

# Biological Resources Assessment

±920-Acre Eliot Facility Plan Area  
Alameda County, California

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## 1.0 INTRODUCTION

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This report summarizes the findings of a biological resources assessment and an aquatic resources delineation completed for the ±920-acre Eliot Facility, located in unincorporated Alameda County, California. This document addresses the onsite physical features, as well as plant communities present and the common plant and wildlife species occurring, or potentially occurring, in the Study Area. Furthermore, the suitability of habitats to support special-status species and sensitive habitats are analyzed.

### 1.1. *Summary of Biological Resources*

The Study Area has been subject to historic and ongoing disturbance related to gravel-mining activities. Much of the Study Area is currently disturbed or developed and associated with ongoing or previous gravel mining activities. The current alignment of the Arroyo del Valle within the Study Area has been subject to historic and ongoing disturbance. Upstream of the Study Area, the Del Valle Dam has altered the natural hydrology of the Arroyo del Valle within the Study Area. Due to the historic and ongoing disturbance, the drainage contains extensive stands of exotic invasive plants such as giant reed (*Arundo donax*), common reed (*Phragmites australis*), and pampas grass (*Cortaderia selloana*). Exotic plant species reduce the potential for biological communities to support native plant and wildlife species. The channel of the Arroyo del Valle provides substantial opportunities for habitat enhancement and restoration of more native vegetation communities.

Foothill Associates' biologists conducted a site assessment on October 26 and 27, November 1 and 2, 2017, and April 3 and 4, 2018 at the ±920-acre Eliot Facility ("Study Area"), located in unincorporated Alameda County, between the cities of Livermore and Pleasanton.

In considering the degree of historic and ongoing disturbance of vegetation communities within the Study Area, the value of the Study Area for native plant and wildlife species has been degraded over time. However, the Study Area does still support some potential to support a variety of special-status plant and wildlife species. In addition, there are a variety of wetlands and other communities subject to regulation by various regulatory agencies. Known or potential biological habitat for threatened, endangered, proposed threatened, proposed endangered, candidate species, sensitive species, and species of concern considered in this document are:

- Potential habitat for special-status plants including: Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Mt. Diablo buckwheat (*Eriogonum truncatum*), and Mt. Diablo fairy-lantern (*Calochortus pulchellus*);
- Potential habitat for valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*);
- Potential movement habitat for Alameda whipsnake (*Masticophis lateralis euryxanthus*);
- Potential movement habitat for California red-legged frog (*Rana draytonii*);
- Potential movement habitat for California tiger salamander (*Ambystoma californiense*);

- Potential foraging and nesting habitat for bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*);
- Potential habitat for tricolored blackbird (*Agelaius tricolor*);
- Potential habitat for coast horned lizard (*Phrynosoma blainvilli*);
- Potential habitat for San Joaquin whipsnake (*Masticophis flagellum ruddocki*);
- Potential habitat for western pond turtle (*Emys marmorata*);
- Potential habitat for western spadefoot toad (*Spea hammondi*);
- Potential habitat for American peregrine falcon (*Falco peregrinus anatum*);
- Potential foraging and nesting habitat for raptors and other migratory birds including grasshopper sparrow (*Ammodramus savannarum*), California horned lark (*Eremophila alpestris actia*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), ferruginous hawk (*Buteo regalis*), loggerhead shrike (*Lanius ludovicianus*), great blue heron (*Ardea herodias*), northern harrier (*Circus cyaneus*), and prairie falcon (*Falco mexicanus*);
- Potential habitat for white-tailed kite (*Elanus leucurus*);
- Potential breeding and wintering habitat for burrowing owl (*Athene cunicularia*);
- Potential habitat for American badger (*Taxidea taxus*);
- Potential habitat for special-status bats including the pallid bat (*Antrozous pallidus*), hoary bat (*Lasiurus cinereus*), and Yuma myotis (*Myotis yumanensis*);
- Potential habitat for Bridge's coast range shoulderband (*Helminthoglypta nickliniana bridgesi*);
- Potential habitat for crotch bumble bee (*Bombus crotchii*);
- Potential habitat for curved-foot hygrotus diving beetle (*Hygrotus cuvipes*);
- Potential habitat for obscure bumble bee (*Bombus caliginosus*);
- Potential habitat for Western bumble bee (*Bombus occidentalis*); and
- Sensitive habitats including potentially jurisdictional waters of the U.S. (seasonal wetlands, seasonal marshes, perennial drainage (the Arroyo del Valle), intermittent drainages, protected oak trees, and riparian habitats), and California sycamore woodland.

## 1.2. Project Description

CEMEX Construction Materials Pacific, LLC. ("CEMEX") owns and operates the Eliot Quarry, a ±920-acre sand and gravel mining facility, located between the cities of Livermore and Pleasanton, at 1544 Stanley Boulevard in unincorporated Alameda County. CEMEX and its predecessors-in-interest have been continuously mining for sand and gravel at the Eliot Quarry since at least 1906. In addition to mining and reclamation, existing permitted and accessory

uses at the Eliot Quarry include aggregate, asphalt and ready-mix concrete processing, as well as ancillary uses such as aggregate stockpiling, load-out, sales, construction materials recycling, and equipment storage and maintenance. CEMEX's mining operations at the site are vested per pre-1957 mining activities and Alameda County Quarry Permits Q-1 (1957), Q-4 (1957), and Q-76 (1969). Surface mining reclamation activities at the site are currently conducted pursuant to Surface Mining Permit and Reclamation Plan No. SMP-23 ("SMP-23"), approved in 1987.

Under the Eliot Quarry SMP-23 Reclamation Plan Amendment Project ("Project"), CEMEX proposes a revised Reclamation Plan that serves to adjust reclamation boundaries and contours, enhance drainage and water conveyance facilities, incorporate a pedestrian and bike trail, and achieve current surface mining reclamation standards. The planned post-mining end uses are water management, open space, and agriculture (non-prime).

Consistent with prior approvals, the Project will develop Lake A and Lake B, which are the first two lakes in the Chain of Lakes pursuant to the *Alameda County Specific Plan for Livermore-Amador Valley Quarry Area Reclamation* adopted in 1981 ("Specific Plan"). Upon reclamation, Lake A and Lake B, along with their appurtenant water conveyance facilities, will be dedicated to the Zone 7 Water Agency ("Zone 7") for purposes of water storage, conveyance and recharge management.

Lake A reclamation will include installation of a surface water diversion from the Arroyo del Valle ("ADV") to Lake A; conversion of a berm that crosses the west side of the lake to a small island to allow water to flow across the lake; installation of a water conveyance pipeline from Lake A to future Lake C (located off-site to the northwest); and an overflow outlet to allow water to flow back into ADV when Lake A water levels are high to prevent flooding in the localized area. The final surface area of Lake A will be 81 acres as compared to 208 acres in SMP-23. No further mining will occur in Lake A.

Lake B reclamation will include installation of a pipeline turn-out from Lake A, a water pipeline conduit to future Lake C, and an overflow outlet to allow water to flow back into ADV when Lake B water levels are high. The final bottom elevation of Lake B is proposed at 150 feet above mean sea level ("msl"), in order to maximize the available aggregate resource. The final surface area of Lake B will be 208 acres as compared to 243 acres in SMP-23.

To facilitate the southerly progression of Lake B, the Project includes realignment and restoration of a  $\pm 5,800$  linear foot reach of the ADV. The proposed ADV realignment will result in an enhanced riparian corridor that flows around, rather than through (as currently anticipated in SMP-23), Lake B. The ADV realignment was contemplated in the Specific Plan and subject to environmental review in 1981.

Outside of Lake A and Lake B, reclamation treatment for other disturbed areas, including the Lake J excavation (not part of the Chain of Lakes), processing plant sites, and process water ponds will involve backfills and/or grading for a return to open space and/or agriculture.

The Project is a modification of an approved project. Except as outlined above, CEMEX proposes no change to any fundamental element of the existing operation (e.g., mining methods, processing operations, production levels, truck traffic, or hours of operation). A more complete description of the proposed Project is contained in CEMEX's Project Description, Revised Reclamation Plan, and other application materials provided to the County.

## 2.0 PLANT AND WILDLIFE RANKING SYSTEMS

Special-status species considered for inclusion in the biological resources assessment include plant and wildlife species that are threatened, endangered, proposed threatened, proposed endangered, candidate species, sensitive species, and species of concern as included in **Table 1**.

**TABLE 1 — FEDERAL, STATE, AND CNPS RANKS**

FE = Federal endangered FT = Federal threatened FC = Federal candidate PT = Federal proposed threatened FPD = Federal proposed for delisting FD = Federal delisted FSC = Federal Species of Concern	CE = California state endangered CT = California state threatened CFP = California fully protected CSC = California Species of Special Concern CSA = California Special Animals List CR = California state rare	1A = Plants presumed extinct in California 1B = Plants rare, threatened, or endangered in California and elsewhere 2 = Plants rare, threatened, or endangered in California, but common elsewhere 3 = Plants about which we need more information 4 = Plants of limited distribution
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### 2.1. *California Native Plant Society*

The California Native Plant Society (“CNPS”) maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under the California Environmental Quality Act (CEQA) review process. The following identifies the definitions of the CNPS ranks:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- Rank 3: Plants about which we need more information – A Review List
- Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS Rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA (see **Appendix A**).

### 2.2. *California Department of Fish and Wildlife Species of Concern*

Some additional fish, amphibian, reptile, bird, and mammal species may receive consideration by the California Department of Fish and Wildlife (CDFW) and lead agencies during the CEQA

process, in addition to species that are formally listed under the Federal Endangered Species Act (“FESA”) and the California Endangered Species Act (“CESA”) or are fully protected. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to “Species of Special Concern” (“SSC”), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (“CNDDDB”), but warrant no legal protection. These species are identified as “California Special Animals” (“CSA”) (see **Appendix A**).

### **2.3. Sensitive Biological Communities**

Sensitive biological communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified by CDFW on local or regional plans, policies, or regulations. The CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its California Natural Diversity Database (CDFW 2017). Sensitive plant communities are also identified by CDFW (CDFW 2017) and the California Native Plant Society (CNPS 2017). Vegetation alliances are ranked 1 through 5 in the CNDDDB based on NatureServe's methodology, with those alliances ranked globally (G) or statewide (S). Rankings 1 through 3 are considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or United States Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

### 3.0 METHODS

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Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the **References** section. The following site-specific information was reviewed:

- California Department of Fish and Wildlife (CDFW). 2017. *California Natural Diversity Data Base* (CNDDDB: *Livermore, Diablo, Tassajara, Byron Hot Springs, Mendenhall Springs, Altamont, La Costa Valley, Niles, and Dublin*. U.S. Geological Survey (USGS) 7.5-minute series quadrangles), Sacramento, CA. Accessed [11/09/2017];
- California Native Plant Society (CNPS). 2017. *Inventory of Rare and Endangered Plants* (online edition, v8-02) (CNPS: *California Natural Diversity Data Base* (CNDDDB: *Livermore, Diablo, Tassajara, Byron Hot Springs, Mendenhall Springs, Altamont, La Costa Valley, Niles, and Dublin* quadrangles). Accessed [11/09/2017];
- U.S. Fish and Wildlife Service (USFWS). 2017. *Information for Planning and Conservation (IPaC) Trust Resource Report: Arroyo Del Valle*. Accessed [11/9/2017]; and
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2017. *Web Soil Survey*. Available online at: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.html>. Accessed [11/09/2017].

Prior to conducting site surveys, existing information, including soil maps, and the results of the records search and five-mile radius CNDDDB query were summarized in a species-occurrence table (**Appendix A**). Field surveys of the Study Area were conducted on October 26 and 27 and November 1 and 2, 2017 and April 3 and 4, 2018. The Study Area was systematically surveyed on foot, driving, using public roadways, and scanning the Study Area with binoculars to ensure total search coverage, with special attention given to identifying those portions of the Study Area with the potential for supporting special-status species and sensitive habitats. During the field surveys, biologists recorded plant and animal species observed (**Appendix B**), as well as characterized biological communities occurring onsite. Biological features such as wetlands, trees, or active nests were mapped using a hand-held GPS unit with sub-meter accuracy. Following the site survey, the potential for each species identified in the records search to occur in the Study Area was determined based on the site surveys, soils, and species-specific information, as shown in **Appendix A**.

## 4.0 RESULTS

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### *4.1. Site Location and Description*

The approximate ±920-acre Study Area is located in unincorporated Alameda County, and portions of the site are mined by CEMEX as an active aggregate mining facility. The majority of the Study Area consists of active quarry pits, silt ponds, quarry ponds, processing facilities, offices, and developed roads. Vulcan, a second mining operation, is located to the north and east of the Study Area. Shadow Cliff Recreation Area, a former quarry site, is located to the west of the Study Area, and private residential subdivisions are located to the south and north of portions of the Study Area. The Arroyo del Valle runs from the southeast to the northwest within the southern portion of the Study Area.

The approximate location of the center of the Study Area is 37° 39' 40.438" North, 121° 48' 54.723" West (**Figure 1**).

### *4.2. Physical Features*

#### *4.2.1. Topography and Drainage*

The majority of the hydrology and topography of the Study Area has been significantly altered by historic and current aggregate mining activities and development. Hydrologic alterations have impacted stream flow, bank condition, flooding, and riparian vegetation from historical conditions of the Arroyo del Valle. The historic topography of the Arroyo del Valle included broad marshes and braided streams.

The Study Area is relatively flat ranging from approximately 254 to 460 feet (77 to 140 meters) above msl and is located in the Alameda Creek Watershed, one of the major drainages of the Livermore/Amador Valley. The Arroyo del Valle begins in northeastern Santa Clara County and flows northwesterly into Alameda County where it is impounded by Del Valle Dam and forms Lake del Valle. The Arroyo del Valle then flows downstream and westward from Lake del Valle and eventually through the Study Area. The Arroyo del Valle is tributary to Arroyo de la Laguna, which is a tributary to Alameda Creek. In turn, Alameda Creek is tributary to the San Francisco Bay. The Arroyo del Valle now contains perennial flow due to regulated releases of water upstream from Lake del Valle.

Today, the Arroyo del Valle is primarily channelized upstream of the Study Area from Del Valle Dam to Sycamore Grove Park. The Arroyo del Valle within the Study Area, contains reaches that have been highly modified due to urbanization and mining operations. The Arroyo de la Laguna is located downstream of the Study Area. It includes residential homes, Castlewood Golf Course, and agricultural land. Prior to the completion of the Del Valle Reservoir in 1968, the Arroyo del Valle had an intermittent flow. The shift in hydrology associated with the reservoir operation has encouraged different riparian plants to establish.



#### 4.2.2. Soils

An online soil survey of the Study Area indicates that there are eleven map units occurring within the Study Area (**Figure 2**). Soil mapping units found within the Study Area include: **Livermore Gravelly Loam; Livermore Very Gravelly Coarse Sandy Loam; Pleasanton Gravelly Loam, 0 to 3 Percent Slopes; Pleasanton Gravelly Loam, 3 to 12 Percent Slopes; Positas Gravelly Loam, 2 to 20 Percent Slope, Eroded; Yolo Loam, 0 to 3 Percent Slopes; Yolo Loam Over Gravel, 0 to 3 Percent Slopes; Yolo Sandy Loam, 0 to 3 Percent Slopes; Zamora Silt Loam, 0 to 4 Percent Slopes; Gravel Pit; and Riverwash**. Also depicted in **Figure 2** there are features consisting largely of open water, including silt ponds and quarry ponds. The general characteristics and properties associated with these map units are described below.

- **(Lg) Livermore Gravelly Loam:** This somewhat excessively drained soil is a mix of fine textured and very gravelly coarse sandy loam. The amount of gravel by volume ranges from 20 to 40 percent. The available water holding capacity is low and the fertility is moderate. This soil type is used to cultivate grapes and dry-framed grains. The hydric soils list for Alameda County does not identify this soil type as hydric (USDA, NRCS 1966 and 2017).
- **(Lm) Livermore Very Gravelly Coarse Sandy Loam:** Except for the texture, this soil is similar to Livermore Loam. The percent of gravel ranges from 40 to 75 percent. Both soil mapping units contain inclusions of Positas, Pleasanton, and Yolo series soils, and the hydric soils list for Alameda County does not identify this soil type as hydric (USDA, NRCS 1966 and 2017).
- **(PgA) Pleasanton Gravelly Loam, 0 to 3 Percent Slopes:** This soil occurs on nearly level terraces or fans. It is reddish-brown in color, medium acidic to moderately alkaline clay substrate. This soil is extremely hard when dry and plastic when wet. This soil is used for pasture, range, and dry farming. The hydric soils list for Alameda County does not identify this soil type as hydric (USDA, NRCS 1966 and 2017).
- **(PGB) Pleasanton Gravelly Loam, 3 to 12 Percent Slopes:** Except for being found on steeper slopes, this soil is similar to Pleasanton gravelly loam, 0 to 3 percent slopes. Runoff is medium to slow and erosion hazard is moderate to slight. This soil is used primarily for dry-farming and grain hay. Both soil mapping units contain inclusions of Positas, Rincon, and Livermore series soils, and the hydric soils list for Alameda County does not identify this soil type as hydric (USDA, NRCS 1966 and 2017).
- **(PoC2) Positas Gravelly Loam, 2 to 20 Percent Slope, Eroded:** Positas soils are located on terraced side slope of streams. This soil is formed by alluvium of mixed origin. These soils have less than 35 percent clay, moderate drainage, very slow permeability, and very high runoff. Vegetation supported by this soil type is dryland grain and vineyards. The hydric soils list for Alameda County does not identify this soil type as hydric (USDA, NRCS 1966 and 2017b).
- **(YmA) Yolo Loam, 0 to 3 Percent Slopes:** This soil type occurs mostly on flat valley floors. The upper surface of this soil type is mildly alkaline, grayish- brown, slightly hard

when dry, and slightly sticky when wet. The mid horizon of this soil type is brown with fine sand that is slightly alkaline, and nonsticky and nonplastic when wet. The lower horizon of this soil type is moderately alkaline and slightly sticky when wet. In some areas an intermittent water table is found within a depth of 5 feet. The hydric soils list for Alameda County does not identify this soil type as hydric; however, the unnamed soil inclusion is rated as hydric (USDA, NRCS 1966 and 2017).

- **(Yo) Yolo Loam Over Gravel, 0 to 3 Percent Slopes:** This soil occurs on the flat valley floor in narrow stringers. The fertility and water holding capacity are moderate to low. This soil is underlain by loose porous gravelly sand at a depth of 24 to 36 inches. This soil is used mainly for alfalfa, row crops, and irrigated pastures. The hydric soils list for Alameda County does not identify this soil type as hydric; however, the unnamed soil inclusion is rated as hydric (USDA, NRCS 1966 and 2017b).
- **(Ys) Yolo Sandy Loam, 0 to 3 Percent Slopes:** Except for its sandy coarser texture, this soil is similar to Yolo loam 0 to 3 percent slopes. Water holding capacity and permeability are both moderate. This soil is mainly used for row and alfalfa crops. The hydric soils list for Alameda County does not identify this soil type as hydric; however, the unnamed soil inclusion is rated as hydric (USDA, NRCS 1966 and 2017).
- **(Za) Zamora Silt Loam, 0 to 4 Percent Slopes:** This well-drained, deep soil, consists of mixtures of alluvium derived from sedimentary rock. A typical pedon of Zamora series soil has a very dark grayish brown silt loam Ap horizon, underlain by dark brown, silty clay loam Bt horizons, underlain by dark yellowish brown, silt loam to gravelly loam C horizons. These soils are slightly acid to moderately alkaline, fine-silty to loam. These soils are utilized for field crops, native or naturalized grasslands, scattered oak trees, and orchards. The hydric soils list for Alameda County does not identify this soil type as hydric (USDA, NRCS 1966 and 2017b).
- **(GP) Gravel Pit:** Gravel pits are the result of excavation where enough of the original soil has been removed. This land type is usually devoid of plant growth. Aggregate excavation for sand and gravel are the primary land use within areas mapped with this soil type within the Study Area. The hydric soils list for Alameda County does not identify this unit as hydric; however, the unnamed soil inclusion is rated as hydric (USDA, NRCS 1966 and 2017).
- **(Rh) Riverwash:** Riverwash is a mixture of cobblestone, sand, and gravel that contain little or no silt and clay. This land type occupies streams and channels and is exposed at low water. Riverwash is subject to flooding and movement in the spring during periods of runoff. Vegetation supported by this land type within the Study Area include willows, white alders, giant reeds, and cottonwoods. The hydric soils list for Alameda County identifies this soil type as hydric (USDA, NRCS 1966 and 2017).
- **(W) Water:** Areas mapped as water in the Study Area generally consist of relatively large areas of open water such as quarry ponds and silt ponds.

