apr-Jun						
Asteraceae	<a href="#">Madia radiata</a>	(historical-1941)	*A1x	1B.1 S2.1(CEQA) G2	Alkali Areas, Grassland (Annual or Perennial)	Presumed EXTIRPATED	Limited/Threatened Habitat	showy golden madia, showy madia	66-3937	CCA?	Mar-May						PDAST650E0
Malvaceae	<a href="#">Malacothamnus hallii</a>	(M. fasciculatus in Jepson Man	*A1	1B.2 S2(CEQA) G2Q	Chaparral		Narrow Range in ALA & CCA	Hall's bush-mallow	<2493	CCA	May-Jul						PDMAL0Q0F0
Asteraceae	<a href="#">Malacothrix californica</a>	(historical-1895)	A1x	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone, Miscellaneous	Presumed EXTIRPATED	Disjunct	California malacothrix	<5577	CCA?	Mar-May						
Asteraceae	<a href="#">Malacothrix clevelandii</a>		A1	CEQA	Burns, Chaparral	Presumed EXTIRPATED	Fire Follower	Cleveland's malacothrix	<4921	CCA	Mar-Jun						
Asteraceae	<a href="#">Malacothrix coulteri</a>		A1	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone		Disjunct	snake's-head	<4921	ALA, CCA?	Mar-May						
Asteraceae	<a href="#">Malacothrix floccifera</a>		A2	CEQA	Burns, Chaparral, Woodland, Miscellaneous		Fire Follower	woolly malacothrix	<6562	ALA, CCA	Mar-Nov						
Asteraceae	<a href="#">Matricaria occidentalis</a>	(formerly Chamomilla o.) (hist	A1x	CEQA	Alkali Areas, Salt Marsh, Vernal Pool			valley mayweed, valley pineapple weed	<7874	ALA?	Mar-Aug						
Papaveraceae	<a href="#">Meconella californica</a>		A1	CEQA	Rock, Tallus, Scree	P1stnRdg		California meconella	<3281	ALA, CCA?	Mar-May						
Papaveraceae	<a href="#">Meconella oregana</a>		*A2	1B.1 S1.1(CEQA) G2G3	Grassland (Annual or Perennial), Miscellaneous	Not in Jepson or Munz - not previously thought to be in California		Oregon meconella	<3281	ALA, CCA	Mar-May						PDPAP0G030
Poaceae	<a href="#">Melica bulbosa</a>	(?)	A1	CEQA	Forest, Rock, Tallus, Scree	Previously thought to be mis-identifications of M.calif., but verified by Steve Edwards at Ohlone in "The Four Seasons", vol. 14, no. 3, p. 71	Disjunct	onion grass	<11155	ALA	Jul-Aug						2017-02-09
Lamiaceae	<a href="#">Mentha canadensis</a>		A1	CEQA	Miscellaneous Wetlands, Riparian			American cornmint, Japanese peppermint	-10-25833	ALA, CCA	Jul-Oct						2016-03-01 2012-08-05
Loasaceae	<a href="#">Mentzelia affinis</a>		A2	CEQA	Grassland (Annual or Perennial), Sand,			hydra stick-leaf, Hydra stick-leaf	<3937	ALA, CCA	Apr-May						

Loasaceae	<a href="#">Mentzelia dispersa</a>		A2	CEQA	Sandstone, Woodland Rock, Tallus, Scree, Sand, Sandstone	More than 2 Regions but: Overlooked?	Narrow Range in ALA & CCA Small Populations	Nada stick-leaf	2953-10171	CCA	May-Aug		2012-06-11	
Loasaceae	<a href="#">Mentzelia laevicaulis</a>	(historical-1969)	A1x	CEQA	Dry Wash, Rock, Tallus, Scree, Sand, Sandstone			blazing star	<9514	ALA?	May-Oct			
Loasaceae	<a href="#">Mentzelia lindleyi</a>		A2	CEQA	Rock, Tallus, Scree, Scrub (Coastal or Interior), Woodland		Narrow Range in ALA & CCA Small Geographical Range	Lindley's blazing star	<4429	ALA, CCA	May-Jun			
Loasaceae	<a href="#">Mentzelia micrantha</a>		A1	CEQA	Burns, Chaparral, Woodland	Overlooked? Doesn't mind disturbance	Fire Follower	small-flowered stick-leaf	<7402	CCA	Apr-Jun			
Loasaceae	<a href="#">Mentzelia pectinata</a>	(historical-1935)	A1x	CEQA	Grassland (Annual or Perennial), Woodland		Disjunct	San Joaquin blazing star	<4593	ALA?	Mar-May			
Loasaceae	<a href="#">Mentzelia tridentata</a>	(historical-1937)	A1x	1B.3 S2.3?(CEQA) G2	Scrub (Coastal or Interior)	PRESUMED EXTIRPATED The only record for it is from a voucher at UC/Jepson. It is voucher 2116 by R.F. Hoover and was a personal communication from Tony Morosco. However, when I checked that voucher number, it is actually for Phacelia distans. I couldn't find any other vouchers for this species from Alameda or Contra Costa counties in the Consortium, so either Tony made a mistake, or I copied it down wrong. At any rate, it's incorrect.	Disjunct	creamy blazing star, desert stick-leaf	2297-4265	ALA	Apr-May	PDLOA031U0	2012-09-30	2002-05-09
Asteraceae	<a href="#">Micropus amphibolus</a>		*A1x	3.2 S3.2?(CEQA) G3	Grassland (Annual or Perennial), Open Dry Slope, Rock, Tallus, Scree	Taxonomic questions		Mount Diablo cottonseed, Mt. Diablo cottonweed	131-2953	ALA	Mar-Jun	PDAST6D030	2016-03-01	
Asteraceae	<a href="#">Micropus californicus var. subvestitus</a>	(historical-1930) (var. califo)	A1x	CEQA	Open Dry Slope, Miscellaneous	Presumed EXTIRPATED		slender cottonweed	164-3609	ALA?, CCA?	Apr-Jun			
Asteraceae	<a href="#">Microseris bigelovii</a>	(historical-1891)	A1x	CEQA	Coastal Bluff, Coastal Strand, Sand, Sandstone	Presumed EXTIRPATED	Limited/Threatened Habitat	coast microseris	<1722	ALA?, CCA?	Apr-Jul			
Asteraceae	<a href="#">Microseris campestris</a>		A2	CEQA	Grassland (Annual or Perennial), Vernal Pool		W Limit	San Joaquin microseris	<1640	ALA, CCA	Apr-Jun			
Asteraceae	<a href="#">Microseris sylvatica</a>		*A2	4.2 S3.2(CEQA) G3	Grassland (Annual or Perennial), Woodland		Narrow Range in ALA & CCA	sylvan microseris	<5577	CCA	Mar-Jun	PDAST6E0E0		
Phrymaceae	<a href="#">Mimulus androsaceus</a>	(?)	A1?	CEQA	Riparian, Miscellaneous Wetlands, Miscellaneous	Reported here but site unknown		androsace monkeyflower	<6890	ALA?	Mar-Jun			
Phrymaceae	<a href="#">Mimulus bolanderi</a>		A1x	CEQA	Burns, Chaparral, Miscellaneous		Fire Follower	Bolander's monkeyflower	984-5577	ALA	Apr-Jul		2016-03-01	
Phrymaceae	<a href="#">Mimulus douglasii</a>		A2	CEQA	Chaparral, Gravel, Rock, Tallus, Scree, Serpentine or Serpentine-derived soils, Woodland			Douglas monkeyflower	148-3937	ALA, CCA	Feb-Apr			

