Appendix C
Biological Resources Assessment

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Biological Resources Assessment

Fields at Alamo Creek

OCTOBER 2023

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
IPaC	Information, Planning, and Conservation
USFWS	United States Fish and Wildlife Service
CDFW	California Department of Fish and Game
CNDDB	California Natural Diversity Database
GPS	Global Positioning System
CWA	Clean Water Act
NWI	National Wetlands Inventory
RWQCB	Regional Water Quality Control Board
MBTA	Migratory Bird Treaty Act
CFGC	California Fish and Game Code
CEQA	California Environmental Quality Act

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1 Project Location

The Fields at Alamo Creek Project site (Project site) is located along Hawkins Road in unincorporated Solano County, California, approximately 2 miles southeast of Interstate 80 (I-80) (Figure 1, Project Location). The site is situated in Township 6 North, Range 1 East, Section 24 of the U.S. Geological Survey Elmira, California 7.5-minute quadrangle. The approximate center of the Project site corresponds to 38.357212° north and -121.922394° west (decimal degrees).

2 Project Description

The proposed project includes amending the Farm at Alamo Creek Specific Plan to include the 33.6-acre project site. The project is proposing a continuation of the residential uses and design principles set forth in Specific Plan and would connect to the Specific Plan's roadway system and tie into utilities stubbed adjacent to the western boundary of the project site. The project is proposing 241 residential units with a 300-foot open space buffer along the eastern boundary of the site, adjacent to agricultural lands in Solano County.

3 Methods

Biological resources on the Project site were evaluated through a desktop analysis of existing literature and data, followed by a reconnaissance-level field survey including a preliminary delineation of aquatic resources.

3.1 Preliminary Site Evaluation

Prior to conducting the field survey, Dudek reviewed pertinent online and literature sources in January 2023. This review consisted of the following online databases and reports: the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) Trust Resource Report, California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), and the California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants. The IPaC report was based on a query for the Project site. The CNDDB and CNPS databases were queried for the nine USGS 7.5-minute quadrangles containing and immediately surrounding the Project site (*Mount Vaca, Allendale, Dixon, Fairfield North, Elmira, Dozier, Fairfield South, Denverton, Birds Landing*).

Following a review of the above resources, Dudek biologists determined the potential for special-status plant and wildlife species to occur onsite. Determinations were based on a review of habitat types, soils, and elevation preferences, as well as the known geographic range and nearest occurrence records of each species. No protocol-level surveys for special-status species were conducted; the field survey was focused on evaluating the potential for the Project site to provide habitat for these species.

For this report, special-status plant and wildlife species are defined as those that are (1) listed, proposed for listing, or candidates for listing as Threatened or Endangered under the federal Endangered Species Act; (2) listed or candidates as Threatened or Endangered for listing under the California Endangered Species Act; (3) a state fully protected species;

(4) a CDFW Species of Special Concern; or (5) a species listed on the CNPS Inventory of Rare and Endangered Plants with a California Rare Plant Rank (CRPR) of 1 or 2.

3.2 Field Survey

Dudek biologist, Lorna Haworth performed a field survey of the approximately 33.6-acre Project site on February 7, 2023. The survey was conducted on foot to visually cover the entire Project site. Field notes, an aerial photograph with an overlay of the property boundary, and a Trimble Geo 7X Global Positioning System (GPS) unit were used to map vegetation communities and record any sensitive biological resources within the Project site. Because the field visit was conducted outside of the blooming season for special-status plants and the breeding season for wildlife species known to occur in the Project region, no protocol-level or focused surveys for special-status species were conducted. As such, the focus of the field visit was to assess overall habitat suitability for the target species identified as a result of the literature and database review described in Section 3.1. Wildlife species detected during the field survey by sight, calls, tracks, scat, or other signs were recorded directly into a field notebook. The site was also scanned with binoculars to aid in the identification of wildlife.

3.3 Aquatic Resources Delineation

Concurrent with the fieldwork on February 7, 2023, Dudek performed a preliminary field delineation to identify and map the extent of aquatic resources within or adjacent to the Project site that are potentially subject to regulation under federal Clean Water Act (CWA) Sections 401 and 404, California Fish and Game Code Section 1600, and/or the provisions of the Porter-Cologne Water Quality Act. Results of the aquatic resources delineation are incorporated into this assessment.

4 Results

4.1 Topography and Soils

The Project site is relatively flat, with an approximate elevation of 64 to 67 feet above mean sea level. According to the Natural Resources Conservation Service (US Department of Agriculture [USDA] 2021a), three soil types are mapped on the Project site: Capay silty clay loam, 0% slopes; Yolo loam, 0% to 4% slopes; Yolo loam, clay substratum (Figure 2, Soils). The Capay series consists of very deep, moderately well and somewhat poorly drained soil formed in fine textured alluvium derived from mostly sandstone and shale; the Yolo series consists of very deep, well drained soils that formed in alluvium from mixed rocks. None of the three soil types mapped on site are included on the USDA list of hydric soils (USDA 2021b), which are commonly associated with wetlands or other waters.

4.2 Land Use

The Project site is located along Hawkins Road in Solano County, California, east of the city of Vacaville (Figure 1, Project Location). The Project site and surrounding areas are agricultural parcels with development to the west and south. The Farm at Alamo Creek Specific Plan is an approved residential development on the neighboring agricultural land to the west and south of the Fields at Alamo Creek.

4.3 Hydrologic Setting

The Project site occurs within the Ulatis Creek watershed (Hydrological Unit Code 1802016305) (CDFW 2021a). According to the USFWS National Wetlands Inventory (NWI), there is one aquatic resource mapped near the Project site: a canal (classified as Riverine) is mapped just north of the Project site (USFWS 2021b) (Figure 3, Hydrologic Setting). This canal was the only aquatic resource identified near the Project site during the February 2023 field survey (see Section 4.5). The NWI is based on coarse aerial mapping and does not involve ground-truthing.

4.4 Aquatic Resources

During the field delineation, no aquatic resources were encountered within the Project site. However, one canal associated with the Solano Irrigation District occurs just north of the Project site parallel to Hawkins Road (Figure 3, Hydrologic Setting); only the portion of the canal parallel to the Project site was surveyed. In some areas the canal is reinforced with concrete and riprap along the banks. There was little to no aquatic vegetation in the canal and the impacts of human disturbance were evident with the presence of trash in the waterway. It is likely considered a jurisdictional aquatic resource subject to state (CDFW and RWQCB) jurisdiction but not federal jurisdiction due to lack of hydrologic connectivity to a navigable waterway. The adjacency of the canal to the Project site has been considered in this biological resources assessment, specifically in aiding the potential for special-status species to occur within the Project site. There are also agricultural ditches outside the project boundary near the southeast and northeast corners of the site (see Appendix C, Photo Log) which are likely state jurisdictional. There was no obvious wetland vegetation during the survey although the habitat assessment was conducted outside the bloom period for many plant species. Some ditches held water at the time of survey, but this inundation most likely was due to recent rains.

4.5 Vegetation Communities and Land Cover Types

The Project site consists of one land cover type: general agriculture (Figure 5, Vegetation Communities and Land Covers). Agricultural lands are an anthropogenic land cover and are not described in CDFW (2022a) or CNPS (2021b).

General Agriculture. During the February 2023 survey, the site was fallow. Fallow lands are previously used agricultural lands that are not actively growing any crops, and that therefore have a low vegetative cover and are considered highly disturbed.

4.6 Special-Status Species

Based on the known habitat life history requirements (e.g., vegetation types, soils, and elevation preferences) of the target list of special-status plant and wildlife species (Section 3.1), the known geographic range and nearest occurrence records of each of these species (Section 3.1), and on the field habitat suitability assessment (Section 3.2), the potential of target species to occur on or adjacent to the Project site was determined (Attachment A, Special-Status Plant Species Potential to Occur with the Project Area, and Attachment B, Special-Status Wildlife Species Potential to Occur within the Project Area). The potential for occurrence of each species was summarized according to the categories listed below.

- Known to occur: the species has been documented on the Project site by a reliable source.
- High potential to occur: the species has not been documented on the Project site but is known to recently occur in the vicinity and suitable habitat is present.
- Moderate potential to occur: the species has not been documented on the Project site or in the Project vicinity, but the site is within the known range of the species and suitable habitat for the species is present.
- Low potential to occur: the species has not been documented in the Project vicinity or on the Project site, but the site is within the known range of the species; however, suitable habitat for the species onsite is of low quality.
- Not expected to occur: the Project site is outside the known geographic or elevational range of the species and/or the site does not support suitable habitat for the species.

For this report, special-status plant and wildlife species are defined as those that are:

- listed, proposed for listing, or candidate for listing as Threatened or Endangered under the federal Endangered Species Act;
- listed, proposed for listing, or candidate for listing as Threatened or Endangered under the California Endangered Species Act;
- listed as a state Fully Protected species;
- listed as a CDFW Species of Special Concern;
- listed on the CNPS Inventory of Rare and Endangered Plants with a California Rare Plant Rank (CRPR) of 1 or 2.