### 4.3. Biological Communities

Twelve biological communities occur within the Study Area. Historic and ongoing mining activities have reduced the habitat function and values of many of these communities. For example, the Arroyo del Valle has extensive expanses of exotic, invasive plant species within the Ordinary High-water Mark of the channel including common reed, giant reed, and pampas grass. The majority of the Study Area has been subject to disturbance associated with mining activities. Therefore, biological communities within the Study Area have been subject to various sources of disturbance over time.

Biological communities that occur within the Study Area include: marsh habitats (comprised of depressional seasonal marsh, riverine seasonal marsh, and freshwater marsh within the OHWM of the Arroyo del Valle), intermittent stream, breached quarry pond, sycamore woodland, willow riparian wetland, gravel bars within the OHWM of the Arroyo del Valle, ruderal grassland, native revegetation area, quarry pond, silt pond, percolation pond, and developed areas. These communities provide habitat to a number of common species of wildlife and may provide suitable habitat for special-status plant and wildlife species. Dominant vegetation observed within each biological community is discussed in detail below. A comprehensive list of plants observed within the Study Area is provided in **Appendix B**. The location and extent of each biological community are depicted in **Figure 3**.

#### 4.3.1. Marsh (Depressional Seasonal Marsh, Riverine Seasonal Marsh, and Freshwater Marsh)

This community includes freshwater marsh within the OHWM of the Arroyo del Valle, as well as riverine seasonal marsh, and depressional seasonal marsh in the southeastern portion of the Study Area outside of the OHWM of the Arroyo del Valle associated with Quarry Pond A (QP-A). The three marsh habitats occupy a total approximately 0.44 acres within the Study Area. The 0.44 acres of marsh include approximately 0.06 acres of depressional seasonal marsh, approximately 0.09 acres of riverine seasonal marsh, and approximately 0.29 acres of freshwater marsh located within the OHWM of the Arroyo del Valle that is included in the perennial stream category in the aquatic resources delineation (Foothill Associates 2018). This vegetation type is comprised of common reed (*Phragmites australis*), tall flatsedge, tule, and cattails. These marsh habitats generally are associated with areas that have been subject to previous mining activities. Removal of soils associated with mining have degraded these communities and allowed the establishment of some invasive plant species.

Marsh habitats provide habitat for numerous wildlife species including various amphibians and reptiles and provide potential foraging habitat for raptors. Vegetation within this community also provides potential nesting habitat for various bird species.

#### 4.3.2. Intermittent Stream

Intermittent streams occupy approximately 0.44 acres of the Study Area. These features originate outside of the Study Area and flow into the Study Area through culverts crossing under Vineyard Avenue in the southern section of the Study Area. These intermittent features

lack riparian vegetation and appear to flow only during and immediately following rain events. In the delineation report, some of this community type (0.1 acre) occurs within the OHWM of the Arroyo del Valle and therefore is included in the perennial stream classification in the aquatic resources delineation (Foothill Associates 2018).

#### 4.3.3. Breached Quarry Ponds

Breached quarry ponds occupy approximately 16.90 acres of the Study Area. These features are located in-line with or are directly connected to the Arroyo del Valle stream channel and receive flows directly from the Arroyo del Valle. Overstory vegetation surrounding these features include red, sand bar, and arroyo willow. Tall flatsedge (*Cyperus eragrostis*), fennel (*Foeniculum vulgare*), Himalayan blackberry (*Rubus armeniacus*), and rough cocklebur (*Xanthium strumarium*) are some of the dominant understory species located in the centrally located breached ponds. The northern breached pond is dominated by overstory of cottonwoods and willows with steep banks dominated by coyote brush and non-native grasses.

Breached quarry ponds provide habitat for numerous wildlife species. A great horned owl (*Bubo virginianus*) was observed roosting in a cottonwood adjacent to southern PSI. A nesting colony of double-breasted cormorants (*Phalacrocorax auratus*) was observed on a willow riparian island surrounded by the northern feature within the Study Area. Additional species that have the potential to occur in this community include nesting birds and amphibian species.

#### 4.3.4. Sycamore Woodland

Sycamore woodland occupies approximately 6.50 acres within the southeastern portion of the Study Area. This community is comprised of remnant patches of California sycamore (*Platanus racemosa*) and a mix of non-native grassland. The small, isolated patches of sycamores are in varying degrees of health with the majority of the trees being in poor health. The understory of this community is comprised of non-native grasses and milk thistle. This community is associated with isolated remnant wetland features that appear to be located in the vicinity of previous alignments of the Arroyo del Valle. These areas are adjacent to developed areas and therefore subject to ongoing human disturbance.

Sycamore woodland provides habitat for numerous wildlife species. Trees in poor health that have trunk decay provide potential roosting habitat for numerous bat species including pallid bat and hoary bat (*Lasiurus cinereus*).

#### 4.3.5. Willow Riparian Wetland

Willow riparian wetlands occupy approximately 57.26 acres of the Study Area. Of this 57.26 acres, 2.69 acres is located outside of the OHWM of the Arroyo del Valle, therefore the majority of this community is included in the perennial stream category for the aquatic resources delineation (Foothill Associates 2018). This biological community is primarily located within the ordinary high-water mark (OHWM) of the Arroyo del Valle, and also associated with the margins of Quarry Pond A (QP-A) in the eastern portion of the Study Area, and intertwined with braided gravel bars located along the northern banks of the Arroyo del Valle. These riparian communities have been subject to disturbance from mining activities over time.

The overstory is dominated by red and arroyo willows, Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), white alder (*Alnus rhombifolia*), narrow-leaved willow (*Salix exigua* var. *hindsiana*), and pampas grass. Giant reed (*Arundo donax*), a non-native, invasive species rated as having “high” ecological impact by the California Exotic Pest Control Council (“Cal-IPC”), is also present in varying abundances throughout the riparian corridor. Within the Study Area, this noxious weed has a tendency to displacing native plant species. Pampas grass is rated as having “high” ecological impact by the Cal-IPC as well and is abundant within the Study Area forming dense patches within this community. The understory is dominated by cattails (*Typha* spp.), tall flatsedge (*Cyperus eragrostis*), tule (*Schoenoplectus acutus* var. *occidentalis*), Bigelow’s sneezeweed (*Helenium bigelovii*), and watercress (*Nasturtium officinale*).

Riparian areas provide habitat for a variety of wildlife species including nesting birds, raptors, and numerous mammals. This biological community has the potential to support American badger as well as providing habitat for western pond turtles, and potentially California red-legged frog (CRLF) and California tiger salamander (CTS).

#### 4.3.6. Gravel Bar

Gravel bars occupy approximately 20.03 acres within the OHWM of the Arroyo del Valle. Since this community occurs within the OHWM of the Arroyo del Valle, this community is included in the perennial stream category for the aquatic resources delineation (Foothill Associates 2018). This community consists of sediment deposits of varying size gravel and some sand. These gravel bars have formed braided bars and cut banks within the OHWM of the Arroyo del Valle. Vegetation within this community is sparse and includes tall cyperus (*Cyperus eragrostis*), American water fern (*Azolla filiculoides*), and duckweed (*Lemna minor*).

Gravel bars provide potential habitat for numerous amphibian and reptile species including CRLF and CTS, western spadefoot (*Spea hammondi*), and western pond turtle.

#### 4.3.7. Ruderal Grassland

Ruderal grasslands occupy approximately 121.41 acres of the Study Area. Ruderal grasslands are areas that have been disturbed by human activity. When vegetation is present, the areas are similar to non-native grasslands and include ripgut brome, slim oat, soft chess, and milk thistle (*Silybum marianum*). Some native species were also present within this biological community including coyote brush (*Baccharis pilularis*) and toyon (*Heteromeles arbutifolia*). Approximately 0.07 acres within this habitat consist of percolation ponds. These non-vegetated ponds are located through the southern portion of the ruderal grassland within the southern portion of the Study Area south of the area referred to as Lake A. Additionally, large patches of pampas grass (*Cortaderia jubata*) are located throughout the Study Area, denser populations are located in the southern portion of the Study Area.

Ruderal grasslands support numerous wildlife species including California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), and provide foraging habitat for numerous raptors and nesting birds including, golden eagle, bald eagle, American peregrine falcon, red-tailed hawk (*Buteo jamaicensis*), and white-tailed

kite. This community provides potential foraging and nesting habitat for burrowing owls, ground nesting birds, and marginal upland habitat for some amphibian species of concern. Additionally, this community has the potential to support San Joaquin whipsnake (*Masticophis flagellum ruddocki*).

#### 4.3.8. Native Revegetation Area

Native revegetation areas occupy approximately 21.45 acres within the southern portion of the Study Area. Native revegetation areas were previously barren or sparsely vegetated and have been planted with native species including coast live oak (*Quercus agrifolia*) and California buckeye (*Aesculus californica*). Some shrubs and herbaceous species have become naturalized in these areas, including toyon and elderberry. The herbaceous layer is dominated primarily by non-native grasses. Additionally, a portion of native revegetation area occupies the southeastern portion of the Study Area. This vegetation is comprised of valley oak (*Quercus lobata*), coast live oak, and occasionally northern California black walnut (*Juglans hindsii*), as well as California sycamore.

Native revegetation areas provide potential habitat for numerous wildlife species. Ground squirrel burrows were noted in this community and providing potential habitat for burrowing owls. Additionally, the understory grassland may provide habitat for the San Joaquin whipsnake.

#### 4.3.9. Quarry Pond

Quarry ponds occupy approximately 118.70 acres of the Study Area. These man-made features are a result of aggregate mining activities. These mining pits are now used for water storage and supply for the active mining and processing operations. Some areas surrounding the perimeter of the pits have established riparian vegetation that provides habitat for wildlife species. Dominant vegetation within these riparian fringes includes red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepis*) along the eastern portion of Quarry Pond A. Additionally, elderberry shrubs (*Sambucus nigra* ssp. *caerulea*) and white sage (*Salvia apiana*) line the margins of Quarry Pond A in the eastern portion of the Study Area (**Figure 3**).

Quarry ponds provide habitat for an array of wildlife species. Numerous waterfowl including ring-necked duck (*Aythya collaris*) and bufflehead were observed during the site visits. California scrub-jay (*Aphelocoma californica*), Anna's hummingbird (*Calypte anna*), American coot (*Fulica americana*), dark-eyed junco (*Junco hyemalis*), mourning dove (*Zenaidura macroura*), and black phoebe (*Sayornis nigricans*) were also observed utilizing quarry ponds. The steep slopes of the ponds could potentially provide nesting habitat for cliff-dwelling raptors such as American peregrine falcons and marginal roosting habitat for listed bat species including pallid bats (*Antrozous pallidus*) along with providing foraging habitat over the open water for other special-status bat species. However, cliff-dwelling raptors and bat species were not observed utilizing the slopes of the ponds during site visits.

#### 4.3.10. Silt Pond

Silt ponds occupy approximately 108.50 acres of the Study Area. This actively managed man-made basin is part of ongoing quarry operations. Vegetation cover is moderate and dominated by non-native grasses and forbs such as soft chess, ripgut brome, and slim oat. Milk thistle and coyote bush line the steep slopes of the ponds.

Silt ponds provide habitat for a variety of wildlife species. Numerous waterfowl were observed including western grebe (*Aechmophorus occidentalis*), ring-necked duck (*Aythya collaris*), and bufflehead (*Bucephala albeola*). Additionally, three western pond turtles (*Actinemys marmorata*) were observed in Silt Pond 1 (S-01) located in the northeastern section of the Project Site (**Figure 3**).

#### 4.3.11. Percolation Pond

Percolation ponds occupy approximately 0.07 acres of the Study Area. These small features are located to the south of QP-A and are small constructed features associated with sand and gravel mining. These features appear to be dry most of the time and the vegetation community is similar to that of the ruderal grassland that surrounds it.

#### 4.3.12. Developed

The developed areas occupy approximately 448.07 acres of the Study Area. This area contains active quarry pits, developed roads, offices, mining stockpiles, quarry ponds and processing facilities. The substrate within the developed/ mining area is highly disturbed and is composed of a mix of native and non-native soil types, often with a high proportion of gravel and cobbles. Vegetative cover is sparse and is dominated by non-native, often invasive grasses and forbs, and shrubs such as soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus madritensis*), ripgut brome (*Bromus diandrus*), slim oat (*Avena barbata*), and yellow star thistle (*Centaurea solstitialis*).

The developed areas support foraging, and marginal shelter habitat for several species of wildlife. A white-tailed kite (*Elanus leucurus*) was observed foraging near Silt Pond 1 (S-01) in the northeastern portion of the Study Area, and an American peregrine falcon (*Falco peregrinus anatum*) was observed foraging between Quarry Pond H (QP-H) in the northeastern portion of the Study Area during site surveys (**See Page A1, Figure 3**).

### 4.4. *Special-Status Species*

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under CESA or FESA;
- Protected under other regulations (e.g. Migratory Bird Treaty Act [MBTA]);
- Included on the CDFW Special Animals List;

- Identified as Rank 1 through 4 by CNPS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on queries of the CNDDDB, the U.S. Fish and Wildlife Service (“USFWS”), and CNPS ranked species (online versions) for the *Livermore*, and eight surrounding quadrangles: *Diablo*, *Tassajara*, *Byron Hot Springs*, *Mendenhall Springs*, *Altamont*, *La Costa Valley*, *Niles*, and *Dublin*. **Appendix A** includes the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence in the Study Area. The following set of criteria has been used to determine each species’ potential for occurrence in the Study Area:

- **Present:** Species known to occur within the Study Area based on CNDDDB records and/or observed within the Study Area during the biological surveys.
- **High:** Species known to occur on or in the vicinity of the Study Area (based on CNDDDB records within five miles and/or based on professional expertise specific to the Study Area or species) and there is suitable habitat within the Study Area.
- **Low:** Species known to occur in the vicinity of the Study Area and there is marginal habitat within the Study Area **-OR-** Species is not known to occur in the vicinity of the Study Area, however, there is suitable habitat on the Study Area.
- **None:** Species is not known to occur on or in the vicinity of the Study Area and there is no suitable habitat within the Study Area **-OR-** Species was surveyed for during the appropriate season with negative results **-OR-** The Study Area occurs outside of the known elevation or geographic ranges.

Only those species that are known to be *present* or have a *high* or *low* potential for occurrence are discussed further in the following sections.

#### 4.4.1. Listed and Special-Status Plants

According to the records search, 65 special-status plant species have the potential to occur on or in the vicinity of the Study Area. Based on field observations and literature review, three special-status plant species were determined to have the potential to occur within the Study Area. No special-status plant species were considered to have a high potential to occur within the Study Area due to the high degree of ongoing disturbance that is occurring within the Study Area due to gravel mining operations. The plant species that are considered to have a low potential to occur within the Study Area include Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Mt. Diablo buckwheat (*Eriogonum truncatum*), and Mt. Diablo fairy-lantern (*Calochortus pulchellus*).



## **Plant Species with a Low Potential for Occurrence**

### **Congdon's Tarplant – California Rare Plant Rank 1B.1 (Plants Rare, Threatened, or Endangered in California and Elsewhere)**

This annual herb is rare throughout its range with the majority of its range located in California. Congdon's tarplant is in the Asteraceae family and blooms from May to November. This species is found in moderately alkaline to alkaline or saline soils in valley and foothill grasslands, at elevations from 0 to 230 meters (0 to 755 feet) (CNPS 2017). Seven occurrences are documented within five miles of the Study Area including the following locations: Camp Parks Reserve Forces Training Area (10,000 individuals reported in 2003) along Tassajara Road north of Livermore (4,000+ plants and 9,600 plants observed at two locations in 1998), east of Livermore along North Livermore Road (370,000 plants observed in 1998), and along the Contra Costa/Alameda County line along Collier Canyon Road (321,000 plants observed in 1998) (CDFW 2017). Focused surveys for this species were conducted within the Study Area in 2016 by WRA, Inc. with negative results (WRA 2016). In addition, the potential mapped habitat for this species in the East Alameda County Conservation Strategy (EACCS) does not overlap with the Study Area (ICF 2010). However, agencies consider focused plant surveys to be valid for generally two years. Therefore, based on the age of previous focused surveys for this species and the presence of marginally suitable habitat within the ruderal grassland and the native revegetation areas within the Study Area as well as the species' ability to colonize disturbed areas and the known CNDDDB records in the near vicinity of the Study Area, the potential for Congdon's tarplant to occur in the Study Area is considered *low*.

### **Mt. Diablo Buckwheat – California Rare Plant Rank 1B.1**

Mt. Diablo buckwheat is an annual herb in the Polygonaceae family that blooms from April to September. This species is found in northern coastal scrub, valley grasslands, and chaparral, at an elevation from 3 to 350 meters (10 to 1,150 feet) (CNPS 2017). This species is known to occur in Alameda and Contra Costa counties. Mt. Diablo buckwheat is a small pink wildflower, believed to have been extinct since 1936 until its rediscovery in 2005. Although no occurrences have been recorded within a five-mile radius of the Study Area (CDFW 2017), the CNPS' estimated plant range for the species includes the Study Area (CNPS 2017). The northern coastal scrub and ruderal grassland within the Study Area provide potential habitat for this species. Based on the presence of marginally suitable habitat within the Study Area and the degree of ongoing disturbance within the Study Area, the potential for Mt. Diablo buckwheat to occur in the Study Area is considered *low*.

### **Mt. Diablo Fairy-Lantern – California Rare Plant Rank 1B.1**

Mt. Diablo fairy-lantern is a perennial bulbiferous herb in the Liliaceae family that blooms from April to July. This species is found within valley grassland, foothill woodland, and chaparral at an elevation between 30 to 840 meters (98 to 2,755 feet) (CNPS 2017). This species is known to occur in Alameda and Contra Costa counties. Mt. Diablo fairy-lantern produces bright yellow pendant flowers. Although no occurrences have been recorded within a five-mile radius of the Study Area (CDFW 2017), the CNPS' estimated plant range includes the Study Area (CNPS 2017). The ruderal grassland and native revegetation areas within the Study Area provide marginal

potential habitat for this species. Based on the presence of marginally suitable habitat and the degree of ongoing disturbance within the Study Area, the potential for Mt. Diablo fairy-lantern to occur in the Study Area is considered *low*.

#### 4.4.2. Listed and Special-Status Wildlife

According to the records search, 53 special-status wildlife species (including invertebrates) have the potential to occur onsite or in the vicinity of the Study Area. Based on field observations and literature review, 33 species were determined to have the potential to occur in the Study Area.

Species that are known to be present or that are considered to have a high potential to occur within the Study Area include bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), Yuma myotis (*Myotis yumanensis*), western pond turtle (*Emys marmorata*), American peregrine falcon (*Falco peregrinus anatum*), great blue heron (*Ardea herodias*), prairie falcon (*Falco mexicanus*), and white-tailed kite (*Elanus leucurus*).

