

**Appendix D**  
**Biological Resources Assessment; and**  
**Delineation of Water of the U.S. Report**



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# Biological Resources Assessment

FAIRVIEW AT NORTHGATE  
VALLEJO, SOLANO COUNTY, CALIFORNIA

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**Prepared For:**

Lewis Management Corp.  
9216 Kiefer Blvd.  
Sacramento, CA 95826  
Contact: Jeb Elmore

**WRA Contact:**

Leslie Lazarotti  
Lazarotti@wra-ca.com

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California red-legged frog
CWA	Clean Water Act
EFH	Essential Fish Habitat
ESA	Federal Endangered Species Act
FAC	Facultative plant species
FACW	Facultative wetland plant species
Inventory	CNPS Inventory of Rare and Endangered Plants
NMFS	National Marine Fisheries Service
OBL	Obligate wetland plant species
OWHM	Ordinary High Water Mark
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WRA	WRA, Inc.

## EXECUTIVE SUMMARY

The purpose of this report is to provide an analysis of natural community and special-status species at the Fairview at Northgate project site located in Vallejo, Solano County, California (Study Area). This report is an update to the original biological resource assessment report, prepared in September of 2017. Updates include: (1) modification of the Study Area boundary to include a narrow strip of land east of Admiral Callaghan Lane and removal of the parcel on the west side of Interstate 80;<sup>1</sup> (2) discussion of anthropogenic depressions; and (3) clarification regarding the status of California red-legged frog surveys.

On March 18 and May 3, 2017, WRA, Inc. conducted an assessment of biological resources within the Study Area. The Study Area consists of approximately 52.62 acres of undeveloped land located within a commercially and residentially developed area of the City of Vallejo. While the site has not been developed, unauthorized activities have occurred there, including off-road vehicle usage and temporary camping. Sensitive biological communities observed in the Study Area included approximately 5.02 acres of seasonal wetland swale, 0.08 acre of anthropogenic depressions, and 0.02 acre of perennial stream below the ordinary high water mark (OHWM) (0.05 acre below top-of-bank). If these areas are impacted by the project, permits from the Corps of Engineers, Regional Water Quality Control Board, and, for the perennial stream, from the California Department of Fish and Wildlife in addition to the other two agencies.

Based on a review of relevant resources and the types and condition of biological communities observed at the site, it was determined that one special-status plant species had a moderate potential to occur in the Study Area: coast iris (*Iris longipetala*); however, this species was not observed during surveys and is assumed to be absent from the Study Area. No other special status plants species are expected to occur on the site.

Protocol-level surveys for the federal threatened California red-legged frog (CRLF; *Rana draytonii*) have been completed as of July 12, 2017, and no lifestage of CRLF or CRLF habitat was determined to be present.

Eight special-status wildlife species were determined to have a moderate to high potential to occur within the Study Area. These species are all bird species that may nest on the site and include: white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), loggerhead shrike (*Lanius ludovicianus*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), Samuel's song sparrow (*Melospiza melodia samuelis*), and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*). One special-status wildlife species was observed in the Study Area: Allen's hummingbird (*Selasphorus sasin*). Avoidance measures such as conducting work during non-breeding seasons or conducting preconstruction surveys to avoid harming occupied nests will mitigate for project impacts. None of these species are listed as endangered or threatened under the federal Endangered Species Act or the California Endangered Species Act.

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<sup>1</sup> The report appendices contain some data that pertains to the parcel west of Interstate 80, such as plant species observed in this area.

## 1.0 INTRODUCTION

On March 18 and May 3, 2017, WRA, Inc. (WRA) performed an assessment of biological resources at the Fairview at Northgate project (Project) located in Vallejo, Solano County, California (Study Area, Figure 1). This report describes the results of the site visit, which assessed the Study Area for the (1) potential to support special-status plant or wildlife species and (2) presence of other sensitive biological resources protected by local, state, or federal laws and regulations. The regulatory framework of this biological resources assessment is provided in Section 2.0 of this report. The methods used in the assessment are described in Section 3.0, and the results of the site visit are presented in Section 4.0. A summary of the sensitive biological resources observed or with potential to occur at the site is provided in Section 5.0. Section 5.0 also includes a summary of permits that may be necessary for a proposed project as well as recommended avoidance and minimization measures to avoid impacts to sensitive biological resources on the site.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. A special-status plant survey was also conducted simultaneously with the biological resources assessment, and the results of the survey are incorporated into this report. Protocol-level surveys for the federal threatened California red-legged frog (CRLF; *Rana draytonii*) have been completed as of July 12, 2017, and no lifestage of CRLF or CRLF habitat was determined to be present. The results of these surveys will be presented in a separate report.

For special-status wildlife species other than CRLF, the biological resources assessment presents information on any species that were seen on the site or may have the potential to occur based on proximity to the site of other occurrences or the presence of suitable habitat. Recommendations on any additional surveys necessary based on the findings for this site are provided in Section 5.0. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

## 2.0 REGULATORY BACKGROUND

The following section describes the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential Project impacts.

### 2.1 Special-Status Species

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or the California Endangered Species Act. These acts afford protection to both listed and proposed species. In addition, the California Department of Fish and Wildlife (CDFW; formerly the California Department of Fish and Game) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species listed in the California Native Plant Society (CNPS) Rare

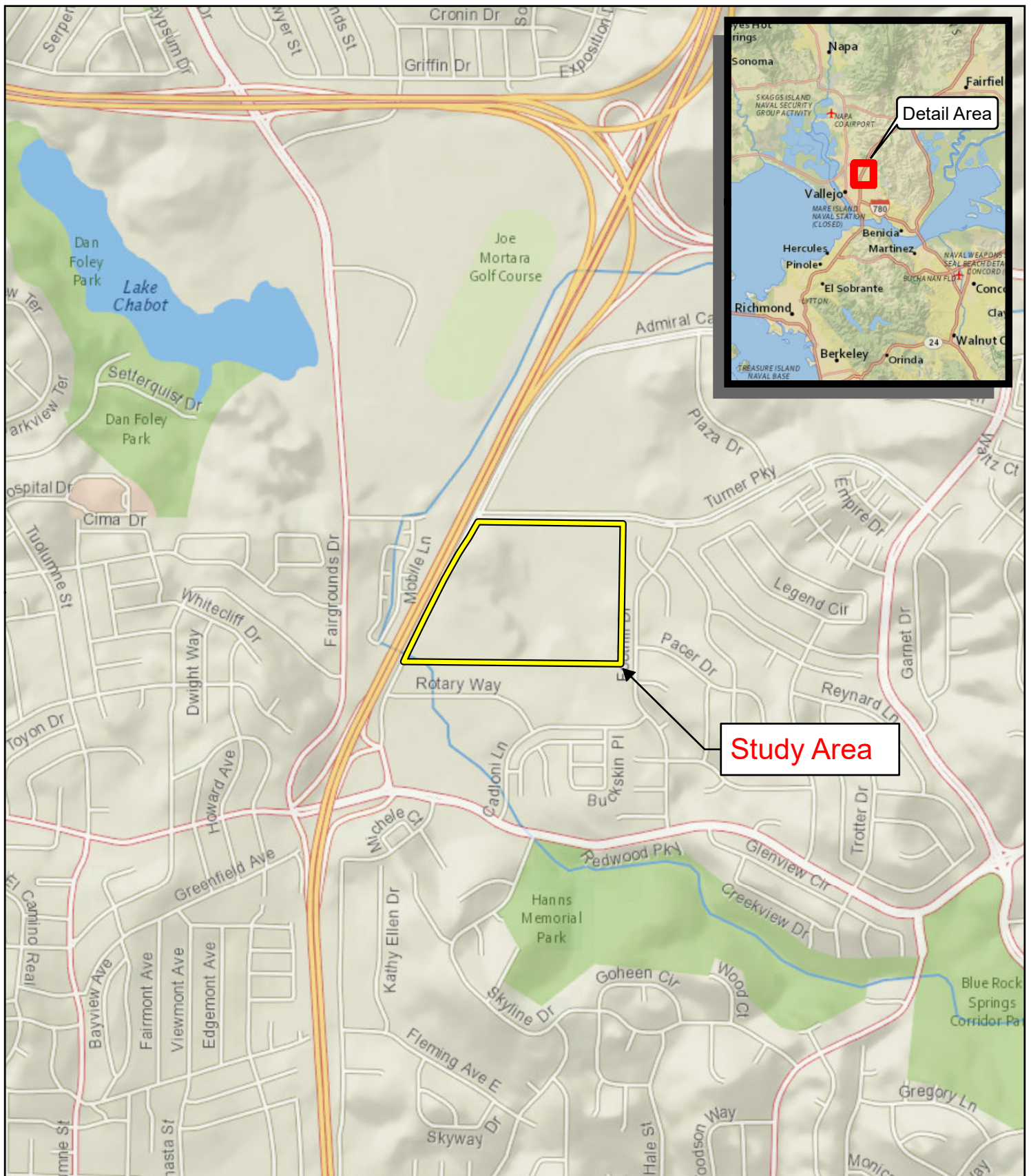


Figure 1. Regional Location Map

Fairview at Northgate  
Solano County, California

0 0.2 0.4  
Miles



Map Prepared Date: 1/16/2018  
Map Prepared By: czumwalt  
Base Source: Esri Streaming - National Geographic  
Data Source(s): WRA

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and Endangered Plant Inventory (Inventory; CNPS 2017a) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under the CEQA. Rank 4 species are afforded reduced to no protection under the CEQA but are included in this analysis for completeness. A description of the CNPS Ranks and associated threat codes is provided below in Table 1.

Table 1. Description of CNPS ranks and threat codes

<b>California Rare Plant Ranks (formerly known as CNPS Lists)</b>	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
<b>Threat Ranks</b>	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

## 2.2 Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects that they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA "jeopardy standard". However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

## 2.3 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act (CWA); state regulations such as the Porter-Cologne Act, the California Fish and Game Code, and the CEQA; or local ordinances and policies such as city or county Tree Ordinances, Special Habitat Management Areas, General Plans, and Habitat Conservation Plans.

## Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the CWA. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Supplement* (Arid West Supplement; Corps 2008), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as “other waters” and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

## Waters of the State

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

## Streams, Lakes, and Riparian Habitat

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



### Essential Fish Habitat

Essential Fish Habitat (EFH) is regulated through the National Marine Fisheries Service (NMFS), a division of the National Oceanic and Atmospheric Administration. Protection of EFH is mandated through changes implemented in 1996 to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to protect the loss of habitat necessary to maintain sustainable fisheries in the United States. The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" [16 USC 1802(10)]. The NMFS further defines essential fish habitat as areas that "contain habitat essential to the long-term survival and health of our nation's fisheries" (NMFS 2007). EFH can include the water column, certain bottom types such as sandy or rocky bottoms, vegetation such as eelgrass or kelp, or structurally complex coral or oyster reefs. Under regulatory guidelines issued by the NMFS, any federal agency that authorizes, funds, or undertakes action that may affect EFH is required to consult with the NMFS (50 CFR 600.920).

### Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. The CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2017). Sensitive plant communities are also identified by the CDFW (CDFG 2010) and CNPS (CNPS 2017b). Vegetation alliances in the CNDDDB are ranked 1 through 5 based on NatureServe's (2017) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or the USFWS must be considered and evaluated under the CEQA. Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

## **3.0 METHODS**

On March 18 and May 3, 2017, the Study Area was traversed on foot to determine (1) the biological communities present within the Study Area, (2) whether existing conditions at the site provide potentially suitable habitat for any special-status plant or wildlife species, and (3) whether sensitive biological communities are present. All plant and wildlife species encountered were recorded, and are summarized in Appendix A. Plant nomenclature follows the Jepson Flora Project (2017), except where noted. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities.

### **3.1 Biological Communities**

Prior to the site visit, Soil Survey data for Solano County (CSRL 2017) were examined to determine whether any unique soil types capable of supporting sensitive plant communities or aquatic features have been mapped in the Study Area. Additional sources, such as the U.S. Geological Survey (USGS) 7.5-minute map for the Cordelia quadrangle (USGS 2015) and available aerial imagery were also reviewed to determine the potential for sensitive biological communities to occur in the Study Area. Biological communities were primarily classified based on existing descriptions found in *A Manual of California Vegetation, Online Edition* (CNPS 2017b).

However, in some cases it was necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by the CEQA and other applicable laws and regulations.

### *3.1.1 Non-Sensitive Biological Communities*

Non-sensitive biological communities are those communities that are not afforded special protection under the CEQA, or other state, federal, or local laws, regulations, or ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species. Non-sensitive biological communities observed in the Study Area are described in Section 4.1.1, below.