Phrymaceae	<a href="#">Mimulus floribundus</a>	(?)	A1?	CEQA	Rock, Tallus, Scree, Riparian	Reported here but site unknown		floriferous monkeyflower	<8202	ALA?	Apr-Jul			
Phrymaceae	<a href="#">Mimulus kelloggii</a>		A1	CEQA	Woodland	ID Questions	Disjunct	Kellogg's monkeyflower	164-5003	ALA, CCA	Mar-Jun			
Phrymaceae	<a href="#">Mimulus latidens</a>		A1	CEQA	Vernal Pool, Miscellaneous Wetlands	Declining?	Limited/Threatened Habitat	broad-toothed monkeyflower	<2953	ALA, CCA	Apr-Jun			
Phrymaceae	<a href="#">Mimulus pilosus</a>		A2	CEQA	Dry Wash, Gravel, Riparian, Sand, Sandstone		Narrow Range in ALA & CCA Small Populations	downy monkeyflower	<8530	ALA	Apr-Aug			
Phrymaceae	<a href="#">Mimulus rattanii</a>		A1	CEQA	Burns, Chaparral	Unclear if at Corall Hollow	Fire Follower	Rattan monkeyflower	295-4003	ALA, CCA	Apr-Jul	PDSCR1B2D2		
Phrymaceae	<a href="#">Mimulus tricolor</a>		A1	CEQA	Vernal Pool	Unclear if it's actually here	Limited/Threatened Habitat	tricolor monkeyflower		CCA	Mar-Jun			
Caryophyllaceae	<a href="#">Minuartia californica</a>		A2	CEQA	Chaparral, Open Dry Slope, Grassland (Annual or Perennial), Rock, Tallus, Scree, Sand, Sandstone, Serpentine or Serpentine-derived soils			California sandwort	<4921	ALA, CCA	-			
Caryophyllaceae	<a href="#">Minuartia pusilla</a>		A2	CEQA	Chaparral, Forest			annual sandwort, least sandwort	<7874	ALA, CCA	-			
Nyctaginaceae	<a href="#">Mirabilis laevis var. crassifolia</a>	(formerly M. californica)	A1	CEQA	Chaparral, Open Dry Slope, Dry Wash, Grassland (Annual or Perennial), Rock, Tallus, Scree, Sand, Sandstone, Woodland		Disjunct	wishbone bush, California four o'clock	<8202	ALA	-			
Caryophyllaceae	<a href="#">Moehringia macrophylla</a>		A2	CEQA	Forest, Rock, Tallus, Scree, Serpentine or Serpentine-derived soils, Woodland			large-leaved sandwort, big-leaf sandwort	984-5906	CCA	-			
Lamiaceae	<a href="#">Monardella antonina subsp. antonina</a>		*A1	3 S3?(CEQA) G4T3Q	Chaparral, Rock, Tallus, Scree, Woodland			San Antonio hills monardella	0-4265	ALA	May-Aug		2012-03-19	
Lamiaceae	<a href="#">Monardella breweri subsp. breweri</a>	(historical-1868)	A1x	CEQA	Chaparral, Woodland	N Limit? Presumed EXTIRPATED		Brewer's monardella	<4921	ALA	May-Aug		2012-03-24	
Lamiaceae	<a href="#">Monardella douglasii</a>		A2	CEQA	Chaparral, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Woodland	Unable to locate at Skyln in 90 or 91	Declining	fenestra monardella, Fenestra monardella	164-3609	ALA, CCA	-			
Lamiaceae	<a href="#">Monardella sheltonii</a>		A1x	CEQA	Chaparral, Forest, Rock, Tallus, Scree, Serpentine or Serpentine-derived soils, Woodland		Limited/Threatened Habitat	Shelton's monardella	1394-5249	ALA	-		2016-03-01	
Lamiaceae	<a href="#">Monardella villosa subsp. globosa</a>	(ssp. villosa is more common)	*A2	1B.2 S2.2(CEQA) G5T2	Chaparral, Woodland	Taxonomic Questions		robust monardella	0-4265	ALA	May-Aug		2012-03-20	
Chenopodiaceae	<a href="#">Monolepis nuttalliana</a>		A1	CEQA	Alkali Areas, Burns	Overlooked? Munz indicates common	Fire Follower	Nuttall's poverty weed, poverty weed	<12139	ALA?, CCA	Apr-Sep			
Asteraceae	<a href="#">Monolopia gracilens</a>		*A1	1B.2 S2S3(CEQA) G2G3	Chaparral, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Woodland		N Limit	woodland woollythreads, woodland monolopia	328-3937	ALA?, CCA	Mar-Jul	PDAST6G010		
Asteraceae	<a href="#">Monolopia lanceolata</a>	(historical-1941)	A1x	CEQA	Chaparral, Open Dry Slope, Grassland (Annual or	Presumed EXTIRPATED	Disjunct	common hillside daisy, common monolopia	164-5249	ALA?, CCA?	Feb-Jun			

					Perennial), Woodland										
Montiaceae	<a href="#">Montia linearis</a>	(historical-1933)	A1x	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland	Presumed EXTIRPATED		linear-leaved montia	<7546	ALA? CCA?	-				
Myricaceae	<a href="#">Morella californica</a>	(formerly Myrica c.)	A2	CEQA	Forest, Redwood Forest, Scrub (Coastal or Interior)	Declining? E Limit? Regeneration?	Narrow Range in ALA & CCA Small Populations	wax myrtle	>2454	ALA, CCA	Mar- Apr				
Ranunculaceae	<a href="#">Myosurus minimus subsp. apus</a>		*A1	3.1 S2.2(CEQA) G5T2Q	Alkali Areas, Freshwater Marsh, Vernal Pool		Limited/Threatened Habitat	little mousetail		ALA, CCA	-	PDRAN0H031			
Ranunculaceae	<a href="#">Myosurus minimus subsp. minimus</a>		A2	CEQA	Freshwater Marsh, Vernal Pool	Overlooked?	Limited/Threatened Habitat	common mouse-tail		ALA, CCA	-				
	<a href="#">Myriopteris covillei</a>		A1	CEQA	Rock, Tallus, Scree	Confusion with C. intertexta		Coville's lip fern	1969-7874	ALA, CCA	-		2016-02-29		
	<a href="#">Myriopteris gracillima</a>		A1	CEQA	Rock, Tallus, Scree			lace fern	1312-10499	ALA	-		2016-02-29	1998-12-02	
	<a href="#">Myriopteris intertexta</a>		A2	CEQA	Rock, Tallus, Scree	Confusion with C. covillei	Narrow Range in ALA & CCA	coastal lip fern	984-9186	ALA, CCA	-		2016-02-29		
Polemoniaceae	<a href="#">Navarretia atractyloides</a>		A2	CEQA	Rock, Tallus, Scree, Sand, Sandstone			holly-leaved navarretia	<8202	CCA	May-Jul				
Polemoniaceae	<a href="#">Navarretia cotulifolia</a>		*A2	4.2 S3.2(CEQA) G3	Miscellaneous Wetlands		Limited/Threatened Habitat	cotula navarretia	<1640	ALA, CCA	May- Jun	PDPLM0C040			
Polemoniaceae	<a href="#">Navarretia gowenii</a>		*A1	1B.1 S1(CEQA) G1	Sand, Sandstone			Lime Ridge navarretia	656-984	CCA	-	PDPLM0C120		2007-02-11	

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California Native Plant Society's East Bay Chapter's Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties



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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Polemoniaceae	<a href="#">Navarretia hamata subsp. parviloba</a>		A1	CEQA	Chaparral, Rock, Tallus, Scree, Sand, Sandstone			hooked navarretia	<3281	CCA	Apr-Jun			
Polemoniaceae	<a href="#">Navarretia heterandra</a>		*A1	4.3 S3.3(CEQA) G3	Vernal Pool			Tehama navarretia	<3609	CCA	May-Jun	PDPLM0C0A0		2004-08-24
Polemoniaceae	<a href="#">Navarretia intertexta subsp. intertexta</a>		A1	CEQA	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat	needle-leaved navarretia	<6890	ALA	May-Jul			2000-02-09
Polemoniaceae	<a href="#">Navarretia leucocephala subsp. leucocephala</a>		A1	CEQA	Vernal Pool	emails March 27,2012 from David Gowen, Chris Thayer, Dianne Lake conclude this is not in East Bay		white-flowered navarretia	<6890	ALA	Apr-May		2013-02-01	2002-08-18
Polemoniaceae	<a href="#">Navarretia nigelliformis subsp. nigelliformis</a>		*A2	4.2 S3.2(CEQA) G4T3	Vernal Pool		Limited/Threatened Habitat N Limit	adobe navarretia	33-3281	ALA, CCA	Apr-Jun	PDPLM0C0J1		
Polemoniaceae	<a href="#">Navarretia nigelliformis subsp. radians</a>		*A1	1B.2 S2S3.2(CEQA) G4T2T3	Vernal Pool		Limited/Threatened Habitat	shining navarretia	492-3281	CCA	May-Jul	PDPLM0C0J2	2016-03-01	2003-01-12
Polemoniaceae	<a href="#">Navarretia prostrata</a>		*A2	1B.1 S2.1?(CEQA) G2?	Alkali Areas, Vernal Pool			prostrate vernal pool navarretia	<2297	ALA	Apr-Jul	PDPLM0C0Q0		2003-12-03
Polemoniaceae	<a href="#">Navarretia tagetina</a>	(historical-1927)	A1x	CEQA	Grassland (Annual or Perennial), Vernal Pool	Presumed EXTIRPATED		marigold navarretia	33-5249	CCA?	Apr-Jun			
Polemoniaceae	<a href="#">Navarretia viscidula</a>		A1	CEQA	Freshwater Marsh, Grassland (Annual or Perennial), Sand, Sandstone, Vernal Pool		Small Populations S Limit	sticky navarretia	328-2953	CCA	Jun-Jul			
Solanaceae	<a href="#">Nicotiana attenuata</a>		A1	CEQA	Open Dry Slope			coyote tobacco	656-9186	ALA	May-Oct			
Solanaceae	<a href="#">Nicotiana quadrivalvis</a>		A2	CEQA	Dry Wash, Open Dry Slope	Plentiful along MnRd-6/1994. Only 1 plant there 6/1995		indian tobacco	<4921	ALA, CCA	May-Oct		2016-03-01	
Amaranthaceae	<a href="#">Nitrophila occidentalis</a>		A1	CEQA	Alkali Areas	Overlooked?	Limited/Threatened Habitat	nitrophila	<6890	ALA, CCA	May-Oct			
Onagraceae	<a href="#">Oenothera deltooides subsp. cognata</a>		A2	CEQA	Grassland (Annual or Perennial), Sand, Sandstone		N Limit	desert evening-primrose	<2297	ALA?, CCA	Mar-May			
Onagraceae	<a href="#">Oenothera deltooides subsp. howellii</a>		*A2	1B.1 S1.1(CEQA) G5T1 CE FE	Scrub (Coastal or Interior), Sand, Sandstone	(does not occur outside of CCA county) LmRdg population may not be natural	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Geographical Range	Antioch Dunes evening-primrose	<328	CCA	Mar-Sep	PDONA0C0B4		
Oxalidaceae	<a href="#">Oxalis oregana</a>		A1	CEQA	Redwood Forest	E Limit? Dmnd seen 2/92, but threatened by Algerian Ivy. R. Ornduff questions if still at StwbyCyn OkIndHIN-1959 site at end of Jordan Rd-still there? Also, planted in Canyon	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	redwood sorrel	<3281	ALA	Feb-Aug			
Oxalidaceae	<a href="#">Oxalis pilosa</a>	(formerly O. albicans ssp. p.)	A1	CEQA	Chaparral, Grassland (Annual or Perennial), Scrub (Coastal or Interior)			hairy wood-sorrel	<5906	ALA	Feb-Sep			
Papaveraceae	<a href="#">Papaver californicum</a>		A2	CEQA	Burns, Woodland	Only 1 plant seen at BrionP in 1988 but not since	Fire Follower	fire poppy	<3937	ALA, CCA	Apr-May			