Species that are considered to have a low potential to occur within the Study Area include Alameda whipsnake (=striped racer) (*Masticophis lateralis euryxanthus*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), tricolored blackbird (*Agelaius tricolor*), coast horned lizard (*Phrynosoma blainvillii*), San Joaquin whipsnake (*Masticophis flagellum ruddocki*), western spadefoot (*Spea hammondi*), grasshopper sparrow (*Ammodramus savannarum*), western burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alpestris actia*), Cooper's hawk (*Accipiter cooperii*), ferruginous hawk (*Buteo regalis*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), American badger (*Taxidea taxus*), Bridge's coast range shoulderband (*Helminthoglypta nickliniana bridgesi*), crotch bumble bee (*Bombus crotchii*), curved-foot hygrotus diving beetle (*Hygrotus curvipes*), obscure bumble bee (*Bombus caliginosus*), and western bumble bee (*Bombus occidentalis*).

#### Wildlife Species with a High Potential for Occurrence

##### Bald Eagle – State Endangered, Bald and Golden Eagle Protection Act

Bald eagles winter throughout most of California near lakes, reservoirs, river systems, and some rangelands and coastal wetlands. The breeding range is mostly restricted to mountainous habitats near reservoirs, lakes, and rivers, primarily in the northern two-thirds of the State. Nests are large, typically between 5 to 6 feet in diameter and 2 to 4 feet tall. Nests are typically built in large, old-growth trees with open branch work, especially ponderosa pine (CDFW 2017). The bald eagle diet consists mainly of fish, but it will eat a wide variety of foods depending on what is available. They will eat waterfowl, reptiles, amphibians, invertebrates, small mammals, and sometimes carrion. The nearest CNDDDB occurrence of this species is located approximately 5.5 miles southeast of the Study Area near Lake Del Valle Reservoir, which is the only known nesting location for the species in Alameda County (CDFW 2017). The Study Area contains quarry ponds and silt ponds that provide foraging habitat and large trees that could support a

nesting pair within the willow riparian wetland, breached quarry pond and, native revegetation area. This species was not observed in the Study Area or in the vicinity during the field surveys. However, it was observed in 2016 foraging within Stanley Reservoir immediately adjacent to the Study Area during previous site visits. Due to the suitable habitat found within the Study Area and the known occurrences of this species in the vicinity of the Study Area, the potential for bald eagles to occur in the Study Area is considered *high*.

#### Golden Eagle – California Fully Protected, Bald and Golden Eagle Protection Act

The golden eagle is found in grasslands, forested habitat and woodland. This species preys mostly on small reptiles, birds, and mammals up to the size of mule deer fawns and coyote pups. They build nests on cliffs or in large trees. The ruderal grassland provides marginal foraging habitat and large trees within the Study Area provide suitable nesting habitat.

The nearest CNDDDB occurrence is 3.5 miles south of the Study Area (CDFW 2017), and the species is known to nest in the region. This species was not observed in the Study Area or in the vicinity during the field surveys. However, due to the suitable habitat found within the Study Area and the known occurrences of this species in the vicinity, the potential for golden eagle to occur in the Study Area is considered *high*.

#### Special-Status Bat Species

Three special-status bat species have the potential to occur within the Study Area: hoary bat, pallid bat, and Yuma myotis.

Hoary bats are found in many habitats suitable for bearing young, which include all woodlands and forests with medium to large-size trees and dense foliage. Preferred roost sites are hidden from above, with few branches below, and have ground cover with low reflectivity. The native revegetation area and sycamore woodland in the Study Area provide suitable roosting habitat for the hoary bat and the ruderal grassland provides suitable foraging habitat. One CNDDDB occurrence for this species is located within five miles of the Study Area (CDFW 2017).

Pallid bats roost in rock crevices and caves and occasionally hollow trees and buildings and forage over open ground. The native revegetation area, sycamore woodland, silt and quarry ponds, and ruderal grasslands in the Study Area may provide suitable roosting and foraging habitat. There are three known occurrences in the CNDDDB within five miles of the Study Area (CDFW 2017).

Yuma myotis roost in caves, tunnels, or buildings and may occasionally be found under bridges and they generally forage over open water. The silt and quarry ponds may provide suitable foraging habitat. There is one known occurrence in the CNDDDB within five miles of the Study Area (CDFW 2017).

Therefore, there is a *high* potential for special-status bat species to occur within the Study Area.

### Western Pond Turtle – California Species of Special Concern

Western pond turtles occur in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with suitable basking sites (Californiaherps 2017). Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). Western pond turtles nest and overwinter in areas of sparse vegetation comprised of grassland and forbs.

There are four CNDDDB records for this species within five miles of the Study Area (CDFW 2017). Three adult western pond turtles were observed in Silt Pond 1 (S-01) during the November 1 and 2, 2017 site visits. The silt ponds, quarry ponds, and perennial drainage all provide suitable aquatic habitat and the willow riparian wetland, freshwater marsh, gravel bars, and ruderal grassland provide suitable upland habitat for this species. This species is assumed to be *present* within suitable habitat within the Study Area.

### American Peregrine Falcon – California Fully Protected

American peregrine falcon occurs in landscapes with cliffs or skyscrapers for nest sites. They can be found nesting at elevations up to about 12,000 feet, as well as along rivers and coastlines or in cities. In migration and winter, peregrine falcons are found in nearly any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains. Falcons nest in tall structures, cliffs, and forage for shore birds or waterfowl. Peregrine falcons typically nest on cliffs faces from 25 to 1,300 feet above MSL. Other nesting locations include quarries, silos, and tall man-made structures.

An American peregrine falcon was observed foraging along the dirt road between Quarry Pond H (QP-H) and Silt Pond 1 (S-01) during the November 2, 2017 site visit. The Study Area provides foraging and nesting habitat for this species. This species is assumed to be *present* within the Study Area.

### White-Tailed Kite – California Fully Protected

White-tailed kite is a year-long resident in coastal and valley lowlands in California. White-tailed kites breed from February to October, peaking from May to August (Zeiner *et al.* 1990). This species nests near the top of dense oaks, willows, or other large trees.

One white-tailed kite was observed foraging adjacent to Silt Pond 1 (S-01) within the Study Area on November 2, 2017. A photo of this species taken on site is located in **Appendix C**. Therefore, this species is assumed to be *present* within the Study Area.

### Nesting Birds and Raptors

The nests of raptors and most other birds are protected under the Migratory Bird Treaty Act. Raptors are also protected by Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest. Additionally, the USFWS and CDFW identified a number of avian species of conservation concern that do not have specific statutory protection. Avian species forage and nest in a variety of habitats throughout Alameda County. The ruderal grassland, sycamore woodland, native revegetation area, willow riparian wetland,

freshwater marsh, and northern coastal scrub on and surrounding the Study Area may provide nesting and foraging habitat for raptors and other protected birds, including: prairie falcon (*Falco mexicanus*) and great blue heron (*Ardea herodias*). Raptors and other protected migratory birds have a *high* potential to occur in the Study Area.

### **Wildlife Species with a Low Potential for Occurrence**

#### **Alameda Whipsnake (=striped racer) - Federal Threatened and State Threatened**

The range of the Alameda whipsnake is restricted to the inner Coast Range in western and central Contra Costa and Alameda counties (USFWS 2006). The historical range of this species has been fragmented into five disjunct populations: Tilden-Briones, Oakland-Las Trampas, Hayward-Pleasanton Ridge, Sunol-Cedar Mountain, and the Mount Diablo-Black Hills. The Alameda whipsnake is associated with scrub communities with a mosaic of open and closed canopy; woodland or annual grassland plant communities including mixed chaparral, chamise-redshank chaparral, coastal scrub; and annual grassland and oak woodlands that lie adjacent to scrub habitats that contain areas of rock outcroppings. Rock outcroppings are important as they are a favored location for lizard prey. The Eliot Facility does not have significant rock outcroppings which reduces the potential for this species to occur within the Study Area. Whipsnakes frequently venture into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland.

Twenty-one CNDDDB occurrences of this species have been recorded within a five-mile radius of the Study Area (CDFW 2017). The ruderal grassland, northern coastal scrub, sycamore woodland, and native revegetation areas that contain oak trees provide some marginal habitat for this species. The EACCS (ICF 2010) does not include the Study Area within its modeled habitat for this species. No Alameda whipsnakes were observed during the site visits. The historic and ongoing disturbances to the vegetation communities within the Study Area significantly reduce the potential for this species to utilize the Study Area. However, the high number of occurrences within a five-mile radius of the Study Area indicates that there is at least some potential for the species to utilize portions of the Study Area for a movement corridor between more suitable habitat patches outside of the Study Area. Therefore, this species has a *low* potential to occur in the Study Area.

#### **Valley Elderberry Longhorn Beetle – Federal Threatened**

Valley elderberry longhorn beetles (“VELB”) are endemic to the Central Valley of California. Typically, the beetles are found on elderberry shrubs within riparian plant communities. Some studies have found that multiple elderberry shrubs clumped together provide superior habitat for the beetle while isolated elderberry shrubs are less likely to support beetle populations. Typical plant species that co-occur with the elderberry shrubs include California sycamore, willow, blackberry, and western poison oak (USFWS 1984). Beetles require elderberry stems with at least one-inch diameter at ground level (dgl) in order for the larvae to utilize the stems (USFWS 1999). The VELB depends on elderberry shrubs for its entire lifecycle. Adults are typically active from March through May during the flowering period of the elderberry shrub. The female lays its eggs on the leaves and stems of the elderberry shrub. The larvae emerge

within a few days and burrow into the elderberry stem. The larvae feed on the stem pith until they pupate. When the host shrub begins flowering, the pupa emerges from the stem as an adult.

Elderberry shrubs with stems greater than one inch in diameter are located along a section of the eastern portion of Quarry Pond A (QP-A) in the eastern portion of the Study Area (**See Page C3, Figure 3**). No exit holes were observed within these shrubs during the site visit; however, the elderberries provide potentially suitable habitat for VELB. There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017). Given the lack of exit holes observed within the elderberry shrubs and the lack of CNDDDB records for VELB in the vicinity of the Study Area, this species has a *low* potential to occur in the Study Area.

#### California Red-Legged Frog – Federal Threatened and California Species of Special Concern

The California red-legged frog (“CRLF”) is a relatively large frog (1.75 to 5.25 inches snout to vent length (“SVL”)), has a light jaw stripe ending in front of the shoulder, and possesses two unique and well defined dorsal-lateral folds on its back, which begin just behind its eyes and extend towards its posterior end. The CRLF was historically present in the Central Valley of California; however, its current range extends from the southern border of California up to the southern portion of Mendocino County, extends northeast in a swath from San Mateo and Sonoma counties across to Plumas and Placer counties, and south along the foothills of the Sierra-Nevada’s from Plumas County to the northeast portion of Madera County; possibly also Mono County. This species has been observed at elevations between sea level and 8,000 feet. CRLF adults are most likely found in deep pools of water, such as ponds, marshes, springs, reservoirs and streams with abundant overhanging vegetation. Juveniles, frog eggs, and adults have also been seen in ephemeral creeks, ponds, and drainages that lack riparian vegetation. These frogs often breed in ponds and drainages between the months of November and April. Disappearing from seventy percent of its historical range, the CRLF has suffered huge declines due to over harvesting, habitat loss, non-native species introductions, and urban encroachment. There are 32 records in the CNDDDB for this species within five miles of the Study Area (CDFW 2017).

The inundated areas (breached quarry ponds) within the OHWM of the Arroyo del Valle provide very marginal breeding habitat for this species due to the ongoing disturbance to these areas from ongoing mining operations. No CRLF were observed during the site surveys. Additionally, bullfrog tadpoles were observed in the Arroyo del Valle. Bullfrogs are a known predator of CRLF. The Arroyo del Valle could potentially provide movement habitat for CRLF between more suitable habitat outside of the Study Area. The EACCS has mapped upland movement habitat for CRLF within the Study Area (ICF 2010). Therefore, CRLF has a *low* potential for occurrence within the Study Area.

#### California Tiger Salamander – Federal Threatened and State Threatened

The California tiger salamander (CTS) is a large (3 to 5” SVL), terrestrial salamander that has well defined costal grooves, yellow to cream colored spots against a black background covering its body, and only occurs only in California. This species occurs near Petaluma, Sonoma County,

east through the Central Valley to Yolo and Sacramento counties and south to Tulare County, and from the vicinity of San Francisco Bay south at least to Santa Barbara County. One isolated population is known to exist at Gray Lodge Wildlife Management Area in Butte County. The CTS is a lowland species restricted to the grasslands and low foothill regions where long-lasting rain pools occur. This salamander occurs at elevations up to 1,054 m (3,200 ft.). The CTS is a permanent resident of California, but following warm winter and spring rains (February–November) CTS migrate to inundated seasonal wetlands and ponded areas to congregate and breed. At least 10 weeks is required for the development from egg, to free-swimming larva, and to metamorphosed juvenile. During hot summer months and as the pool dries out, the CTS migrate at night in mass to small-mammal burrows to over-summer until conditions are favorable again. Juvenile CTS have been observed migrating as much as 1.6 km (0.994 mi.) away from a breeding pool. This salamander may not reproduce during years of low rainfall and require two years to become sexually mature. Loss of habitat, contaminant and pesticide exposure, rodent control, and hybridization with non-native tiger salamanders are currently threatening CTS populations throughout California.

There are 65 records in the CNDDDB for this species within five miles of the Study Area (CDFW 2017). The upland grassland habitat and the Arroyo del Valle corridor provides marginal upland dispersal habitat for CTS. The Arroyo del Valle stream corridor does not provide suitable aquatic breeding habitat for this species. The EACCS has mapped upland habitat for CTS and potential breeding habitat for CTS within Quarry Pond A (QP-A) within the Study Area (ICF 2010). Given the high level of disturbance within the Study Area, this species has a *low* potential for occurrence within the Study Area.

#### Tricolored Blackbird – State Candidate for Endangered Status

Tricolored blackbird is a colonial species that breeds in freshwater marshes of cattail, bulrush (*Schoenoplectiella* sp. and *Isolepis* sp.), sedge, and non-native vegetation including Himalayan blackberry. This species nests occur in large colonies of up to thousands of individuals. Nesting locations must be large enough to support a minimum colony of approximately fifty pairs (Zeiner *et al.* 1990). This species forages in grasslands and agricultural fields with low-growing vegetation (Shuford 2008). There are five CNDDDB records for this species within five miles of the Study Area (CDFW 2017). This species was not observed during the site surveys. The riparian vegetation along the Arroyo del Valle and Quarry Pond A (QP-A) provides potential nesting habitat and the ruderal grassland within the Study Area provides foraging habitat for this species. The EACCS has modelled potential breeding habitat for this species near Quarry Pond A (QP-A) within the Study Area (ICF 2010). However, the historic and ongoing disturbance associated with mining activities has lowered the potential for this species to occur within the Study Area. Therefore, this species has a *low* potential to occur within the Study Area.

#### Coast Horned Lizard – California Species of Special Concern

Coast horned lizard inhabits open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains from sea level to 8,000 feet above MSL. It is typically found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. This species is often found in lowlands along sandy washes with scattered shrubs and along

dirt roads, and frequently found near ant hills (Zeiner *et al.* 1988). The species was not observed within the Study Area during the biological surveys and there are no records in the CNDDDB for this species within five miles of the Study Area (CDFW 2017). However, the gravel bars and ruderal grassland within the Study Area provides marginal habitat for the coast horned lizard. Therefore, this species has a *low* potential to occur within the Study Area.

#### San Joaquin Whipsnake – California Species of Special Concern

San Joaquin whipsnake is a fast-moving snake with smooth scales, a large head and eyes, a thin neck, and a long, thin tail. This species occurs in open, dry and treeless areas including grasslands and scrub. The ruderal grassland within the Study Area provides marginal habitat for this species. There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017). This species has a *low* potential for occurrence within the Study Area.

#### Western Spadefoot – California Species of Concern

Western spadefoot occurs throughout the Central Valley and on the coast from Point Conception, south to the Mexican border. This species occurs from sea level up to 4,500 feet (0 to 1,400 meters) above MSL in the southern Sierra foothills. Western spadefoot individuals are most commonly found in grassland habitats with temporary pools of water, but they have also been found in open chaparral and valley-foothill pine-oak woodlands (Stebbins 2003). This species spends most of the year underground, where individuals seek refuge from desiccating conditions by constructing and residing in small burrows. This species often breeds in temporary pools and quiet streams between the months of January and May that remain inundated for at least six weeks. The gravel bars and willow riparian wetland, as well as the ruderal grassland within the Study Area provide suitable habitat for this species. There are two CNDDDB records for this species within five miles of the Study Area (CDFW 2017). The historic and ongoing disturbance associated with gravel mining activities reduce the potential for this species to occur within the Study Area. Therefore, this species has a *low* potential for occurrence within the Study Area.

#### Western Burrowing Owl – California Species of Special Concern

Western burrowing owl is a small ground-dwelling owl that occurs in western North America from Canada to Mexico, and east to Texas, and Louisiana. Although in certain areas of its range western burrowing owls are migratory, these owls are predominantly non-migratory in California (Zeiner *et al.* 1990). The breeding season for western burrowing owls occurs from February to August, peaking in April and May (Zeiner *et al.* 1990). Western burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. This owl is also known to use artificial burrows including pipes, culverts, and nest boxes. There are 14 CNDDDB records for this species within five miles of the Study Area (CDFW 2017). No western burrowing owls were observed during the site surveys. However, the ruderal grassland and portions of developed areas and along the Arroyo del Valle in the Study Area provide potential habitat for this species. Suitable burrows for this species were observed within the Study Area during the site visits; however, they were located in active gravel mining areas subject to high levels of disturbance. Therefore, the potential for burrowing owls to occur in the Study Area is *low*.



#### American Badger – California Species of Special Concern

American badgers are found in dry, open habitats including grassland and open woodland. Suitable burrowing habitat requires dry, sandy soil. Breeding occurs in summer and early fall, with young being born from March to April (Nature Serve 2015). There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017). The ruderal grassland, northern coastal scrub, sycamore woodland, native revegetation area, and willow riparian wetland provide habitat for this species. However, very few potential burrow sites that could be utilized by this species were observed during the biological surveys and no American badgers were observed during the biological surveys. Therefore, this species has a *low* potential to occur within the Study Area.

#### Bridge's Coast Range Shoulderband – California Special Animals

Bridge's coast range shoulderband is a terrestrial mollusk found in open hillsides and rock piles surrounded by grass and herbaceous vegetation. It is known to occur in Alameda and Contra Costa counties. There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017) and this species was not observed during site visits. Due to the degree of historic and ongoing disturbance within the Study Area, this species has a *low* potential to occur in the Study Area.

#### Crotch Bumble Bee – California Special Species

The crotch bumble bee is typically observed in coastal California east towards the Sierra-Cascade crest; and is less common in western Nevada. Select food plant genera include the following species: *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*. The flight period for workers is between April and August, males between April to September.

One known occurrence has been noted in the CNDDDB within five miles of the Study Area (CDFW 2017). This species was not observed within the Study Area during site visits. The native revegetation area and ruderal grassland areas provide marginal habitat for this species. Therefore, this species has a *low* potential for occurrence within the Study Area.

#### Curved-Foot Hygrotus Diving Beetle – California Special Species

The curved-foot hygrotus diving beetle is typically observed in stock ponds, roadside drainages, slow-moving creeks, ponds, and alkali ponds. These beetles are predatory in both larval and adult stages feeding on small aquatic invertebrates (Borror and White 1970). There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017). This species was not observed within the Study Area during the site visits. Given the degree of historic and ongoing disturbance within aquatic habitats within the Study Area that may support this species, this species has a *low* potential to occur in the Study Area.

#### Obscure Bumble Bee – California Special Species

The obscure bumble bee can be found throughout the year in open grassy coastal prairies and coast range meadows. Nesting occurs underground and also aboveground in abandoned bird nests. Host plants include plants from the genera *Ceanothus*, *Cirsium*, *Clarkia*, *Keckiella*, *Lathyrus*, *Lotus*, *Lupinus*, *Rhododendron*, *Rubus*, *Trifolium*, and *Vaccinium*.