### *3.1.2 Sensitive Biological Communities*

Sensitive biological communities are defined as those communities that are afforded special protection under the CEQA or other applicable federal, state, or local laws, regulations or ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below. Descriptions of sensitive biological communities observed in the Study Area are provided in Section 4.1.2

### Wetlands and Non-Wetland Waters

A jurisdictional wetland delineation following the methods outlined in the Corps Manual (Environmental Laboratory 1987) and the Arid West Supplement (Corps 2008) was conducted by qualified WRA biologists concurrent with this biological resources assessment. The Study Area was surveyed to determine whether any wetlands or non-wetland waters potentially subject to jurisdiction by the Corps, the RWQCB, or the CDFW were present. The delineation was based on the presence of hydrophytic vegetation and indicators or hydric soils or wetland hydrology. The determination of hydrophytic vegetation is based on the dominance of plant species with a wetland indicator status<sup>1</sup> of OBL, FACW, or FAC as given on the National Wetlands Plant List (Lichvar et al. 2016). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, algal matting, and oxidized root channels, or indirect evidence (secondary indicators), such as a water table within two feet of the soil surface during the dry season. Indicators of hydric soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the *Field Indicators of Hydric Soils in the United States* (USDA 2010).

### Other Sensitive Biological Communities

The Study Area was evaluated for the presence of other sensitive biological communities, including sensitive plant communities recognized by CDFW. Prior to the site visit, aerial imagery (Google Earth 2017, NETR 2017), Soil Survey data (CSRL 2017), and *A Manual of California Vegetation, Online Edition* (CNPS 2017b) were reviewed to assess the potential for sensitive biological communities to occur in the Study Area. All vegetation alliances within the Study Area

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<sup>1</sup> OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

with a ranking of 1 through 3 were considered sensitive biological communities. Sensitive biological communities identified in the Study Area are described in Section 4.1.2, below.

## **3.2 Special-Status Species**

### *3.2.1 Literature Review*

The potential for special-status plant and wildlife species to occur in the Study Area was evaluated by first determining which special-status species have been documented from within the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the USGS 7.5-minute maps for the Cordelia quadrangle and eight surrounding quadrangles (USGS a-i). The following sources were reviewed to determine which special-status plant and wildlife species have been documented from the referenced quadrangles:

- CNDDDB records (CDFW 2017)
- USFWS Information for Planning and Conservation Species (USFWS 2017)
- CDFW California Wildlife Habitat Relationships database species accounts and range maps (CDFW 2014)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- California Bird Species of Special Concern (Shuford and Gardali 2008)
- CNPS Inventory records (CNPS 2017a)
- Draft update of the Terrestrial Mammal Species of Special Concern in California (Bolster 1998)
- eBird Online Bird Occurrence Database (eBird 2017)
- Western Bat Working Group species accounts (WBWG 2017).
- Breeding Bird Atlas of Solano County (Rippey 2014).
- Xerces Society for Invertebrate Conservation Species Accounts (Xerces 2017)

### *3.2.2 Site Assessment*

Following the database and literature review, a site visit was made to the Study Area to identify the biological communities present and to assess their condition. Habitat conditions observed in the Study Area were used to evaluate the potential for special-status plant or wildlife species to occur there. This assessment based on conditions observed at the site, the results of the database and literature review, and the professional expertise of the investigating qualified biologists. The potential for each special-status species to occur in the Study Area was ranked based on the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species was observed during the site visit or has been recently recorded from the site.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity of the Study Area. In general, the site visit does not constitute a protocol-level survey for special-status species and is not intended to determine the actual presence or absence of a species; however, if a special-status species was observed during the site visit, its presence was recorded and is discussed in Section 4.2, below. That said, a special-status plant survey was conducted simultaneously with biological resources assessment, and the results of the survey are incorporated into this report and discussed in Section 4.2, below. Protocol-level surveys for the federal threatened California red-legged frog have been completed as of July 12, 2017, and no lifestage of CRLF or CRLF habitat was determined to be present.

In cases where little information is known about occurrences or habitat requirements of special-status species known to occur in the vicinity, the species evaluation was based on the best professional judgment of qualified WRA biologists with experience working with the species or habitats in question. For some species, a site assessment at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications required by regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described below in Section 5.0.

## 4.0 RESULTS

The following sections present the results of the biological resources assessment within the Study Area. Plant and wildlife species observed in the Study Area during the site visit are listed in Appendix A. A table summarizing the potential for special-status plant and wildlife species to occur in the Study Area is included as Appendix B. Representative photographs of the Study Area are provided in Appendix C.

The Study Area comprises 52.62 acres of disturbed undeveloped land located within a commercially and residentially developed portion of the City of Vallejo, approximately 2.50 miles northeast of downtown Vallejo. The Study Area is located east of Interstate 80 and Admiral Callaghan Lane and southeast of the intersection of Admiral Callaghan Lane and Turner Parkway (Study Area). The Study Area has been essentially undeveloped since at least 1948 to the present day (Google Earth 2017, NETR 2017). However, the area has been used extensively and without authorization by off-road vehicles which resulted in an extensive network of vehicle paths and tire ruts throughout the Study Area. Although the site is now fenced along the northern edge on Turner Parkway, unauthorized access can still occur on the western edge of the property,

and the site is illegally used by people for temporary campsites. In addition, ground disturbance, caused by excavation and other earth-moving activities occurred in the northern portion of the Study Area. As a result of this construction activity, several small depressions were created in the property.

The majority of the Study Area is characterized by non-native annual grassland. Plant species observed in the Study Area are predominantly non-native annual grasses and herbaceous species typical of disturbed sites. A seasonal wetland swale complex is present at the base of the hills within the Study Area. The Study Area also contains a small reach of Blue Rock Springs Creek, a perennial stream, which runs east to west in southwestern corner of the Study Area.

#### 4.1 Biological Communities








Non-sensitive biological communities observed in the Study Area included non-native annual grassland and coyote brush scrub. Additionally, three sensitive biological communities were observed in the Study Area: perennial stream, seasonal wetland swale, and anthropogenic depressions. Descriptions for each biological community are contained in the following sections. Biological communities within the Study Area are summarized in Table 2 and shown in Figure 2.

Table 2. Summary of biological communities in the Study Area

Community Type	Area (acres)
<b>Non-sensitive biological communities</b>	
Non-Native Annual Grassland	45.67
Coyote Brush Scrub	1.83
<b>Sensitive biological communities</b>	
Perennial Stream	0.02 (0.05 below top-of-bank)
Seasonal Wetland Swale	5.02
Anthropogenic Depression	0.08
<b>Total Study Area Size</b>	<b>52.62</b>

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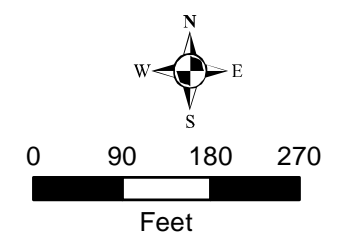


-  Project Area (52.62 ac.)
- Biological Community**
-  Anthropogenic Depression (0.08 ac.)
-  Seasonal Wetland Swale (5.02 ac.)
-  Perennial Stream (0.02 ac., 85 LF)
-  Perennial Stream Below TOB (0.05 ac.)
-  Coyote Brush Scrub (1.83 ac.)
-  Non-native Annual Grassland (45.67 ac.)

Fairview at  
Northgate

Solano County,  
California

Figure 2.  
Biological  
Communities within the  
Study Area



Map Prepared Date: 5/15/2018  
Map Prepared By: czumwalt  
Base Source: USGS EROS Ortho 1ft.  
Data Source(s): WRA



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#### 4.1.1 Non-Sensitive Biological Communities

**Non-Native Annual Grassland. No Rank.** Although not described in the literature, non-native annual grassland occupies the majority of the Study Area. This community was located within drier areas on all aspects and slopes. The dominant species observed within this community were Italian rye grass (*Festuca perennis*; FAC), ripgut brome (*Bromus diandrus*; NL), soft chess (*Bromus hordeaceus*; FACU), seaside barely (*Hordeum marinum*; FAC), foxtail barely (*Hordeum murinum*; FACU), and slender oat grass (*Avena barbata*; NL). Indian teasel (*Dipsacus sativus*; NL), sweet fennel (*Foeniculum vulgare*; NL), curly dock (*Rumex crispus*; FAC), spring vetch (*Vicia sativa*; FACU), and bristly ox tongue (*Helminthotheca echioides*; FAC) were observed mixed within the stands of annual grasses. Very few native species were observed within the non-native annual grasslands, and they occurred at extremely low cover. Native species observed included narrow leaf mule ears (*Wyethia angustifolia*; FACU) and white brodiaea (*Triteleia hyacinthina*; FAC).

**Coyote brush scrub (*Baccharis pilularis* Shrubland Alliance). Rank: G5 S5.** Coyote brush scrub is known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This vegetation alliance is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay. These scrubs are located primarily on mid- to high-slopes on north-facing aspects, predominantly underlain by rocky loam substrate (CNPS 2017b)

Within the Study Area, the dominant species in the shrub layer is coyote brush, with isolated individuals of toyon (*Heteromeles arbutifolia*) and cherry plum (*Prunus cerasifera*). Herbaceous cover is dominated by non-native herbs including soft chess, Italian rye grass, ripgut brome, foxtail barely, and slender oat grass. In lesser abundance, sweet fennel, purple vetch (*Vicia benghalensis*), short podded mustard (*Hirschfeldia incana*), Mediterranean linseed (*Bellardia trixago*), purple salsify (*Tragopogon porrifolius*) were present.

#### 4.1.2 Sensitive Biological Communities

**Perennial Stream.** Perennial stream within the Study Area is comprised of a small (approximately 85 linear feet) portion of Blue Rock Springs Creek, which is located in the southwestern corner of the Study Area. Perennial streams are considered sensitive under the CEQA and are regulated by the Corps, RWQCB, and CDFW. The primary source of water for the perennial stream is stormwater and other runoff from the surrounding developed lands. The stream enters the Study Area from the south via a culvert that runs under an automobile dealership. It exits the Study Area to the west via a culvert under Admiral Callaghan Lane. Sparse vegetation is present along the fringes of the creek below OHWM, but the feature is generally unvegetated. Indicators of OHWM are present, including a clear bed and bank. The perennial stream in the Study Area is assumed to drain into receiving waters that are jurisdictional waters of the U.S. and therefore is expected to be considered jurisdictional under Section 404 of the CWA. Areas below the top of bank are expected to be considered jurisdictional by CDFW.

**Seasonal Wetland Swale.** A seasonal wetland swale is present in the low, flat areas at the base of the hills within the Study Area. The wetland consists of a number of connected swales that flow into the eastern portion of the property from the surrounding urbanized areas and then flow off the property through a culvert to the north. The wetlands are characterized by hydrophytic vegetation, but they have been extensively disturbed by a still-visible network of off-road vehicle

pathways and tire ruts resulting from unauthorized off-road vehicle activity. The wettest portions of the swales are generally at their upper ends, near the southern and eastern Study Area boundary, where they enter from the surrounding residential developments and are dominated by obligate and facultative perennial wetland species, including cattails, bulrushes (*Bolboschoenus* sp.), and iris-leaved rush (*Juncus xiphioides*). Drier portions of the wetland swale are dominated by annual facultative and facultative wetland species, including salt grass (*Distichlis spicata*), Italian ryegrass, curly dock, rabbit's foot grass, bristly ox-tongue, and creeping wildrye (*Elymus triticoides*). Occasional red willows (*Salix laevigata*) are present, particularly along the southern boundary of the Study Area, but the wetlands are generally treeless.

Within the Study Area, seasonal wetland swales were mapped primarily based on vegetation signatures observed on foot during the field visit in May 2017. Seasonal wetland swales in the Study Area met the three wetland criteria and are assumed to drain into receiving waters that are jurisdictional waters of the U.S. and therefore are expected to be considered jurisdictional under Section 404 of the CWA.

### **Anthropogenic Depression**

Within non-native annual grassland, several anthropogenic depressions and tire ruts caused by unauthorized off-road vehicle and excavation activity were observed in the north-central and west portions of the Study Area. The depressions are seasonally inundated and are typically characterized by annual species such as seaside barley, Italian ryegrass, rabbit's foot grass (*Polypogon monspeliensis*), and waxy manna grass (*Glyceria declinata*), though some depressions support perennial species such as iris-leaved rush and cattails (*Typha* sp.). Although the excavations and tire ruts are manmade within otherwise upland areas, anthropogenic depressions in the Study Area met the three wetland criteria and are assumed to drain into receiving waters that are jurisdictional waters of the U.S. They are therefore expected to be considered jurisdictional under Section 404 of the CWA.

## **4.2 Special-Status Species**

### **4.2.1 Special-Status Plants**

Based upon a review of the resources and databases listed in Section 3.2.1, it was determined that 67 special-status plant species have been documented within the vicinity of the Study Area. Special-status plant species that have been documented in the CNDDDB within a 5-mile radius of the Study Area are depicted in Figure 3. Appendix B summarizes the potential for each of these species to occur in the Study Area. One special-status plant species was determined to have a moderate potential to occur within the Study Area.