Urticaceae	<a href="#">Parietaria hespera var. californica</a>		A1	CEQA	Chaparral, Rock, Tallus, Scree, Sand, Sandstone, Woodland		N Limit	California pellitory	98-4003	ALA, CCA	Feb-May			
Boraginaceae	<a href="#">Pectocarya penicillata</a>		A1	CEQA	Miscellaneous	Declining? Overlooked		northern pectocarya, winged pectocarya	295-6890	ALA, CCA	Feb-May			
Fabaceae	<a href="#">Pedimelum californicum</a>		A1	CEQA	Chaparral, Woodland		Small Populations N Limit	indian breadroot	3281-8202	ALA, CCA	Apr-Jul			
Plantaginaceae	<a href="#">Penstemon centranthifolius</a>		A2	CEQA	Chaparral, Sand, Sandstone, Woodland		Narrow Range in ALA & CCA	scarlet bugler	<5906	ALA, CCA	Apr-Jul			
Plantaginaceae	<a href="#">Penstemon heterophyllus var. purdyi</a>		A2	CEQA	Chaparral, Forest, Grassland (Annual or Perennial)			foothill penstemon	164-6234	ALA, CCA	May-Jun			
Asteraceae	<a href="#">Pentachaeta alsinoides</a>		A2	CEQA	Grassland (Annual or Perennial)	Overlooked	Declining	tiny pentachaeta	<1804	ALA, CCA	Mar-Jun			
Asteraceae	<a href="#">Pentachaeta exilis subsp. exilis</a>		A1	CEQA	Grassland (Annual or Perennial)	Overlooked	Declining	meager pentachaeta	<2953	ALA, CCA	Mar-May			
Apiaceae	<a href="#">Perideridia californica</a>		A2	CEQA	Riparian		N Limit	California yampah	984-4101	ALA, CCA	Apr-May			
Apiaceae	<a href="#">Perideridia gairdneri subsp. gairdneri</a>		*A1	4.2 S3.2(CEQA) G5T3	Miscellaneous Wetlands			Gairdner's yampah	<1148	CCA	Jun-Jul	PDAP11N062		
Apiaceae	<a href="#">Perideridia oregana</a>		A1	CEQA	Miscellaneous, Open Dry Slope, Rock, Tallus, Scree, Woodland			yampah	197-6890	ALA, CCA	Jul-Aug		2016-03-01	
Polygonaceae	<a href="#">Percicaria hydropiperoides</a>	(formerly Polygonum h.)	A2	CEQA	Freshwater Marsh, Riparian		Limited/Threatened Habitat	false waterpepper, water-pepper	<4921	CCA	Jun-Oct			
Asteraceae	<a href="#">Petasites frigidus var. palmatus</a>		A1	CEQA	Riparian, Redwood Forest	E Limit?		western sweet coltsfoot, coltsfoot	<4593	ALA, CCA	Jan-Apr			
Solanaceae	<a href="#">Petunia parviflora</a>		A1	CEQA	Dry Wash	Overlooked? Confused with Polygonum aviculare?		wild petunia	<4265	ALA, CCA	Apr-Aug			
Boraginaceae	<a href="#">Phacelia breweri</a>		A2	CEQA	Chaparral, Rock, Tallus, Scree, Woodland		Small Geographical Range N Limit	Brewer's phacelia	<4593	ALA, CCA	Mar-Jun			
Boraginaceae	<a href="#">Phacelia divaricata</a>		A2	CEQA	Chaparral, Grassland (Annual or Perennial), Woodland	Several old sites in OkInd/Bky Hills- any still exist?	Declining	divaricate phacelia	<4921	ALA, CCA	Apr-Jun			
Boraginaceae	<a href="#">Phacelia douglasii</a>		A1	CEQA	Sand, Sandstone		N Limit	Douglas' phacelia	<5577	ALA, CCA?	Mar-May			
Boraginaceae	<a href="#">Phacelia egena</a>	(historical-1956)	A1x	CEQA	Chaparral, Riparian, Woodland			phacelia	164-8202	ALA?, CCA	Apr-Jul			
Boraginaceae	<a href="#">Phacelia malvifolia var. malvifolia</a>		A2	CEQA	Gravel, Sand, Sandstone			stinging phacelia	<4593	ALA	Apr-Jul		2016-02-29	
Boraginaceae	<a href="#">Phacelia phacelioides</a>		*A1	1B.2 S1.2(CEQA) G1	Burns, Chaparral, Rock, Tallus, Scree		Limited/Threatened Habitat Narrow Range in ALA & CCA Fire Follower	Mount Diablo phacelia	1640-4593	CCA	Apr-Jun	PDHYD0C3Q0	2014-04-15	
Boraginaceae	<a href="#">Phacelia ramosissima</a>		A2	CEQA	Open Dry Slope, Dry Wash, Grassland (Annual or Perennial), Miscellaneous			branching phacelia	<12467	ALA, CCA	Apr-Oct	PDHYD0C416		
Boraginaceae	<a href="#">Phacelia rattanii</a>		A1	CEQA	Rock, Tallus, Scree			Rattan's phacelia	<4593	ALA, CCA	May-Jul			
Boraginaceae	<a href="#">Phacelia suaveolens</a>		A1	CEQA	Burns, Chaparral, Forest	Unclear if currently at Diablo	Narrow Range in ALA & CCA Fire Follower	sweet-scented phacelia	656-5577	CCA	-			
Poaceae	<a href="#">Phalaris angusta</a>	(historical-1912)	A1x	CEQA	Miscellaneous Wetlands	Presumed EXTIRPATED		narrow canary grass	<4593	ALA?	May-Jun			
Poaceae	<a href="#">Phalaris arundinacea</a>		A2	CEQA	Riparian, Miscellaneous Wetlands		Limited/Threatened Habitat	reed canary grass	<5577	ALA, CCA	May-Sep			
Poaceae	<a href="#">Phalaris californica</a>	(historical-1943)	A1x	CEQA	Grassland (Annual or Perennial), Woodland	Presumed EXTIRPATED		California canary grass	<2625	ALA?, CCA?	Apr-Jun			
Poaceae	<a href="#">Phalaris lemmonii</a>		A1x	CEQA	Miscellaneous			Lemmon's canary-grass	<2297	ALA	Apr-Jun		2016-03-01	