The native revegetation and ruderal grassland areas provide marginal habitat for this species. There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017) and this species was not observed during the site visits. Therefore, this species has a *low* potential for occurrence within the Study Area.

#### Western Bumble Bee – California Special Species

The Western bumble bee can be found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. They nest underground in abandoned rodent burrows or other cavities. Associated host plants are from the genera *Ceanothus*, *Centaurea*, *Chrysothamnus*, *Geranium*, *Grindelia*, *Lupinus*, *Melilotus*, *Monardella*, *Rubus*, *Solidago*, and *Trifolium*. Flight period for queens' bee are typically from February to November, and workers from April to November.

The native revegetation and ruderal grassland areas provide marginal habitat for this species. There are no CNDDDB records for this species within five miles of the Study Area (CDFW 2017) and this species was not observed during the site visits. Therefore, this species has a *low* potential for occurrence within the Study Area.

#### 4.4.3. Special-Status Fish Species

The Arroyo del Valle did historically support a population of steelhead (*Oncorhynchus mykiss*). However, flood control structures and other barriers to fish migration downstream of the Study Area have removed the potential for steelhead and other special-status fish species to occur within the Study Area (Hanson *et al.* 2004). Therefore, special-status fish species are not addressed in this document and will not be included in future impact assessments.

#### 4.4.4. Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Based on CNDDDB queries, alkali meadow, alkali seep, cismontane alkali marsh, northern claypan vernal pool, valley needlegrass grassland, valley sink scrub, and California sycamore woodlands historically were known to occur in the vicinity of the Study Area. Of these sensitive habitats, California sycamore woodland currently occurs within the Study Area. California sycamore woodland is listed as a sensitive plant community on the California Department of Fish and Wildlife Natural Communities List and is required to be considered in CEQA documents. In order for California sycamore woodlands to be considered a natural community, at least 30 percent of the relative cover in the tree canopy is dominated by California sycamore. *Salix* species, or Fremont's cottonwood (*Populus fremontii*) may be co-dominant (CNPS 2018). Although, the sycamore woodland meets the criteria to be considered a sensitive community, it is very low quality due to small patch size, declining tree health, lack of supporting hydrology, and fragmented patches.

Additional sensitive habitats within the Study Area include: potentially jurisdictional waters of the U.S. (seasonal wetlands, seasonal marshes, a perennial drainage, intermittent drainages, and willow riparian wetland habitats).

The Study Area also contains native oak species that are protected under CEQA and Alameda County.

## 5.0 CONCLUSIONS

As discussed, the Study Area consists of land that supports primarily active mining, ruderal grasslands, riparian habitat within the OHWM of the Arroyo del Valle. **Table 2** below summarizes the biological communities found within the Study Area. See **Figure 3** for mapped areas of vegetation communities.

**TABLE 2 — BIOLOGICAL COMMUNITIES**

Biological Communities	Total Acreage
Marsh*	0.44
Intermittent Stream	0.44
Breached Quarry Pond	16.90
Sycamore Woodland	6.50
Willow Riparian Wetland	57.26
Gravel Bar	20.03
Ruderal Grassland	121.41
Native Revegetation Area	21.45
Quarry Pond	118.70
Silt Pond	108.50
Percolation Pond	0.07
Developed	448.07
<b>Total</b>	<b>919.77 Acres</b>

\*Depressional seasonal marsh, riverine seasonal marsh, and freshwater marsh acreages are combined into the “marsh” biological community. The freshwater marsh component is located entirely within the OHWM of the Arroyo del Valle.

Known or potential biological habitat for threatened, endangered, proposed threatened, proposed endangered, candidate species, sensitive species, and species of concern in the Study Area include the following:

- Potential habitat for special-status plants including Congdon’s tarplant, Mt. Diablo buckwheat, and Mt. Diablo fairy-lantern;
- Potential habitat for valley elderberry longhorn beetle;
- Potential movement habitat for Alameda whipsnake;
- Potential movement habitat for California red-legged frog;
- Potential movement habitat for California tiger salamander;
- Potential foraging and nesting habitat for bald eagle and golden eagle;

- Potential habitat for tricolored blackbird;
- Potential habitat for coast horned lizard;
- Potential habitat for San Joaquin whipsnake;
- Potential habitat for western pond turtle;
- Potential habitat for western spadefoot toad;
- Potential habitat for American peregrine falcon;
- Potential foraging and nesting habitat for raptors and other migratory birds including grasshopper sparrow, California horned lark, Cooper's hawk, sharp-shinned hawk, ferruginous hawk, loggerhead shrike, great blue heron, northern harrier, and prairie falcon;
- Potential habitat for white-tailed kite;
- Potential breeding and wintering habitat for burrowing owl;
- Potential habitat for American badger;
- Potential habitat for special-status bats including the pallid bat, hoary bat, and Yuma myotis;
- Potential habitat for Bridge's coast range shoulderband;
- Potential habitat for crotch bumble bee;
- Potential habitat for curved-foot hygrotus diving beetle;
- Potential habitat for obscure bumble bee;
- Potential habitat for Western bumble bee; and
- Sensitive habitats including potentially jurisdictional waters of the U.S. (seasonal wetlands, seasonal marshes, perennial drainage, intermittent drainages, protected oaks, and riparian habitats), and California sycamore woodlands.

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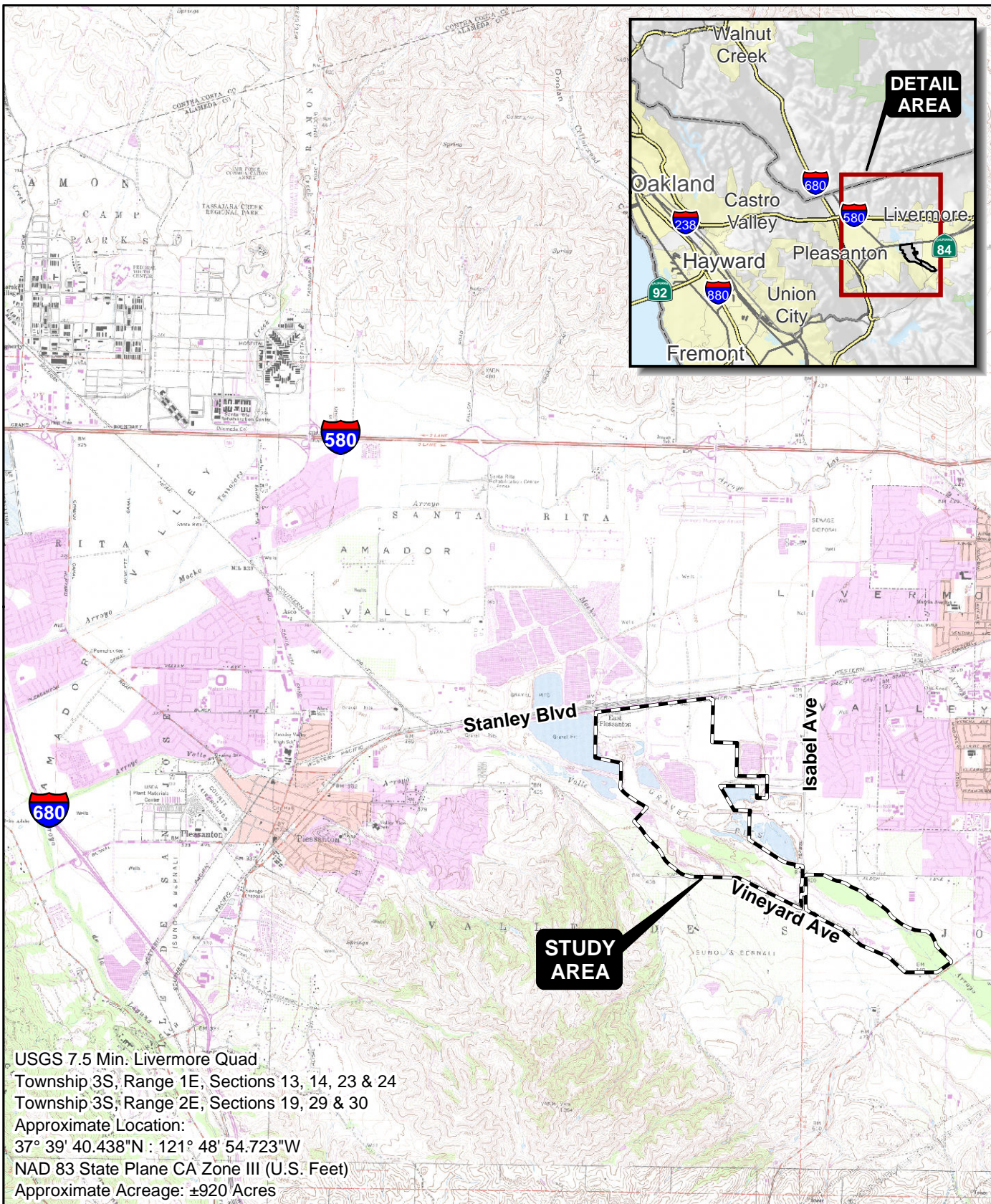
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## SITE AND VICINITY

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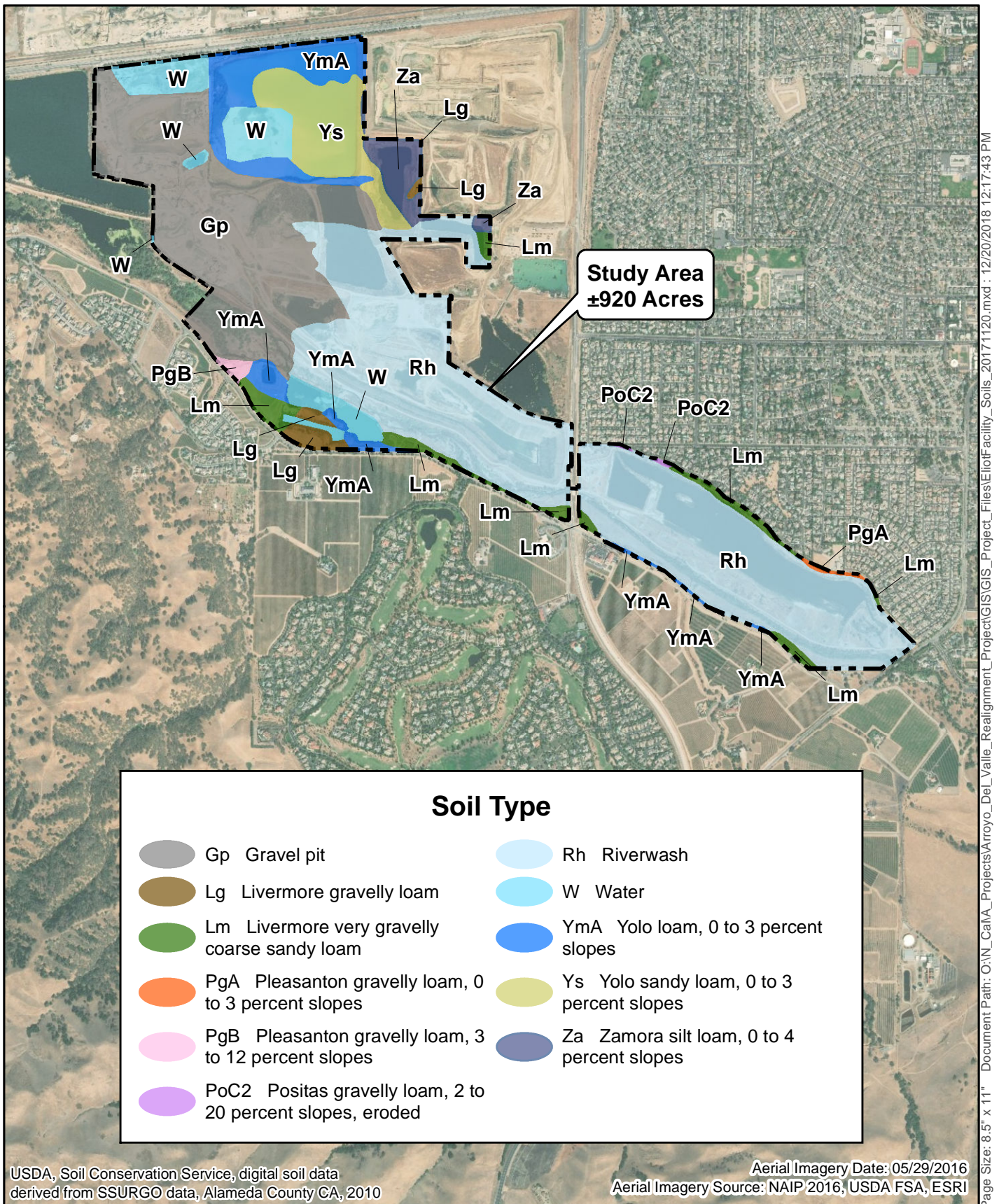


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 QA/QC: AMP  
 Date: 12/18/2018

**FIGURE 1**





## SOILS



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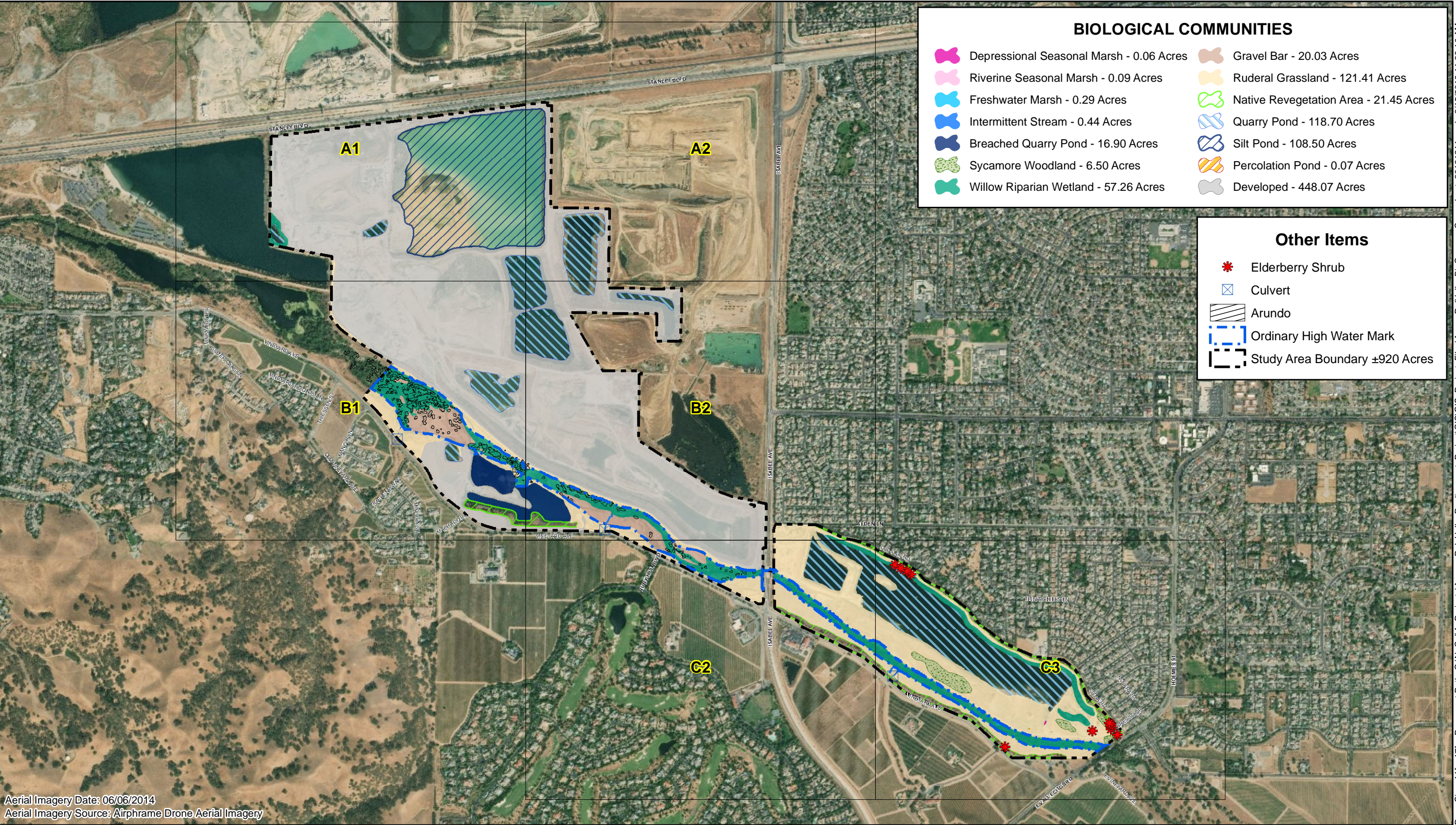
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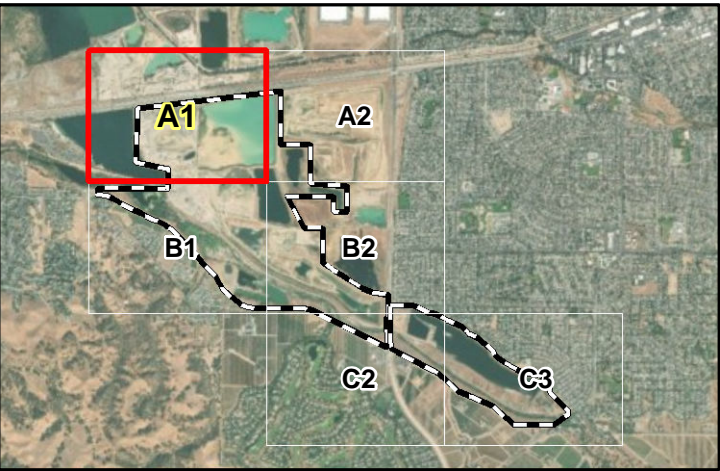
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**FIGURE 2**





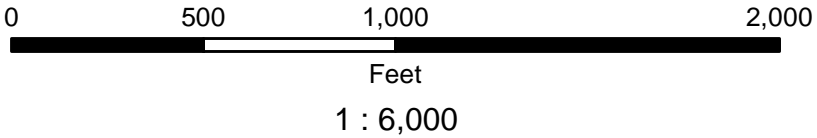




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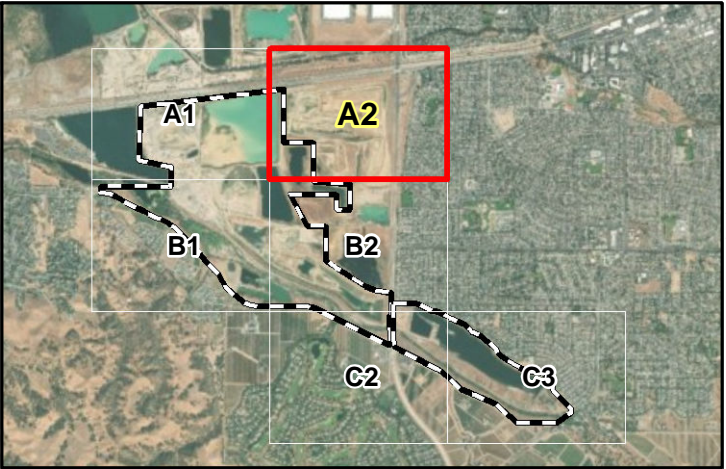
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- ☒ Culvert
- ▨ Arundo
- ▤ Ordinary High Water Mark
- ▭ Study Area Boundary ±920 Acres
- Biological Communities**
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- 🌿 Riverine Seasonal Marsh - 0.09 Acres
- 🌿 Freshwater Marsh - 0.29 Acres
- 🌿 Intermittent Stream - 0.44 Acres
- 🌿 Breached Quarry Pond - 16.90 Acres
- 🌿 Sycamore Woodland - 6.50 Acres
- 🌿 Willow Riparian Wetland - 57.26 Acres
- 🌿 Gravel Bar - 20.03 Acres
- 🌿 Ruderal Grassland - 121.41 Acres
- 🌿 Native Revegetation Area - 21.45 Acres
- 🌿 Quarry Pond - 118.70 Acres
- 🌿 Silt Pond - 108.50 Acres
- 🌿 Percolation Pond - 0.07 Acres
- 🌿 Developed - 448.07 Acres