Of the 67 special-status plant species listed in Appendix B, it was determined that 37 have no potential to occur at the site, 29 are unlikely to occur, and one has moderate potential to occur.

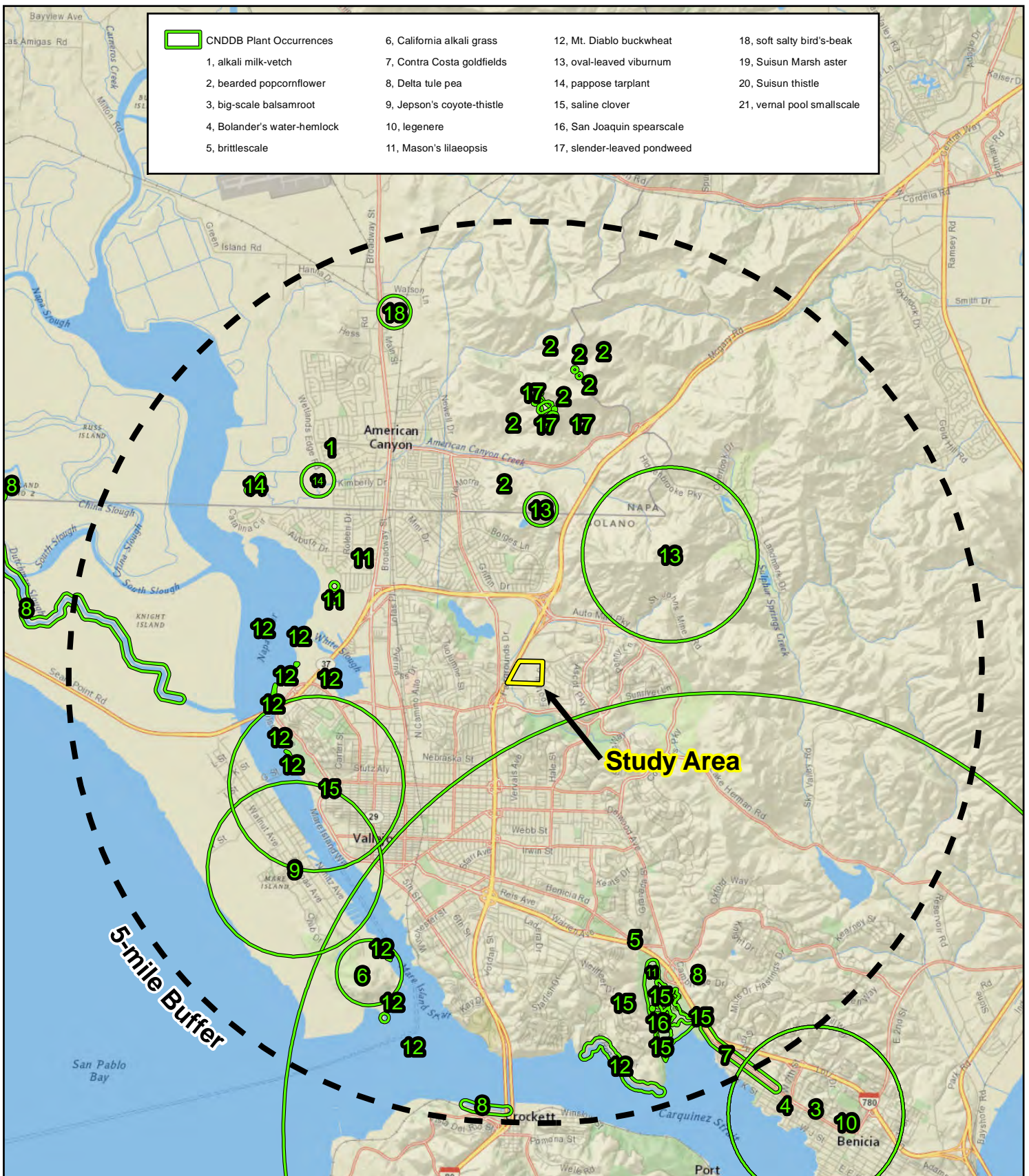
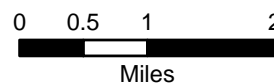


Figure 3. CNDDDB Occurrence Records of Special-Status Plant Species within 5 Miles of the Study Area

Fairview at Northgate  
Solano County, California



Map Prepared Date: 1/3/2019  
Map Prepared By: czumwalt  
Base Source: National Geographic  
Data Source(s): CNDDDB May 2017

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The 37 species that have no potential to occur require habitat elements that are absent from the site such as tidal marshes, chaparral, vernal pools, chenopod scrub, and serpentine substrate.

For the 29 species determined to be unlikely to occur at the site, some elements of suitable habitat may be present (e.g., grassland, seasonal wetland, coastal scrub); however, because of the high disturbance levels surrounding the site and the generally degraded condition of habitat, these species are unlikely to occur within the Study Area.

#### Species with Potential to Occur in the Study Area

One special-status species was determined to have a moderate potential to occur in the Study Area based on distribution and on-site habitat: coast iris (*Iris longipetala*). The potential for this species to occur in the Study Area and the results of the protocol-level plant survey for this species are discussed below.

**Coast iris (*Iris longipetala*). Rank 4.2. Moderate Potential. Not Observed.** Coast iris is a perennial rhizomatous herb in the iris family (Iridaceae). It typically occurs in mesic coastal prairie, lower montane coniferous forest, and meadows and seeps habitats at elevations ranging from 0 to 1,970 feet (0 to 600 meters). Typically observed associated species include coast redwood (*Sequoia sempervirens*), California bay (*Umbellularia californica*), rattlesnake grass (*Briza maxima*), slender wild oat, soft chess, and purple needlegrass (*Stipa pulchra*; CCH 2017).

The nearest documented occurrence of this species is approximately 6.5 miles northeast of the Study Area on a grassy slope in a somewhat disturbed area (CCH 2017). Coast iris has a moderate potential to occur in the non-native annual grassland and coyote brush scrub communities within the Study Area due to the relatively close proximity of the nearest occurrence and suitable grassland and open scrub habitats.

During the May site visit, meandering transects were walked throughout all grassland and coyote brush scrub habitat within the Study Area, and coast iris was not observed. The only iris species observed within the Study Area was a non-native ornamental iris species located at the edge off mixed woodland habitat. The site visit occurred during the published blooming period of coast iris, and this species was observed at a reference site prior to the site visit. As such, coast iris is assumed to be absent from the Study Area.

#### *4.2.2 Special-Status Wildlife*

Based upon a review of the resources and databases listed in Section 3.2.1, it was determined that 64 special-status wildlife species have been documented within the vicinity of the Study Area. Special-status wildlife species documented in the CNDDb from within 5 miles of the Study Area are shown in Figure 4. Appendix B summarizes the potential for each of these species to occur in the Study Area. Eight special-status wildlife species were determined to have a moderate to high potential to occur within the Study Area, and one special-status species has been observed within the Study Area during WRA site visits.

Of the 64 special-status wildlife species listed in Appendix A, it was determined that 36 have no potential to occur at the site, 19 are unlikely to occur, and eight have moderate potential to occur. One special-status species was observed within the Study Area during WRA site visits. The 34 species that have no potential to occur require habitat elements that are absent from the site such as tidal marshes, chaparral, streams connected to Bay waters that would allow for fish passage, dense riparian vegetation, large areas of open grasslands, woodlands, forests, sandy

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beaches, salt ponds, vernal pools, or alkali flats. For the 21 species determined to be unlikely to occur at the site, some elements of suitable habitat may be present (e.g., freshwater marsh); however, the high disturbance levels surrounding the site, the generally degraded condition of habitat, and lack of connectivity preclude their presence and/or inhabitation of the site..

#### Species with Potential to Occur in the Study Area or Documented as Present

Eight special-status bird species were determined to have a moderate or high potential to occur and nest within or immediately adjacent to the Study Area: white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), loggerhead shrike (*Lanius ludovicianus*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), Samuel's song sparrow (*Melospiza melodia samuelis*), and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*). One special-status bird species, Allen's hummingbird (*Selasphorus sasin*), was observed within the Study Area during WRA site visits, and also may nest on the site. These species and their potential to occur in the Study Area are discussed in greater detail below.

##### **White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential.**

The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. The Study Area contains open grassland habitats suitable for foraging for this species. Large bushes and trees within the Study Area may also support nesting, although the Study Area is surrounded by development and thus the potential for nesting may be reduced. This species has not yet been observed within the Study Area.

##### **Northern harrier (*Circus cyaneus*). CDFW Species of Special Concern. Moderate Potential.**

The northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates. The Study Area contains open grasslands mixed with seasonal wetlands, which provide foraging habitat for this species. Additionally, this species may nest in dense upland vegetation on the site, although regular mowing may reduce this potential. This species has not yet been observed within the Study Area.

##### **Nuttall's woodpecker (*Picoides nuttallii*). USFWS Bird of Conservation Concern. Moderate Potential.**

Nuttall's Woodpecker, common in much of its range, is a year-round resident throughout most of California west of the Sierra Nevada. Typical habitat is oak or mixed woodland, and riparian areas (Lowther 2000). Nesting occurs in tree cavities, principally those of oaks and larger riparian trees. Nuttall's woodpecker also occurs in older residential settings and orchards where trees provide suitable foraging and nesting habitat. This species forages on a variety of arboreal invertebrates. This species is relatively common, even in developed areas, and the southern section of the Study Area contains oaks and other trees that may contain cavities suitable for nesting. This species has not yet been observed within the Study Area.

**Oak titmouse (*Baeolophus inornatus*), USFWS Bird of Conservation Concern. Moderate Potential.** This relatively common species is year-round resident throughout much of California including most of the coastal slope, the Central Valley and the western Sierra Nevada foothills. In addition, the species may also occur in residential settings where landscaping provides foraging and nesting habitat. Its primary habitat is woodland dominated by oaks. Local populations have adapted to woodlands of pines and/or junipers in some areas (Cicero 2000). The oak titmouse nests in tree cavities, usually natural cavities or those excavated by woodpeckers, though they may partially excavate their own (Cicero 2000). Seeds and arboreal invertebrates make up the birds' diet. This species is relatively common, even in developed areas, and the southern section of the Study Area contains oaks and other trees that may contain cavities suitable for nesting. This species has not yet been observed within the Study Area.

**Loggerhead shrike (*Lanius ludovicianus*), CDFW Species of Special Concern, USFWS Bird of Conservation Concern. Moderate Potential.** The loggerhead shrike is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Nests in trees and large shrubs; nests are usually placed three to ten feet off the ground (Shuford and Gardali 2008). The Study Area contains suitable foraging habitat for the species, and patches of dense trees and shrubs may be suitable for nesting. This species has not yet been observed within the Study Area.

**Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*). CDFW Species of Special Concern. Moderate Potential.** This subspecies of the common and widespread savannah sparrow is a year-round resident of the coastal California fog belt. It typically occupies upper tidally-influenced habitats, often found where wetland communities merge into grassland. Nesting occurs in vegetation on or near the ground, including along roads, levees, and canals (Shuford and Gardali 2008). Like most sparrows, Bryant's consumes primarily invertebrates and vegetable matter (e.g., seeds). The Study Area is within this subspecies' range and contains grasslands near wetlands that may support foraging and nesting for this subspecies. This species has not yet been observed within the Study Area.

**Samuels song sparrow (*Melospiza melodia samuelis*). CDFW Species of Special Concern, USFWS Bird of Conservation Concern. Moderate Potential.** Also known as the San Pablo song sparrow, this subspecies of the common and widespread song sparrow is endemic to tidal and semi-tidal marshes of San Pablo Bay and northern San Francisco Bay. The essential habitat requirement is dense, taller emergent and herbaceous vegetation, particularly in the upper marsh plain; high-quality habitat tends to include woody shrubs in the upper marsh and adjacent transitional areas (Shuford and Gardali 2008). Nests are placed in dense vegetative cover, and invertebrates compose most of the diet. The Study Area is within this subspecies' home range, and contains wetland vegetation that may support foraging and nesting for this subspecies, although it is not the primary salt marsh habitat. This species has not yet been observed within the Study Area.

**San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuosa*), USFWS Bird of Conservation Concern, CDFW Species of Special Concern. Moderate Potential.** This subspecies of the common yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, brackish marshes, and saltwater marshes. Their breeding range extends from

Tomales Bay in the north, Carquinez Strait to the east, and Santa Cruz County to the south. This species requires thick, continuous cover such as tall grasses, tule patches, or riparian vegetation down to the water surface for foraging and prefers willows for nesting (Shuford and Gardali 2008). The Study Area is within this subspecies' range and contains emergent dense wetland vegetation suitable for foraging and nesting. This species has not yet been observed within the Study Area.