Verbenaceae	<a href="#">Phyla lanceolata</a>		A1x	CEQA	Miscellaneous Wetlands			fog-fruit	<1312	CCA	May-Nov		2016-03-01	
Verbenaceae	<a href="#">Phyla nodiflora</a>	(var. nodiflora is more commo)	A1	CEQA	Miscellaneous Wetlands	vars no longer recognized. Moved to Inactive 1/4/17		narrow-leaved fog-fruit	<1312	ALA	May-Nov		2017-01-04	
Marsileaceae	<a href="#">Pilularia americana</a>		A2	CEQA	Vernal Pool, Miscellaneous Wetlands	Overlooked?	Limited/Threatened Habitat	pillwort	<6562	ALA, CCA	-			
Pinaceae	<a href="#">Pinus attenuata</a>		A2	CEQA	Burns, Chaparral, Forest, Sand, Sandstone	- Trees at FickrRdg old and decaying, but some regeneration Recently died out at SblyP	Declining Fire Follower	knobcone pine	<6562	ALA, CCA	-			
Pinaceae	<a href="#">Pinus coulteri</a>		A2	CEQA	Chaparral, Forest	- Many trees diseased. Introduced at Tidn and EBMUD land near Tidn	Declining N Limit Stressed	Coulter pine	<9843	ALA, CCA	-			
Orchidaceae	<a href="#">Piperia elongata</a>		A2	CEQA	Forest, Scrub (Coastal or Interior)	More than 5 regions but: Very PISPblo has not been reported in many years	Small Populations	chaparral orchid, wood rein-orchid, elongate piperia	<7218	ALA, CCA	May-Jul			
Orchidaceae	<a href="#">Piperia michaelii</a>		*A2	4.2 S3.2(CEQA) G3	Forest, Scrub (Coastal or Interior), Woodland	More than 5 regions but: Rare, Threatened or Endangered statewide. ID confusion		Michael's rein-orchid	<2297	ALA, CCA	Apr-Aug	PMORC1X110	2016-02-29	
Orchidaceae	<a href="#">Piperia unalascensis</a>		A1	CEQA	Forest, Scrub (Coastal or Interior), Woodland	ID Questions. All may be incorrect and should be checked.		Alaska piperia, slender-spire orchid	<9843	ALA, CCA	May-Aug			
Boraginaceae	<a href="#">Plagiobothrys chorisianus var. chorisianus</a>	(historical-1890)	*A1x	1B.2 S2.2(CEQA) G3T2Q	Chaparral, Grassland (Annual or Perennial), Scrub (Coastal or Interior)	Presumed EXTIRPATED		Choris' popcornflower	<2133	ALA?	Mar-Jun	PDBOR0V061		
Boraginaceae	<a href="#">Plagiobothrys diffusus</a>		*A1	1B.1 S1.1(CEQA) G1Q CE	Grassland (Annual or Perennial), Miscellaneous Wetlands			San Francisco popcornflower	98-492	ALA	Apr-Jun	PDBOR0V080		
Boraginaceae	<a href="#">Plagiobothrys glaber</a>		*A1	1A SH(CEQA) GH	Alkali Areas, Vernal Pool, Miscellaneous Wetlands	Presumed EXTIRPATED? Possibly refound at Dublin but more research needed	Limited/Threatened Habitat	hairless popcornflower	<328	ALA	Apr-May	PDBOR0V0B0		
Boraginaceae	<a href="#">Plagiobothrys infectivus</a>		A1	CEQA	Miscellaneous		Narrow Range in ALA & CCA	dye popcornflower	262-2723	CCA	Mar-May			
Boraginaceae	<a href="#">Plagiobothrys leptocladius</a>		A2	CEQA	Alkali Areas		Limited/Threatened Habitat Narrow Range in ALA & CCA	alkali plagiobothrys	<4593	ALA, CCA	Mar-Jul			
Boraginaceae	<a href="#">Plagiobothrys tenellus</a>		A2	CEQA	Miscellaneous		Declining	Pacific popcornflower, slender popcornflower	<5577	ALA, CCA	Mar-Jun			
Boraginaceae	<a href="#">Plagiobothrys undulatus</a>		A1	CEQA	Vernal Pool, Miscellaneous Wetlands			wavy-stemmed popcornflower, coast allocarya	<1312	CCA	Mar-Jun		2004-09-06	
Plantaginaceae	<a href="#">Plantago maritima</a>		A1	CEQA	Salt Marsh		Limited/Threatened Habitat Declining	Pacific seaside plantain	<492	ALA, CCA	May-Sep			
Plantaginaceae	<a href="#">Plantago subnuda</a>		A1	CEQA	Coastal Bluff, Miscellaneous Wetlands	More?	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	Mexican plantain	<984	ALA?, CCA	May-Sep			
Orchidaceae	<a href="#">Platanthera dilatata var. leucostachys</a>	(formerly P. l.) (historical-1)	A1x	CEQA	Freshwater Marsh, Riparian	Presumed EXTIRPATED		white-flowered bog-orchid	<11155	ALA?	May-Sep			
Valerianaceae	<a href="#">Plectritis congesta subsp. congesta</a>		A2	CEQA	Coastal Bluff, Woodland	Taxonomic problems. ID questionable for all Plectritis spp.		sea blush	<5577	ALA, CCA	Mar-Jun		2012-03-24	
Poaceae	<a href="#">Poa douglasii</a>	(historical-1882)	A1x	CEQA	Coastal Strand	Presumed EXTIRPATED	Limited/Threatened Habitat	sanddune bluegrass	<328	ALA?	Mar-Jul			



Poaceae	<a href="#">Poa howellii</a>		A2	CEQA	Chaparral, Rock, Tallus, Scree, Woodland			Howell's bluegrass	<5577	ALA, CCA	Apr-Jun			
Lamiaceae	<a href="#">Pogogyne douglasii</a>	(historical-1940)	A1x	CEQA	Vernal Pool		Limited/Threatened Habitat	Douglas' beardstyle, Douglas pogogyne	<2953	ALA?, CCA?	Mar-Jul			2009-01-26
Lamiaceae	<a href="#">Pogogyne zizyphoroides</a>		A1	CEQA	Vernal Pool		Limited/Threatened Habitat	Sacramento beardstyle	<1312	ALA?, CCA	Mar-Jun			
Polemoniaceae	<a href="#">Polemonium carneum</a>		*A1	2.2 S1(CEQA) G4	Miscellaneous	E Limit?		Oregon polemonium, great polemonium	<5906	ALA	Apr-Jun	PDPLM0E050		
Polygalaceae	<a href="#">Polygala californica</a>		A1	CEQA	Chaparral, Forest, Redwood Forest			California milkwort	33-4593	CCA	Apr-Jul			
Polypodiaceae	<a href="#">Polypodium scolieri</a>		A2	CEQA	Coastal Bluff, Miscellaneous			leather-leaf fern	<1969	ALA	-			2015-03-05
Dryopteridaceae	<a href="#">Polystichum californicum</a>		A1	CEQA	Miscellaneous			California sword fern	<3609	ALA?, CCA	-			
Dryopteridaceae	<a href="#">Polystichum imbricans subsp. imbricans</a>		A1	CEQA	Miscellaneous			rock sword fern	984-8202	ALA?	-			
Potamogetonaceae	<a href="#">Potamogeton zosteriformis</a>	(historical-1949)	*A1x	2.2 S2.2?(CEQA) G5	Freshwater Marsh, Riparian, Miscellaneous Wetlands			eel-grass pondweed	<4265	CCA	Jun-Jul	PMPOT03160		
Rosaceae	<a href="#">Potentilla anserina subsp. pacifica</a>		A1	CEQA	Miscellaneous Wetlands	E Limit?	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	Pacific silverweed	<492	ALA?, CCA	Mar-Oct			
Primulaceae	<a href="#">Primula clevelandii var. gracilis</a>	(ssp. patulum is more common)	A1	CEQA	Woodland		N Limit	Padre's shooting star	<1969	ALA, CCA	Mar-May			2016-03-06
Liliaceae	<a href="#">Prosartes smithii</a>	(?) (formerly Disporum s.) (P.	A1?	CEQA	Forest, Woodland	ID of 1939 voucher should be rechecked)	Narrow Range in ALA & CCA Small Populations	large-flowered fairy bell	<5167	ALA	Mar-Jun			
Lamiaceae	<a href="#">Prunella vulgaris var. lanceolata</a>	(var. vulgaris is more common)	A1	CEQA	Forest, Riparian, Woodland, Miscellaneous Wetlands	Also reported at Chbt & PtPnl, but var. unknown		selfheal	<8202	CCA	May-Sep			
Asteraceae	<a href="#">Pseudognaphalium biolettii</a>	(formerly Gnaphalium bicolor)	A2	CEQA	Open Dry Slope, Sand, Sandstone	Name currently unresolved for new edition of Jepson Manual		Biolett's cudweed	16-1969	ALA, CCA	Apr-Jun			
Asteraceae	<a href="#">Pseudognaphalium microcephalum</a>	(formerly Gnaphalium canescens)	A2	CEQA	Chaparral, Open Dry Slope	Taxonomic problems. Some may be ssp. beneolens. Needs study		white everlasting	<7382	ALA, CCA	Jun-Aug			
Asteraceae	<a href="#">Psilocarphus brevissimus var. multiflorus</a>	(?) (var. brevissimus is more)	*A1?	4.2 S3(CEQA) G4T3	Vernal Pool, Miscellaneous Wetlands	Reported here but location unknown	Limited/Threatened Habitat	delta woolly-marbles	33-1640	ALA?	May-Jun	PDAST7R012		
Asteraceae	<a href="#">Psilocarphus chilensis</a>	(formerly P. tenellus var. glo)	A2	CEQA	Miscellaneous Wetlands, Vernal Pool		Limited/Threatened Habitat	round woolly marbles, round woolly-marbles	<2297	ALA, CCA	Mar-Jul			2015-03-05
Poaceae	<a href="#">Puccinellia nutkaensis</a>		A1	CEQA	Alkali Areas, Salt Marsh, Miscellaneous Wetlands		Limited/Threatened Habitat	Alaska alkali grass	<33	ALA	-			
Poaceae	<a href="#">Puccinellia nuttalliana</a>		A1	CEQA	Alkali Areas		Limited/Threatened Habitat	Nuttall's alkali grass	<8661	ALA	Jun-Sep			
Poaceae	<a href="#">Puccinellia simplex</a>		A2	CEQA	Alkali Areas		Limited/Threatened Habitat Narrow Range in ALA & CCA	little alkali grass	<2953	ALA, CCA	Mar-May			
Asteraceae	<a href="#">Pyrrocoma racemosa var. racemosa</a>	(historical-1959)	A1x	CEQA	Alkali Areas, Grassland (Annual or Perennial), Salt Marsh, Miscellaneous			racemose pyrrocoma	<2953	ALA	Jun-Oct			
Fagaceae	<a href="#">Quercus agrifolia x wislizeni</a>		A1x	CEQA	Scrub (Coastal or Interior), Woodland	Not recognized in Jepson Manual		coast live oak x interior live oak		CCA	-			2016-03-01
Fagaceae	<a href="#">Quercus agrifolia</a>		A2	CEQA	Woodland, Forest, Miscellaneous	Many trees being attacked by Sudden Oak Death (SOD)		coast live oak, encina		ALA, CCA	-			2010-01-19
Fagaceae	<a href="#">Quercus chrysolepis</a>		A2	CEQA	Chaparral, Scrub (Coastal or Interior)	Not recognized in Jepson Manual, but East Bay specimens seem distinct		maul oak, canyon live oak, shrubby canyon oak	98-9022	ALA, CCA	Apr-May			2018-02-11 2002-08-11