4.6.1 Special-Status Plants

Results of USFWS, CNDDB, and CNPS database searches revealed 56 special-status plant species that are known to occur in the Project site region (Figure 5, CNDDB Occurrences). Of these 56 species, none are expected to occur on the Project site due to the lack of suitable habitat or the presence of very low-quality habitat within or adjacent to the Project site, the lack of documented occurrences near the Project site, and/or the site being outside of the species' known geographic or elevation range. These species are identified in Attachment A, but not addressed further in this report. These results are consistent with the Farm at Alamo Creek Biological Resources Assessment; special-status plant species with potential to occur on the Farm at Alamo Creek site were vernal pool species (Dwarf Downingia (*Dowingia pusilla*), Contra Costa Goldfields (*Lasthenia conjugens*), Baker's Navarretia (*Navarretia leucocephala* ssp. *bakeri*), and Bearded popcorn flower (*Plagiobothrys hystriculus*)) a habitat type which the Fields at Alamo Creek site lacks. Additionally, rare plant surveys conducted for the Farm at Alamo Creek failed to detect any special-status plant species.

4.6.2 Special-Status Wildlife

Results of the USFWS and CNDDB database searches revealed 40 special-status wildlife species that are known to occur in the Project site region, including 14 species documented within 5 miles of the site (Figure 5, CNDDB Occurrences). Of the 40 species, all but 8 of these species were determined to have a low potential to occur or are not expected to occur due to the lack of suitable habitat or the presence of very low-quality habitat within or adjacent to the Project site, the lack of documented occurrences near the Project site, or due to the site being outside of the species' known geographic or elevation range. Those 12 species are identified in Attachment B, but not addressed further in this report. Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and northern harrier (*Circus hudsonius*) have high potential to occur. Burrowing owl (*Athene cunicularia*), mountain plover (*Charadrius montanus*), short-eared owl (*Asio flammeus*), ferruginous hawk (*Buteo regalis*), and loggerhead shrike (*Lanius ludovicianus*) have moderate potential to occur. These results are consistent with the Farm at Alamo Creek Biological Resources Assessment; special-status wildlife species with potential to occur on the Farm at Alamo Creek site were those with essential habitat elements were not present on the Fields at Alamo Creek. Some of these species include valley elderberry longhorn beetle, western pond turtle, various tree or shrub nesting birds, and tree roosting bats.

The Project site provides habitat for nesting birds protected by the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC).

Raptors and Nesting Birds. The Project site provides habitat for numerous local and migratory bird species protected by CFGC and the federal MBTA, including burrowing owl and mountain plover, both CDFW Species of Special Concern. Swainson's hawk were observed foraging within the 2018 EIR study area and agricultural habitat on site is suitable for foraging. Burrowing owl frequently use agricultural fields for nesting and foraging; there are two occurrences approximately one mile from the site recorded in 2005 and 2015 (CDFW 2023). Mountain plover winter in agricultural fields and the nearest occurrence is approximately nine miles southeast near Creed and recorded in 1991 (CDFW 2023). Multiple common bird species were detected during the February 2023 field survey. A focused survey for nesting birds was not conducted. White-tailed kite, northern harrier, short-eared owl, ferruginous hawk, and loggerhead shrike are all known to forage on agricultural lands. White-tailed kite and northern harrier have high potential to occur due to presence of nearby occurrences along with suitable habitat.

Short-eared owl, ferruginous hawk, and loggerhead shrike do not have occurrences within 10 miles of the project site.

5 Conclusions and Recommendations

5.1 Special-Status Plants

No special-status plants were identified on the Project site during the biological fieldwork, which covered the entire Project site. However, the fieldwork was conducted during a time of year when the target special-status plant species with a potential to occur would not be in bloom or identifiable. Regardless, based on the field assessment and relevant literature, special-status plant species have no potential to occur on the Project site. The Project site comprises highly disturbed agricultural fields and lacks unique habitat features normally required by the target special-status plants, such as exposed serpentinite or other rare soil types, vernally mesic seeps and meadows, or rocky openings within woodland habitat. No additional surveys or avoidance, minimization, or mitigation measures are recommended related to special-status plant species.

5.2 Special-Status Wildlife

As noted in Section 4.6.2, various migratory bird species have the potential to occur on the Project site and may breed on site. This is especially true for ground-nesting species tolerant of disturbed conditions, including a common species such as killdeer (*Charadrius vociferus*) and the previously mentioned special-status burrowing owl. Raptor species may also nest in trees outside the Project site but near enough to be disturbed by site construction activities. The following measure is recommended to avoid and minimize effects to protected nesting bird species.

Swainson's Hawk. If Project activities were to be conducted during a time of year when native bird species are actively nesting, these activities could adversely affect Swainson's hawks protected by the California Endangered Species Act, federal MBTA, and stipulations in the CDFW. In addition to violating the protections under CESA, MBTA, and CDFW, direct or indirect impacts to Swainson's hawk could potentially be considered a significant impact under CEQA. To avoid impacting active nests, Dudek recommends implementing the following measures prior to commencing any construction activities:

- If construction (including site clearing and grading) occurs during the nesting season for Swainson's hawk (March 1 through August 31), a qualified biologist shall conduct preconstruction surveys no more than 15 days prior to construction to identify nesting Swainson's hawk within 0.25 mile of the project site. If a lapse in project-related construction activities of 15 days or longer occurs, additional preconstruction surveys shall be conducted prior to reinitiating work.
- If an active Swainson's hawk nest is identified within 0.25 mile of the project site, an exclusion buffer shall be established in consultation with the biologist and California Department of Fish and Wildlife (CDFW). No construction work such as grading, earthmoving, or any operation of construction equipment shall occur within the buffer zone unless in consultation with and approved by CDFW. Construction may commence normally in the buffer zone if the nest becomes inactive (e.g., the young have fully fledged), as determined by the qualified biologist.

Burrowing Owl. Burrowing owl surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities. Preconstruction surveys for this species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met.

- Within 14 days prior to the anticipated start of construction, a qualified biologist shall conduct preconstruction surveys within the project site to identify burrowing owls or their nesting areas. This survey shall follow survey protocols as developed by the Burrowing Owl Consortium (CDFW 2012). If no active burrows or burrowing owls are observed, no further mitigation is required. If a lapse in construction of 15 days or longer occurs during the nesting season, additional preconstruction surveys shall be repeated before work may resume.
- If burrowing owls or active burrows are identified within the project site during the preconstruction surveys, the following measures shall be implemented:
  - During the non-breeding season for burrowing owls (September 1 through January 31), exclusion zones shall be established around any active burrows identified during the preconstruction survey. The exclusion zone shall be no less than 160 feet in radius centered on the active burrow. With approval from the City after consultation with California Department of Fish and Wildlife (CDFW) and a qualified biologist, burrowing owls shall be passively evicted and relocated from the burrows using one-way doors. The one-way doors shall be left in place for a minimum of 48 hours and shall be monitored daily by the biologist to ensure proper function. Upon the end of the 48-hour period, the burrows shall be excavated by the biologist with the use of hand tools and refilled to discourage reoccupation.
  - During the breeding season (February 1 through August 31), a qualified biologist familiar with the biology and behavior of this species shall establish exclusion zones of at least 250 feet in radius centered on any active burrow identified during the preconstruction survey. No construction activities shall occur within the exclusion zone as long as the burrow is active and young are present. Once the breeding season is over and young have fledged, passive relocation of active burrows may proceed as described in measure BIO-3(b), above.
  - The buffer widths may be reduced with the following measures:
    - A site-specific analysis, reviewed and approved by City after consultation with CDFW, shall be prepared by a qualified biologist that documents and describes how the nesting or wintering owls would not be adversely affected by construction activities;
    - Monitoring shall occur by a qualified biologist for a minimum of 10 consecutive days following initiation of construction indicating that the owls do not exhibit adverse reactions to construction activities;
    - Burrows are not in danger of collapse due to equipment traffic; and
    - Monitoring is continued by a qualified biologist at least once a week through the nesting/wintering cycle at the site and no change in behavior by owls is observed; biological monitoring reports shall be submitted to CDFW.