**Allen's hummingbird (*Selasphorus sasin*). USFWS Bird of Conservation Concern.**

**Present.** Allen's hummingbird, common in many portions of its range, is a summer resident along the majority of California's coast and a year-round resident in portions of coastal southern California and the Channel Islands. Breeding occurs in association with the coastal fog belt, and typical habitats used include coastal scrub, riparian, woodland and forest edges, and eucalyptus and cypress groves (Mitchell 2000). It feeds on nectar, as well as insects and spiders. One individual was observed in the Study Area during a WRA survey in March 2017. This species breeds in Solano County (Rippey et al. 2014); and the Study Area contains dense vegetation to support nesting along its southern perimeter. This species has not yet been observed within the Study Area.

**California Red-legged Frog**

CRLF is listed as Threatened under the ESA and is a California Species of Special Concern. CRLF is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. CRLF can be found during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds.

CRLF is known from the open ranchlands to the north and east of the Study Area. One occurrence of CRLF has been documented approximately 0.9 miles northeast of the Study Area (CDFW 2017), opposite a large commercial shopping center, residential development, and several major arterial roads. CRLF has not been detected, nor is expected to occur within the Study Area. A CRLF survey conducted by Olberding Environmental in June of 2016 did not detect any CRLF within the Study Area, and WRA completed protocol-level surveys per USFWS guidance, and no lifestage of CRLF were detected. The results of the protocol-level surveys will be prepared as a standalone report.

In addition to these surveys, the Study Area does not contain any habitat capable of supporting CRLF, and the site is surrounded by complete barriers to dispersal, therefore CRLF is unlikely to occur. The site supports several acres of seasonal wetland swale that results from non-point source storm run-off from surrounding residential and commercial developments. The Study Area contains a small (85 feet) day-lighted section of Blue Rock Springs Creek in the far southwestern corner. CRLF are not known to occur in this creek and is not hydrologically connected to any known CRLF aquatic habitats. Finally, this section of creek was sampled for CRLF environmental DNA (eDNA) on May 31, 2017. Based on the laboratory analysis of these samples, CRLF was determined to be absent upstream and downstream of the Study Area. The 2016 CRLF survey noted that site conditions were dry in June of that year (Olberding 2016). Furthermore, in 2017, a year where precipitation exceeded 150 percent of average, the wetlands features were observed to be completely dry in May, when CRLF young would still dependent on water prior to

metamorphosis. Therefore, there are no wetlands within the site that can support CRLF habitation.

No dispersal corridors are present that would allow CRLF to immigrate or emigrate from Study Area. The Study Area is bordered by Admiral Callaghan Lane and Interstate 80. The north side is bordered by Gateway Plaza. The southern edge is bordered by an apartment complex and a commercial development. All of these features represent complete barriers to dispersal (USFWS 2010) and prevent ingress or egress to the Study Area. Because the site lacks aquatic habitat, even in a very wet year, and there is no potential for overland dispersal, and the species appears to be absent from the site, CRLF are not expected to occur within the Study Area.

#### Critical Habitat and Essential Fish Habitat

The Study Area does not contain designated Critical Habitat for any listed species. The Study Area is also not connected to a natural watercourse and thus, has no potential to impact migratory fish or other special-status fish species, nor does the Study Area contain Essential Fish Habitat. Blue Rock Springs Creek crosses the southwest boundary of the Study Area, subsequently undergrounnds downstream, and is thus not accessible by in migrating special-status fish.

## **5.0 SUMMARY AND RECOMMENDATIONS**

Three sensitive biological communities were identified within the Study Area. One special-status plant species was determined to have a moderate potential to occur within the Study Area, but it was not observed during the May 2017 survey. Eight special-status wildlife species were determined to have a moderate or high potential to occur within the Study Area, and one special-status bird species was observed within the Study Area. The following sections discuss potential agency consultation requirements to implement the proposed Fairview at Vallejo Project (Project).

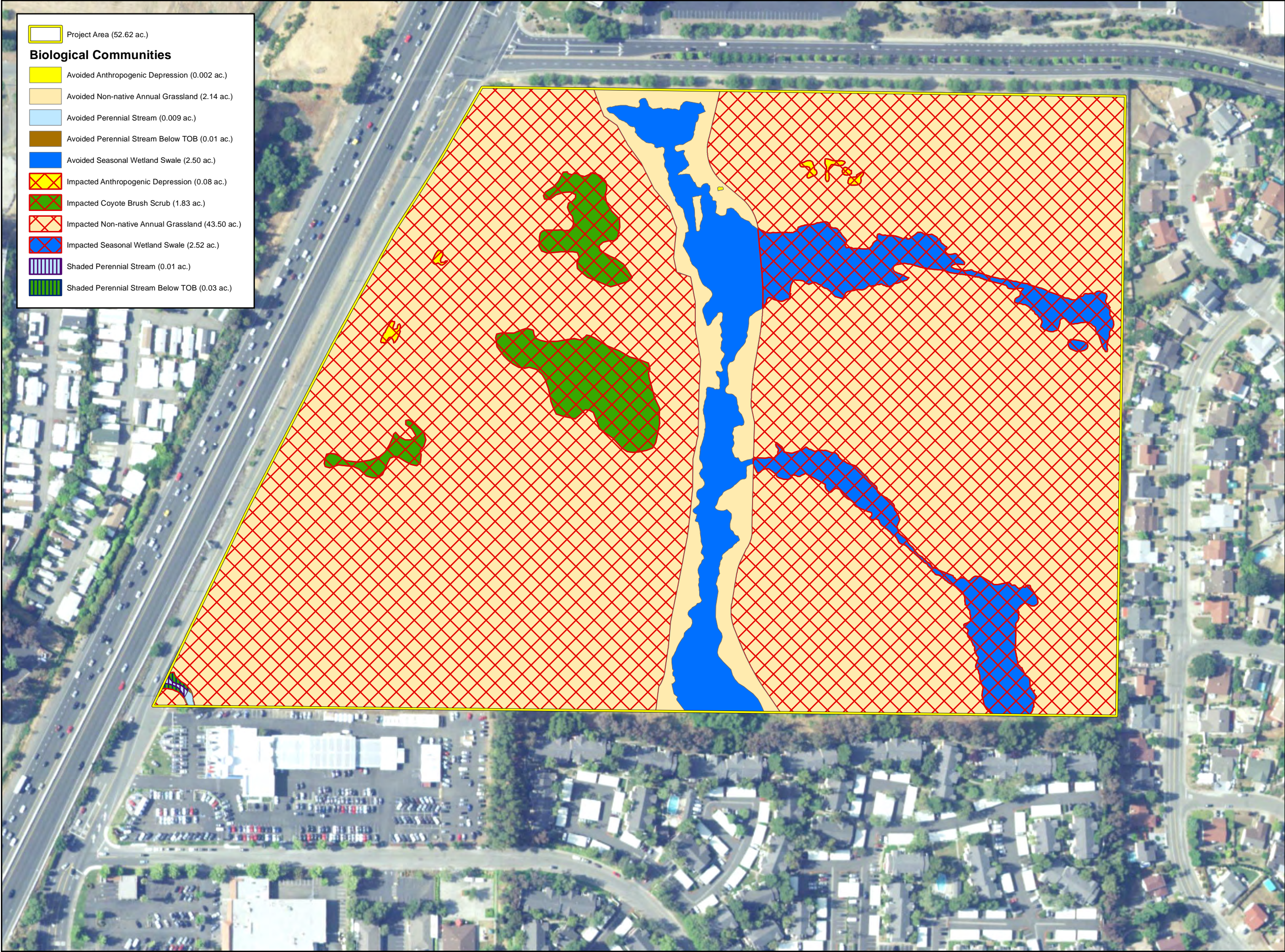
### **5.1 Biological Communities**

The Study Area contains three sensitive biological communities including perennial stream, anthropogenic depressions, and seasonal wetland swales. Project activity will impact 2.52 acres of seasonal wetland swale and 0.08 acre of anthropogenic depression (Figure 5). The Project will also result in shading to 0.01 acre of perennial stream below the OHWM (0.03 acre below top of bank) (Figure 5). Wetland swales and anthropogenic depressions are within the jurisdiction of the Corps under Section 404 of the CWA and the RWQCB under the Porter Cologne Act and Section 401 of the CWA. The perennial stream is jurisdictional by those agencies as well as the CDFW under Section 1602 of the California Fish and Game Code. Permits from these agencies will be required for work within or affecting wetlands and open water habitats.

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

The Study Area has a moderate potential to support one special-status plant species: coast iris. Following observation of this species blooming at a nearby reference site, a protocol-level plant survey was conducted within the Study Area; no coast iris individuals were documented. As such, coast iris was found to be absent from the Study Area, and no avoidance and minimization measures are recommended for this species.





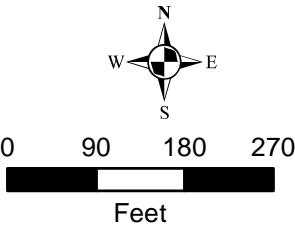
- Project Area (52.62 ac.)**
- Biological Communities**
- Avoided Anthropogenic Depression (0.002 ac.)
  - Avoided Non-native Annual Grassland (2.14 ac.)
  - Avoided Perennial Stream (0.009 ac.)
  - Avoided Perennial Stream Below TOB (0.01 ac.)
  - Avoided Seasonal Wetland Swale (2.50 ac.)
  - Impacted Anthropogenic Depression (0.08 ac.)
  - Impacted Coyote Brush Scrub (1.83 ac.)
  - Impacted Non-native Annual Grassland (43.50 ac.)
  - Impacted Seasonal Wetland Swale (2.52 ac.)
  - Shaded Perennial Stream (0.01 ac.)
  - Shaded Perennial Stream Below TOB (0.03 ac.)

Fairview at  
Northgate

Solano County,  
California

Figure 5.

Project Impacts to  
Biological Communities





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

The Study Area has moderate to high potential to support nesting for eight special-status bird species including: white-tailed kite, northern harrier, Nuttall's woodpecker, oak titmouse, loggerhead shrike, Bryant's savannah sparrow, Samuel's song sparrow, and San Francisco common yellowthroat. In addition, a special-status bird was observed during the May visit: Allen's hummingbird. The Study Area has potential to support common bird species protected by the Migratory Bird Treaty Act and California Fish and Game Code. Activities that result in the removal of active nests (nests containing eggs and/or young) or disturbance to nesting birds sufficient to result in the abandonment of active nests may be considered a significant impact under CEQA and a violation of the Migratory Bird Treaty Act and the California Fish and Game Code.

To avoid impacts to both special-status and non-special-status bird species, proposed Project activities should be initiated outside of the nesting season to the extent feasible (September 1 - January 31). However, if vegetation removal, grading, or initial ground-disturbing activities must be conducted during the nesting season, a pre-construction nesting bird survey should be conducted by a qualified biologist prior to vegetation removal or initial ground disturbance. Nesting habitat may include grasslands, shrubs, trees, snags and open ground. The survey should be conducted in a sufficient area around the work site to identify the location and status of any nests that could potentially be affected by Project activities.

If active nests are found within the proposed Project limit of impact or close enough to these areas to affect breeding success, a work exclusion zone should be established around each nest by a qualified biologist. Established exclusion zones should remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g., due to predation). Appropriate exclusion zone sizes vary dependent upon bird species, nest location, existing visual buffers and ambient sound levels, and other factors; an exclusion zone radius may be as small as 25 feet (for common, disturbance-adapted species) or as large as 250 feet or more for raptors. Exclusion zone size may also be reduced from established levels if supported with nest monitoring by a qualified biologist indicating that work activities outside the reduced radius are not adversely impacting the nest.