Fagaceae	<a href="#">Quercus durata var. durata</a>		A2	CEQA	Chaparral, Serpentine or Serpentine-derived soils		Limited/Threatened Habitat Small Populations	leather oak	492-4921	ALA, CCA	Apr-May			
Fagaceae	<a href="#">Quercus garryana x dumosa</a>		A1x	CEQA	Scrub (Coastal or Interior), Woodland	Not recognized in Jepson Manual		Oregon oak x scrub oak	>2625	ALA	-		2016-03-01	
Fagaceae	<a href="#">Quercus garryana x durata</a>		A1	CEQA	Chaparral, Woodland	Not recognized in Jepson Manual		Oregon oak x leather oak	>2625	ALA	-			
Fagaceae	<a href="#">Quercus palmeri</a>		A2	CEQA	Rock, Tallus, Scree	More than 2 regions but: Regeneration?	Disjunct Small Populations	Palmer's oak	984-5249	ALA, CCA	Apr-May			
Fagaceae	<a href="#">Quercus parvula var. shrevei</a>		A2	CEQA	Chaparral, Woodland	More than 2 regions but: Very	Small Populations	island scrub oak	<3904	ALA, CCA	Mar-May			
Fagaceae	<a href="#">Quercus xepelinii</a>		A1	CEQA	Woodland	Hybrid of Q. garryana & Q. douglasii		Oregon oak x blue oak		CCA	-			
Fagaceae	<a href="#">Quercus xolonensis</a>		A1	CEQA	Forest, Woodland	Many trees with characters of both Q. lobata and Q. douglasii, but few confirmed as this hybrid		blue oak x valley oak		ALA?, CCA	-			
Ranunculaceae	<a href="#">Ranunculus lobbii</a>		*A2	4.2 S3.2(CEQA) G4	Vernal Pool, Miscellaneous Wetlands		Limited/Threatened Habitat	Lobb's aquatic buttercup	<1640	ALA?, CCA	Mar-May	PDRAN0L1J0		
Ranunculaceae	<a href="#">Ranunculus occidentalis var. occidentalis</a>		A2	CEQA	Grassland (Annual or Perennial), Woodland	R. occid., R. canus, & R. calif. all meet in the E Bay and can often be hard to distinguish and may intermingle		western buttercup	<4921	ALA, CCA	Mar-Jul		2012-03-24	
Ranunculaceae	<a href="#">Ranunculus orthorhynchus var. bloomeri</a>		A1	CEQA	Miscellaneous Wetlands		Declining	Bloomer's buttercup	<328	ALA, CCA?	Mar-May			
Ranunculaceae	<a href="#">Ranunculus orthorhynchus var. orthorhynchus</a>	(historical-1895)	A1x	CEQA	Forest, Miscellaneous Wetlands, Miscellaneous	Presumed EXTIRPATED		straight-beaked buttercup	<7218	ALA?	Mar-Aug			
Grossulariaceae	<a href="#">Ribes amarum</a>		A2	CEQA	Chaparral	ID questions		bitter gooseberry	49-6266	ALA	Feb-Apr	PDGRO02012	2016-03-14	
Grossulariaceae	<a href="#">Ribes aureum var. gracillimum</a>		A1	CEQA	Riparian, Miscellaneous		Small Populations N Limit	golden currant	344-2986	ALA, CCA?	Feb-May			

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California Native Plant Society's East Bay Chapter's Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties



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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Grossulariaceae	<a href="#">Ribes quercetorum</a>		A2	CEQA	Chaparral, Woodland		Narrow Range in ALA & CCA N Limit	oakwoods gooseberry, oak gooseberry	131-6463	ALA, CCA	Mar-May			
Grossulariaceae	<a href="#">Ribes speciosum</a>		A1	CEQA	Chaparral, Scrub (Coastal or Interior)	- Only natural occurrence here? Planted at Dbo, Tmscl, etc.	Disjunct	fuchsia-flowered gooseberry		ALA	Jan-May			
Boraginaceae	<a href="#">Romanzoffia californica</a>		A1	CEQA	Coastal Bluff, Rock, Tallus, Scree			Suksdorf's romanzoffia	<2625	CCA	Mar-May			1998-11-07
Brassicaceae	<a href="#">Rorippa curvisiliqua</a>		A2	CEQA	Freshwater Marsh	Munz says frequent. Look for more	Limited/Threatened Habitat Narrow Range in ALA & CCA	yellow cress	<11483	ALA, CCA	May-Oct			
Brassicaceae	<a href="#">Rorippa palustris subsp. palustris</a>		A2	CEQA	Miscellaneous Wetlands			marsh yellow-cress	<10499	ALA, CCA	Mar-Sep		2015-03-05	
Rosaceae	<a href="#">Rosa nutkana subsp. nutkana</a>		A1	CEQA	Miscellaneous	Moved to Inactive 1/1/17. Redet. as variant of Rosa californica.		Nootka rose	<2297	ALA	Apr-Jul		2017-01-01	
Rosaceae	<a href="#">Rubus spectabilis</a>		A1	CEQA	Riparian			salmonberry	<1640	ALA, CCA	Mar-Jun			
Polygonaceae	<a href="#">Rumex californicus</a>	(formerly R. salicifolius var.	A2	CEQA	Miscellaneous Wetlands			willow dock	<11483	ALA, CCA	May-Sep			
Polygonaceae	<a href="#">Rumex crassus</a>	(formerly R. salicifolius var.	A2	CEQA	Coastal Bluff, Coastal Strand, Miscellaneous Wetlands		Limited/Threatened Habitat	willow dock	<328	ALA, CCA	Feb-Jul			
Polygonaceae	<a href="#">Rumex fueginus</a>		A2	CEQA	Brackish Marsh, Salt Marsh	More in Delta?	Limited/Threatened Habitat	golden dock	<6562	ALA, CCA	May-Aug			
Polygonaceae	<a href="#">Rumex occidentalis</a>		A1	CEQA	Miscellaneous Wetlands	Munz says rare in Calif.	Limited/Threatened Habitat	western dock	<8202	ALA?, CCA	May-Aug			
Polygonaceae	<a href="#">Rumex transitorius</a>		A2	CEQA	Miscellaneous Wetlands	More?		willow dock	<7382	ALA, CCA	Apr-Jun			
Alismataceae	<a href="#">Sagittaria latifolia</a>		A1	CEQA	Freshwater Marsh	Planted at Briones Reservoir	Limited/Threatened Habitat	arrowhead	<4921	ALA, CCA	Jul-Aug			
Salicaceae	<a href="#">Salix breweri</a>		A1	CEQA	Gravel, Riparian, Serpentine or Serpentine-derived soils		Narrow Range in ALA & CCA	Brewer's willow	984-4265	ALA	Mar-Apr			
Salicaceae	<a href="#">Salix melanopsis</a>		A1x	CEQA	Riparian		Disjunct	dusky willow	2034-8858	ALA	May-Jul		2016-03-01	
Salicaceae	<a href="#">Salix scouleriana</a>		A2	CEQA	Miscellaneous Wetlands	Aging Populations No Regeneration?	Limited/Threatened Habitat Small Populations	Scouler's willow	3-11155	ALA, CCA	Feb-Jun			
Lamiaceae	<a href="#">Salvia carduacea</a>	(historical-1946)	A1x	CEQA	Gravel, Sand, Sandstone	Presumed EXTIRPATED	Small Populations N Limit	thistle sage	<4593	ALA?, CCA?	Mar-May			
Lamiaceae	<a href="#">Salvia spathacea</a>		A1	CEQA	Chaparral, Open Dry Slope, Scrub (Coastal or Interior), Woodland	Also planted at Tilden and Wildcat	Narrow Range in ALA & CCA	California hummingbird sage, hummingbird sage	<2625	CCA	Mar-May			
Adoxaceae	<a href="#">Sambucus racemosa var. racemosa</a>		A1	CEQA	Riparian	E Limit?	Narrow Range in ALA & CCA Small Populations	red elderberry	<10827	ALA, CCA	May-Jul			
Theophrastaceae	<a href="#">Samolus parviflorus</a>		A1	CEQA	Miscellaneous Wetlands	Overlooked?		seaside brookweed, water-pimpernel	<4265	CCA	-			
Apiaceae	<a href="#">Sanicula arctopoides</a>	(historical-19??)	A1x	CEQA	Coastal Bluff	Not found in recent attempts. Presumed EXTIRPATED	Limited/Threatened Habitat Narrow Range in ALA & CCA Small Populations	footsteps of spring, yellow mats	<820	ALA?	Mar-May			
Apiaceae	<a href="#">Sanicula laciniata</a>		A2	CEQA	Chaparral, Scrub (Coastal or Interior), Woodland	E Limit? ID confusion in E Bay	Narrow Range in ALA & CCA	coast sanicle	98-2953	ALA, CCA	Mar-May			
Apiaceae	<a href="#">Sanicula maritima</a>	(historical-1936)	A1x	1B.1 S2.2(CEQA) G2 CR	Grassland (Annual or Perennial), Miscellaneous, Miscellaneous Wetlands	Presumed EXTIRPATED		adobe sanicle	492-492	ALA?	Apr-May	PDAPI1Z0D0		

Apiaceae	<a href="#">Sanicula saxatilis</a>		*A1	1B.2 S2(CEQA) G2 CR	Chaparral, Rock, Tallus, Scree		Limited/Threatened Habitat Narrow Range in ALA & CCA Small Geographical Range	rock sanicle	2953-3609	CCA	May-Jun	PDAP11Z0H0		
Cyperaceae	<a href="#">Schoenoplectus tabernaemontani</a>		A1	CEQA	Miscellaneous Wetlands			SOFT-STEM BULRUSH	-10-25833	ALA,CCA	-		2018-01-24	2018-01-24
Liliaceae	<a href="#">Scoliopus bigelovii</a>	(historical-1900)	A1x	CEQA	Redwood Forest	Presumed EXTIRPATED		fetid adder's tongue, slink pod	<3609	ALA?	-			
Poaceae	<a href="#">Scribneria bolanderi</a>		A2	CEQA	Miscellaneous			Scribner's grass	1640-8202	CCA	Mar-Jun			
Lamiaceae	<a href="#">Scutellaria californica</a>		A2	CEQA	Scrub (Coastal or Interior), Woodland, Miscellaneous		Narrow Range in ALA & CCA Small Populations S Limit	California skullcap	164-7218	ALA, CCA	Jun-Jul			
Lamiaceae	<a href="#">Scutellaria galericulata</a>	(historical-1949)	*A1x	2.2 S2.2?(CEQA) G5	Miscellaneous Wetlands			marsh skullcap	3281-6890	CCA?	Jun-Sep	PDLAM1U0J0		2005-01-02
Lamiaceae	<a href="#">Scutellaria lateriflora</a>	?	*A1?	2.2 S1(CEQA) G5	Miscellaneous Wetlands	Unclear what county the population occurs in		side-flowering skullcap, blue skullcap	<1640	CCA?	May-Jul	PDLAM1U0Q0		2005-01-02
Lamiaceae	<a href="#">Scutellaria siphocampyloides</a>		A1	CEQA	Riparian, Miscellaneous	in Coast Ranges	N Limit	gray-leaved skullcap	230-8202	ALA	May-Jul			
Crassulaceae	<a href="#">Sedella pentandra</a>	(formorely Parvisedum pentandr	A2	CEQA	Rock, Tallus, Scree, Serpentine or Serpentine-derived soils, Sand, Sandstone	Overlooked? Small Populations?	Limited/Threatened Habitat Narrow Range in ALA & CCA	Mount Hamilton sedella	984-2297	ALA, CCA	Mar-Jun			
Crassulaceae	<a href="#">Sedum radiatum</a>		A1	CEQA	Rock, Tallus, Scree		Limited/Threatened Habitat	coast range stonecrop, star-fruited stonecrop	197-6890	CCA	Apr-Jul			
Selaginellaceae	<a href="#">Selaginella bigelovii</a>		A2	CEQA	Miscellaneous			spike-moss	<6562	ALA	-			
Asteraceae	<a href="#">Senecio aphanactis</a>		*A1	2.2 S1.2(CEQA) G3?	Alkali Areas, Grassland (Annual or Perennial)		Limited/Threatened Habitat	chaparral ragwort, rayless ragwort	33-1804	ALA?, CCA?	Feb-May	PDAST8H060		
Asteraceae	<a href="#">Senecio flaccidus var. douglasii</a>		A2	CEQA	Dry Wash, Rock, Tallus, Scree, Sand, Sandstone		Small Populations	Douglas' threadleaf ragwort, shrubby butterweed	98-4921	ALA, CCA	-			
Asteraceae	<a href="#">Senecio hydrophilus</a>		A1	CEQA	Miscellaneous Wetlands	throughout its range	Limited/Threatened Habitat Declining S Limit	water ragwort, alkali-marsh ragwort, alkali-marsh butterweed	656-8202	ALA?, CCA	May-Sep			
Aizoaceae	<a href="#">Sesuvium verrucosum</a>		A2	CEQA	Alkali Areas		Limited/Threatened Habitat	western sea-purslane, sea-purslane	<4593	ALA, CCA	Apr-Nov			
Poaceae	<a href="#">Setaria parviflora</a>		A2	CEQA	Chaparral, Grassland (Annual or Perennial)			knotroot bristle grass, perennial foxtail	<4823	ALA, CCA	May-Sep			
Malvaceae	<a href="#">Sidalcea diploscypha</a>		A2	CEQA	Grassland (Annual or Perennial), Woodland		Small Populations	fringed checkerbloom, fringed sidalcea	<2756	ALA, CCA	Apr-May			
Caryophyllaceae	<a href="#">Silene antirrhina</a>		A1	CEQA	Burns, Miscellaneous, Sand, Sandstone		Fire Follower	sleepy catchfly, snapdragon catchfly	<5906	ALA, CCA?	Apr-Aug			
Caryophyllaceae	<a href="#">Silene verecunda</a>		A2	CEQA	Forest, Woodland	ssp. platyota not to be recognized in new edition of Jepson Manual, but Mt. Diablo specimens seem distinct	N Limit	San Francisco campion, Cuyamaca campion	<11155	ALA, CCA	-	PDCAR0U213		
Iridaceae	<a href="#">Sisyrinchium californicum</a>		A1	CEQA	Freshwater Marsh		Limited/Threatened Habitat Narrow Range in ALA & CCA	golden-eyed-grass	<656	ALA, CCA	-			
Apiaceae	<a href="#">Sium suave</a>		A1	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat	hemlock water-parsnip	<7710	CCA	Jul-Aug			
Solanaceae	<a href="#">Solanum xanti</a>	(?) (S. umbelliferum is more c	A1?	CEQA	Forest, Scrub (Coastal or Interior), Woodland	- IDs all very questionable. Out of range. May not occur in ALA or CCA	Disjunct	purple nightshade	<8858	ALA?, CCA?	Feb-Jun			
Typhaceae	<a href="#">Sparganium eurycarpum var. eurycarpum</a>		A2	CEQA	Freshwater Marsh, Miscellaneous Wetlands		Limited/Threatened Habitat	bur-reed	<7874	ALA, CCA	Jun-Aug			