Nesting Birds. If Project activities were to be conducted during a time of year when native bird species are actively nesting, these activities could adversely affect nesting birds protected by the federal MBTA and/or stipulations in the CDFW. In addition to violating the protections under the MBTA and CDFW, direct or indirect impacts to nesting birds could potentially be considered a significant impact under CEQA. To avoid impacting active nests, Dudek recommends implementing the following measures:

- A qualified biologist shall conduct a survey for nesting birds approximately two weeks prior to ground-disturbance or vegetation removal activities on the Project site conducted during the nesting season (March through August). The survey shall cover the limits of ground disturbance and vegetation removal and suitable nesting habitat within 250 feet for raptors (including burrowing owls) and 100 feet for other nesting bird species. Burrowing owl surveys should follow CDFG 2012 Staff Report guidelines including walking transects (21 and 66 feet apart depending on visibility), under suitable weather conditions between morning civil twilight and evening civil twilight. All owl sightings, occupied burrows, and burrows with owl sign will be recorded and mapped during the survey.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance, to be determined by the qualified biologist and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal or ground-disturbing activities are delayed, additional nest surveys shall be conducted such that no more than 7 days have elapsed between the survey and ground disturbance activities. It is recommended that disturbing potential nesting habitat (i.e., trimming and/or vegetation removal) be performed outside of the nesting season (September through February) to avoid impacts to nesting birds.
- If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted in close proximity to the nest.

5.3 Aquatic Resources

A formal jurisdiction delineation of the Project site was not conducted during the field survey. No areas containing a dominance of wetland plants or linear features with an ordinary high water mark were observed in or adjacent to the Project site.

There are multiple upland ditches just outside the southeast and northeast corners of the Project boundary but these are human-made stormwater control features constructed in uplands to convey stormwater, and therefore do not qualify as wetlands or other waters of the U.S. In addition, the ditches do not drain into any potential wetlands or other waters, based on conditions observed in the field. Based on these findings, there are no federally regulated aquatic resources on or adjacent to the Project site. However, based on past experience the state may take jurisdiction over those resources through the Regional Water Quality Control Board. In the event that impacts to adjacent ditches are expected, permitting through Porter-Cologne Water Quality Control Act may be necessary. It is recommended that the Project avoids all impacts to the aquatic resources adjacent to the site. If the Project is anticipated to impact these resources a formal wetland delineation and associated permitting is required.

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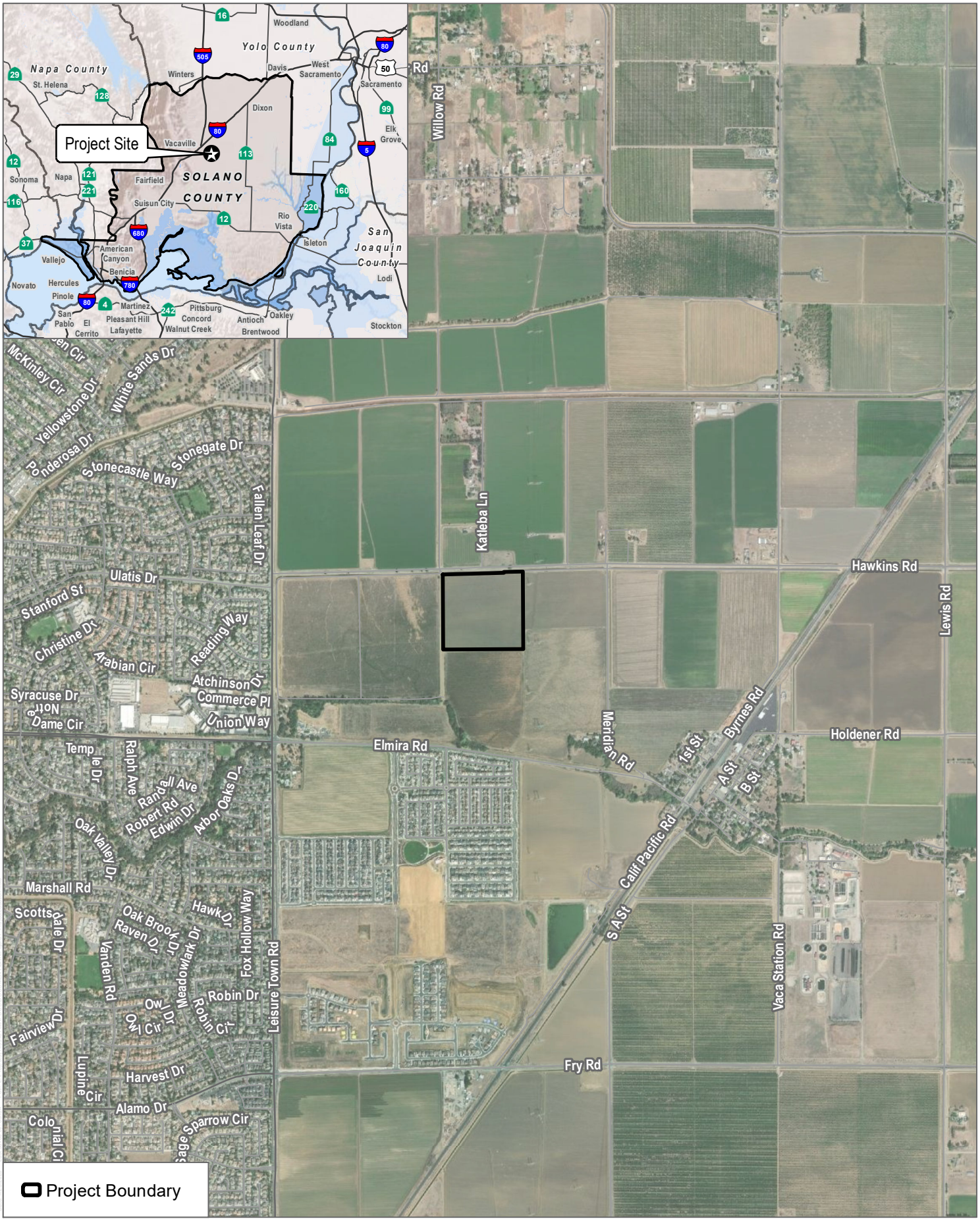

SOURCE: DigitalGlobe 2017, Open Street Map 2019

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Fields at Alamo Creek

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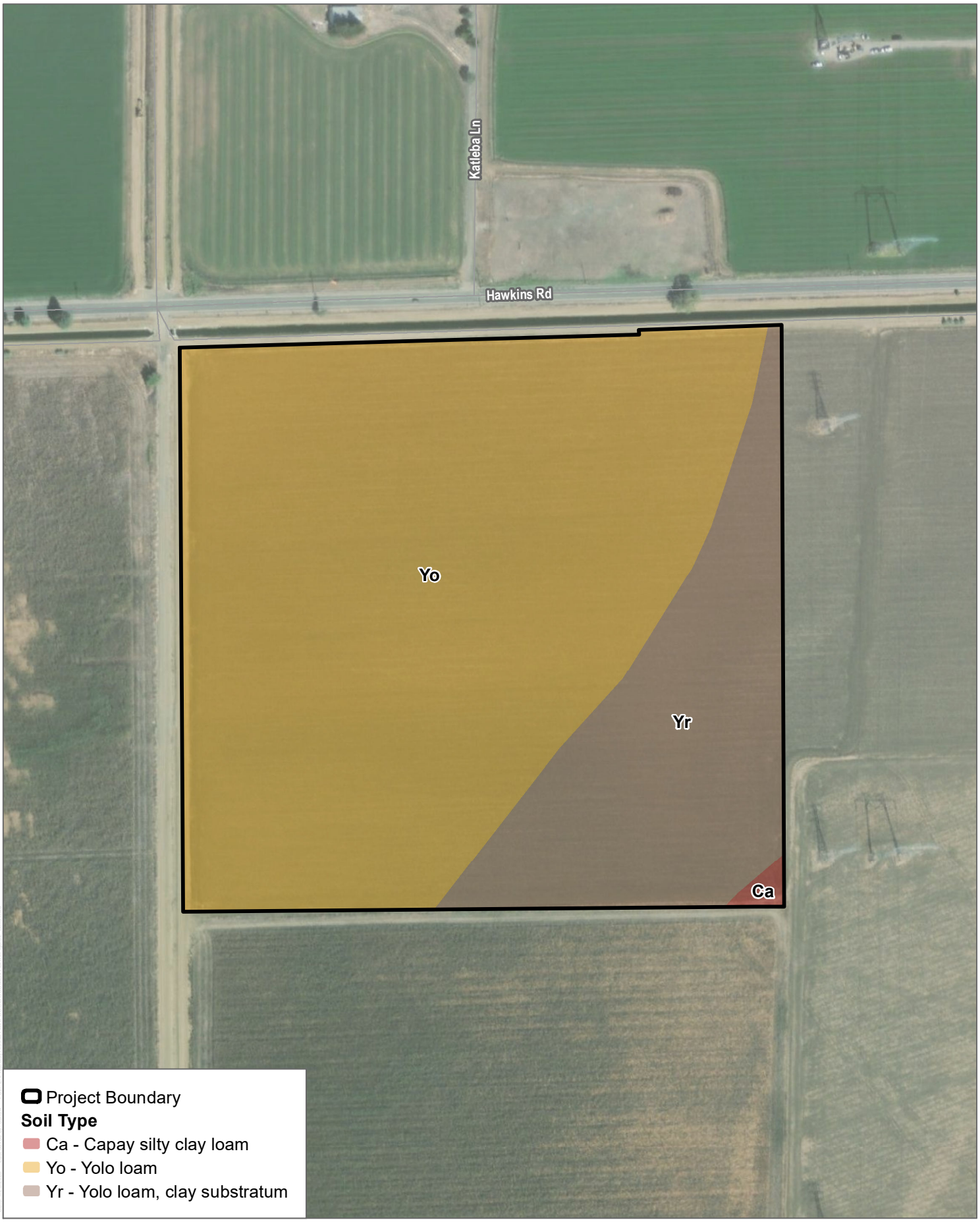