Aerial Imagery: USGS 2011 Mosaic  
Digital base data provided by WRA Environmental Consulting



**ELIOT FACILITY  
BIOLOGICAL COMMUNITIES**

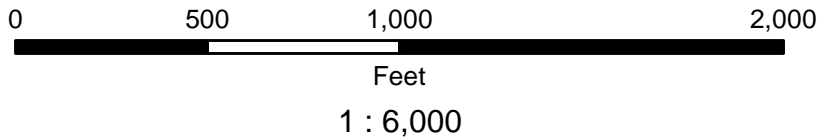




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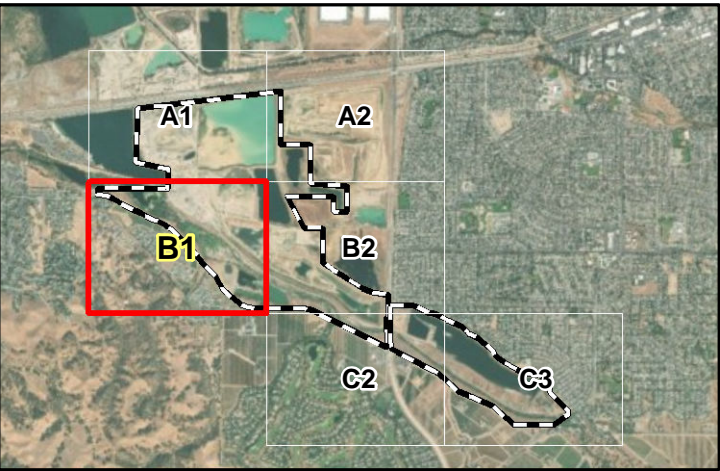
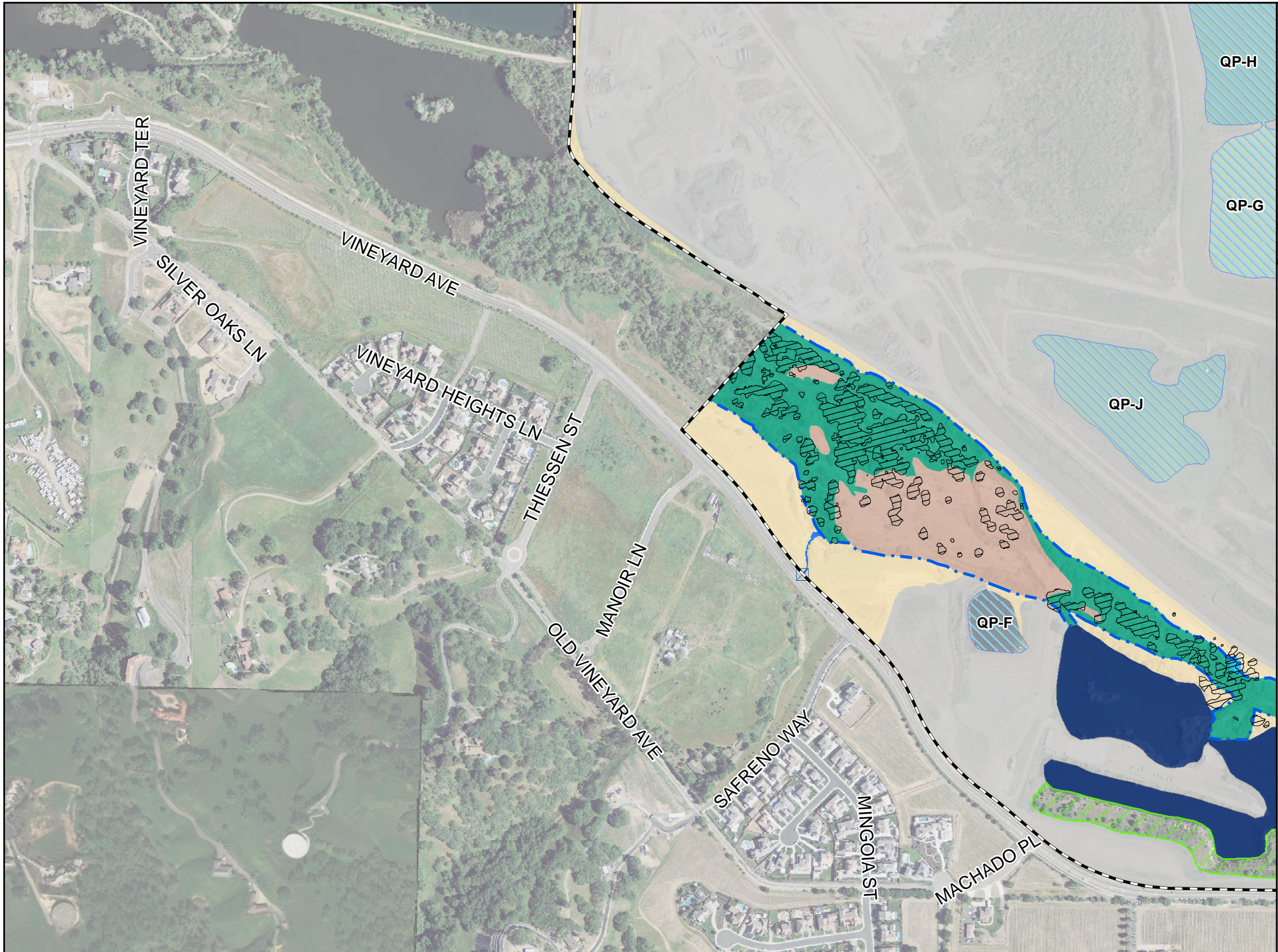
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- 🌸 Percolation Pond - 0.07 Acres
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Aerial Imagery: USGS 2011 Mosaic  
Digital base data provided by WRA Environmental Consulting



**ELIOT FACILITY  
BIOLOGICAL COMMUNITIES**

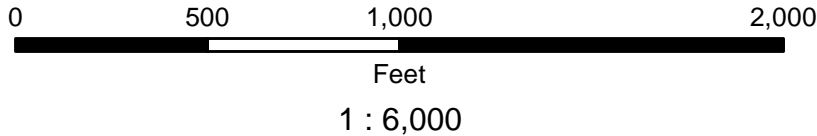




### Legend

- ✱ Elderberry Shrub
- Culvert
- Arundo
- Ordinary High Water Mark
- Study Area Boundary ±920 Acres
- Biological Communities**
- Depressional Seasonal Marsh - 0.06 Acres
- Riverine Seasonal Marsh - 0.09 Acres
- Freshwater Marsh - 0.29 Acres
- Intermittent Stream - 0.44 Acres
- Breached Quarry Pond - 16.90 Acres
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- Silt Pond - 108.50 Acres
- Percolation Pond - 0.07 Acres
- Developed - 448.07 Acres

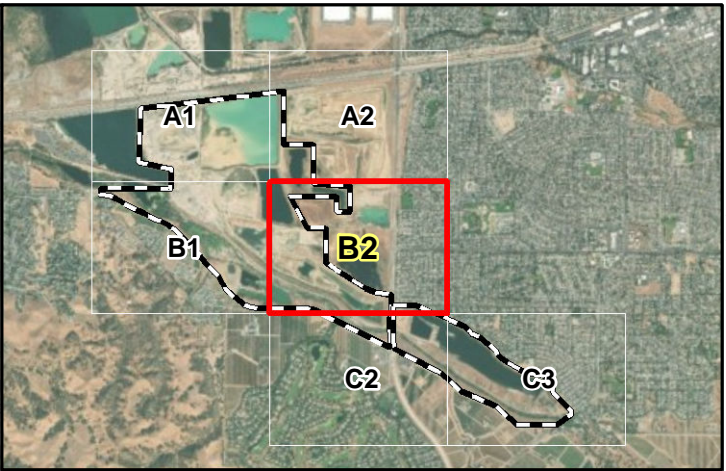
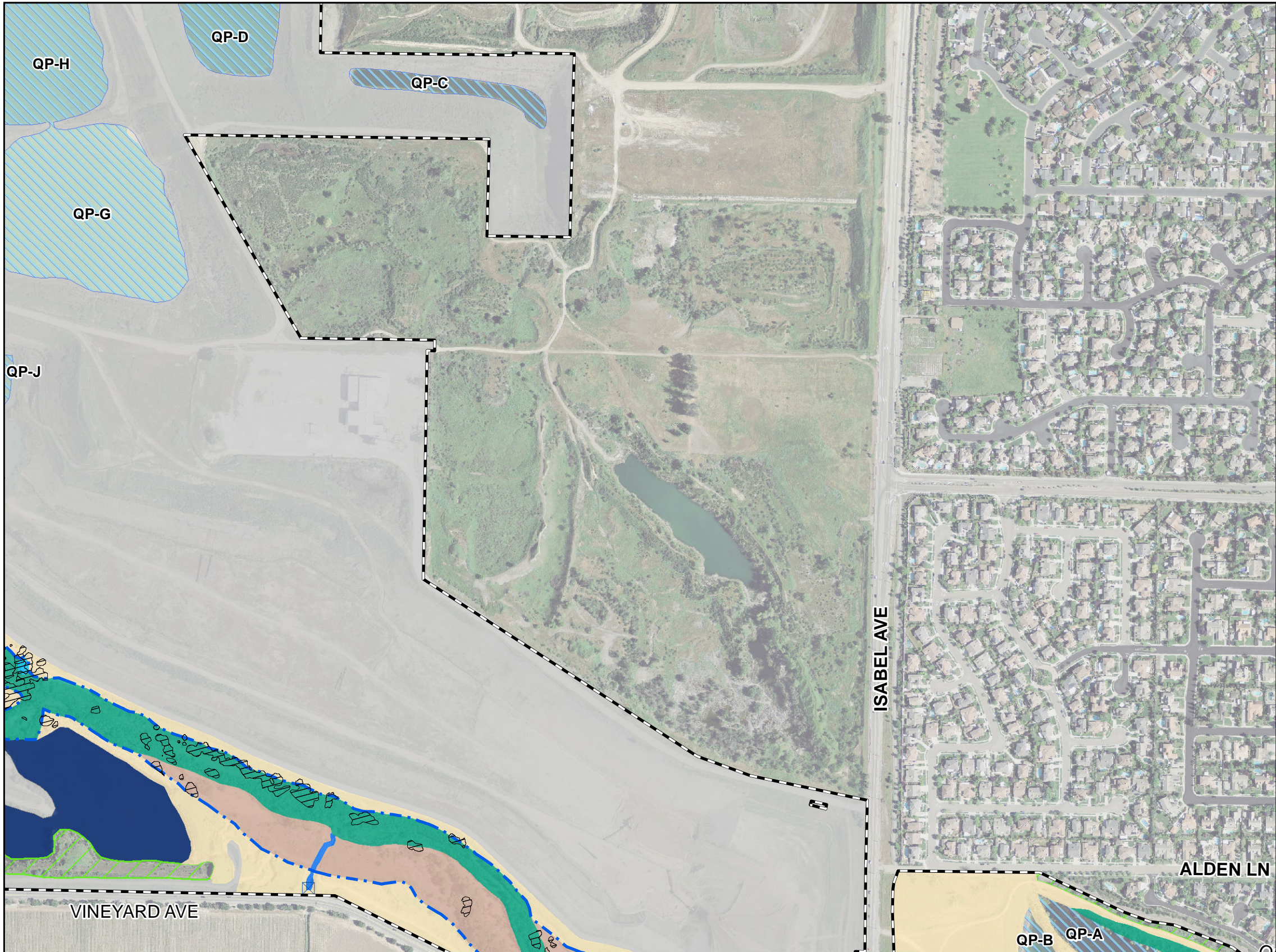
Aerial Imagery: USGS 2011 Mosaic  
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## ELIOT FACILITY BIOLOGICAL COMMUNITIES

**FIGURE 3  
PAGE B1**





### Legend

- \* Elderberry Shrub
- ▣ Culvert
- ▨ Arundo
- ▤ Ordinary High Water Mark
- ▭ Study Area Boundary ±920 Acres
- Biological Communities**
- Depressional Seasonal Marsh - 0.06 Acres
- Riverine Seasonal Marsh - 0.09 Acres
- Freshwater Marsh - 0.29 Acres
- Intermittent Stream - 0.44 Acres
- Breached Quarry Pond - 16.90 Acres
- Sycamore Woodland - 6.50 Acres
- Willow Riparian Wetland - 57.26 Acres
- Gravel Bar - 20.03 Acres
- Ruderal Grassland - 121.41 Acres
- Native Revegetation Area - 21.45 Acres
- Quarry Pond - 118.70 Acres
- Silt Pond - 108.50 Acres
- Percolation Pond - 0.07 Acres
- Developed - 448.07 Acres

Aerial Imagery: USGS 2011 Mosaic  
Digital base data provided by WRA Environmental Consulting

**FOOTHILL ASSOCIATES**

ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

Drawn By: MUB QA/QC:AMP Date: 2/15/2019

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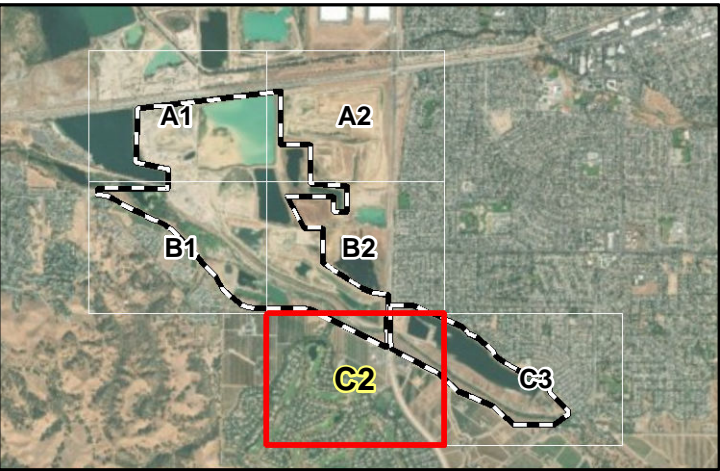


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## ELIOT FACILITY BIOLOGICAL COMMUNITIES

**FIGURE 3  
PAGE B2**

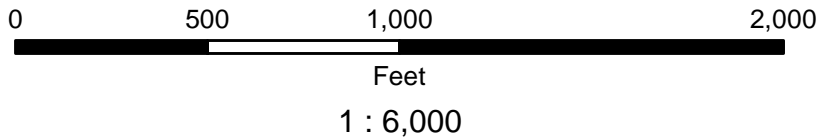




### Legend

- \* Elderberry Shrub
- ☒ Culvert
- ▨ Arundo
- ▬ Ordinary High Water Mark
- ▭ Study Area Boundary ±920 Acres
- Biological Communities**
- 🌸 Depressional Seasonal Marsh - 0.06 Acres
- 🌸 Riverine Seasonal Marsh - 0.09 Acres
- 🌸 Freshwater Marsh - 0.29 Acres
- 🌸 Intermittent Stream - 0.44 Acres
- 🌸 Breached Quarry Pond - 16.90 Acres
- 🌸 Sycamore Woodland - 6.50 Acres
- 🌸 Willow Riparian Wetland - 57.26 Acres
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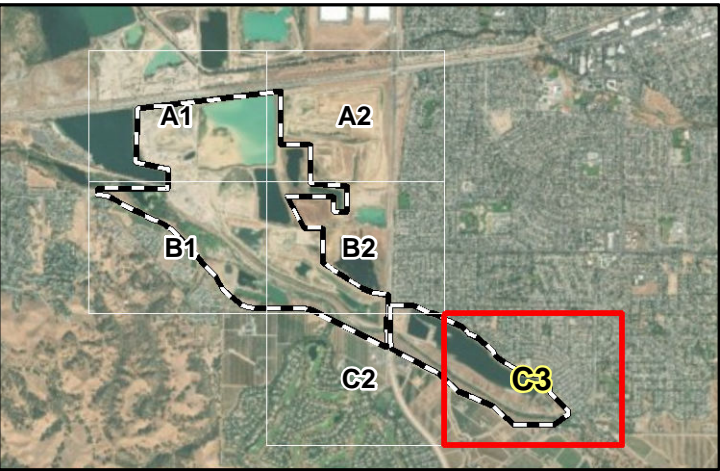
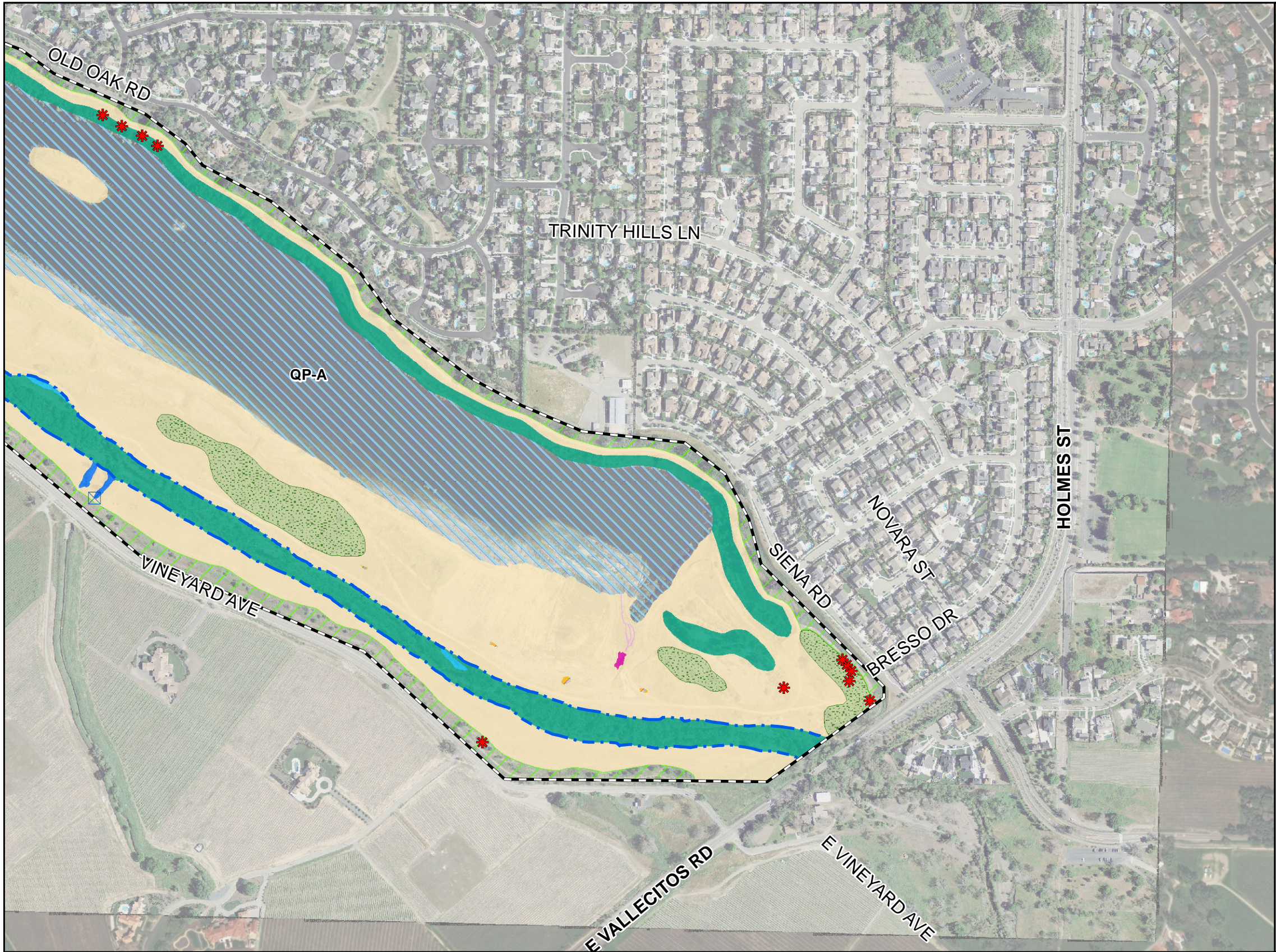
Aerial Imagery: USGS 2011 Mosaic  
Digital base data provided by WRA Environmental Consulting