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- [USGS] U.S. Geological Survey. 2015e. Fairfield South 7.5-minute quadrangle.
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## APPENDIX A

### LIST OF OBSERVED PLANT AND WILDLIFE SPECIES

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**Appendix A-1. Plant Species Observed in the Study Area.**

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Aizoaceae	<i>Carpobrotus edulis</i>	Iceplant	non-native (invasive)	perennial herb	-	High	-
Alliaceae	<i>Allium amplexans</i>	Narrow leaved onion	native	perennial herb (bulb)	-	-	-
Anacardiaceae	<i>Pistacia</i> sp.	Pistacio	non-native	tree	-	-	-
Anacardiaceae	<i>Toxicodendron diversilobum</i>	Poison oak	native	vine, shrub	-	-	FACU
Apiaceae	<i>Foeniculum vulgare</i>	Fennel	non-native (invasive)	perennial herb	-	High	-
Araliaceae	<i>Hedera helix</i>	English ivy	non-native (invasive)	vine, shrub	-	-	FACU
Asteraceae	<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote brush	native	shrub	-	-	-
Asteraceae	<i>Calendula arvensis</i>	Field marigold	non-native	annual herb	-	-	-
Asteraceae	<i>Centaurea calcitrapa</i>	Purple star thistle	non-native (invasive)	annual, perennial herb	-	Moderate	-
Asteraceae	<i>Centaurea solstitialis</i>	Yellow starthistle	non-native (invasive)	annual herb	-	High	-
Asteraceae	<i>Cichorium intybus</i>	Chicory	non-native	perennial herb	-	-	FACU
Asteraceae	<i>Cirsium vulgare</i>	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	<i>Cynara cardunculus</i> ssp. <i>flavescens</i>	Cardoon	non-native	perennial herb	-	-	-



Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Asteraceae	<i>Dittrichia graveolens</i>	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	<i>Helminthotheca echioides</i>	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Asteraceae	<i>Hypochaeris glabra</i>	Smooth cats ear	non-native (invasive)	annual herb	-	Limited	-
Asteraceae	<i>Hypochaeris radicata</i>	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	<i>Lactuca serriola</i>	Prickly lettuce	non-native (invasive)	annual herb	-	-	FACU
Asteraceae	<i>Psilocarphus tenellus</i>	Slender woolly heads	native	annual herb	-	-	OBL
Asteraceae	<i>Sonchus oleraceus</i>	Sow thistle	non-native	annual herb	-	-	UPL
Asteraceae	<i>Symphyotrichum cf. subspicatum</i>	Douglas aster	native	perennial herb	-	-	FACW
Asteraceae	<i>Tragopogon porrifolius</i>	Salsify	non-native	perennial herb	-	-	-
Asteraceae	<i>Wyethia angustifolia</i>	Narrow leaved mule ears	native	perennial herb	-	-	FACU
Betulaceae	<i>Alnus rhombifolia</i>	White alder	native	tree	-	-	FACW
Brassicaceae	<i>Brassica nigra</i>	Black mustard	non-native (invasive)	annual herb	-	Moderate	-
Brassicaceae	<i>Hirschfeldia incana</i>	Mustard	non-native (invasive)	perennial herb	-	Moderate	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Brassicaceae	<i>Nasturtium officinale</i>	Watercress	native	perennial herb (aquatic)	-	-	OBL
Brassicaceae	<i>Raphanus sativus</i>	Jointed charlock	non-native (invasive)	annual, biennial herb	-	Limited	-
Cactaceae	<i>Opuntia</i> sp.	Prickly pear	non-native	shrub	-	-	-
Caryophyllaceae	<i>Spergularia rubra</i>	Purple sand spurry	non-native	annual, perennial herb	-	-	FAC
Chenopodiaceae	<i>Atriplex prostrata</i>	Fat-hen	non-native	annual herb	-	-	FACW
Convolvulaceae	<i>Convolvulus arvensis</i>	Field bindweed	non-native (invasive)	perennial herb, vine	-	-	-
Crassulaceae	<i>Crassula aquatica</i>	Aquatic pygmy weed	native	annual herb	-	-	OBL
Cupressaceae	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	native	tree	Rank 1B.2*	-	-
Cyperaceae	<i>Bolboschoenus</i> sp.	Bulrush	native	perennial grasslike herb	-	-	OBL
Cyperaceae	<i>Cyperus eragrostis</i>	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Cyperaceae	<i>Eleocharis macrostachya</i>	Spike rush	native	perennial grasslike herb	-	-	OBL
Cyperaceae	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Tule	native	perennial grasslike herb	-	-	OBL
Cyperaceae	<i>Schoenoplectus americanus</i>	Chairmaker's bulrush	native	perennial grasslike herb	-	-	OBL

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Dipsacaceae	<i>Dipsacus sativus</i>	Indian teasel	non-native (invasive)	biennial herb	-	Moderate	-
Fabaceae	<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish lotus	native	annual herb	-	-	UPL
Fabaceae	<i>Genista monspessulana</i>	French broom	non-native (invasive)	shrub	-	High	-
Fabaceae	<i>Lotus corniculatus</i>	Bird's foot trefoil	non-native (invasive)	perennial herb	-	-	FAC
Fabaceae	<i>Lupinus formosus</i> var. <i>formosus</i>	Western lupine	native	perennial herb	-	-	-
Fabaceae	<i>Medicago polymorpha</i>	California burclover	non-native (invasive)	annual herb	-	Limited	FACU
Fabaceae	<i>Melilotus indicus</i>	Annual yellow sweetclover	non-native	annual herb	-	-	FACU
Fabaceae	<i>Trifolium dubium</i>	Shamrock	non-native	annual herb	-	-	UPL
Fabaceae	<i>Trifolium fragiferum</i>	Strawberry clover	non-native	perennial herb	-	-	FAC
Fabaceae	<i>Trifolium fucatum</i>	Bull clover	native	annual herb	-	-	FACU
Fabaceae	<i>Trifolium hirtum</i>	Rose clover	non-native (invasive)	annual herb	-	Limited	-
Fabaceae	<i>Vicia benghalensis</i>	Purple vetch	non-native	annual herb, vine	-	-	-
Fabaceae	<i>Vicia sativa</i>	Spring vetch	non-native	annual herb, vine	-	-	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Fabaceae	<i>Vicia villosa</i>	Hairy vetch	non-native (invasive)	annual herb, vine	-	-	-
Fagaceae	<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak	native	tree	-	-	-
Fagaceae	<i>Quercus ilex</i>	Holly oak	non-native	tree	-	-	-
Geraniaceae	<i>Erodium botrys</i>	Big heron bill	non-native (invasive)	annual herb	-	-	FACU
Geraniaceae	<i>Erodium cicutarium</i>	Coastal heron's bill	non-native (invasive)	annual herb	-	Limited	-
Geraniaceae	<i>Geranium dissectum</i>	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Geraniaceae	<i>Geranium robertianum</i>	Robert's geranium	non-native (invasive)	annual herb	-	-	FACU
Iridaceae	<i>cf. Chasmanthe</i> sp.	African corn flag	non-native	perennial herb	-	-	-
Iridaceae	<i>Iris</i> sp.	Ornamental iris	non-native	perennial herb	-	-	-
Iridaceae	<i>Sisyrinchium bellum</i>	Blue eyed grass	native	perennial herb	-	-	FACW
Juglandaceae	<i>Juglans hindsii</i>	Northern california black walnut	native	tree	Rank 1B.1*	-	FAC
Juncaceae	<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic rush	native	perennial grasslike herb	-	-	FACW
Juncaceae	<i>Juncus bufonius</i>	Common toad rush	native	annual grasslike herb	-	-	FACW

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Juncaceae	<i>Juncus tenuis</i>	Slender rush	native	perennial grasslike herb	-	-	FACW
Juncaceae	<i>Juncus xiphioides</i>	Iris leaved rush	native	perennial grasslike herb	-	-	OBL
Lamiaceae	<i>Stachys albens</i>	Cobwebby hedge nettle	native	perennial herb	-	-	OBL
Lythraceae	<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	non-native	annual, perennial herb	-	-	OBL
Malvaceae	<i>Malva</i> sp.	Mallow	non-native	annual herb	-	-	-
Moraceae	<i>Ficus carica</i>	Common fig	non-native (invasive)	tree	-	Moderate	FACU
Myrsinaceae	<i>Lysimachia arvensis</i>	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Myrtaceae	<i>Eucalyptus globulus</i>	Blue gum	non-native (invasive)	tree	-	Limited	-
Oleaceae	<i>Ligustrum</i> sp.	Privet	non-native	tree, shrub	-	-	-
Oleaceae	<i>Olea europaea</i>	Olive	non-native (invasive)	tree, shrub	-	Limited	-
Onagraceae	<i>Epilobium brachycarpum</i>	Willow herb	native	annual herb	-	-	-
Onagraceae	<i>Epilobium ciliatum</i>	Slender willow herb	native	perennial herb	-	-	FACW
Onagraceae	<i>Taraxia ovata</i>	Sun cup	native	perennial herb	-	-	-
Orobanchaceae	<i>Bellardia trixago</i>	Mediterranean lineseed	non-native (invasive)	annual herb	-	Limited	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Orobanchaceae	<i>Parentucellia viscosa</i>	Yellow parentucellia	non-native (invasive)	annual herb	-	Limited	FAC
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	native	annual, perennial herb	-	-	-
Pinaceae	<i>Pinus</i> sp.	Pine	non-native	evergreen tree	-	-	-
Plantaginaceae	<i>Kickxia spuria</i>	Fluellin	non-native	perennial herb	-	-	-
Plantaginaceae	<i>Plantago lanceolata</i>	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Platanaceae	<i>Platanus xhispanica</i>	London plane tree	non-native	deciduous tree	-	-	-
Poaceae	<i>Avena barbata</i>	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Poaceae	<i>Avena fatua</i>	Wildoats	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	<i>Briza minor</i>	Little rattlesnake grass	non-native	annual grass	-	-	FAC
Poaceae	<i>Bromus catharticus</i>	Rescue grass	non-native	annual, perennial grass	-	-	-
Poaceae	<i>Bromus diandrus</i>	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	<i>Bromus hordeaceus</i>	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Poaceae	<i>Cortaderia selloana</i>	Pampas grass	non-native (invasive)	perennial grass	-	High	FACU



Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Poaceae	<i>Crypsis schoenoides</i>	Swamp grass	non-native	annual grass	-	-	FACW
Poaceae	<i>Distichlis spicata</i>	Salt grass	native	perennial grass	-	-	FAC
Poaceae	<i>Elymus caput-medusae</i>	Medusa head	non-native	annual grass	-	-	-
Poaceae	<i>Elymus triticoides</i>	Beardless wild rye	native	perennial grass	-	-	FAC
Poaceae	<i>Festuca bromoides</i>	Brome fescue	non-native	annual grass	-	-	FACU
Poaceae	<i>Festuca myuros</i>	Rattail sixweeks grass	non-native (invasive)	annual grass	-	-	FACU
Poaceae	<i>Festuca perennis</i>	Italian rye grass	non-native	annual, perennial grass	-	-	FAC
Poaceae	<i>Glyceria declinata</i>	Waxy mannagrass	non-native (invasive)	perennial grass	-	Moderate	FACW
Poaceae	<i>Holcus lanatus</i>	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Poaceae	<i>Hordeum brachyantherum</i>	Meadow barley	native	perennial grass	-	-	FACW
Poaceae	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Barley	non-native (invasive)	annual grass	-	Moderate	FAC
Poaceae	<i>Hordeum murinum</i>	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Poaceae	<i>Paspalum dilatatum</i>	Dallis grass	non-native	perennial grass	-	-	FAC
Poaceae	<i>Phalaris aquatica</i>	Harding grass	non-native (invasive)	perennial grass	-	Moderate	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Poaceae	<i>Phalaris paradoxa</i>	Hood canarygrass	non-native	annual grass	-	-	FAC
Poaceae	<i>Polypogon monspeliensis</i>	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
Polygonaceae	<i>Rumex acetosella</i>	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
Polygonaceae	<i>Rumex crispus</i>	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Polygonaceae	<i>Rumex pulcher</i>	Fiddleleaf dock	non-native	perennial herb	-	-	FAC
Rhamnaceae	<i>Rhamnus alaternus</i>	Italian buckthorn	non-native	shrub	-	-	FACU
Rosaceae	<i>Cotoneaster pannosus</i>	Woolly cotoneaster	non-native (invasive)	shrub	-	Moderate	-
Rosaceae	<i>Fragaria vesca</i>	Wild strawberry	native	perennial herb	-	-	UPL
Rosaceae	<i>Heteromeles arbutifolia</i>	Toyon	native	shrub	-	-	-
Rosaceae	<i>Prunus cerasifera</i>	Cherry plum	non-native (invasive)	tree	-	Limited	-
Rosaceae	<i>Prunus dulcis</i>	Almond	non-native	tree	-	-	-
Rosaceae	<i>Prunus persica</i>	Peach	non-native	tree	-	-	-
Rosaceae	<i>Pyracantha</i> sp.	Firethorn	non-native	shrub	-	-	-
Rosaceae	<i>Pyrus</i> sp.	Pear	non-native	tree	-	-	-
Rosaceae	<i>Rubus armeniacus</i>	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rubiaceae	<i>Galium aparine</i>	Cleavers	native	annual herb	-	-	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Salicaceae	<i>Salix gooddingii</i>	Gooding's willow	native	tree	-	-	FACW
Salicaceae	<i>Salix laevigata</i>	Red willow	native	tree	-	-	FACW
Salicaceae	<i>Salix lasiolepis</i>	Arroyo willow	native	shrub, tree			FACW
Tamaricaceae	<i>Tamarix</i> sp.	Tamarisk	non-native	shrub, tree	-	High	-
Themidaceae	<i>Triteleia hyacinthina</i>	Wild hyacinth	native	perennial herb	-	-	FAC
Typhaceae	<i>Typha</i> sp.	Cattail	unknown	perennial herb	-	-	OBL
Ulmaceae	<i>Ulmus</i> sp.	Elm	non-native	tree	-	-	-
Vitaceae	<i>Vitis vinifera</i>	Cultivated grape	non-native	vine, shrub	-	-	-

▪ All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2017]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2017]

\*Special-status only in its native range. The Project Area is outside of the native range of this species

<sup>1</sup>Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2017)

FE: Federal Endangered

FT: Federal Threatened

SE: State Endangered

ST: State Threatened

SR: State Rare

Rank 1A: Plants presumed extinct in California

Rank 1B: Plants rare, threatened, or endangered in California and elsewhere. Generally regarded as special-status in native stands only.

Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere

Rank 3: Plants about which we need more information – a review list

Rank 4: Plants of limited distribution – a watch list

<sup>2</sup>Invasive Status: California Invasive Plant Inventory (Cal-IPC 2017)

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.

Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically

Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically

Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

<sup>3</sup>Wetland Status: National List of Plant Species that Occur in Wetlands, California – Arid West (Lichvar et al. 2016)

OBL: Almost always found in wetlands; >99% frequency

FACW: Usually found in wetlands; 67-99% frequency

FAC: Equally found in wetlands and uplands; 34-66% frequency

FACU: Usually not found in wetlands; 1-33% frequency

UPL: Almost never found in wetlands; >1% frequency

NL:	Not listed, assumed almost never found in wetlands; >1% frequency
NI:	No information; not factored during wetland delineation

## Appendix A-2. Wildlife species observed in the Study Area

Scientific Name	Common Name
<b>Mammals</b>	
<i>Didelphis virginiana</i>	American opossum
<i>Lepus californicus</i>	black-tailed jackrabbit
<i>Felis catus</i>	domestic cat
<b>Birds</b>	
<i>Calypte anna</i>	Anna's hummingbird
<i>Selasphorus sasin</i>	Allen's hummingbird
<i>Anas platyrhynchos</i>	mallard
<i>Falco sparverius</i>	American kestrel
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Cathartes aura</i>	turkey vulture
<i>Ardea alba</i>	great egret
<i>Columba livia</i>	rock pigeon
<i>Sayornis nigricans</i>	black phoebe
<i>Psaltiriparus minimus</i>	bushtit
<i>Mimus polyglottos</i>	northern mockingbird
<i>Corvus brachyrhynchos</i>	American crow
<i>Spinus psaltria</i>	lesser goldfinch
<i>Haemorhous mexicanus</i>	house finch
<i>Junco hyemalis</i>	dark-eyed junco
<i>Melospiza crissalis</i>	California towhee
<i>Passerculus sandwichensis</i>	savannah sparrow
<i>Melospiza melodia</i>	song sparrow
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
<i>Sturnella neglecta</i>	western meadowlark
<b>Reptiles and Amphibians</b>	
<i>Pseudacris regilla</i>	northern Pacific treefrog