SOURCE: DigitalGlobe 2017, Open Street Map 2019, CA Dept. of Conservation 2018

DUDEK

0 135 270 Feet

FIGURE 2

Soils

Fields at Alamo Creek

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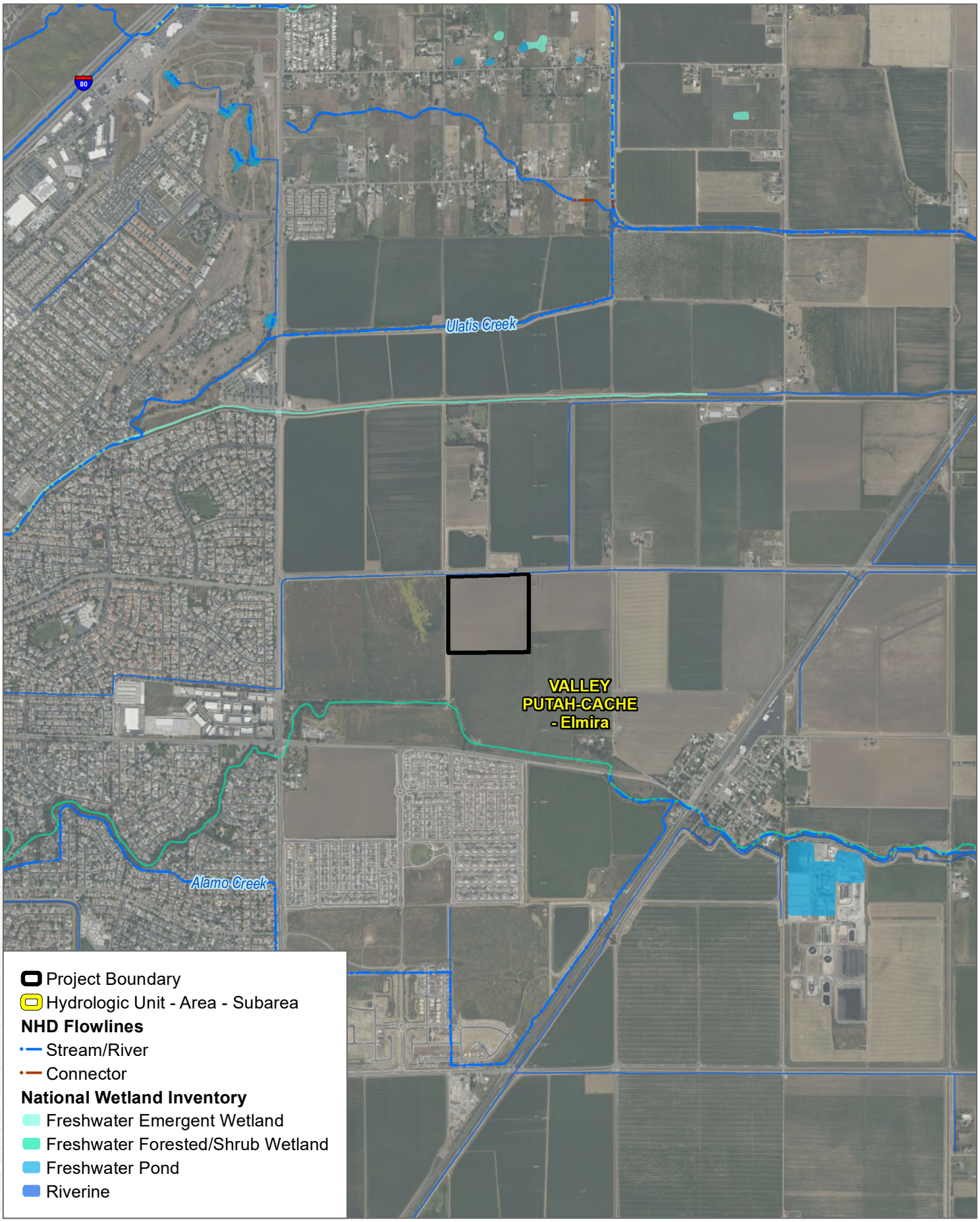

SOURCE: Bing Maps 2021, USFWS 2019, USGS 2019

DUDEK

0 1,000 2,000 Feet

FIGURE 3

Hydrologic Setting

Fields at Alamo Creek

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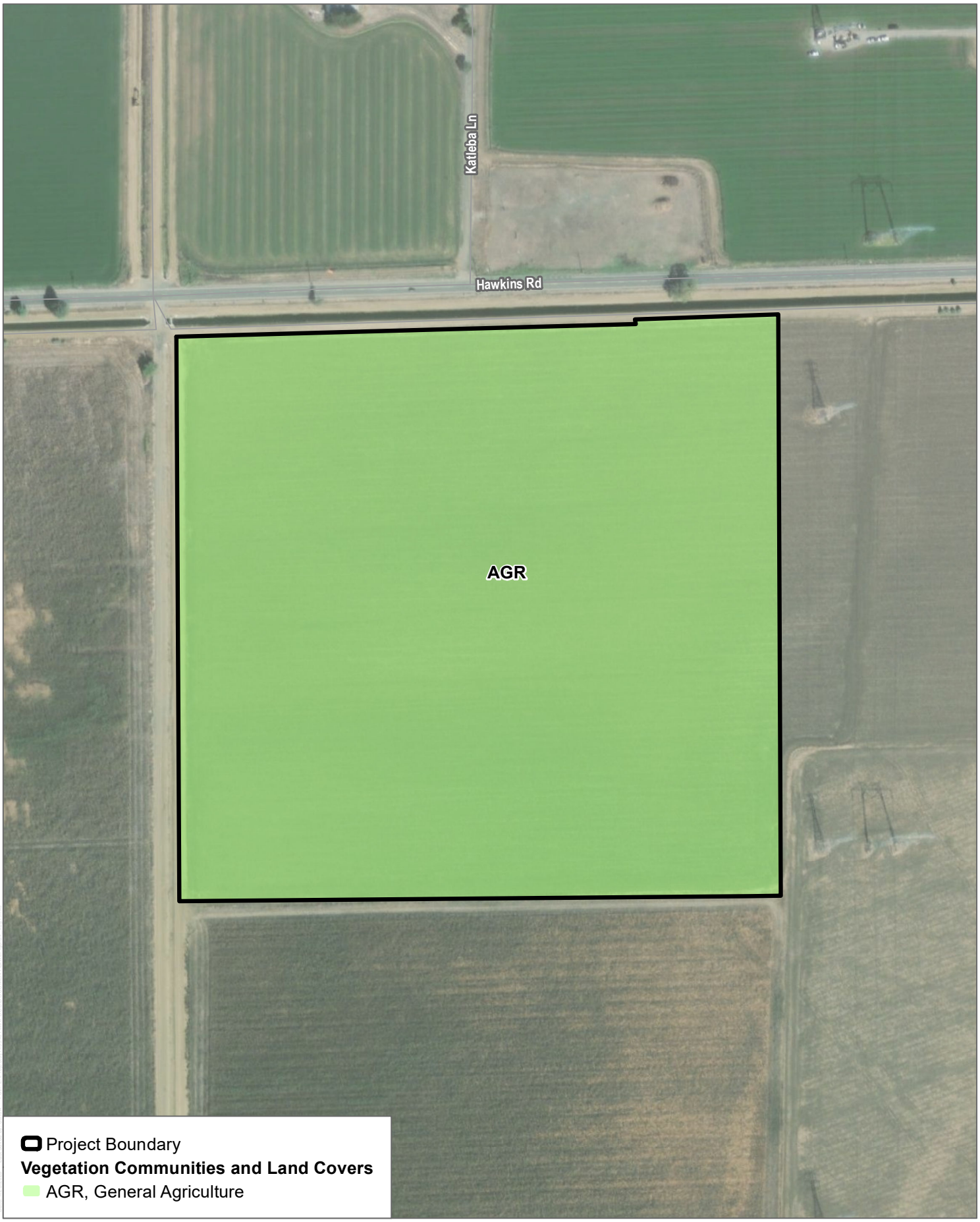

SOURCE: DigitalGlobe 2017, Open Street Map 2019, FRAP 2015

DUDEK

0 135 270 Feet

FIGURE 4

Vegetation Communities and Land Covers

Fields at Alamo Creek

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Project Boundary
Project Boundary - 5 Mile Buffer