Typhaceae	<a href="#">Sparganium eurycarpum var. greenei</a>		A1	CEQA	Freshwater Marsh, Miscellaneous Wetlands		Limited/Threatened Habitat	Greene's bur-reed	<492	ALA	Jun-Aug			
Caryophyllaceae	<a href="#">Spergularia macrotheca var. leucantha</a>		A2	CEQA	Alkali Areas, Vernal Pool		Limited/Threatened Habitat	large-flowered sand spurry	<2625	ALA, CCA	Apr-Jun			
Caryophyllaceae	<a href="#">Spergularia macrotheca var. macrotheca</a>		A2	CEQA	Alkali Areas, Coastal Bluff, Rock, Tallus, Scree, Miscellaneous Wetlands		Limited/Threatened Habitat	large-flowered sand spurry	<820	ALA, CCA	-			
Caryophyllaceae	<a href="#">Spergularia macrotheca var. unknown</a>		A1	CEQA	Alkali Areas, Coastal Bluff, Rock, Tallus, Scree, Miscellaneous Wetlands		Limited/Threatened Habitat	large-flowered sand spurry		ALA, CCA	-			2000-10-09
Orchidaceae	<a href="#">Spiranthes porrifolia</a>		A1x	CEQA	Miscellaneous Wetlands			western ladies' tresses	<8202	ALA	Jun-Sep		2016-03-01	
Orchidaceae	<a href="#">Spiranthes romanzoffiana</a>		A1	CEQA	Coastal Bluff, Freshwater Marsh		Limited/Threatened Habitat	hooded ladies' tresses	<10827	ALA?, CCA	May-Sep			
Poaceae	<a href="#">Sporobolus airoides</a>		A1	CEQA	Alkali Areas		Limited/Threatened Habitat	alkali sacaton	<6890	ALA, CCA	Apr-Oct			
Lamiaceae	<a href="#">Stachys ajugoides</a>	(var. rigida is more common)	A2	CEQA	Miscellaneous Wetlands	- used to be more common	Limited/Threatened Habitat Small Populations Declining	bugle hedge nettle	<3281	ALA, CCA	-			
Lamiaceae	<a href="#">Stachys bullata</a>	(?) (S. ajugoides var. rigida)	A1?	CEQA	Open Dry Slope, Miscellaneous	IDs very questionable. Confused with S. ajugoides ssp. rigida. S. bullata probably does not occur in ALA or CCA		California hedge nettle	<1640	ALA?, CCA?	Mar-Sep			
Asteraceae	<a href="#">Stephanomeria elata</a>		A2	CEQA	Open Dry Slope	Declining? Confusion with S. virgata pleurocarpa		stephanomeria	328-4593	ALA, CCA	Jul-Nov			
Poaceae	<a href="#">Stipa lemmonii var. lemmonii</a>	(formerly Achnatherum lemmonii)	A1	CEQA	Forest, Scrub (Coastal or Interior)			Lemmon needlegrass	164-7546	ALA	May-Jul		2015-03-04	
Brassicaceae	<a href="#">Streptanthus albidus subsp. peramoenus</a>		*A2	1B.2 S2.2(CEQA) G2T2	Chaparral, Grassland (Annual or Perennial), Open Dry Slope, Serpentine or Serpentine-derived soils	More than 5 regions but: Rare, Threatened or Endangered statewide	Small Geographical Range	most beautiful jewel-flower	>2461	ALA, CCA	Apr-Jul	PDBRA2G012	2016-02-29	
Brassicaceae	<a href="#">Streptanthus breweri</a>		A1	CEQA	Serpentine or Serpentine-derived soils		Limited/Threatened Habitat	Brewer's streptanthus	820-6890	ALA	-			
Brassicaceae	<a href="#">Streptanthus hispidus</a>		*A1	1B.3 S1.2(CEQA) G1	Chaparral, Rock, Tallus, Scree	(Endemic to Mt. Diablo) Above 1000 ft.	Small Geographical Range	Mount Diablo jewelflower	1969-3937	CCA	Mar-Jun	PDBRA2G0M0		
Potamogetonaceae	<a href="#">Stuckenia filiformis subsp. alpina</a>	(formerly Potamogeton f.)	*A1	2.2 S1S2(CEQA) G5	Freshwater Marsh, Riparian, Miscellaneous Wetlands			slender-leaved potamogeton	984-7054	CCA	-	PMPOT03090		2005-05-20
Asteraceae	<a href="#">Stylocline gnaphaloides</a>		A2	CEQA	Sand, Sandstone, Miscellaneous	Overlooked?		everlasting neststraw, nest-straw	<3937	ALA, CCA?	Mar-May			
Chenopodiaceae	<a href="#">Suaeda californica</a>	(historical-1958)	*A1x	1B.1 S1.1(CEQA) G1 FE	Salt Marsh	NOTE: ID Controversy. Some believe these are all mis-identified specimens of S. moquinii		California seablite	<16	ALA	Jul-Oct	PDCEH0P020		2010-01-14
Chenopodiaceae	<a href="#">Suaeda nigra</a>	(formerly S. moquinii)	A2	CEQA	Alkali Areas, Miscellaneous Wetlands		Limited/Threatened Habitat	bush seepweed	<5249	ALA, CCA	May-Sep			
Asteraceae	<a href="#">Symphyotrichum frondosum</a>	(historical-1958)	A1x	CEQA	Alkali Areas, Freshwater Marsh, Miscellaneous Wetlands, Salt Marsh			short-rayed alkali aster	2297-8038	ALA	May-Oct		2015-03-04	
Asteraceae	<a href="#">Symphyotrichum lanceolatum var. hesperium</a>	(formerly Aster lanceolatum ss)	A2	CEQA	Miscellaneous, Riparian, Miscellaneous Wetlands	Confused with A. chilensis	Disjunct	marsh aster	<6562	ALA, CCA	Jul-Aug			
Asteraceae	<a href="#">Symphyotrichum lentum</a>	(formerly Aster lentus)	*A2	1B.2 S2(CEQA) G2	Miscellaneous Wetlands		Limited/Threatened Habitat Small Populations	Suisun marsh aster	<984	CCA	May-Nov	PDASTE8470		