## ELIOT FACILITY BIOLOGICAL COMMUNITIES

**FIGURE 3  
PAGE C2**

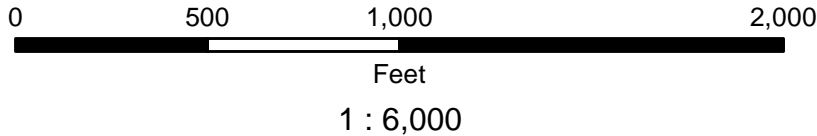




**Legend**

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Aerial Imagery: USGS 2011 Mosaic  
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**ELIOT FACILITY  
BIOLOGICAL COMMUNITIES**





## **Appendix A— Regionally Occurring Listed and Special-Status Species**



Table 1 — Legally Protected Species

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
California seablite <i>Suaeda californica</i>	FE; --; --; 1B	Perennial evergreen shrub found mostly on coastal salt marshes and swamps from 0-15 meters (0-50 feet).	Blooming period: July – October	<b>None</b> ; the Study Area is outside of geographical range and does not provide suitable habitat for this species. Remnant population in San Francisco Bay and Morro Bay.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE; --; --; 1B	Annual herb found in cismontane woodland, often on alkaline playas, valley and foothill grassland, and vernal pools from 0-470 meters (0-1,542 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks vernal pools or alkaline playas that support this species.
Large flowered fiddleneck <i>Amsinckia grandiflora</i> (Gray) Greene	FT; CE; --; 1B	Annual herb found in cismontane woodland and foothill grasslands from 270-550 meters (885-1805 feet).	Blooming period: (March) April – May	<b>None</b> ; the Study Area is outside of species’ known elevation range.
Livermore tarplant <i>Deinandra bacigalupii</i> B.G. Baldwin	--; CE; --; 1B	Annual herb found in meadows and seeps often on alkaline soil from 150 - 185 meters (492-606 feet).	Blooming period: June – October	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and lack meadows or seeps.
Palmate-bracted bird's-beak <i>Chloropyron palmatum</i> (Ferris) Tank & J.M Egger	FE; CE; --; 1B	Annual hemiparasite herb found on alkaline soil in chenopod scrub, valley and foothill grassland from 5-155 meters (16-510 feet).	Blooming period: May – October	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Invertebrates				
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT; --: --: --	Limited to serpentine outcrops in Santa Clara and San Mateo Counties. Adults feed on California goldfields, desert parsley, and tidy-tips along with native grasses.	Adults emerge in spring to feed on goldfields, desert parsley, and tidy-tips along with native grasses.	<b>None</b> ; the Study Area lacks serpentine outcrops and the species is not known to occur in Alameda County.
Conservancy fairy shrimp <i>Branchinecta conservation</i>	FE; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. This This species is currently known only from several disjunct populations: The Vina Plains in Tehama County, south of Chico in Butte County; the Jepson Prairie Preserve and surrounding area in Solano County; the Sacramento National Wildlife Refuge Complex in Glenn County; Mapes Ranch west of Modesto; San Luis National Wildlife Refuge, the Flying M Ranch, and UC Merced Reserve in Merced County; and two locations on the Los Padres National Forest in Ventura County.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	<b>None</b> ; the Study Area lacks vernal pools or suitable freshwater habitats.
Longhorn fairy shrimp <i>Branchinecta longiantenna</i>	FE; --; --; --	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.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	<b>None</b> ; the Study Area lacks vernal pools or suitable freshwater habitats.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE; --: --: --	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host stonecrop succulent ( <i>Sedum spathulifolium</i> ).	Adults emerge in spring to feed on <i>Sedum spathulifolium</i> from April – June	<b>None</b> ; This species is not known to occur in Alameda County. The Study Area lacks the host plant associated with this species.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT: --; --: --	Elderberry shrubs usually associated with riparian areas.	Adults emerge in spring until June. Exit holes visible year-round.	<b>Low</b> ; elderberry shrubs are located within the Study Area along the margins of Quarry Pond A; and on the southern section of the Ruderal Grassland, however, no CNDDDB occurrences have been documented within a 5-mile radius of the Study Area nor were any exit holes observed within elderberry shrubs during the fall 2017 and April 2018 site visits.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. This species is known from Alameda, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Ventura, Yolo, and Yuba counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	<b>None</b> ; the Study Area lacks vernal pools or suitable freshwater habitats.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. This species is known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Madera, Merced, Placer, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, and Yuba counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	<b>None</b> ; the Study Area lacks vernal pools or suitable freshwater habitats.
<b>Fish</b>				
Central Valley steelhead <i>Oncorhynchus mykiss</i>	FT; --; --; --	Rivers and streams tributary to the Sacramento-San Joaquin Rivers and Delta ecosystems.	Spawn in winter and spring.	<b>None</b> ; historically, steelhead were observed in the Arroyo del Valle however downstream barriers prevent this species from occurring in the Study Area.
Delta smelt <i>Hypomesus transpacificus</i>	FT; CE; --; --	Found in estuarine waters. Majority of life span is spent within the freshwater outskirts of the mixing zone (saltwater-freshwater interface) within the Delta.	Spawn from December – July	<b>None</b> ; the Study Area lacks habitat for this species. Downstream barriers prevent this species from occurring in the Study Area.
<b>Amphibians/ Reptiles</b>				
Alameda whipsnake (=striped racer) <i>Masticophis lateralis euryxanthus</i>	FT; CST; --; --	Found in chaparral foothills, shrublands with scattered grassy patches, rock canyons and watercourses, and within adjacent habitats. When inactive they are under cover or underground. Known to occur from Alameda, Contra Costa, San Joaquin, and Santa Clara counties. The population in Stanislaus County is extirpated or possibly extirpated.	Breeding: Spring  Eggs laid: May – July  Eggs Hatch: August – October	<b>Low</b> ; the Study Area contains marginally suitable habitat for this species. Degree of historical and ongoing disturbance within the Study Area reduces the likelihood for this species to occur. The EACCS does not include the Study Area as containing suitable habitat for this species.  Twenty-one known occurrences within five miles of the Study Area have been noted (CDFW 2017).
California red-legged frog <i>Rana draytonii</i>	FT; CSC; --; --	Requires a permanent water source and is typically found along quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation. Breeding sites are in aquatic habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds and lagoons from 0 to 1,500 meters. Additionally, frequently breed in artificial impoundments such as stock ponds. Typically found in or within 300 feet of aquatic habitat, but may disperse up to two miles between suitable aquatic habitat. Elevational range extends from sea level to about 1,500 meters, but typically occur below 1,200 meters.	Breeding: November – March  Non-Breeding: June – August	<b>Low</b> ; the Study Area contains marginal aquatic habitat within the willow riparian wetland and highly disturbed upland habitat within the ruderal grassland and native revegetation area.  Thirty-two known occurrences within five miles of the Study Area have been noted (CDFW 2017).
California tiger salamander, Central Population <i>Ambystoma californiense</i>	FT; CT; --; --	Found in grassland, oak savannah, edges of mixed woodland, and lower elevation coniferous forest. Breeds in temporary ponds that form during winter and may dry out in summer. During the summer, adults spend time underground in small mammal burrows. Known from Alameda, Butte, Contra Costa, Fresno, Glenn, Kern, Madera, Merced, Monterey, Fresno, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, Stanislaus, Tulare, and Yolo counties.	Drift fence studies during fall and winter for upland habitats.  Adults: November – February  Larvae: March 15 – May 15	<b>Low</b> ; the Study Area contains marginal suitable aquatic habitat within the willow riparian wetland and highly disturbed upland habitat within the Ruderal grassland and native revegetation area. The disturbed nature of these communities and the artificial hydrology associated with the aquatic features reduce the likelihood of this species to occur.  Sixty-five known occurrences within five miles of the Study Area have been noted (CDFW 2017).



Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
<b>Birds</b>				
Bald eagle <i>Haliaeetus leucocephalus</i>	FD; CE; --; --	Breeding habitat most commonly includes areas within 2.5 miles (4.0 kilometers) of coastal areas, bays, rivers, lakes, and reservoirs. Nests usually are in tall trees or on pinnacles or cliffs near water.	Year-round	<b>High</b> ; the species has been observed foraging within Study Area (WRA 2016) and documented numerous times within Stanley Reservoir immediately adjacent to the Study Area. Ruderal Grassland, Silt Ponds, Quarry Ponds, Willow Riparian Wetlands, Perennial Stream Impoundment, Native Revegetation Area, Sycamore Woodland, Marsh, Northern Scrub, and Intermittent Stream provide foraging habitat for bald eagle within the Study Area. Additionally, large trees located in the Willow riparian wetland and Native revegetation area provide potential nesting habitat for the species.
California black rail <i>Laterallus jamaicensis coturniculus</i>	--; CT; --; --	Saltwater, brackish, and occasionally freshwater marshes. This species is known from Alameda, Butte, Contra Costa, Imperial, Los Angeles, Marin, Napa, Nevada, Orange, Placer, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Sutter, and Yuba counties, in California.	Year-round	<b>None</b> ; the Study Area lacks suitable habitat on or adjacent to the Study Area for this species. Although, some marsh habitat is located within the Study Area, it is neither salt marsh, which this species prefers, nor does it provide suitable structure for nesting or foraging habitat due to steep banks, deep water, and adjacent non-suitable habitat.
California least tern <i>Sternula antillarum browni</i>	FE; SE; --; --	Breeding in summer along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins.	Breeding April – August	<b>None</b> ; the Study Area is outside of the species’ known breeding range.
Golden eagle <i>Aquila chrysaetos</i>	--; CFP; --; -- (nesting and wintering)	Open and semi-open areas in the mountains up to 12,000 feet in elevation. They are also found in canyon lands, rimrock, terrain, and riverside cliffs and bluffs. Nest are built on cliffs and steep escarpments in grassland, in trees, chaparral, shrubland, forests and man-made structures within vegetated areas.	Year-round	<b>High</b> ; this species has been observed foraging numerous times in Stanley Reservoir, which is located immediately adjacent to the Study Area (eBird 2017). Trees located throughout the Study Area provide potential nesting habitat.  The nearest CNDDDB occurrence is 3.5 miles south of the Study Area (CDFW 2017). The oak trees and sycamore woodland within the Study Area provide nesting habitat for this species.
Swainson’s hawk <i>Buteo swainsoni</i>	--; CT; --; --	Forages in grasslands and nest in trees or tree groves. Most of the California population breeds in the Central Valley. Forages on insects and rodents, also other vertebrates.	Year-round	<b>None</b> ; this species typically forges in agricultural pastures, row crops, or alfalfa fields.
Tricolored blackbird <i>Agelaius tricolor</i>	--; CCE; CSA; --	Breeding habitat is freshwater marshes that include cattails, tules, bulrushes and sedges. Nests are made in the dense vegetation of the marsh or thickets, and sometimes on the ground. In migration and winter, will inhabit open cultivated lands and pastures as well as marshes.	Year-round	<b>Low</b> ; vegetation in and adjacent to the willow riparian wetland provides some suitable nesting habitat. The degree of historical and ongoing disturbance within the ruderal grassland reduces the suitability of foraging habitat which reduces the likelihood for this species to occur.  Five known occurrences within five miles of the Study Area have been noted (CDFW 2017).
<b>Mammals</b>				
Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE; CE; --; --	Found in dense pickleweed ( <i>Salicornia</i> sp.) and salt grass ( <i>Distichlis spicata</i> ) within tidal and non-tidal salt marshes of Suisun, San Pablo Bay, and central and south San Francisco Bays. Also, inhabits adjacent grasslands during high tides. Known only in the saline emergent wetlands of San Francisco Bay and its tributaries.	Year-round	<b>None</b> ; the Study Area does not contain suitable habitat for this species. No saline emergent wetlands are located with the Study Area.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE; ST; EACCS; --	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	Year-round	<b>None</b> ; no large burrows were observed during the fall site surveys in 2017. The highly disturbed upland habitat provides minimal prey habitat.  One known occurrence within five miles of the Study Area has been noted (CDFW 2017).

**Table 1** includes federal threatened or endangered species and eagles, and state threatened, endangered, or fully protected species.

**Table 2 — Species Subject to CEQA Review**

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
<b>Plants</b>				
Alkali milk-vetch <i>Astragalus tener</i>	--; --; --; 1B	Annual herb found on alkaline soils on playas, valley and adobe clay foothill grassland (adobe clay), vernal pools from 1 - 60 meters (0 - 200 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.  One known occurrence within five miles of the Study Area has been noted (CDFW 2017).
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	--; --; --; 1B	Annual herb found in coastal bluff scrub, cismontane woodland, and valley and foothill grassland from 3 - 500 meters (10 - 1,640 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks coastal bluffs or woodland habitat types that are known to support this species. Grasslands within the Study Area are highly disturbed due to historic and ongoing mining activities.
Big tarplant <i>Blepharizonia plumosa</i>	--; --; --; 1B	Annual herb usually found on clay soils in valley and foothill grasslands from 30-505 meters (98–1,656 feet).	Blooming period: July – October	<b>None</b> ; the Study Area lacks soils known to support this species.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	--; --; --; 1B	Perennial herb sometimes found in serpentinite soils in chaparral, cismontane woodlands, valley and foothill grassland, from 90-1555 meters (295-5,101 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks soils and habitat known to support this species.
Brewer's western flax <i>Hesperolinon breweri</i>	--; --; --; 1B	Annual herb usually found on serpentine soil in chaparral, cismontane woodland, valley and foothill grassland from 30-945 meters (98-3,100 feet).	Blooming period: May – July	<b>None</b> ; the Study Area lacks suitable soils known to support this species.
California alkali grass <i>Puccinellia simplex</i>	--; --; --; 1B	Annual herb found on alkaline, vernaly mesic; sinks, flats, lake margins in chenopod scrub, meadow and seeps, valley and foothill grassland, vernal pools, from 2-930 meters (7-3,051 feet).	Blooming period: March – May	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i> Greene	--; --; --; 1B	Annual herb found in valley and foothill grasslands sometimes on alkaline hills, from 1-455 meters (3-1,493 feet).	Blooming period: March – April	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Chaparral harebell <i>Campanula exigua</i>	--; --; --; 1B	Annual herb often found on rocky and serpentinite soil in chaparral from 275-1,250 meters (902-4,101 feet).	Blooming period: May – June	<b>None</b> ; the Study Area lacks suitable soils that are known to support this species.
Chaparral ragwort <i>Senecio aphanactis</i>	--; --; --; 2B	Annual herb sometimes found on alkaline soils in chaparral, cismontane woodland, coastal scrub, from 15-800 meters (49-2,625 feet).	Blooming period: January – April (May)	<b>None</b> ; the Study Area lacks chaparral habitat. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Congdon's tarplant <i>Centromadia parryi</i> (Greene) Greene ssp. congdonii (Rob. & Greenm.) B.G. Baldwin	--; --; --; 1B	Annual herb found in valley and foothill grassland sometimes in alkaline soils from 0-230 meters (0-755 feet).	Blooming period: May – October (November)	<b>Low</b> ; the Ruderal grassland and native revegetation area within the Study Area provides marginal habitat for this species. The species was previously surveyed for in the Study Area with negative results. However, the age of the previous negative survey may require an updated survey to confirm absence given the presence of suitable habitat within the Study Area.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
				Seven known occurrences within five miles of the Study Area have been noted (CDFW 2017).
Contra Costa manzanita <i>Arctostaphylos manzanita</i> <i>parry</i> ssp. <i>laevigata</i>	--; --; --; 1B	Perennial evergreen shrub found on rocky soils in chaparral, from 430-1100 meters (1,410-3,608 feet).	Blooming period: January – March (April)	<b>None</b> ; the Study Area lacks chaparral habitat known to support this species.
Diablo helianthella <i>Helianthella castanea</i>	--; --; --; 1B	Perennial herb usually found on rocky, azonal soil in chaparral, cismontane woodlands, coastal scrub, riparian woodland, and valley and foothill grasslands from 60-1,300 meters (197-4,265 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks chaparral or coastal scrub. The ruderal grasslands within the Study Area are highly disturbed and likely do not support this species.
Diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	--; --; --; 1B	Annual herb found in valley and foothill grassland sometimes in alkaline clay soil from 0-975 meters (0-3,199 feet).	Blooming period: March – April	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Fragrant fritillary <i>Fritillaria liliacea</i>	--; --; --; 1B	Perennial bulbiferous herb often found on serpentinite soil in cismontane woodlands, coastal prairie, coastal scrub, valley and foothill grasslands from 3-410 meters (10-1,345 feet).	Blooming period: February – April	<b>None</b> ; the Study Area lacks suitable soils for this species.
Hairless popcornflower <i>Plagiobothrys glaber</i>	--; --; --; 1A	Annual herb often found on alkaline soils in meadows and seeps as well as coastal salt marshes and swamps, from 15-180 meters (50-590 feet).	Blooming period: March – May	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Hall's bush-mallow <i>Malacothamnus hallii</i>	--; --; --; 1B	Perennial evergreen shrub found in the chaparral and coastal scrub from 10 - 760 meters (33-2,493 feet).	Blooming period: (April) May – September (October)	<b>None</b> ; the Study Area lacks chaparral habitat.
Heartscale <i>Atriplex cordulata</i>	--; --; --; 1B	Annual herb found on saline or alkaline soils in chenopod scrub, meadows and seeps, valley and foothill grassland, from 0-560 meters (0-1,837 feet).	Blooming period: April – October	<b>None</b> ; the Study Area lacks meadows and seeps.
High Coastal triquetrella <i>Triquetrella californica</i> (Lesq.) <i>Grout</i>	--; --; --; 1B	Moss found in coastal scrub and coastal bluff scrub, from 10-100 meters (32-328 feet).	N/A	<b>None</b> ; the Study Area lacks suitable bluffs or coastal habitat known to support this species.
Hispid bird's-beak <i>Chloropyron molle</i>	--; --; --; 1B	Annual hemiparasite herb found on alkaline soil in meadows and seeps, playas, valley and foothill grasslands, from 1-155 meters (3-508 feet).	Blooming period: June – September	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Hospital Canyon larkspur <i>Delphinium californicum</i>	--; --; --; 1B	Perennial herb found often in openings in chaparral, cismontane woodlands, coastal scrub, from 195-1,095 meters (640-3,593 feet).	Blooming period: April – June	<b>None</b> ; the Study Area lacks suitable habitat for this species.
Jepson's coyote thistle <i>Eryngium jepsonii</i>	--; --; --; 1B	Perennial herb found on clay soils in valley and foothill grassland, vernal pools, from 3-300 meters (10-984 feet).	Blooming period: April – August	<b>None</b> ; the Study Area lacks vernal pools or suitable grassland habitat know to support this species.
Jepson's woolly sunflower <i>Eriophyllum jepsonii</i>	--; --; --; 1B	Perennial herb sometimes found on serpentinite soil in chaparral, cismontane woodland, coastal scrub from 200-1,025 meters (656-3,363 feet).	Blooming period: April – June	<b>None</b> ; the Study Area lacks suitable soils or suitable habitat for this species.
Legenere <i>Legenere limosa</i>	--; --; --; 1B	Annual herb found in vernal pools from 1-880 meters (3-2,887 feet).	Blooming period: April – June	<b>None</b> ; the Study Area lacks vernal pools.
Lesser saltscale <i>Atriplex minuscula</i>	--; --; --; 1B	Annual herb found on alkaline and sandy soils in chenopod scrub, playas, valley and foothill grasslands, from 15-200 meters (50-656 feet).	Blooming period: May – October	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Long-styled sand-spurrey <i>Spergularia macrotheca</i> (Hornem. ex Cham. & Schltldl.) Heynh. var. <i>longistyla</i> Rossbach	--; --; --; 1B	Perennial herb found on alkaline soils in meadows and seeps, marshes and swamps, from 0-255 meters (0-836 feet).	Blooming period: February – May	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Most beautiful jewelflower <i>Streptanthus albidus</i> Greene ssp. <i>peramoenus</i> (Greene) Kruckeberg	--; --; --; 1B	Annual herb found on serpentinite soils in chaparral, cismontane woodlands, valley and foothill grasslands, from 95-1,000 meters (311-3,280 feet).	Blooming period: (March) April – September (October)	<b>None</b> ; the Study Area lacks suitable soils for this species.
Mt. Diablo buckwheat <i>Eriogonum truncatum</i>	--; --; --; 1B	Annual herb found on sandy soil in chaparral, coastal scrub, valley and foothill grassland from 3-350 meters (10-1,148 feet).	Blooming period: April – September (November – December)	<b>Low</b> ; the Northern Coastal Scrub located in the northern section of the Study Area may contain suitable habitat for this species as well as the Ruderal Grassland.
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	--; --; --; 1B	Perennial bulbiferous herb found in chaparral, cismontane woodland,	Blooming period: April – June	<b>Low</b> ; the Study Area contains marginally suitable habitat for this