CNDDB Plant Occurrences

1, bearded popcornflower, (*Plagiobothrys hystriculus*)
2, Valley Needlegrass Grassland, (*Valley Needlegrass Grassland*)
3, Coulter's goldfields, (*Lasthenia glabrata ssp. coulteri*)
4, adobe-lily, (*Fritillaria pluriflora*)
5, Keck's checkerbloom, (*Sidalcea keckii*)
6, Baker's navarretia, (*Navarretia leucocephala ssp. bakeri*)
7, legenere, (*Legenere limosa*)
8, alkali milk-vetch, (*Astragalus tener var. tener*)
9, two-fork clover, (*Trifolium amoenum*)
10, San Joaquin spearscale, (*Extriplex joaquinana*)
11, Carquinez goldenbush, (*Isocoma arguta*)
12, dwarf downingia, (*Downingia pusilla*)
13, heartscale, (*Atriplex cordulata var. cordulata*)
14, Contra Costa goldfields, (*Lasthenia conjugens*)
15, saline clover, (*Trifolium hydrophilum*)
16, recurved larkspur, (*Delphinium recurvatum*)

CNDDB Wildlife Occurrences

17, foothill yellow-legged frog - north coast DPS, (*Rana boylii pop. 1*)
18, western pond turtle, (*Emys marmorata*)
19, western bumble bee, (*Bombus occidentalis*)
20, California tiger salamander - central California DPS, (*Ambystoma californiense pop. 1*)
21, burrowing owl, (*Athene cunicularia*)
22, tricolored blackbird, (*Agelaius tricolor*)
23, vernal pool fairy shrimp, (*Branchinecta lynchi*)
24, midvalley fairy shrimp, (*Branchinecta mesovallensis*)
25, vernal pool tadpole shrimp, (*Lepidurus packardi*)
26, Ricksecker's water scavenger beetle, (*Hydrochara ricksecker*i)
27, Crotch bumble bee, (*Bombus crotchii*)
28, California linderiella, (*Linderiella occidentalis*)
29, grasshopper sparrow, (*Ammodramus savannarum*)
30, valley elderberry longhorn beetle, (*Desmocerus californicus dimorphus*)
31, Swainson's hawk, (*Buteo swainsoni*)
32, American badger, (*Taxidea taxus*)
33, white-tailed kite, (*Elanus leucurus*)

Cantelow Rd
Midway Rd
Gibson Canyon Rd
E Monte Vista Ave
Nut Tree Rd
Merchant St
Elmira Rd
Leisure Town Rd
Alamo Dr
S 1st St
Rio Dixon Rd
N Texas St
Dover Ave
505
80
40
113

SOURCE: DigitalGlobe 2017; CA Dept. of Fish and Wildlife 2021

DUDEK

0 3,250 6,500 Feet

FIGURE 5
CNDDB Occurrences
Fields at Alamo Creek

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Attachment A

Special-Status Plant Species Potential to Occur with the Project Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Astragalus tener var. ferrisiae	Ferris' milk-vetch	None/None/1B.1	Meadows and seeps (vernally mesic), Valley and foothill grassland (subalkaline flats)/annual herb/Apr–May/7–245	Not expected to occur. The nearest occurrence is approximately 9 miles east near Bunker and recorded in 2002 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Astragalus tener var. tener	alkali milk-vetch	None/None/1B.2	Playas, Valley and foothill grassland (adobe clay), Vernal pools; alkaline/annual herb/Mar–June/3–195	Not expected to occur. The nearest occurrence is approximately 3 miles southwest near Alamo Drive and recorded in 1896 (CDFW 2023). A more recent occurrence is approximately 4.5 miles southeast near Hay Road and recorded in 2002 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Atriplex cordulata var. cordulata	heartscale	None/None/1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy); saline or alkaline/annual herb/Apr–Oct/0–1,835	Not expected to occur. The nearest occurrence is approximately 2 miles southwest near Alamo Drive and recorded in 1892 (CDFW 2023). A more recent occurrence is approximately 7 miles southwest in the vicinity of Barker Slough and recorded in 1994 (CDFW 2023). No suitable habitat is present and there are no saline or alkaline soils (Calflora 2023).
Atriplex depressa	brittlescale	None/None/1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools; alkaline, clay/annual herb/Apr–Oct/3–1,045	Not expected to occur. The nearest occurrence is approximately 7 miles south near Travis Air Force Base and recorded in 1986 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Atriplex persistens	vernal pool smallscale	None/None/1B.2	Vernal pools (alkaline)/annual herb/June,Aug,Sep,Oct/33–375	Not expected to occur. The nearest occurrence is approximately 7.5 miles southeast near Creed Road and recorded in 1992 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Carex lyngbyei	Lyngbye's sedge	None/None/2B.2	Marshes and swamps (brackish or freshwater)/perennial rhizomatous herb/Apr–Aug/0–35	Not expected to occur. The nearest occurrence is approximately 10 miles southwest near Deadmans Island and recorded in 2020 (CDFW 2023). No suitable habitat is present.
Centromadia parryi ssp. parryi	pappose tarplant	None/None/1B.2	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and	Not expected to occur. The nearest occurrence is 5.5 miles southwest near Lagoon Valley and

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			foothill grassland (vernally mesic); often alkaline/annual herb/May–Nov/0–1,375	recorded in 2013 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Chloropyron molle ssp. hispidum	hispid bird's-beak	None/None/1B.1	Meadows and seeps, Playas, Valley and foothill grassland; alkaline/annual herb (hemiparasitic)/June–Sep/3–510	Not expected to occur. The nearest occurrence is approximately 8 miles south near Denverton Creek and recorded in 2010 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Chloropyron molle ssp. molle	soft bird's-beak	FE/SR/1B.2	Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/June–Nov/0–10	Not expected to occur. The nearest occurrence is approximately 9 miles south near Highway 12 and recorded in 1999 (CDFW 2023). No suitable habitat is present.
Cicuta maculata var. bolanderi	Bolander's water-hemlock	None/None/2B.1	Marshes and swamps Coastal, fresh or brackish water/perennial herb/July–Sep/0–655	Not expected to occur. The nearest occurrence is approximately 8.5 miles southeast near Rio Dixon Road and recorded in 1998 (CDFW 2023). No suitable habitat is present.
Cirsium hydrophilum var. hydrophilum	Suisun thistle	FE/None/1B.1	Marshes and swamps (salt)/perennial herb/June–Sep/0–3	Not expected to occur. The nearest occurrence is approximately 10 miles southwest near Potrero Hills Lane and recorded in 2019 (CDFW 2023). No suitable habitat is present and there are no saline soils (Calflora 2023).
Delphinium recurvatum	recurved larkspur	None/None/1B.2	Chenopod scrub, Cismontane woodland, Valley and foothill grassland; alkaline/perennial herb/Mar–June/10–2,590	Not expected to occur. The nearest occurrence is approximately 3 miles west along Browns Valley Road and recorded in 1940 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Downingia pusilla	dwarf downingia	None/None/2B.2	Valley and foothill grassland (mesic), Vernal pools/annual herb/Mar–May/3–1,455	Not expected to occur. The nearest occurrence is approximately 3 miles northwest in the vicinity of highway 505 and recorded in 1998. No suitable habitat is present.
Eleocharis parvula	small spikerush	None/None/4.3	Marshes and swamps/perennial herb/(Apr)June–Aug(Sep)/3–9,905	Not expected to occur. The nearest occurrence is approximately 22 miles west near Napa County Airport and recorded in 1980 and 1983 (CCH 2023). No suitable habitat is present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Erigeron biolettii	streamside daisy	None/None/3	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest; rocky, mesic/perennial herb/June–Oct/98–3,605	Not expected to occur. There are two occurrences approximately 14 miles southwest and recorded in 2013 and 1901 (CCH 2023). No suitable habitat is present.
Eriogonum truncatum	Mt. Diablo buckwheat	None/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland; sandy/annual herb/Apr–Sep(Nov–Dec)/10–1,145	Not expected to occur. The nearest occurrence is approximately 10 miles southwest in Suisun City and recorded in 1888 (CDFW 2023). There are no additional occurrences within 20 miles (CDFW 2023). No suitable habitat is present.
Eryngium jepsonii	Jepson's coyote thistle	None/None/1B.2	Valley and foothill grassland, Vernal pools; clay/perennial herb/Apr–Aug/10–985	Not expected to occur. The nearest occurrence is approximately 14.5 miles northeast in the vicinity of Toe Drain Canal and recorded in 2002 (CDFW 2023). No suitable habitat is present.
Extriplex joaquinana	San Joaquin spearscale	None/None/1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland; alkaline/annual herb/Apr–Oct/3–2,735	Not expected to occur. The nearest occurrence is approximately 2 miles southwest near Alamo Drive and recorded in 1891 (CDFW 2023). A more recent occurrence is 5 miles southwest near Lagoon Valley and recorded in 1989 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Fritillaria agrestis	stinkbells	None/None/4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland; Clay, sometimes serpentinite/perennial bulbiferous herb/Mar–June/33–5,100	Not expected to occur. There are no occurrences within 20 miles of the project (CDFW 2023). No suitable habitat is present and there are no serpentinite soils (Calflora 2023).
Fritillaria liliacea	fragrant fritillary	None/None/1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland; Often serpentinite/perennial bulbiferous herb/Feb–Apr/10–1,345	Not expected to occur. The nearest occurrence is approximately 7 miles southeast near Olcott and recorded in 1983 (CDFW 2023). No suitable habitat is present and there are no serpentinite soils (Calflora 2023).
Fritillaria pluriflora	adobe-lily	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; often adobe/perennial bulbiferous herb/Feb–Apr/197–2,310	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Gratiola heterosepala	Boggs Lake hedge-hyssop	None/SE/1B.2	Marshes and swamps (lake margins), Vernal pools; clay/annual herb/Apr–Aug/33–7,790	Not expected to occur. The nearest occurrence is approximately 8 miles southeast near Salem Road and recorded in 2002 (CDFW 2023). No suitable habitat is present.
Hesperevax caulescens	hogwallow starfish	None/None/4.2	Valley and foothill grassland (mesic, clay), Vernal pools (shallow); sometimes alkaline/annual herb/Mar–June/0–1,655	Not expected to occur. The nearest occurrence is approximately 1 mile north and recorded in 2002 (CCH 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Hesperolinon breweri	Brewer's western flax	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; usually serpentinite/annual herb/May–July/98–3,100	Not expected to occur. The nearest occurrence is approximately 6 miles west in Gates Valley and recorded in 1892 (CDFW 2023). No suitable habitat is present and there are no serpentinite soils (Calflora 2023).
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	None/None/1B.2	Marshes and swamps (freshwater); Often in riprap on sides of levees./perennial rhizomatous herb (emergent)/June–Sep/0–395	Not expected to occur. The nearest occurrence is approximately 10 miles west in Hass Slough and recorded in 2005 (CDFW 2023). No suitable habitat is present.
Iris longipetala	coast iris	None/None/4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps; mesic/perennial rhizomatous herb/Mar–May(June)/0–1,965	Not expected to occur. The nearest occurrence is 16 miles southwest Near Cordelia and recorded in 2006 (CCH 2023). No suitable habitat is present.
Isocoma arguta	Carquinez goldenbush	None/None/1B.1	Valley and foothill grassland (alkaline)/perennial shrub/Aug–Dec/3–65	Not expected to occur. The nearest occurrence is approximately 5 miles east along Rio Dixon Highway and recorded in 1959 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Lasthenia chrysantha	alkali-sink goldfields	None/None/1B.1	Vernal pools; alkaline/annual herb/Feb–Apr/0–656	Not expected to occur. The nearest occurrence is approximately 7 miles southeast near Cook late and no recorded date (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Lasthenia conjugens	Contra Costa goldfields	FE/None/1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools; mesic/annual herb/Mar–June/0–1,540	Not expected to occur. The nearest occurrence is approximately 2 miles southwest in the vicinity of Alamo Drive and recorded in 1918 (CDFW 2023).