Onagraceae	<a href="#">Tetrapteron graciflorum</a>		A2	CEQA	Open Dry Slope, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland		Small Populations Declining	hill sun cup	<2625	ALA, CCA	Mar-Apr		
Fabaceae	<a href="#">Thermopsis californica var. californica</a>	(historical-1929)	A1x	CEQA	Chaparral, Grassland (Annual or Perennial), Woodland	Presumed EXTIRPATED formerly identified as <i>T. macrophylla</i> but re-identified as <i>T. calif. var calif.</i> in 1991		santa ynez false-lupine, false-lupine	3281-4593	ALA?	May-Jun	PDFAB3Z0E0	2012-09-29
Brassicaceae	<a href="#">Thysanocarpus radians</a>		A1	CEQA	Miscellaneous		Narrow Range in ALA & CCA	ribbed fringe pod	<2625	CCA	Mar-Apr		2016-03-01
Saxifragaceae	<a href="#">Tolmiea diplomenziesii</a>		A1	CEQA	Riparian		Limited/Threatened Habitat Narrow Range in ALA & CCA	pig-a-back plant	<5906	ALA	-		
Plantaginaceae	<a href="#">Tonella tenella</a>		A2	CEQA	Riparian, Miscellaneous	Overlooked Needs undisturbed sites. Very little at Dbo 1991 where there was pig damage. Only seen on edges beyond pig damage	Small Populations Declining	small-flowered tonella	<5249	ALA, CCA	Mar-Jun		
Poaceae	<a href="#">Torreyochloa pallida var. pauciflora</a>		A1	CEQA	Freshwater Marsh, Riparian		S Limit	weak manna grass	<11483	ALA	Jul-Sep		
Melanthiaceae	<a href="#">Toxicoscordion paniculatum</a>	(?) (formerly <i>Zigadenus panic</i> )	A1?	CEQA	Open Dry Slope, Forest, Miscellaneous	ID Questions May not occur in ALA or CCA		panicled zygadene	3937-7546	CCA?	May-Jun		
Melanthiaceae	<a href="#">Toxicoscordion venosum var. venosum</a>	(formerly <i>Zigadenus venosus</i> )	A1	CEQA	Miscellaneous			death-camas	<8530	ALA	May-Jul		
Aizoaceae	<a href="#">Trianthema portulacastrum</a>		A1	CEQA	Miscellaneous Wetlands	Overlooked?	Limited/Threatened Habitat	horse purslane	<3281	CCA	Jun-Nov		
Fabaceae	<a href="#">Trifolium barbigerum</a>		A2	CEQA	Miscellaneous	Declining? Overlooked? E Limit?		bearded clover	<2297	ALA, CCA	-		
Fabaceae	<a href="#">Trifolium flavulum</a>	(Included within <i>T. fucatum</i> in	A2	CEQA	Alkali Areas, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Miscellaneous Wetlands	Not to be recognized in new edition of Jepson Manual	Small Populations Declining	bull clover		ALA, CCA	-		2004-01-07
Fabaceae	<a href="#">Trifolium gambelii</a>	(Included within <i>T. fucatum</i> in	A2	CEQA	Alkali Areas, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Miscellaneous Wetlands	Not to be recognized in new edition of Jepson Manual	Small Populations Declining	bull clover		ALA, CCA	-		2004-01-07
Fabaceae	<a href="#">Trifolium grayi</a>	(?)	A1?	CEQA	Miscellaneous	ID Confusion May not occur here		Gray's clover	<1969	ALA	Apr-Jun		
Fabaceae	<a href="#">Trifolium hydrophilum</a>	(vars. amplexens and truncatu	*A1	1B.2 S2.2?(CEQA) G2?	Alkali Areas, Salt Marsh		Limited/Threatened Habitat	saline clover	<984	ALA, CCA?	Apr-Jun	PDFAB400R5	
Fabaceae	<a href="#">Trifolium lilacinum</a>	(Included within <i>T. barbigerum</i>	A2	CEQA	Miscellaneous	Not to be recognized in new edition of Jepson Manual		Gray's clover		ALA	-		2004-01-07
Fabaceae	<a href="#">Trifolium macraei</a>		A1	CEQA	Sand, Sandstone, Miscellaneous	Overlooked? E Limit?		Macrae's clover, double-headed clover	<1969	ALA, CCA?	Mar-May		
Fabaceae	<a href="#">Trifolium olivaceum</a>		A2	CEQA	Miscellaneous	Overlooked?		olive clover	<2625	ALA, CCA	Apr-May		
Fabaceae	<a href="#">Trifolium wormskiolidii</a>		A2	CEQA	Miscellaneous Wetlands		Declining	cow clover	<10499	ALA, CCA	May-Oct		
Juncaginaceae	<a href="#">Triglochin concinna var. concinna</a>	( <i>T. maritima</i> is more common)	A2	CEQA	Salt Marsh	Confused with <i>T. striata</i> To be Included with <i>T. maritima</i> in new edition of Jepson Manual, but most East Bay field specimens differ remarkably, at least visually, from <i>T. maritima</i>	Limited/Threatened Habitat Narrow Range in ALA & CCA	seaside arrow-grass, slender arrow-grass	<33	ALA	-		
Juncaginaceae	<a href="#">Triglochin striata</a>	( <i>T. maritima</i> is more common)	A2	CEQA	Salt Marsh	Overlooked? Confused with <i>T. concinna</i>	Limited/Threatened Habitat Narrow Range in	three-ribbed arrow-grass	<98	ALA?, CCA	May-Sep		

Melanthiaceae	<a href="#">Trillium ovatum subsp. ovatum</a>		A2	CEQA	Forest, Redwood Forest	S	ALA & CCA Limited/Threatened Habitat Narrow Range in ALA & CCA E Limit	white trillium	33-5249	ALA, CCA	Feb-Apr			
Campanulaceae	<a href="#">Triodanis biflora</a>		A2	CEQA	Burns, Miscellaneous	More than 5 regions but:	Small Populations Declining Fire Follower	Venus' looking-glass	<6562	ALA, CCA	Apr-Jun			
Orobanchaceae	<a href="#">Triphysaria versicolor subsp. faucibarbata</a>		A2	CEQA	Grassland (Annual or Perennial)	Easily confused with <i>Castilleja rubicundula</i> ssp. <i>lithospermoides</i>		smooth owl's-clover	<1640	ALA, CCA	Apr-Jun			
Poaceae	<a href="#">Trisetum canescens</a>		A2	CEQA	Forest, Miscellaneous	Name unresolved for new edition of Jepson Manual	Small Populations	tall trisetum	<9285	ALA, CCA	May-Aug			
Themidaceae	<a href="#">Triteleia peduncularis</a>		A1	CEQA	Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Vernal Pool, Miscellaneous Wetlands			long-rayed brodiaea	<2625	ALA	May-Jul			
Brassicaceae	<a href="#">Tropidocarpum capparidum</a>	(historical-1981 but not seen)	*A1x	1B.1 S1.1(CEQA) G1	Alkali Areas, Grassland (Annual or Perennial)	All presumed EXTIRPATED		caper-fruited tropidocarpum	<1312	ALA?, CCA?	Mar-Apr	PDBRA2R010		
Berberidaceae	<a href="#">Vancouveria planipetala</a>	(historical-1898)	A1x	CEQA	Forest	Presumed EXTIRPATED		redwood ivy, inside-out flower	<5085	ALA?	-			
Verbenaceae	<a href="#">Verbena hastata</a>		A1	CEQA	Miscellaneous Wetlands		Limited/Threatened Habitat	blue vervain	<4265	CCA?	Jun-Sep			
Adoxaceae	<a href="#">Viburnum ellipticum</a>		*A2	2,3 S2.3(CEQA) G5	Chaparral	BrionP site discovered 1994 - 18 plants there	S Limit W Limit Stressed	oval-leaved viburnum	984-4593	ALA, CCA	Jun-Aug	PDCPR07080		
Fabaceae	<a href="#">Vicia hassei</a>		A2	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior)			slender vetch	<3937	ALA, CCA	Mar-May			
Violaceae	<a href="#">Viola adunca subsp. adunca</a>		A1	CEQA	Forest			western blue violet	<11713	ALA	-			
Violaceae	<a href="#">Viola douglasii</a>		A1	CEQA	Grassland (Annual or Perennial), Riparian, Serpentine or Serpentine-derived soils			Douglas' violet, golden violet	66-7546	ALA	Feb-Jul			
Violaceae	<a href="#">Viola glabella</a>		A2	CEQA	Forest, Riparian		Narrow Range in ALA & CCA	stream violet, smooth yellow violet	<8530	ALA, CCA	Mar-Aug			

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## California Native Plant Society's East Bay Chapter's Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties

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706 matching records

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Family	Scientific Name	notes	East Bay CNPS rarity rank	California rarity rank	habitat	comments	criteria	common name	elevation (Feet)	county	blooming period	cnddb element	last_updated	created
Violaceae	<a href="#">Viola purpurea subsp. purpurea</a>		A2	CEQA	Chaparral, Scrub (Coastal or Interior), Woodland	Confusion between ssp. purpurea and ssp. quercetorum B. Ertter reports specimens from Mt. Diablo are ssp. quercetorum		mountain violet	699-9501	ALA, CCA	Mar-Jul			
Violaceae	<a href="#">Viola purpurea subsp. quercetorum</a>		A2	CEQA	Grassland (Annual or Perennial), Scrub (Coastal or Interior)	Confusion between ssp. purpurea and ssp. quercetorum		mountain violet	997-6499	ALA, CCA	Feb-Jul			
Violaceae	<a href="#">Viola sempervirens</a>		A1	CEQA	Redwood Forest	Should be in Canyon area too?	Limited/Threatened Habitat	evergreen violet, redwood violet	16-4593	ALA, CCA	Jan-Jul			
Violaceae	<a href="#">Viola sheltonii</a>		A2	CEQA	Woodland		Small Populations	Shelton's violet, fan violet	1588-8202	ALA, CCA	Mar-Jul			
Araceae	<a href="#">Wolffia brasiliensis</a>		*A1	2.3 S1.3(CEQA) G5	Freshwater Marsh			BRAZILIAN WATERMEAL	-10-1076	CCA	-	PMLEM03020	2015-03-04	2015-02-18
Gentianaceae	<a href="#">Zeltnera trichantha</a>	(formerly Centaurium tricanthu)	A1	CEQA	Alkali Areas, Chaparral, Forest			alkali centaury	<2625	ALA?, CCA	May-Aug			

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## Citation:

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