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
		riparian woodland, valley and foothill grassland, from 30-840 meters (98-2,755 feet).		species within the Ruderal grassland and Native Revegetation Area.
Mt. Diablo manzanita <i>Arctostaphylos auriculata</i> Eastw.	--; --; --; 1B	Perennial evergreen shrub found sometimes on sandstone in chaparral and cismontane woodlands from 135-650 meters (443-2,162 feet).	Blooming period: January – March	<b>None</b> ; the Study Area lacks chaparral or woodlands that would support this species.
Mt. Diablo phacelia <i>Phacelia phacelioides</i>	--; --; --; 1B	Annual herb found on rocky soils in chaparral, cismontane woodland, from 500-1,370 meters (1,640-4,495 feet).	Blooming period: April – May	<b>None</b> ; the Study Area is not within the known elevational range of this species.
Mt. Hamilton coreopsis <i>Leptosyne hamiltonii</i>	--; --; --; 1B	Annual herb often found on rocky soil in cismontane woodland from 550-1,300 meters (1,805-4,265 feet).	Blooming period: March – May	<b>None</b> ; the Study Area is not within the known elevational range of this species.
Oregon polemonium <i>Polemonium carneum</i>	--; --; --; 2B	Perennial herb found in coastal prairie, coastal scrub, lower montane coniferous forest, from 0-180 meters (0-590 feet).	Blooming period: April – September	<b>None</b> ; the Study Area lacks coastal prairies or coniferous forests.
Oval-leaved viburnum <i>Viburnum ellipticum</i> Hook.	--; --; --; 2B	Perennial deciduous shrub found in chaparral, cismontane woodlands, lower montane coniferous forest, from 215-1,400 meters (705-4,593 feet).	Blooming period: May – June	<b>None</b> ; the Study Area lacks woodland types known to support this species.
Parish's brittlescale <i>Atriplex parishii</i>	--; --; --; 1B	Annual herb found on alkaline soil in chenopod scrub, playas, vernal pools from 25-1,900 meters (82-6,233 feet).	Blooming period: June – October	<b>None</b> ; the Study Area lacks vernal pools. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Prostrate vernal pool navarretia <i>Navarretia prostrata</i>	--; --; --; 1B	Annual herb found in moist meadows and seeps, alkaline valley and foothill grasslands, and vernal pools from 3-120 meters (10-394 feet).	Blooming period: April – July	<b>None</b> ; the Study Area lacks vernal pools, meadows or seeps. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Recurved larkspur <i>Delphinium recurvatum</i>	--; --; --; 1B	Perennial herb found on alkaline soil in chenopod scrub, cismontane woodland, valley and foothill grassland, from 3-790 meters (10-2,590 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks suitable habitat for this species. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Rock sanicle <i>Sanicula saxatilis</i>	--; --; --; 1B	Perennial herb found in rocky, scree, talus in broad leaved upland forest, chaparral, valley and foothill grassland, from 620-1,175 meters (2,035- 3,854 feet).	Blooming period: April – May	<b>None</b> ; the Study Area lacks woodland or foothill grasslands that are known to support this species.
Round-leaved filaree <i>California macrophylla</i>	--; --; --; 1B	Annual herb found on clay in cismontane woodland, valley and foothill grassland, from 15-1,200 meters (50-3,937 feet).	Blooming period: March – May	<b>None</b> ; the Study Area does not contain suitable soil types for this species.
Saline clover <i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	--; --; --; 1B	Annual herb found in marshes and swamps, sometimes on alkaline valley and foothill grasslands, vernal pools, from 0-300 meters (0-985 feet).	Blooming period: April – June	<b>None</b> ; the Study Area lacks vernal pools or salt marshes that would support this species.
San Joaquin spearscale <i>Extriplex joaquinana</i>	--; --; --; 1B	Annual herb found on alkaline soil in chenopod scrub, meadows and seeps, playas, valley and foothill grassland from 1-835 meters (3-2,740 feet).	Blooming period: April – October	<b>None</b> ; the Study Area lacks meadows and seeps. The moderately alkaline soils located within the Study Area are highly disturbed and unlikely to support this species.
Shining navarretia <i>Navarretia nigelliformis</i> Greene ssp. <i>radians</i>	--; --; --; 1B	Annual herb sometimes found on clay, in cismontane woodland, valley and foothill grasslands, vernal pools, from 65-1,000 meters (213-3,280 feet).	Blooming period: (March) April – July	<b>None</b> ; the Study Area lacks vernal pools.
Slender-leaved pondweed <i>Stuckenia filiformis</i> (Pers.) Börner ssp. <i>alpina</i> (Blytt) R.R. Haynes et al.	--; --; --; 2B	Perennial rhizomatous herb (aquatic) found in marshes and swamps and sometimes assorted shallow freshwater features from 300-2,150 meters (985-7,053 feet).	Blooming period: May – July	<b>None</b> ; the Study Area lacks suitable aquatic features for this species.
Spiny-sepaled button-celery <i>Eryngium spinosepalum</i>	--; --; --; 1B	Annual/perennial herb found in valley and foothill grassland and vernal pools from 80-975 meters (262-3,198 feet).	Blooming period: April – June	<b>None</b> ; the Study Area lacks vernal pools or suitable grassland habitat for this species.
California triquetrella moss <i>Triquetrella californica</i>	--; --; --; 1B	Moss found on soil in coastal bluffs scrub and costal scrub from 10-100 meters (32-328) feet).	N/A	<b>None</b> ; the Study Area lacks coastal bluff scrub and coastal scrub.
Western leatherwood <i>Dirca occidentalis</i>	--; --; --; 1B	Perennial deciduous shrub found in, chaparral, foothill woodland, mixed evergreen forest, closed-cone pine forest, and north coastal coniferous forest, from 25-425 meters (82-1,394 feet).	Blooming period: January – March (April)	<b>None</b> ; the Study Area lacks coniferous forest or suitable woodlands.
Woodland woollythreads <i>Monolopia gracilens</i>	--; --; --; 1B	Annual herb found in serpentine soils within openings of broad-leaf upland forest, openings of chaparral, cismontane woodland, north coast coniferous forest, and valley and foothill grassland habitats from 100 to 1,200 meters (328-3,937 feet).	Blooming period: (February) March – July	<b>None</b> ; the Study Area lacks suitable soil types for this species.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
<b>Fish</b>				
Central California coast steelhead <i>Oncorhynchus mykiss irideus</i>	FT; --; --; --	Dependent on estuaries of estuary at the mouths of rivers and stream, this species’ distribution is located below natural and manmade barriers on stream from Russian River in the north to Aptos Creek on the south.	Winter run December – February	<b>None;</b> the Study Area lacks suitable habitat for this species. Downstream barriers prevent this species from occurring in the Study Area.
<b>Amphibians/ Reptiles</b>				
Coast horned lizard <i>Phrynosoma blainvillii</i>	--; CSC; --; --	Inhabits open areas of sandy soils and low vegetation in valleys, foothills, and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose sandy soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.	Year-round (excluding extended periods of low temperatures or extreme heat).	<b>Low;</b> the Study Area contains some suitable habitat for this species within the Willow Riparian Wetland and ruderal grassland communities in and adjacent to the Arroyo del Valle.
Foothill yellow-legged frog <i>Rana boylei</i>	--; CSC; --; --	Found in streams and rivers with rocky substrate and open, sunny banks in forests, chaparral and woodlands. Sometimes found in isolated pools, vegetated backwaters and deep shaded spring fed pools. Occurs from 0 to 1,830 meters (0-6,000 feet). Rarely encountered far from permanent water sources.	April – July	<b>None;</b> The nearest CNDDB occurrence record for this species is mapped approximately two miles northeast of the Study Area and dated 1973 (CDFW 2017). The EACCS does not map any potentially suitable habitat for this species within the Study Area.  One known occurrence within five miles of the Study Area (CDFW 2017).
San Joaquin whipsnake <i>Masticophis flagellum ruddocki</i>	--; CSC; --; --	Found in valley grassland and saltbush scrub in the San Joaquin Valley in open, dry habitats with little or no tree cover. Requires mammal burrows for refuge and breeding sites.	Year-round	<b>Low;</b> this species has a wide habitat range and has been observed six miles east of the Study Area. Ruderal grassland and the native revegetation area located within the Study Area provides marginal habitat for this species. The ongoing and historical level of disturbance reduces the potential for this species to occur.
Western pond turtle <i>Emys marmorata</i>	--; CSC; --; --	Typically associated with permanent ponds, lakes, streams, irrigation ditches and canals, and marshes, or pools in intermittent drainages, usually lined with abundant vegetation and either rocky or muddy bottom substrates. Requires aquatic basking sites, such as logs, rocks, cattail mats or exposed banks. Turtles are active from February to November, in which breeding occurs from April to May. Overwintering occurs in upland terrestrial habitats close to water sources (approximately 300 feet), in which they will bury themselves under loose soil.	Active: February – November	<b>Present;</b> the species was observed in a pond the northeast section of the Study Area during the fall 2017 site visit as well as in 2013 by LSA Associates, Inc. (Alameda County Resource Conservation District 2015, LSA Associates, Inc. 2013). Additionally, the riparian woodland within the Study Area provides suitable aestivation habitat and the perennial drainage provides breeding habitat for this species.  Four CNDDB occurrences are documented within five miles of the Study Area (CDFW 2017).
Western spadefoot <i>Spea hammondi</i>	--; CSC; --; --	Found in open grasslands and woodlands. Breeds in seasonal ponds and vernal pools.	Year-round	<b>Low;</b> the margins of the willow riparian wetland, marsh, and gravel bar located within the Study Area provide marginal breeding habitat for this species. The ruderal grassland and native revegetation area provide marginal upland habitat. Level of disturbance reduces potential for this species to occur.
<b>Birds</b>				
Alameda song sparrow <i>Melospiza melodia pusillula</i>	--; CSC; --; --	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	Year-round	<b>None;</b> the Study Area does lacks salt marshes.
Peregrine falcon <i>Falco peregrinus anatum</i>	FSC; CFP; --; --	Found in a wide variety of habitats from open country, cliffs (mountains to coast), tundra, desert, and sometimes in cities Is found often near water, especially along the coast, and migrants may fly far out to sea. Nests are typically situated on ledges of vertical rocky cliffs commonly with shelter overhang; however, locally, river banks, tundra mounds, open bogs, large stick nests of other species and man-made structures (ledges of city buildings) are also used.	Year-round (some migrate)	<b>Present;</b> this species was observed during the fall 2017 site visits foraging in the northeast section of the Study Area. The steep banks of the quarry ponds and the oak trees and sycamore woodlands provide suitable nesting habitat for this species.
Grasshopper sparrow <i>Ammodramus savannarum</i>	--; CSC; --; --	Breeding range occurs in portions of western California, including most	Breeding summer	<b>Low;</b> the Study Area provides potentially suitable foraging habitat

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
		coastal counties south to extreme northwest Baja California (where resident). Also, the western Sacramento Valley and along the western edge of the Sierra Nevada. Wintering range is extreme Southern California and Baja.		for this species within the ruderal grassland and native revegetation area located within the Study Area. The level of ongoing and historic disturbance within the Study Area reduces the potential for this species to occur.
Burrowing owl <i>Athene cunicularia</i>	--; CSC; --; -- (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.	Year-round	<b>Low</b> ; suitable ground squirrel burrows were observed within the Study Area during the fall 2017 site visits, and the Study Area provides potentially suitable foraging habitat for this species. Level of ongoing disturbance within the Study Area reduces the potential for this species to occur.  Fourteen occurrences are documented within five miles of the Study Area (CDFW 2017).
California horned lark <i>Eremophila alpestris actia</i>	--; CSA; --; --	Found in open areas dominated by sparse vegetation or widely scattered low shrubs. Nests in hollow on ground often.	Year-round	<b>Low</b> ; the ruderal grassland and native revegetation area located throughout the Study Area provides breeding, nesting, and foraging habitat. The level of historic and ongoing disturbance within the Study Area reduces potential for this species to occur.
Cooper’s hawk <i>Accipiter cooperii</i>	--; CSA; --; --	Found in mature forests, open woodlands, woodland edges, and river groves. Nesting occurs in coniferous, deciduous and mixed woodlands that have tall trees with openings or edge habitat nearby. Can also be found in trees along rivers through open country, and in suburbs and cities. Overwintering usually occurs in fairly open country.	Year-round	<b>Low</b> ; various habitats located throughout and adjacent to the Study Area provide breeding, nesting, and foraging habitat for this species. Level of disturbance reduces potential for this species to occur.
Ferruginous hawk <i>Buteo regalis</i>	--; CSC; --; --	Frequents open habitats including grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Preys on rodents and other vertebrates.	Winter	<b>Low</b> ; ruderal grassland habitat located within the Study Area provide moderate foraging habitat. The level of historic and ongoing disturbance within the Study Area reduces potential for this species to occur.  One occurrence is documented within five miles of the Study Area (CDFW 2017).
Great blue heron <i>Ardea herodias</i>	--; CSA; --; --	Inhabits both freshwater and saltwater habitats and forages in grassland and agricultural fields. Breeding colonies are located within two to four miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests.	Year-round	<b>Present</b> ; numerous observations were made within the Study Area during the 2017 site visit. A rookery site present immediately to the west of Study Area.
Loggerhead shrike <i>Lanius ludovicianus</i>	--; CSC; --; --	Found in grasslands, semi-open terrain, woodland clearing or desert with scattered shrubs. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Year-round	<b>Low</b> ; dense vegetation along the Arroyo del Valle may provide suitable nesting habitat for this species. Level of disturbance reduces potential for this species to occur.  One known occurrence within five miles of the Study Area has been noted (CDFW 2017).
Northern harrier <i>Circus cyaneus</i>	--; CSC; --; --	Found in coastal scrub, Great Basin grassland, marshes and swamps, riparian scrub, valley and foothill grassland, wetlands. Nests and forages in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation usually at marsh edge; nests built of a large mound of sticks in wet areas.	Year-round	<b>Low</b> ; Ruderal Grassland habitat located within the Study Area provides moderately suitable foraging habitat. The willow riparian wetland habitat provides nesting habitat.
Prairie falcon <i>Falco mexicanus</i>	--; CSA; --; --	Inhabits dry, open terrain, including deserts and grasslands and well as open spaces past treeline.	Wintering	<b>High</b> ; upland habitat located throughout the Study Area provides foraging habitat for this species.  Two occurrences are documented within five miles of the Study Area (CDFW 2017).
Sharp-shinned hawk <i>Accipiter striatus</i>	--; CSA; --; --	The smallest hawk in North America found in mature forests and woodland edges. Nesting occurs in conifers and hardwood trees under dense canopy cover.	Year-round	<b>Low</b> ; the Study Area lacks preferred habitats for this species, but there are some woodland edges that potentially would support nesting habitat for this species.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
White-tailed kite <i>Elanus leucurus</i>	--; CFP; --; -- (nesting)	Inhabits savanna, open woodlands, marshes, desert grassland, partially cleared lands and cultivated fields. Nests in trees, often near a marsh in savanna, open woodland, partially cleared lands, and cultivated fields. Foraging occurs within ungrazed or lightly-grazed fields and pastures.	Year-round	<b>Present</b> ; this species was observed in the northern portion of the Study Area during the fall 2017 site visit.
<b>Mammals</b>				
American badger <i>Taxidea taxus</i>	--; CSC; --; --	Found in a variety of grasslands, shrublands, and open woodlands throughout California.	Year-round	<b>Low</b> ; Suitable grassland habitat for this species is located in portions of the Study Area. However, no signs of badger were observed during the fall 2017 site visits. Additionally, the Study Area is surrounded on all sides by mining operations, highways, and/or suburban development, rendering the site unlikely to be colonized.  Two occurrences are documented within five miles of the Study Area (CDFW 2017).
Berkeley kangaroo rat <i>Dipodomys heermanni berkeleyensis</i>	--; CSA; --; --	Found on knolls and ridges where soil is shallow and well-drained and the vegetation is minimal, as well as sandy valley floors and coastal plains. Burrows into the soil for shelter and will utilize existing ground squirrel burrows as well. Known to occur only in a small area east of San Francisco Bay in Alameda County. Populations in Contra Costa and Santa Clara counties may be extirpated or possibly extirpated.	Year-round	<b>None</b> ; the Study Area is outside of the known range for this species.
Hoary bat <i>Lasiurus cinereus</i>	--; CSA; --; --	Found in broadleaf upland forest, woodland, lower montane coniferous forest, and north coast coniferous forest. Roosts in dense foliage of medium to large trees.	Year-round	<b>High</b> ; trees within the riparian woodland and disturbed/developed areas within the Study Area provide suitable roosting habitat for this species.  One occurrence is documented within five miles of the Study Area (CDFW 2017).
Pallid bat <i>Antrozous pallidus</i>	--; CSC; --; --	Found in arid and semi-arid locations in low elevation areas in California. Can be found in grasslands, shrublands, woodlands and mixed conifer forests near water. Although most common habitats occur in open, dry habitats with rocky areas for roosting. Three types of roosting habitats include (1) day roosts occur in warm, horizontal openings such as attics or rock cracks; (2) night roosts occur in the open, near foliage; and (3) hibernation roosts, which occur in buildings, cracks in rocks, or caves. This species is very sensitive to disturbance.	Year-round	<b>High</b> ; trees within the riparian woodland and disturbed/developed areas within the Study Area provide suitable roosting habitat, this species is very sensitive to human disturbance.  Three occurrences are documented within five miles of the Study Area (CDFW 2017).
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	--; CSC; --; --	This species is highly arboreal and is found in riparian areas along streams and rivers. Habitats include evergreen, valley oaks (few live oaks) and other thick-leaved trees and shrubs are important habitat components. This species is social and lives in colonies of conical stick houses using bark, plants, sticks and other material. Current distribution is known to occur in Caswell Memorial State Park and nearby riparian areas along the San Joaquin and Stanislaus rivers, and in parts of San Joaquin and Stanislaus counties.	Year-round	<b>None</b> ; the Study Area does not occur within the known geographical range for this species.
Townsend’s big-eared bat <i>Corynorhinus townsendii</i>	--; CSC; --; --	Primarily found in mesic coniferous and deciduous habitats, but they are most commonly associated with desert scrub, mixed conifer forest, pinyon-juniper, and pine forests, and within these habitats known to occur within limestone caves, lava tubes, and buildings. Maternity and hibernation colonies typically are in caves and mine tunnels. Extremely sensitive to human disturbance.	Year-round	<b>None</b> ; the Study Area lacks suitable habitat or caves.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Yuma myotis <i>Myotis yumanensis</i>	--; CSA; --; --	Found in a variety of habitats throughout the state, typically closely associated with open water. Roost in caves, attics, buildings, mines, and underneath bridges. Forage over open water or open land.	Spring – Fall	<b>High</b> ; the Study Area provides adequate foraging habitat however roosting habitat is limited.