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Lasthenia ferrisiae	Ferris' goldfields	None/None/4.2	Vernal pools (alkaline, clay)/annual herb/Feb–May/66–2,295	Not expected to occur. The nearest occurrence is 36 miles south near Discovery Bay and recorded in 1971 (CCH 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None/None/1B.1	Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/Feb–June/3–4,000	Not expected to occur. The nearest occurrence is approximately 5 miles south near Travis Air Force Base and recorded in 2018 (CDFW 2023). No suitable habitat is present.
Lathyrus jepsonii var. jepsonii	Delta tule pea	None/None/1B.2	Marshes and swamps (freshwater and brackish)/perennial herb/May–July(Aug–Sep)/0–15	Not expected to occur. The nearest occurrence is approximately 9 miles southeast in Calhoun Cut Canal and recorded in 2018 (CDFW 2023). No suitable habitat is present.
Legenere limosa	legenere	None/None/1B.1	Vernal pools/annual herb/Apr–June/3–2,885	Not expected to occur. The nearest occurrence overlaps with the project but recorded as extirpated due to agricultural development in 1983 (CDFW 2023). No suitable habitat is present.
Lepidium latipes var. heckardii	Heckard's pepper-grass	None/None/1B.2	Valley and foothill grassland (alkaline flats)/annual herb/Mar–May/7–655	Not expected to occur. The nearest occurrence is approximately 7 miles south in the vicinity of Travis Air Force Base and recorded in 2002 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Lessingia hololeuca	woolly-headed lessingia	None/None/3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; clay, serpentinite/annual herb/June–Oct/49–1,000	Not expected to occur. The nearest occurrence is approximately 10 miles south near Rio Vista and recorded in 1930 (CCH 2023). No suitable habitat is present and there are no serpentinite soils (Calflora 2023).
Lilaeopsis masonii	Mason's lilaeopsis	None/SR/1B.1	Marshes and swamps (brackish or freshwater), Riparian scrub/perennial rhizomatous herb/Apr–Nov/0–35	Not expected to occur. The nearest occurrence is approximately 9 miles southeast in Calhoun Cut Canal and recorded in 2005 (CDFW 2023). No suitable habitat is present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Limosella australis	Delta mudwort	None/None/2B.1	Marshes and swamps (freshwater or brackish), Riparian scrub; Usually mud banks/perennial stoloniferous herb/May–Aug/0–10	Not expected to occur. The nearest occurrence is approximately 9.5 miles southeast in Calhoun Cut Canal and recorded in 1997 (CDFW 2023). No suitable habitat is present.
Lomatium repostum	Napa lomatium	None/None/4.3	Chaparral, Cismontane woodland; serpentinite/perennial herb/Mar–June/295–2,720	Not expected to occur. The site is outside of the species' known elevation range.
Meesia triquetra	three-ranked hump moss	None/None/4.2	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic); soil/moss/July/4,265–9,685	Not expected to occur. The site is outside of the species' known elevation range.
Microseris paludosa	marsh microseris	None/None/1B.2	Closed-cone coniferous forest, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial herb/Apr–June(July)/16–1,160	Not expected to occur. The nearest occurrence is approximately 8.5 miles south near Travis Air Force Base and recorded in 2005 (CDFW 2023). No suitable habitat is present.
Myosurus minimus ssp. apus	little mousetail	None/None/3.1	Valley and foothill grassland, Vernal pools (alkaline)/annual herb/Mar–June/66–2,095	Not expected to occur. There are no occurrences within 20 miles of the site (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None/None/1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Mesic/annual herb/Apr–July/16–5,705	Not expected to occur. The nearest occurrence is approximately 1 mile southeast near Elmira and recorded in 1952 (CDFW 2023). No suitable habitat is present.
Neostapfia colusana	Colusa grass	FT/SE/1B.1	Vernal pools (adobe, large)/annual herb/May–Aug/16–655	Not expected to occur. The nearest occurrence is approximately 7 miles southeast near Creed and recorded in 2010 (CDFW 2023). No suitable habitat is present.
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT/SE/1B.1	Vernal pools/annual herb/Apr–Sep/33–2,475	Not expected to occur. The nearest occurrence is approximately 6.5 miles southeast in the vicinity of Travis Air Force Base and recorded in 2011 (CDFW 2023). No suitable habitat is present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	None/None/4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools; vernally mesic/perennial herb/June–Oct/0–2,000	Not expected to occur. The nearest occurrence is 6 miles southwest in the vicinity of Travis Air Force Base and recorded in 2005 (CCH 2023). No suitable habitat is present.
Plagiobothrys hystriculus	bearded popcornflower	None/None/1B.1	Valley and foothill grassland (mesic), Vernal pools margins; often vernal swales/annual herb/Apr–May/0–900	Not expected to occur. The nearest occurrence is approximately 3 miles south in the vicinity of Cypress Lakes Golf Course and recorded in 2013 (CDFW 2023). No suitable habitat is present.
Puccinellia simplex	California alkali grass	None/None/1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; Alkaline, vernally mesic; sinks, flats, and lake margins/annual herb/Mar–May/7–3,050	Not expected to occur. The nearest occurrence is approximately 7 miles southeast near Olcott and recorded in 1963 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Ranunculus lobbii	Lobb's aquatic buttercup	None/None/4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; mesic/annual herb (aquatic)/Feb–May/49–1,540	Not expected to occur. The nearest occurrence is 15 miles west near Wild Horse Valley Ranch and recorded in 1992 (CCH 2023). No suitable habitat is present.
Sidalcea keckii	Keck's checkerbloom	FE/None/1B.1	Cismontane woodland, Valley and foothill grassland; serpentinite, clay/annual herb/Apr–May(June)/246–2,130	Not expected to occur. The site is outside of the species' known elevation range.
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	None/None/1B.2	Meadows and seeps, Marshes and swamps; Alkaline/perennial herb/Feb–May/0–835	Not expected to occur. The nearest occurrence is approximately 11 miles southwest in Suisun City and recorded in 1953 (CDFW 2023). No suitable habitat is present and there are no alkaline soils (Calflora 2023).
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	None/None/2B.2	Marshes and swamps (assorted shallow freshwater)/perennial rhizomatous herb (aquatic)/May–July/984–7,050	Not expected to occur. The site is outside of the species' known elevation range.
Symphyotrichum lentum	Suisun Marsh aster	None/None/1B.2	Marshes and swamps (brackish and freshwater)/perennial rhizomatous herb/(Apr)May–Nov/0–10	Not expected to occur. The nearest occurrence is approximately 5.5 miles south in Vanden and recorded in 1920 (CDFW 2023). No suitable habitat is present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Trifolium amoenum	two-fork clover	FE/None/1B.1	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite)/annual herb/Apr–June/16–1,360	Not expected to occur. There are three historical occurrences approximately 2 miles west and within the project boundary recorded between 1892-1909 (CDFW 2023). There are no recent occurrences within 10 miles of the site (CDFW 2023). No suitable habitat is present and there are no serpentinite soils (Calflora 2023).
Trifolium hydrophilum	saline clover	None/None/1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools/annual herb/Apr–June/0–985	Not expected to occur. The nearest occurrence is approximately 5 miles west near Lagoon Valley and recorded in 1960 (CDFW 2023). No suitable habitat is present.
Tuctoria mucronata	Crampton's tuctoria or Solano grass	FE/SE/1B.1	Valley and foothill grassland (mesic), Vernal pools/annual herb/Apr–Aug/16–35	Not expected to occur. The nearest occurrence is approximately 7 miles south near Creed and recorded in 2010 (CDFW 2023). No suitable habitat is present.
Viburnum ellipticum	oval-leaved viburnum	None/None/2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest/perennial deciduous shrub/May–June/705–4,590	Not expected to occur. The site is outside of the species' known elevation range.