## APPENDIX B

### POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR IN THE STUDY AREA



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**Appendix B.** Special status animal species known to occur in in the vicinity of the Study Area. List of animals compiled from USFWS species list (USFWS 2017) and CNDDB 9-quad species list (CDFW 2017) for Napa, Mt. George, Fairfield North, Cuttings Wharf, Cordelia, Fairfield South, Mare Island, Benicia, and Vine Hill and other CDFW lists and publications.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
<b>Plants</b>				
Henderson's bent grass <i>Agrostis hendersonii</i>	Rank 3.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 230 to 1000 feet (70 to 305 meters). Blooms Apr-Jun.	<b>Unlikely.</b> The Study Area does not contain vernal pool habitat, and any mesic grassland is highly disturbed by vehicle activity.	No further actions are recommended for this species.
Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	<b>No Potential.</b> The Study Area does not contain chaparral habitat. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory.	No further actions are recommended for this species.
modest rockcress <i>Arabis modesta</i>	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 390 to 2620 feet (120 to 800 meters). Blooms Mar-Jul.	<b>No Potential.</b> The Study Area does not contain chaparral or lower montane coniferous forest habitats.	No further actions are recommended for this species.
alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline. Elevation ranges from 0 to 200 feet (1 to 60 meters). Blooms Mar-Jun.	<b>No Potential.</b> The Study Area does not contain playas, vernal pools, or alkaline adobe clay grassland.	No further actions are recommended for this species.
crownscale <i>Atriplex coronata</i> var. <i>coronata</i>	Rank 4.2	Chenopod scrub, valley and foothill grassland, vernal pools/alkaline, often clay. Elevation ranges from 0 to 1940 feet (1 to 590 meters). Blooms Mar-Oct.	<b>No Potential.</b> The Study Area does not contain chenopod scrub, alkaline clay grassland, or vernal pool habitats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
vernal pool smallscale <i>Atriplex persistens</i>	Rank 1B.2	Vernal pools (alkaline). Elevation ranges from 30 to 380 feet (10 to 115 meters). Blooms Jun-Oct.	<b>No Potential.</b> The Study Area does not contain vernal pool habitat.	No further actions are recommended for this species.
big-scale balsamroot <i>Balsamorhiza macrolepis</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland/sometimes serpentine. Elevation ranges from 300 to 5100 feet (90 to 1555 meters). Blooms Mar-Jun.	<b>Unlikely.</b> The Study Area does not contain chaparral, cismontane woodland, or valley and foothill grassland/sometimes serpentine.	No further actions are recommended for this species.
big tarplant <i>Blepharizonia plumosa</i>	Rank 1B.1	Valley and foothill grassland/usually clay. Elevation ranges from 100 to 1660 feet (30 to 505 meters). Blooms Jul-Oct.	<b>Unlikely.</b> The Study Area contains grassland habitat, but it is highly disturbed from past vehicle activity.	No further actions are recommended for this species.
narrow-anthered brodiaea <i>Brodiaea leptandra</i>	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland/volcanic. Elevation ranges from 360 to 3000 feet (110 to 915 meters). Blooms May-Jul.	<b>No Potential.</b> The Study Area does not contain volcanic substrates. Therefore, there is no potential for this species to occur within the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Brewer's calandrinia <i>Calandrinia breweri</i>	Rank 4.2	Chaparral, coastal scrub/sandy or loamy, disturbed sites and burns. Elevation ranges from 30 to 4000 feet (10 to 1220 meters). Blooms (Jan), Mar-Jun.	<b>Unlikely.</b> The Study Area does not contain chaparral, burned areas, or sandy soils. This species is often associated with burned or disturbed chaparral or other shrubland habitat; although the Study Area contains patches of coyote brush scrub, these patches are small and more indicative of a grassland converting to a shrub community rather than the regeneration of an existing shrubland. This species is disturbance-tolerant, but the Study Area is highly disturbed by extensive and prolonged vehicle activity and other anthropogenic disturbance and is heavily dominated by non-native species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 100 to 2760 feet (30 to 840 meters). Blooms Apr-Jun.	<b>Unlikely.</b> The Study Area does not contain chaparral or riparian woodland habitats. The Study Area contains a small, wooded area, but it is primarily remnant landscaping and has a very weedy understory. Grassland habitat and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy.	No further actions are recommended for this species.
Lyngbye's sedge <i>Carex lyngbyei</i>	Rank 2B.2	Marshes and swamps (brackish or freshwater). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Apr-Aug.	<b>Unlikely.</b> Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity.	No further actions are recommended for this species.
Tiburon paintbrush <i>Castilleja affinis</i> var. <i>neglecta</i>	FE, ST, Rank 1B.2	Valley and foothill grassland (serpentine). Elevation ranges from 200 to 1310 feet (60 to 400 meters). Blooms Apr-Jun.	<b>No Potential.</b> The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
johnny-nip <i>Castilleja ambigua</i> var. <i>ambigua</i>	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal poolsmargins. Elevation ranges from 0 to 1430 feet (0 to 435 meters). Blooms Mar-Aug.	<b>Unlikely.</b> The Study Area does not contain coastal bluff scrub, coastal prairie, or venal pool habitats. Grassland and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy. Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity.	No further actions are recommended for this species.
holly-leaved ceanothus <i>Ceanothus purpureus</i>	Rank 1B.2	Chaparral, cismontane woodland/volcanic, rocky. Elevation ranges from 390 to 2100 feet (120 to 640 meters). Blooms Feb-Jun.	<b>No Potential.</b> The Study Area does not contain rocky, volcanic substrate.	No further actions are recommended for this species.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 750 feet (0 to 230 meters). Blooms May-Oct (Nov).	<b>No Potential.</b> The Study Area does not contain alkaline grassland habitat.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	Rank 1B.2	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic)/often alkaline. Elevation ranges from 0 to 1380 feet (0 to 420 meters). Blooms May-Nov.	<b>Unlikely.</b> The Study Area does not contain chaparral, coastal prairie, or coastal salt marshes and swamps. The grassland and seasonal wetland swales are not alkaline, are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance, and are very weedy. In addition, no <i>Centromadia</i> species were observed during the May site visit.	No further actions are recommended for this species.
Parry's rough tarplant <i>Centromadia parryi</i> ssp. <i>rudis</i>	Rank 4.2	Valley and foothill grassland, vernal pools/alkaline, vernally mesic, seeps, sometimes roadsides. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms May-Oct.	<b>Unlikely.</b> The Study Area does not contain alkaline valley and foothill grassland or vernal pool, or seep habitats. In addition, no <i>Centromadia</i> species were observed during the May site visit.	No further actions are recommended for this species.
soft bird's-beak <i>Chloropyron molle</i> ssp. <i>molle</i>	FE, SR, Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Jul-Nov.	<b>No Potential.</b> The Study Area does not contain coastal salt marshes and swamps.	No further actions are recommended for this species.
Bolander's water-hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	Rank 2B.1	Marshes and swampscoastal, fresh or brackish water. Elevation ranges from 0 to 660 feet (0 to 200 meters). Blooms Jul-Sep.	<b>Unlikely.</b> Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Suisun thistle <i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	FE, Rank 1B.1	Marshes and swamps (salt). Elevation ranges from 0 to 0 feet (0 to 1 meters). Blooms Jun-Sep.	<b>No Potential.</b> The Study Area does not contain salt marshes and swamps.	No further actions are recommended for this species.
Tracy's clarkia <i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Rank 4.2	Chaparral (openings, usually serpentine). Elevation ranges from 210 to 2130 feet (65 to 650 meters). Blooms Apr-Jul.	<b>No Potential.</b> The Study Area does not contain chaparral habitat or serpentine substrate.	No further actions are recommended for this species.
western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland/mesic. Elevation ranges from 80 to 1390 feet (25 to 425 meters). Blooms Jan-Mar (Apr).	<b>No Potential.</b> The Study Area does not contain closed-cone coniferous forest, chaparral, north coast coniferous forest, riparian forest, or riparian woodland. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory.	No further actions are recommended for this species.
dwarf downingia <i>Downingia pusilla</i>	Rank 2B.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 0 to 1460 feet (1 to 445 meters). Blooms Mar-May.	<b>No Potential.</b> The Study Area does not contain vernal pool habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
small spikerush <i>Eleocharis parvula</i>	Rank 4.3	Marshes and swamps. Elevation ranges from 0 to 9910 feet (1 to 3020 meters). Blooms (Apr), Jun-Aug (Sep).	<b>No Potential.</b> Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity. In addition, this species is primarily known from coastal salt marsh wetlands (CDFW 2017).	No further actions are recommended for this species.
streamside daisy <i>Erigeron biolettii</i>	Rank 3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest/rocky, mesic. Elevation ranges from 100 to 3610 feet (30 to 1100 meters). Blooms Jun-Oct.	<b>No Potential.</b> The Study Area does not contain rocky substrate.	No further actions are recommended for this species.
Greene's narrow-leaved daisy <i>Erigeron greenei</i>	Rank 1B.2	Chaparral (serpentine or volcanic). Elevation ranges from 260 to 3300 feet (80 to 1005 meters). Blooms May-Sep.	<b>No Potential.</b> The Study Area does not contain chaparral habitat or serpentine or volcanic substrates.	No further actions are recommended for this species.
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland/serpentine, sandy to gravelly. Elevation ranges from 0 to 2300 feet (0 to 700 meters). Blooms May-Sep.	<b>No Potential.</b> The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Mt. Diablo buckwheat <i>Eriogonum truncatum</i>	Rank 1B.1	Chaparral, coastal scrub, valley and foothill grassland/sandy. Elevation ranges from 10 to 1150 feet (3 to 350 meters). Blooms Apr-Sep (Nov), (Dec).	<b>No Potential.</b> This species occurs on dry, exposed clay or sandy substrates (CDFW 2017), which are not present in the Study Area.	No further actions are recommended for this species.
Jepson's coyote thistle <i>Eryngium jepsonii</i>	Rank 1B.2	Valley and foothill grassland, vernal pools/clay. Elevation ranges from 10 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	<b>Unlikely.</b> The Study Area does not contain vernal pools. Areas with clay substrate are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance.	No further actions are recommended for this species.
San Joaquin spearscale <i>Extriplex joaquinana</i>	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland/alkaline. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	<b>No Potential.</b> The Study Area does not contain chenopod scrub, playas, alkaline meadows and seeps, or alkaline valley and foothill grassland.	No further actions are recommended for this species.
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/often serpentine. Elevation ranges from 10 to 1350 feet (3 to 410 meters). Blooms Feb-Apr.	<b>Unlikely.</b> The Study Area does not contain coastal prairie habitat or serpentine substrate. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory. Grassland and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
woolly-headed gilia <i>Gilia capitata ssp. tomentosa</i>	Rank 1B.1	Coastal bluff scrub, valley and foothill grassland/serpentine, rocky, outcrops. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms May-Jul.	<b>No Potential.</b> The Study Area does not contain serpentine, rocky substrate.	No further actions are recommended for this species.
nodding harmonia <i>Harmonia nutans</i>	Rank 4.3	Chaparral, cismontane woodland/rocky or gravelly, volcanic. Elevation ranges from 250 to 3200 feet (75 to 975 meters). Blooms Mar-May.	<b>No Potential.</b> The Study Area does not contain rocky or gravelly volcanic substrate.	No further actions are recommended for this species.
Diablo helianthella <i>Helianthella castanea</i>	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland/usually rocky, axonal soils. often in partial shade. Elevation ranges from 200 to 4270 feet (60 to 1300 meters). Blooms Mar-Jun.	<b>Unlikely.</b> The Study Area does not contain chaparral or riparian woodland habitats or rocky, azonal soils. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory. Grassland and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Brewer's western flax <i>Hesperolinon breweri</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland/usually serpentine. Elevation ranges from 100 to 3100 feet (30 to 945 meters). Blooms May-Jul.	<b>Unlikely.</b> The Study Area does not contain chaparral habitat or serpentine substrate. Grassland habitat in the Study Area is highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and is very weedy.	No further actions are recommended for this species.
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT, SE, Rank 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland/often clay, sandy. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms Jun-Oct.	<b>Unlikely.</b> The Study Area does not contain coastal prairie habitat or sandy or clay soils. Grassland and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
coast iris <i>Iris longipetala</i>	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps/mesic. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	<b>Moderate Potential. Not Observed.</b> The Study Area does not contain coastal prairie or lower montane coniferous forest habitats. This species has been observed on hillsides in somewhat disturbed non-native annual grassland habitat approximately 6.5 miles northeast of the Study Area, and such habitat is present in the Study Area. However, this species was not observed during a survey which occurred after this species was observed and identifiable at a reference site and which occurred during the published blooming period of this species. Therefore, this species is assumed to be absent from the Study Area.	No further actions are recommended for this species.
Carquinez goldenbush <i>Isocoma arguta</i>	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 70 feet (1 to 20 meters). Blooms Aug-Dec.	<b>No Potential.</b> The Study Area does not contain alkaline valley and foothill grassland.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Northern California black walnut <i>Juglans hindsii</i>	Rank 1B.1	Riparian forest, riparian woodland. Elevation ranges from 0 to 1440 feet (0 to 440 meters). Blooms Apr-May.	<b>No Potential.</b> The Study Area does not contain riparian forest or riparian woodland. Only native occurrences of this species are considered special status, and the Study Area is not in or near a native occurrence. Outside of its highly restricted native range, this species is considered naturalized and is fairly widespread. A few small individuals of this species were observed in the Study Area, but they are small and assumed to be naturalized volunteers.	No further actions are recommended for this species.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools/mesic. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	<b>Unlikely.</b> The Study Area does not contain playa or vernal pool habitats. Seasonal wetland swales in the Study Area are highly disturbed by off-road vehicle activity.	No further actions are recommended for this species.
Ferris' goldfields <i>Lasthenia ferrisiae</i>	Rank 4.2	Vernal pools (alkaline, clay). Elevation ranges from 70 to 2300 feet (20 to 700 meters). Blooms Feb-May.	<b>No Potential.</b> The Study Area does not contain vernal pool habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Rank 1B.2	Marshes and swamps (freshwater and brackish). Elevation ranges from 0 to 20 feet (0 to 5 meters). Blooms May-Jul (Aug), (Sep).	<b>Unlikely.</b> Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity.	No further actions are recommended for this species.
legenere <i>Legenere limosa</i>	Rank 1B.1	Vernal pools. Elevation ranges from 0 to 2890 feet (1 to 880 meters). Blooms Apr-Jun.	<b>No Potential.</b> The Study Area does not contain vernal pool habitat.	No further actions are recommended for this species.
Jepson's leptosiphon <i>Leptosiphon jepsonii</i>	Rank 1B.2	Chaparral, cismontane woodland/usually volcanic. Elevation ranges from 330 to 1640 feet (100 to 500 meters). Blooms Mar-May.	<b>Unlikely.</b> The Study Area does not contain chaparral habitat or volcanic substrate. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory.	No further actions are recommended for this species.
woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentine. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	<b>No Potential.</b> The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Apr-Nov.	<b>No Potential.</b> This species occurs in muddy, marshy areas in the tidal zone, typically along the Sacramento-San Joaquin River Delta (CDFW 2017). Such habitat is not present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
redwood lily <i>Lilium rubescens</i>	Rank 4.2	Broadleafed upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest/sometimes serpentine, sometimes roadsides. Elevation ranges from 100 to 6270 feet (30 to 1910 meters). Blooms Apr-Aug (Sep).	<b>Unlikely.</b> The Study Area does not chaparral, lower montane coniferous forest, north coast coniferous forest, or upper montane coniferous forest habitats or serpentine substrate. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory. .	No further actions are recommended for this species.
Delta mudwort <i>Limosella australis</i>	Rank 2B.1	Marshes and swamps (freshwater or brackish), riparian scrub/usually mud banks. Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms May-Aug.	<b>No Potential.</b> This species occurs in muddy, marshy areas in the tidal zone, typically along the Sacramento-San Joaquin River Delta (CDFW 2017). Such habitat is not present in the Study Area.	No further actions are recommended for this species.
Napa lomatium <i>Lomatium repostum</i>	Rank 4.3	Chaparral, cismontane woodland/serpentine. Elevation ranges from 300 to 2720 feet (90 to 830 meters). Blooms Mar-Jun.	<b>No Potential.</b> The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland/rocky. Elevation ranges from 150 to 2710 feet (45 to 825 meters). Blooms Mar-May.	<b>Unlikely.</b> The Study Area does not contain rocky substrate. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory. Grassland habitat in the Study Area is highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and is very weedy.	No further actions are recommended for this species.
green monardella <i>Monardella viridis</i>	Rank 4.3	Broadleafed upland forest, chaparral, cismontane woodland. Elevation ranges from 330 to 3310 feet (100 to 1010 meters). Blooms Jun-Sep.	<b>No Potential.</b> The Study Area does not contain broadleafed upland forest, chaparral, and cismontane woodland. Therefore, there is no potential for this species to occur within the Study Area.	No further actions are recommended for this species.
Baker's navarretia <i>Navarretia leucocephala ssp. bakeri</i>	Rank 1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic. Elevation ranges from 20 to 5710 feet (5 to 1740 meters). Blooms Apr-Jul.	<b>No Potential.</b> The Study Area does not contain vernal pools or vernal swale (CDFW 2017) habitats.	No further actions are recommended for this species.
Marin knotweed <i>Polygonum marinense</i>	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms (Apr), May-Aug (Oct).	<b>No Potential.</b> The Study Area does not contain coastal salt or brackish marsh and swamp habitats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
California alkali grass <i>Puccinellia simplex</i>	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools/alkaline, vernal mesic; sinks, flats, and lake margins. Elevation ranges from 10 to 3050 feet (2 to 930 meters). Blooms Mar-May.	<b>No Potential.</b> The Study Area does not contain alkaline sinks, flats, or lake margins.	No further actions are recommended for this species.
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools/mesic. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May.	<b>Unlikely.</b> The Study Area does not contain north coast coniferous forest or vernal pool habitat. The wooded area in the West Area is primarily remnant landscaping, has a very weedy understory, and is not mesic. Grassland and seasonal wetland habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are often very weedy.	No further actions are recommended for this species.
California beaked-rush <i>Rhynchospora californica</i>	Rank 1B.1	Bogs and fens, lower montane coniferous forest, meadows and seeps (seeps), marshes and swamps (freshwater). Elevation ranges from 150 to 3310 feet (45 to 1010 meters). Blooms May-Jul.	<b>Unlikely.</b> The Study Area does contain bog and fen habitats. The seasonal wetland swales are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are often very weedy.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