**Table 2** includes state and federal species of concern and Rank 1 and 2 CNPS species.



Table 3 — Other Species of Interest

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Adobe navarretia <i>Navarretia nigelliformis</i> Greene ssp. <i>nigelliformis</i>	--; --; --; 4	Annual herb found on clay, sometimes serpentinite soils, in moist valley and foothill grasslands, sometimes vernal pools, from 100-1000 meters (328-3,280 feet).	Blooming period: April – June	<b>None</b> ; the Study Area has been highly disturbed by historic and active mining activities and are unlikely to support this species.
Bristly leptosiphon <i>Leptosiphon acicularis</i>	--; --; --; 4	Annual herb found in chaparral, coastal prairie, valley and foothill grassland, and cismontane woodland from 55 to 1,500 meters (180-4,921 feet).	Blooming period: April – July	<b>None</b> ; woodlands and grasslands located within the Study Area have been highly disturbed by historic and active mining activities and are unlikely to support this species.
California androsace <i>Androsace elongata</i> ssp. <i>acuta</i>	--; --; --; 4	Annual herb found in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland from 150 to 1,305 meters (492-4,281 feet).	Blooming period: March – June	<b>None</b> ; The Study Area lacks chaparral, meadows and seeps, and pinyon and juniper woodland. Woodland and grassland habitats within the Study Area are highly disturbed through historic and ongoing mining activities.
Crownscale <i>Atriplex coronata</i>	--; --; --; 4	Annual herb often on alkaline soil often in clay in chenopod scrub, valley and foothill grassland, vernal pools from 1-590 meters (3-1,935 feet).	Blooming period: March – October	<b>None</b> ; the Study Area lacks vernal pools. The alkaline soils within the Study Area are associated with an active silt pond located in the in the northeast section of the Study Area.
Hogwallow starfish <i>Hesperervax caulescens</i>	--; --; --; 4	Annual herb sometimes found on alkaline soil in valley foothill grassland sometimes on mesic clay and shallow vernal pools from 0-505 meters (0-1,656 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks vernal pools. The alkaline soils within the Study Area are associated with an active silt pond located in the in the northeast section of the Study Area.
Little mousetail <i>Myosurus minimus</i> L. ssp. <i>apus</i>	--; --; --; 3	Annual herb found in valley and foothill grasslands, sometimes on alkaline soils in vernal pools, from 20-640 meters (65-2,100 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks vernal pools. The alkaline soils within the Study Area are associated an active silt pond located in the in the northeast section of the Study Area.
Oakland star-tulip <i>Calochortus umbellatus</i>	--; --; --; 4	Perennial bulbiferous herb often found serpentinite soil in broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland from 100-700 meters (329-2,297 feet).	Blooming period: March – May	<b>None</b> ; the Study Area lacks serpentine soils known to support this species.
San Antonio Hills monardella <i>Monardella antonina</i> ssp. <i>antonina</i>	--; --; --; 3	Perennial rhizomatous herb found in chaparral and cismontane woodland from 320 to 1,000 meters (1,050- 3280 feet).	Blooming period: June – August	<b>None</b> ; the Study Area lacks chaparral habitat. Woodland habitat within the Study Area is highly disturbed and unlikely to support this species.
Santa Clara red ribbons <i>Clarkia concinna</i>	--; --; --; 4	Annual herb found in chaparral and cismontane woodland from 90-150 meters (295-492 feet).	Blooming period: (April) May – June (July)	<b>None</b> ; the Study Area lacks chaparral habitat. Woodland habitat within the Study Area is highly disturbed and unlikely to support this species.
Santa Clara thorn-mint <i>Acanthomintha lanceolata</i>	--; --; --; 4	Annual herb often found on serpentine soils in cismontane woodland, coastal scrub. Elevation ranges from 80-1200 meters (262-3,937 feet).	Blooming period: Mar – June	<b>None</b> ; the Study Area lacks serpentine soils known to support this species.
Serpentine leptosiphon <i>Leptosiphon ambiguus</i>	--; --; --; 4	Annual herb usually found on serpentinite soil in cismontane woodlands, coastal scrub, valley and foothill grassland from 120-1,130 meters (393-3,707 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks serpentine soils known to support this species.
Slender silver moss <i>Anomobryum julaceum</i> Also called <i>Anomobryum filiforme</i>	--; --; --; 4	Moss found on damp rocks and soil on outcrops, usually on roadcuts in broad-leaved upland forests, lower montane coniferous forest, and North Coast coniferous forests from 100-1,000 meters (328-3,280 feet).	N/A	<b>None</b> ; the Study Area lacks coniferous forests or broad-leaved upland forests.
Small-flowered morning-glory <i>Convolvulus simulans</i>	--; --; --; 4	Annual herb found on clay, serpentinite seeps in chaparral openings, coastal scrub, valley and foothill grassland from 30-740 meters (98-2,428 feet).	Blooming period: March – July	<b>None</b> ; the Study Area lacks clay or serpentine seeps, or chaparral known to support this species.
Stinkbells <i>Fritillaria agrestis</i>	--; --; --; 4	Perennial bulbiferous herb found on clay and sometimes serpentinite soils in chaparral, cismontane woodlands, pinyon and juniper woodlands, valley and foothill grasslands from 10-1,555 meters (33-5,101 feet).	Blooming period: March – June	<b>None</b> ; the Study Area lacks clay or serpentine soils.
Invertebrates				
Antioch efferian robberfly <i>Efferia antiochi</i>	--; CSA; --; --	Known only from Antioch and Fresno counties, and Scout Island in the San Joaquin River.		<b>None</b> ; this species is not known to occur in Alameda County.

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Bridge’s coast range shoulderband <i>Helminthoglypta nickliniana bridgesi</i>	--; CSA; --; --	Terrestrial mollusk found in open hillsides and rock piles surrounded by grass and herbaceous vegetation. Known to occur in Alameda and Contra Costa counties.	Year-round	<b>Low</b> ; known to occur in Alameda County. The gravel bar and upland vegetated habitat within the Study Area provides potentially suitable habitat. The historic and ongoing level of disturbance reduces potential for this species to occur.
Crotch bumble bee <i>Bombus crotchii</i>	--; CSA; --; --	Typically observed in coastal California east towards the Sierra-Cascade Crest; less common in western Nevada. Select food plant genera: <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , <i>Eriogonum</i> .	Flight period: (Queen): March-May  Flight period: (Worker) April – August  Flight period: (Male): April – September	<b>Low</b> ; the vegetation within the upland habitat within the Study Area provides marginal habitat for this species.  One known occurrence within five miles of the Study Area has been noted (CDFW 2017).
Curved-foot hygrotus diving beetle <i>Hygrotus cuvipes</i>	--; CSA; --; --	Found in shallow muddy pools in Alameda and Contra Costa Counties.	Year-round	<b>Low</b> ; the Study Area provides marginal habitat for this species along the margins of the willow riparian wetland and marsh habitats located within the Study Area.
Midvalley fairy shrimp <i>Branchinecta mesoallensis</i>	--; CSA; --; --	Vernal pools in the Central Valley in Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa Counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	<b>None</b> ; the Study Area lacks vernal pools or suitable freshwater habitats.
Obscure bumble bee <i>Bombus caliginosus</i>	--; CSA; --; --	Inhabits open grassy coastal prairies and coast range meadows. Nesting occurs underground and also above ground in abandoned bird nests. Host plants include plants from the genera <i>Ceanothus</i> , <i>Cirsium</i> , <i>Clarkia</i> , <i>Keckiella</i> , <i>Lathyrus</i> , <i>Lotus</i> , <i>Lupinus</i> , <i>Rhododendron</i> , <i>Rubus</i> , <i>Trifolium</i> , and <i>Vaccinium</i> .	Year-round	<b>Low</b> ; although the vegetation within the ruderal grassland, native revegetation, and northern coastal scrub habitat within the Study Area provides marginal habitat for this species, limited host plants are known to occur within the Study Area for this species.
Western bumble bee <i>Bombus occidentalis</i>	--; CSA; --; --	Found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. They nest underground in abandoned rodent burrows or other cavities. Associated host plants are from the genera <i>Ceanothus</i> , <i>Centaurea</i> , <i>Chrysothamnus</i> , <i>Geranium</i> , <i>Grindelia</i> , <i>Lupinus</i> , <i>Melilotus</i> , <i>Monardella</i> , <i>Rubus</i> , <i>Solidago</i> , and <i>Trifolium</i> .	Flight period (Queen): February – November  Flight period (Workers): April – November	<b>Low</b> ; although the vegetation within the ruderal grassland, native revegetation, and northern coastal scrub habitats within the Study Area provides marginal habitat for this species, limited host plants for this species are known to occur within the Study Area for this species.

**Table 3** includes Rank 3 and 4 CNPS species and non-listed invertebrates, which may not be subject to CEQA review.

## **Appendix B — Plants and Wildlife Observed in the Study Area**

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## Appendix B — Plant Species Observed in the Study Area

Scientific Name	Common Name
<i>Acer negundo</i>	Boxelder
<i>Acmispon glaber</i> var. <i>glaber</i>	Deerweed
<i>Aesculus californica</i>	Buckeye
<i>Aesculus californica</i>	California buckeye
<i>Aira caryophyllea</i>	Silver hairgrass
<i>Alnus rhombifolia</i>	White alder
<i>Artemisia californica</i>	Coastal sage brush
<i>Artemisia douglasiana</i>	Douglas' sagewrot
<i>Arundo donax</i>	Giant reed
<i>Avena barbata</i>	Slim oat
<i>Azolla filiculoides</i>	American water fern
<i>Baccharis glutinosa</i>	Douglas' baccharis
<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote brush
<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>	Mule fat
<i>Berula erecta</i>	Cut leaved water parsnip
<i>Bromus diandrus</i>	Ripgut brome
<i>Bromus hordeaceus</i>	Soft chess
<i>Bromus madritensis</i>	Foxtail chess
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Cortaderia jubata</i>	Andean pampas grass
<i>Croton setiger</i>	Turkey-mullein
<i>Cyperus eragrostis</i>	Tall cyperus
<i>Cyperuseragrostis</i>	Tall flatsedge
<i>Datura stramonium</i>	Jimson weed
<i>Daucus carota</i>	Wild carrot
<i>Dipsacus fullonum</i>	Fuller's teasel
<i>Dittrichia graveolens</i>	Stinkwort
<i>Epilobium brachycarpum</i>	Annual fireweed
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Willow herb
<i>Epillobium ciliatum</i>	Fringed willowherb
<i>Erigeron bonariensis</i>	Flax-leaved horseweed
<i>Erodium botrys</i>	Broad leaf filaree
<i>Eschscholzia californica</i>	California poppy
<i>Eucalyptus globulus</i>	Blue gum
<i>Eucalyptus</i> sp.	Eucalyptus
<i>Euthamia occidentalis</i>	Western goldenrod
<i>Festuca myuros</i>	Rattail sixweeks grass
<i>Festuca perennis</i>	Italian rye grass
<i>Festuca perennis</i> (=Lolium perenne)	Perennial ryegrass
<i>Ficus carica</i>	Edible fig
<i>Foeniculum vulgare</i>	Fennel
<i>Galium aparine</i>	Common bedstraw

## Appendix B — Plant Species Observed in the Study Area

Scientific Name	Common Name
<i>Geranium molle</i>	Crane's bill geranium
<i>Gnaphalium palustre</i>	Lowland cudweed
<i>Helenium puberulum</i>	Rosilla
<i>Heliotropium curassavicum</i> var. <i>occulartum</i>	Alkali heliotrope
<i>Helminthotheca echioides</i>	Bristly ox-tongue
<i>Heteromeles arbutifolia</i>	Toyon
<i>Heterotheca grandiflora</i>	Telegraph weed
<i>Hirschfeldia incana</i>	Mediterranean hoary mustard
<i>Hordeum marinum</i>	Seaside barley
<i>Hordeum murinum</i>	Foxtail barley
<i>Juglans hindsii</i>	Northern california black walnut
<i>Juncus patens</i>	Rush
<i>Juncus phaeocephalus</i>	Brownhead rush
<i>Juncus xiphioides</i>	Iris leaved rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lemna minor</i>	Smaller duckweed
<i>Lemna</i> sp.	Duckweed
<i>Lepidium latifolium</i>	Broadleaved pepperweed
<i>Ligustrum lucidum</i>	Glossy privet
<i>Lobularia maritima</i>	Sweet alyssum
<i>Lotus corniculatus</i>	Bird's foot trefoil
<i>Lysimachia arvensis</i>	Scarlet pimpernel
<i>Marrubium vulgare</i>	White horehound
<i>Melilotus albus</i>	White sweetclover
<i>Mentha spicata</i>	Spearmint
<i>Nasturtium officinale</i>	Watercress
<i>Nerium oleander</i>	Oleander
<i>Nicotiana</i> cf. <i>acuminata</i> var. <i>multiflora</i>	Tobacco
<i>Olea europaea</i>	Olive
<i>Paspalum dilatatum</i>	Dallis grass
<i>Persicaria</i> cf. <i>hydropiper</i>	Common smartweed
<i>Persicaria lapathifolia</i>	Common knotweed
<i>Phoenix canariensis</i>	Canary sland date palm
<i>Phragmites australis</i>	Common reed
<i>Pinus</i> sp.	Pine
<i>Plantago lanceolata</i>	English plantain
<i>Platanus racemosa</i>	California sycamore
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
<i>Prunus dulcis</i>	Domestic almond
<i>Quercus agrifolia</i> ssp. <i>agrifolia</i>	Coast live oak
<i>Quercus douglasii</i>	Blue oak
<i>Quercus lobata</i>	Valley oak
<i>Robinia pseudoacacia</i>	Black locust
<i>Rosa californica</i>	California wild rose

## Appendix B — Plant Species Observed in the Study Area

Scientific Name	Common Name
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	Curly dock
<i>Rumex pulcher</i>	Fiddle dock
<i>Salix exigua</i> var. <i>hindsiana</i>	Sandbar willow
<i>Salix laevigata</i>	Red willow
<i>Salix lasiolepis</i>	Arroyo willow
<i>Salsola tragus</i>	Tumbleweed
<i>Salsola tragus</i>	Russian thistle
<i>Salvia apiana</i>	White sage
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue elderberry
<i>Schinus molle</i>	Peruvian pepper tree
<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Tule
<i>Senecio sylvaticus</i>	Woodland groundsel
<i>Sequoia sempervirens</i>	Coast redwood
<i>Silybum marianum</i>	Milk thistle
<i>Sonchus asper</i> ssp. <i>asper</i>	Sow thistle
<i>Stipa miliacea</i> var. <i>miliacea</i>	Smilo grass
<i>Tamarix</i> sp.	Tamarisk
<i>Toxicodendron diversilobum</i>	Poison-oak
<i>Trifolium hirtum</i>	Rose clover
<i>Typha angustifolia</i>	Narrow leaf cattail
<i>Typha latifolia</i>	Broadleaf cattail
<i>Typha</i> spp.	Cattails
<i>Urtica dioica</i>	Stinging nettle
<i>Verbascum thapsus</i>	Common mullein
<i>Xanthium strumarium</i>	Rough cocklebur

## Appendix B — Wildlife Species Observed in the Study Area

Scientific Name	Common Name
<i>Actinemys marmorata</i>	Western pond turtle
<i>Aechmophorus occidentalis</i>	Western Grebe
<i>Aphelocoma californica</i>	Western scrub jay
<i>Ardea herodias</i>	Great Blue Heron
<i>Aythya collaris</i>	Ring-necked duck
<i>Bubo virginianus</i>	Great horned owl
<i>Bucephala albeola</i>	Bufflehead
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Callipepla californica</i>	California quail
<i>Calypte anna</i>	Anna's hummingbird
<i>Canis latrans</i>	Coyote
<i>Cathartes aura</i>	Turkey vulture
<i>Corvus brachyrhynchos</i>	American crow
<i>Egretta thula</i>	Snowy egret
<i>Elanus leucurus</i>	White-tailed kite
<i>Falco peregrinus anatum</i>	American Peregrine Falcon
<i>Falco sparverius</i>	American kestrel
<i>Fulica americana</i>	American coot
<i>Junco hyemalis</i>	Dark-eyed junco
<i>Lepus californicus</i>	Black-tailed Jackrabbit
<i>Lithobates catesbeianus</i>	American bullfrog
<i>Melospiza melodia</i>	Song sparrow
<i>Odocoileus hemionus</i>	Mule deer
<i>Otospermophilus beecheyi</i>	California ground squirrel
<i>Phalacrocorax auritus</i>	Double-crested cormorant
<i>Procyon lotor</i>	Northern raccoon
<i>Pseudacris sierra</i>	Sierran Treefrog
<i>Sayornis nigricans</i>	Black phoebe
<i>Sciurus griseus</i>	Western gray squirrel
<i>Sialia mexicana</i>	Western bluebird
<i>Trachemys scripta elegans</i>	Red-eared slider
<i>Zenaida macroura</i>	Mourning dove



## Appendix C — Representative Site Photographs

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Description: Gravel bar located within the OHWM of the Arroyo del Valle adjacent to willow riparian wetland in the northwestern portion of the Study Area.

Date: 10/26/2017

Photographer: Zachary Neider

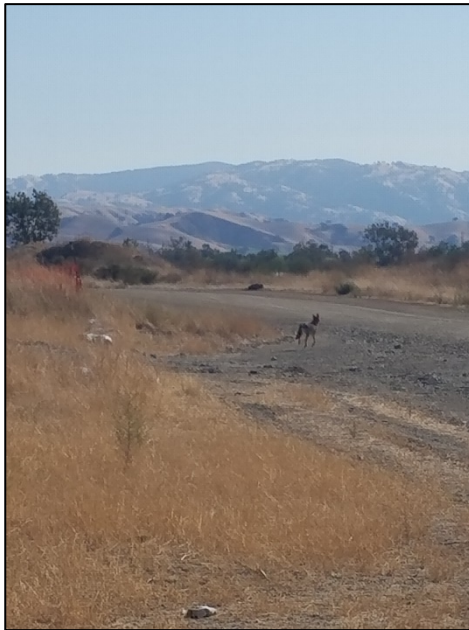


Description: Perennial stream impoundment located in the northeast section of the Study Area. Cormorants observed nesting on tree on the center island.

Date: 11/1/2017

Photographer: Marisa Brilts

## REPRESENTATIVE SITE PHOTOGRAPHS



Description: Coyote within the Study Area near Isabel and Vineyard Avenue.

Date: 11/1/2017

Photographer: Marisa Brilts



Description: White-tailed kite observed near Silt Pond 1.

Date: 11/2/2017

Photographer: Marisa Brilts

## REPRESENTATIVE SITE PHOTOGRAPHS





Description: Elderberry shrubs located along Quarry Pond A.

Date: 10/27/2017

Photographer: Marisa Brilts



Description: Overview of Quarry Pond C. Potential nesting habitat for some raptor species.

Date: 11/2/2017

Photographer: Zachary Neider

## REPRESENTATIVE SITE PHOTOGRAPHS



Description: Active mining operation, centrally located within the Study Area.

Date: 11/27/2017

Photographer: Marisa Brilts



Description: Overview of large clumps of *Arundo donax*, a highly invasive plant species.

Date: 11/27/2017

Photographer: Zachary Neider

## REPRESENTATIVE SITE PHOTOGRAPHS