References:

CCH (Consortium of California Herbaria). 2023. CCH2 Portal. Biodiversity data provided by the participants of the Consortium of California Herbaria. Accessed January 20, 2023 at https://www.cch2.org/portal/collections/map/index.php.

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Attachment B

Special-Status Wildlife Species Potential to Occur with the Project Area

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	FT/ST, WL	Annual grassland, valley–foothill hardwood, and valley–foothill riparian habitats; vernal pools, other ephemeral pools, and (uncommonly) along stream courses and man-made pools if predatory fishes are absent	**Low potential to occur.** The nearest occurrence is approximately 4 miles southwest near Hay Road and recorded in 2006 (CDFW 2023). No aquatic or terrestrial habitat is present on site. If present, would be solely as a transient individual moving between other habitat areas.
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	None/SSC	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Not expected to occur.** The project is outside of the species known range. The nearest occurrence is approximately 3 miles west along Ulatis Creek and recorded in 1912 (CDFW 2023). No aquatic or terrestrial habitat is present on site.
Rana draytonii	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	**Not expected to occur.** The project is outside of the species known range. The nearest occurrence is approximately 16 miles southwest near Cordelia Junction and recorded in 2016 (CDFW 2023). No aquatic or terrestrial habitat is present on site.
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry and other thorny vegetation; forages in grasslands, open woodland, and non-orchard agriculture	**Not expected to nest.** The nearest occurrence is approximately 3 miles south near Leisure Town Road and recorded in 2015 (CDFW 2023). No breeding habitat is present (aquatic habitat with appropriate emergent vegetation, or thorny vegetation) is present on site. High potential to forage in agricultural habitat onsite.
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Low potential to nest. The nearest occurrence is approximately 4 miles southeast near Hay Road and recorded in 2017 (CDFW 2023). Nesting habitat is limited to field crops. Moderate potential to forage in agricultural habitat onsite.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Aquila chrysaetos (nesting & wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	**Not expected to nest** due to lack of habitat and proximity of human activity. There are no occurrences within 10 miles of the site (CDFW 2023). **Low potential to forage.** Agricultural habitat suitable for foraging is present.
Asio flammeus (nesting)	short-eared owl	BCC/SSC	Grassland, prairies, dunes, meadows, irrigated lands, and saline and freshwater emergent wetlands	**Moderate potential to occur.** The nearest occurrence is approximately 12 miles south in Grizzly Island and recorded in 1987 (CDFW 2023). Agricultural land provides wintering and foraging habitat.
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	**Moderate potential to occur.** There are two occurrences approximately 1 mile from the site recorded in 2005 and 2017 (CDFW 2023). Suitable agricultural habitat is present for nesting and foraging. Site does not have suitable sized burrows for owls to nest.
Buteo regalis	Ferruginous hawk	None/SSC	Winters and forages in open, dry country, grasslands, open fields, agriculture	**Moderate potential to occur.** The nearest occurrence is 12 miles southwest near Potrero Hills and recorded in 1996 (CDFW 2023). Agricultural habitat is present for wintering and foraging.
Buteo swainsoni (nesting)	Swainson's hawk	None/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	**Not expected to nest.** There are 5 occurrences approximately 1 mile from the site recorded 2001-2011 (CDFW 2023). No suitable tall trees for nesting are present. **High potential to forage** in agricultural habitat onsite.
Charadrius montanus (wintering)	mountain plover	BCC/SSC	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	**Moderate potential to occur.** The nearest occurrence is approximately 9 miles southeast near Creed and recorded in 1991 (CDFW 2023). Short grassland and grain field habitat is present.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Circus hudsonius (nesting)	northern harrier	BCC/SSC	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	**Low potential to nest.** The nearest occurrence is approximately 12.5 miles south near Joyce Island and recorded in 2004 (CDFW 2023). Grain fields are present although a less preferable nesting habitat. **High potential to forage** in agricultural habitat onsite. Species was observed foraging within the adjacent area analyzed in the 2018 EIR.
Coturnicops noveboracensis	yellow rail	BCC/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	**Not expected to occur.** The nearest occurrence is approximately 12 miles southwest near Joyce Island and recorded in 2009 (CDFW 2023). No suitable aquatic marsh habitat is present.
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	**Not expected to nest.** There are two occurrences approximately 2 miles north and recorded in 2001 (CDFW 2023). No suitable nesting trees are present. **High potential to forage** in agricultural habitat onsite.
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	BCC/SSC	Nests and forages in emergent wetlands including woody swamp, brackish marsh, and freshwater marsh	**Not expected to occur.** The nearest occurrence is approximately 10 miles south in Suisun City and recorded in 2004 (CDFW 2023). No suitable habitat is present.
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	**Not expected to occur.** The nearest occurrence is approximately 11 miles northwest in the vicinity of Lake Solano Park and recorded in 1987 (CDFW 2023). No suitable habitat is present.
Lanius ludovicianus	Loggerhead shrike	None/SSC	Nests and forages in open habitats with scattered shrubs, trees, or other perches	**Moderate potential to forage. Low potential to nest.** Open agricultural habitat is suitable for foraging. Trees in the project vicinity provide nesting habitat. There are no occurrences within 20 miles of the site (CDFW 2023).

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	**Not expected to occur.** The nearest occurrence is approximately 9.5 miles southwest near Highway 12 and recorded in 2009 (CDFW 2023). No suitable habitat is present.
Melospiza melodia maxillaris	Suisun song sparrow	None/SSC	Nests and forages in tidal salt and brackish marsh	**Not expected to occur.** The nearest occurrence is approximately 10 miles southwest in Suisun City and recorded in 2004 (CDFW 2023). No suitable habitat is present.
Rallus obsoletus obsoletus	Ridgway's rail	FE/FP, SE	Coastal salt or brackish marshes	**Not expected to occur.** The nearest occurrence is approximately 10 miles southwest near Suisun City and recorded in 1994 (CDFW 2023). No suitable habitat is present.
Fishes				
Acipenser medirostris pop. 1	green sturgeon - southern DPS	FT/None	Spawns in deep pools in large, turbulent, freshwater rivers; adults live in oceanic waters, bays, and estuaries	**Not expected to occur.** No suitable aquatic habitat present.
Hypomesus transpacificus	Delta smelt	FT/SE	Sacramento–San Joaquin Delta; seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay	**Not expected to occur.** No suitable aquatic habitat present.
Pogonichthys macrolepidotus	Sacramento splittail	None/SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes	**Not expected to occur.** No suitable aquatic habitat present.
Spirinchus thaleichthys	longfin smelt	FC/ST	San Francisco Bay Estuary and areas of the Pacific Ocean out to the Farallon Islands. Older juveniles and adults migrate to the ocean, but must return to fresh water for spawning and rearing.	**Not expected to occur.** No suitable aquatic habitat present.
Invertebrates				

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Bombus crotchii	Crotch bumble bee	None/SCE	Open grassland and scrub communities supporting suitable floral resources.	**Low potential to occur.** The nearest occurrence is approximately 5 miles southwest near Lagoon Valley and recorded in 2007 (CDFW 2023). Agricultural fields onsite provide marginal floral resources, if any.
Bombus occidentalis	western bumble bee	None/SCE	Habitat generalists in areas with blooming from spring to autumn. Typically nest underground in rodent burrows in open grasslands.	**Low potential to occur.** The nearest occurrence is approximately 3 miles west in Vacaville and was recorded in 1950 (CDFW 2023). Agricultural fields onsite provide marginal floral resources, if any.
Branchinecta conservatio	Conservancy fairy shrimp	FE/None	Larger, more turbid vernal pools, playa pools	**Not expected to occur.** The nearest occurrence is approximately 5 miles southeast near Hay Road and recorded in 2014 (CDFW 2023). No suitable habitat present.
Branchinecta lynchi	vernal pool fairy shrimp	FT/None	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	**Not expected to occur.** The nearest occurrence is approximately 2.5 miles northwest near Highway 505 and recorded in 1995 (CDFW 2023). No suitable habitat present.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT/None	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus nigra ssp. caerulea)	**Not expected to occur.** No suitable vegetation present.
Elaphrus viridis	Delta green ground beetle	FT/None	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis Air Force Base	**Not expected to occur.** The nearest occurrence is approximately 5.5 miles southeast near Burke Lane and recorded in 1991 (CDFW 2023). No suitable habitat present.
Lepidurus packardi	vernal pool tadpole shrimp	FE/None	Ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales	**Not expected to occur.** The nearest occurrence is approximately 5.5 miles southeast near Burke Lane and recorded in 2014 (CDFW 2023). No suitable habitat present.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Speyeria callippe callippe	callippe silverspot butterfly	FE/None	Native grassland and associated habitats in the San Francisco Bay area	**Not expected to occur.** The nearest occurrence is approximately 18 miles southwest near Pierce and recorded in 2009 (CDFW 2023). No suitable habitat present.
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	FC/None	Wind-protected tree groves with nectar sources and nearby water sources	**Not expected to occur.** The nearest occurrence is approximately 10 miles southwest near Fairfield and recorded in 1979 (CDFW 2023). No suitable habitat present.
Mammals				
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	**Not expected to roost or forage.** The nearest occurrence is approximately 6.5 miles southwest near Highway 80 and recorded in 2011 (CDFW 2023). No suitable roosting or foraging habitat is present.
Reithrodontomys raviventris	salt-marsh harvest mouse	FE/FP, SE	Saline emergent wetlands, preference for pickleweed saline emergent wetlands; also uses adjacent grasslands	**Not expected to occur.** The nearest occurrence is approximately 9 miles southwest in Suisun Marsh and recorded in 2010 (CDFW 2023). No suitable habitat is present.
Sorex ornatus sinuosus	Suisun shrew	None/SSC	Tidal and brackish marsh communities	**Not expected to occur.** The nearest occurrence is approximately 10 miles southwest near Suisun City and recorded in 1952 (CDFW 2023). No suitable habitat is present.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	**Low potential to occur.** The nearest occurrence is approximately 2.5 miles west near the Nut Tree Airport and recorded in 2016. Agricultural habitat is present on site but provides suboptimal habitat due to human disturbance.
Lasiurus frantzii	western red bat	None/SSC	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	**Not expected to roost.** The nearest occurrence is approximately 14 miles south near Grizzly Island and recorded in 1999

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				(CDFW 2023). Low potential to forage. Agricultural habitat is present on site.
Reptiles				
Emys marmorata	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**Not expected to occur.** The nearest occurrence is approximately 2 miles north near Interstate 80 and recorded in 2016. No aquatic or terrestrial habitat is present on site.
Thamnophis gigas	giant garter snake	FT/ST	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	**Low potential to occur**. The nearest occurrence is approximately 9.5 miles east near Swan Road and recorded in 1987 (CDFW 2023). The irrigation ditch along Hawkins Road just outside the project boundary provides marginal habitat although this species is suspected to be extirpated from Solano County.

References:

CDFW. 2023. RareFind 6 and CNDDB in BIOS. California Natural Diversity Database. CDFW, Biogeographic Data Branch. February 2023. BIOS Viewer@CDFW (ca.gov)

Attachment C

Photo Log

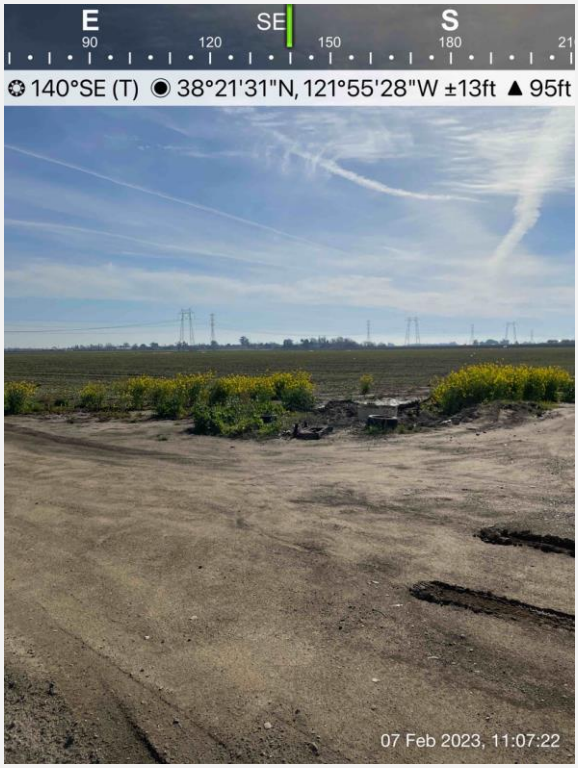

Photo 1. View of northwest corner of site.

Photo 2. View of fallow field from west side of site.

Photo 3. View facing offsite from southwest corner of various weedy plants.

Photo 4. View from the southeast corner of upland agricultural ditches outside the project boundary.

Photo 5. View from southeast corner of upland agricultural ditch outside the project boundary.

Photo 6. View from east boundary of site.

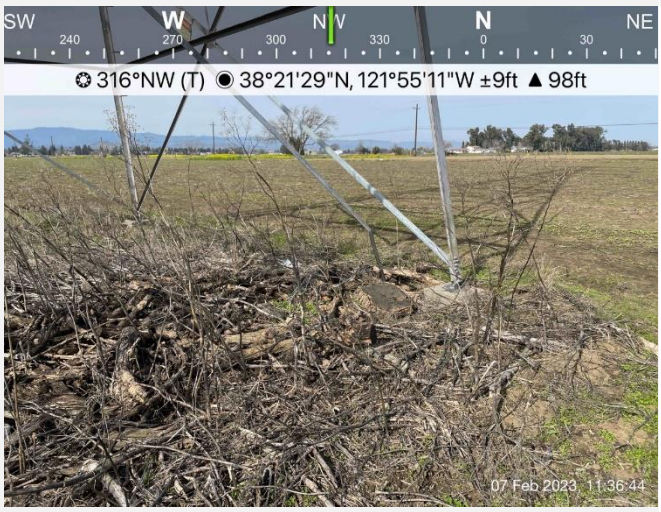

Photo 7. View of woody thatch below electrical tower near northeast corner of site.

Photo 8. View from northeast corner of upland agricultural ditch outside the project boundary.

Photo 9. View of irrigation canal from the northeast corner outside the project boundary.

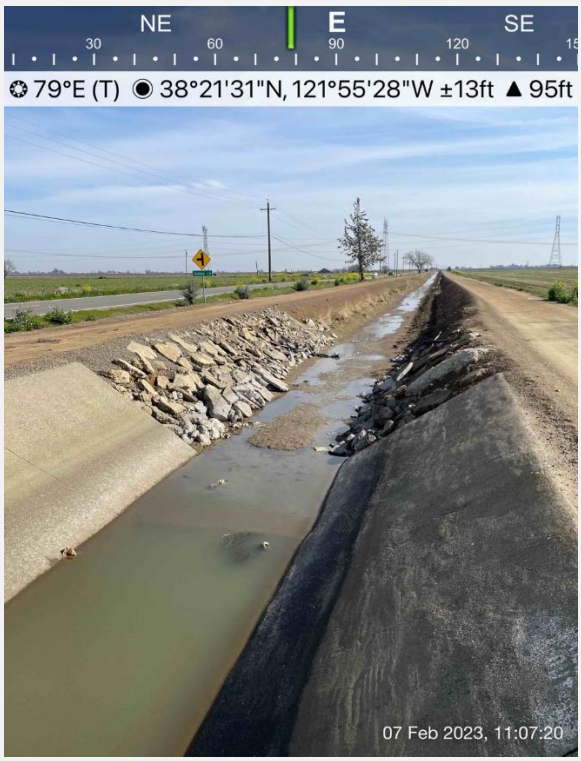

Photo 10. View of irrigation canal from the northwest corner outside the project boundary.