chaparral ragwort <i>Senecio aphanactis</i>	Rank 2B.2	Chaparral, cismontane woodland, coastal scrub/sometimes alkaline. Elevation ranges from 50 to 2620 feet (15 to 800 meters). Blooms Jan-Apr.	<b>Unlikely.</b> The Study Area does not contain chaparral habitat or alkaline substrate. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory. Grassland and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy.	No further actions are recommended for this species.
Napa checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>napensis</i>	Rank 1B.1	Chaparral/rhyolitic. Elevation ranges from 1360 to 2000 feet (415 to 610 meters). Blooms Apr-Jun.	<b>No Potential.</b> The Study Area does not contain chaparral habitat or rhyolitic substrate.	No further actions are recommended for this species.
Marin checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Rank 1B.1	Chaparral (serpentine). Elevation ranges from 160 to 1410 feet (50 to 430 meters). Blooms May-Jun.	<b>No Potential.</b> The Study Area does not contain chaparral habitat or serpentine or volcanic (CDFW 2017) substrates.	No further actions are recommended for this species.
slender-leaved pondweed <i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Rank 2B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 980 to 7050 feet (300 to 2150 meters). Blooms May-Jul.	<b>Unlikely.</b> Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Suisun Marsh aster <i>Symphotrichum lentum</i>	Rank 1B.2	Marshes and swamps (brackish and freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms (Apr), May-Nov.	<b>Unlikely.</b> Small portions of seasonal wetland swales within the Study Area are dominated by cattails, but these areas are small, isolated, and highly disturbed by past vehicle activity. In addition, Suisun Marsh aster is most often seen along sloughs associated with tidal influence or the Sacramento-San Joaquin River Delta, and such habitat is not present in the Study Area.	No further actions are recommended for this species.
Napa bluecurls <i>Trichostema ruygtii</i>	Rank 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 100 to 2230 feet (30 to 680 meters). Blooms Jun-Oct.	<b>Unlikely.</b> The Study Area does not contain chaparral, lower montane coniferous forest, or vernal pools. Although the Study Area contains grassland and a small wooded area, both habitats are highly disturbed. In addition, this species typically occurs on thin clay soils on dry rocky slopes and flats that are adjacent to exposed volcanic bedrock, and these habitats are not present in the Study Area.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
two-fork clover <i>Trifolium amoenum</i>	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 20 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	<b>Unlikely.</b> The Study Area does not contain coastal bluff scrub habitat or serpentine substrate. Grassland habitat in the Study Area is highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and is very weedy.	No further actions are recommended for this species.
saline clover <i>Trifolium hydrophilum</i>	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 980 feet (0 to 300 meters). Blooms Apr-Jun.	<b>No Potential.</b> The Study Area does not contain alkaline habitat.	No further actions are recommended for this species.
dark-mouthed triteleia <i>Triteleia lugens</i>	Rank 4.3	Broadleafed upland forest, chaparral, coastal scrub, lower montane coniferous forest. Elevation ranges from 330 to 3280 feet (100 to 1000 meters). Blooms Apr-Jun.	<b>Unlikely.</b> The Study Area does not contain chaparral or lower montane coniferous forest habitats. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory. Grassland and coyote brush scrub habitats in the Study Area are highly disturbed from extensive and prolonged vehicle activity and other anthropogenic disturbance and are very weedy.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
oval-leaved viburnum <i>Viburnum ellipticum</i>	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 710 to 4590 feet (215 to 1400 meters). Blooms May-Jun.	<b>Unlikely.</b> The Study Area does not contain chaparral or lower montane coniferous forest habitats. The wooded area in the West Area is primarily remnant landscaping and has a very weedy understory.	No further actions are recommended for this species.
<b>MAMMALS</b>				
Hoary bat <i>Lasiurus cinereus</i>	WBWG Medium	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	<b>Unlikely.</b> This species is typically associated with forested habitat. The wooded portion of the West Area is isolated and surrounded by development. Furthermore, the trees are unlikely to support roosting habitat because they are too small. This species may occasionally forage over the Study Area.	No further actions are recommended for this species.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, WBWG High	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves, and mines. Males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	<b>No Potential.</b> The Study Area and adjacent areas do not contain open forest foraging habitat or suitable roosting habitat for the species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Big free-tailed bat <i>Nyctinomops macrotis</i>	SSC, WBWG med-high	Occurs rarely in low-lying arid areas in southern California. Requires high cliffs or rocky outcrops for roosting sites.	<b>No Potential.</b> The Study Area is outside of this species' typical range, although individuals may rarely fly over the Study Area during migration.	No further actions are recommended for this species.
Pallid bat <i>Antrozous pallidus</i>	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open areas, forages along river channels. Roost sites include old ranch buildings, rocky outcrops, and caves with sandstone outcroppings. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Unlikely.</b> This species may occasionally forage over the Study Area; however, the Study Area lacks suitable roost structures for the species, such as buildings, rock outcrops, or caves.	No further actions are recommended for this species.
Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, CFP	Found only in saline emergent wetlands of San Francisco Bay and its tributaries. Primary habitat is dominated by pickleweed ( <i>Salicornia</i> ). Requires adjacent, upland areas as refuge during high tides.	<b>No Potential.</b> Salt marsh habitat is not present within the Study Area.	No further actions are recommended for this species.
Suisun shrew <i>Sorex ornatus sinuosus</i>	SSC	Tidal marshes of the northern shores of San Pablo and Suisun Bays. Requires dense low-lying cover, driftweed, and other litter above the mean high tide line for nesting and foraging.	<b>No Potential.</b> Tidal marsh habitat is not present and the Study Area is outside the known range of this subspecies.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Ringtail (ring-tailed cat) <i>Bassariscus astutus</i>	CFP	Ringtail is widely distributed throughout most of California, but absent from some portions of the Central Valley and northeastern California. The species is nocturnal, primarily carnivorous and is associated with a mixture of dry forest and shrubland in close association with rocky areas and riparian habitat.	<b>No Potential.</b> The Study Area contains very few trees, and is dominated by ruderal vegetation and has been highly disturbed. The surrounding area is highly urbanized and connectivity to suitable habitat is poor.	No further actions are recommended for this species.
American badger <i>Taxidea taxus</i>	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Badgers primarily prey on burrowing rodents.	<b>Unlikely.</b> The Study Area is far too small and isolated to support such a wide-ranging species. No evidence of this species' presence or past denning has been recorded despite multiple site visits by WRA. Barriers to dispersal and lack of prey availability likely preclude badger from this site. Additionally, there are no documented occurrences of this species within eight miles of the Study Area (CDFW 2017).	No further actions are recommended for this species.
<b>BIRDS</b>				
Caspian tern <i>Hydroprogne caspia</i>	BCC	Summer resident in northern California. Nests colonially on sparsely-vegetated islands (including man-made islands), sandbars and beaches near expanses of open water. Forages on fishes.	<b>No Potential.</b> The Study Area does not contain islands, or beaches near open water to support foraging or nesting.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
White-tailed kite <i>Elanus leucurus</i>	CFP	Year-long resident of coastal and valley lowlands. Commonly found in savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	<b>Moderate Potential.</b> The Study Area contains open grassland habitats suitable for foraging. Large bushes and trees within the Study Area may also support nesting, although the Study Area is surrounded by development and thus the potential for nesting may be reduced.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.
Northern harrier <i>Circus cyaneus</i>	SSC	Nests and forages in grassland habitats, usually in association with coastal salt and freshwater marshes. Nests on the ground in shrubby vegetation, usually at marsh edge. Nests are constructed of mounded sticks, typically quite large, in wet areas. May also occur in alkali desert sinks.	<b>Moderate Potential.</b> The Study Area contains open grasslands mixed with seasonal wetlands, which provide foraging habitat for this species. Additionally, this species may nest in dense upland vegetation on the site, although regular mowing may reduce this potential.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.
Ferruginous hawk <i>Buteo regalis</i>	BCC	This winter visitor to California frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Preys on lagomorphs, ground squirrels and mice. Population trends may follow lagomorph population cycles.	<b>Unlikely.</b> The Study Area provides open grassland winter foraging habitat for the species; however, this species does not nest in northern California.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Swainson's hawk <i>Buteo swainsoni</i>	ST, BCC	A California resident, found primarily in the Central Valley and Sierra Nevada foothills. Breeds in stands with few trees in juniper-sage flats, riparian areas, eucalyptus stands and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations.	<b>Unlikely.</b> Potential nesting trees within the Study Area are small and directly adjacent to development. Also, the Study Area provides only marginal foraging habitat for the species due to its relatively small size and its location surrounded by urban development. The closest documented nesting occurrences are 7.5 miles away (CDFW 2017).	No further actions are recommended for this species.
Golden eagle <i>Aquila chrysaetos</i>	CFP, BCC	Resident in rolling foothills mountain areas, sage-juniper flats, desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	<b>Unlikely.</b> The Study Area is within the current year-round range of the species and individuals may occasionally fly over the Study Area. However, the Study Area does not provide large trees or cliffs in large, isolated areas that would typically support nesting.	No further actions are recommended for this species.
Bald eagle <i>Haliaeetus leucocephalus</i>	FD, SE, CFP, BCC	Occurs year-round in California, but primarily a winter visitor. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	<b>Unlikely.</b> This species may occasionally fly over the Study Area but there are no large trees near large lakes or reservoirs in the vicinity to support nesting.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
American peregrine falcon <i>Falco peregrinus anatum</i>	FD, SD, CFP	Largely resident in California. Requires protected cliffs, ledges or manmade structures for nesting. Often associated with coasts, bays, marshes and other open expanses of water. Forages widely and preys primarily upon waterbirds.	<b>Unlikely.</b> The Study Area and areas immediately adjacent to the Study Area do not provide cliffs, ledges, manmade structures, or other suitable nesting habitat, though this species is known to nest on bridges and structures along the San Francisco Bay and associated waters. The Study Area does not contain foraging habitat typical for the species.	No further actions are recommended for this species.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, CFP	Extremely secretive resident of emergent marshes in the San Francisco Bay Estuary and portions of the Central Valley. Occurs in salt, brackish and freshwater habitats. Nests in dense stands of emergent vegetation.	<b>Unlikely.</b> Wetlands within the Study Area are patchy and isolated from other potential habitat in the region by extensive urban development.	No further actions are recommended for this species.
California Ridgway's (clapper) rail <i>Rallus obsoletus obsoletus</i>	FE, SE, CFP	Resident in tidal marshes of the San Francisco Bay Estuary. Requires tidal sloughs and mud flats for foraging, and dense vegetation for nesting. Associated with abundant growth of cordgrass and pickleweed. Largest populations in south San Francisco Bay.	<b>No Potential.</b> The Study Area does not contain tidal marsh habitat for the species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT, SSC, BCC	Federal listing applies only to the Pacific coastal population. Resident on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting.	<b>No Potential.</b> The Study Area does not contain sandy beaches or other suitable nesting habitat for the species.	No further actions are recommended for this species.
California least tern <i>Sternula</i> (formerly <i>Sterna</i> ) <i>antillarum browni</i>	FE, SE, CFP	Summer resident, nesting colonially along the coast from San Francisco Bay south. Breeding colonies in the San Francisco Bay Estuary found on abandoned salt ponds and estuarine shores. Prefers barren or sparsely vegetated, flat substrates near water. Forages for small surface fish along shores, coasts, etc.	<b>No Potential.</b> The Study Area does not contain beach or gravel substrate and therefore does not provide suitable nesting habitat for the species. Additionally, no open water foraging habitat is present in the Study Area for this subspecies.	No further actions are recommended for this species.
Burrowing owl <i>Athene cunicularia</i>	SSC, BCC	Found in open, dry annual or perennial grasslands, deserts & scrub lands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	<b>Unlikely.</b> Although the Study Area contains open grassland habitat, no suitably-sized burrows or California ground squirrels, an obligate species, have been identified on the site during WRA site visits. The nearest occurrence for the species is a historic wintering 1.1 miles to the north west (CDFW 2017).	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Short-eared owl <i>Asio flammeus</i>	SSC	Occurs as a resident and winter visitor in California. Suitable year-round habitat for this species consists of open areas with herbaceous cover, and includes grasslands, prairies, marshes and wetlands, and agricultural areas. Within California, breeding is restricted to the Great Basin, portions of the Central Valley, and scattered other lowland locations (e.g., the northern Sacramento-San Joaquin Delta; Roberson 2008). Nests are placed on the ground within vegetative cover.	<b>Unlikely.</b> The Study Area is located west of the current breeding range of the species (Shuford and Gardali 2008) and wetlands within the Study Area are too small to support the demands of nesting. This species may occasionally forage in the area. The nearest documented nest occurrence is from 1987 at Grizzly Island, approximately 13 miles east of the Study Area (CDFW 2017).	No further actions are recommended for this species.
Allen's hummingbird <i>Selasphorus sasin</i>	BCC	Summer resident along the California coast, breeding in a variety of woodland and forest habitats, including parks and gardens with abundant nectar sources. Nest in shrubs and trees with dense vegetation.	<b>Present.</b> One individual was observed during a WRA survey in March, 2017. This species breeds in Solano County (Rippey et al. 2014); and the Study Area contains dense vegetation to support nesting along its southern perimeter.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Nuttall's woodpecker <i>Picoides nuttallii</i>	BCC	Resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks.	<b>Moderate Potential.</b> This species is relatively common, even in developed areas, and the southern section of the east parcel and west parcel of Study Area contain oaks and other trees that may contain cavities suitable for nesting.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.
Olive-sided flycatcher <i>Contopus cooperi</i>	SSC	Summer resident. Breeds in montane coniferous forests, as well as mixed forests along the coast. Often associated with edge habitats.	<b>No Potential.</b> The Study Area does not contain forest habitat for this species. Additionally, the Study Area is outside the current breeding range of the species (Shuford and Gardali 2008).	No further actions are recommended for this species.
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Resident in open habitats with scattered shrubs, trees, posts, etc. from which to forage for large insects and small vertebrates. Nest is well concealed above ground in a densely-foliaged shrub or tree.	<b>Moderate Potential.</b> The Study Area contains suitable foraging habitat for the species, and patches of dense trees and shrubs may be suitable for nesting.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.
Yellow-billed magpie <i>Pica nuttalli</i>	BCC	Found in oak savannah with large trees and expanses of open ground. Grasslands, pasture, or cultivated fields are needed for foraging.	<b>Unlikely.</b> Although the Study Area contains open grasslands suitable for this species, yellow-billed magpie does not regularly occur in the greater Vallejo area (eBird 2017, Shurford and Gardali 2008).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Bank swallow <i>Riparia riparia</i>	ST	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and banks with fine-textured or sandy soils in which to nest.	<b>Unlikely.</b> This species occurs irregularly in Solano County as a migrant in spring and fall. The Napa-Solano Audubon Society does not include this species on their list of breeding birds for Solano County (Rippey et al. 2014). No nesting habitat for this species occurs in the Study Area, although this species may occasionally forage within the Study Area during migration.	No further actions are recommended for this species.
Oak titmouse <i>Baeolophus inornatus</i>	BCC	Resident in oak woodland, open broad-leaved evergreen forests containing oaks, and riparian woodlands. Nests in tree cavities.	<b>Moderate Potential.</b> This species is relatively common, even in developed areas, and the southern section of the east parcel and west parcel of Study Area contain oaks and other trees that may contain cavities suitable for nesting.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.
Saltmarsh (San Francisco) common yellowthroat <i>Geothlypis trichas sinuosa</i>	SSC, BCC	Breeding habitat is marshes or similar wet areas with low, dense vegetation. Requires continuous, thick cover down to water for foraging. Less common in dry areas.	<b>Moderate Potential.</b> The Study Area contains emergent dense wetland vegetation suitable for foraging and nesting.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Suisun song sparrow <i>Melospiza melodia maxillaris</i>	SSC, BCC	Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and Salicornia; also known to frequent tangles bordering sloughs.	<b>No Potential.</b> The Study Area is outside of this subspecies' known range (Shuford and Gardali 2008).	No further actions are recommended for this species.
San Pablo (=Samuels) song sparrow <i>Melospiza melodia samuelis</i>	SSC, BCC	North San Francisco Bay and San Pablo Bay salt marshes. Nests in low marsh vegetation, high enough to avoid flooding during high tides.	<b>Moderate Potential.</b> The Study Area contains wetland vegetation that may support foraging and nesting for this subspecies, although it is not the primary salt marsh habitat.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.
Bryant's savannah sparrow <i>Passerculus sandwichensis alaudinus</i>	SSC	Resident subspecies, associated with the coastal fog belt. Occupies upper tidally-influenced habitats, often found where pickleweed communities merge into grassland. Nests in vegetation on or near the ground, including along roads, levees, and water conveyance canals.	<b>Moderate Potential.</b> The Study Area contains grasslands near wetlands that may support foraging and nesting for this subspecies.	If Project activities commence during the nesting season (February 1 to August 15) a pre-construction nesting bird survey should be conducted.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<p>Tricolored blackbird</p> <p><i>Agelaius tricolor</i></p>	SSC, BCC	Resident, though disperses somewhat when not breeding. Typically nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs. Highly colonial; breeding aggregations tend to be large.	<p><b>Unlikely.</b> The Study Area is within the breeding range of the species and a historic record from 1987-1988 when a small freshwater marsh existed at the site; however, no perennial aquatic features with deep open water and emergent vegetation for nesting by the species is currently present. Subsequent surveys in 1989, 1997, 2008, 2011, 2014 and 2015 resulted in no observations of the species (CDFW 2017). There is a low potential for this species to utilize the Study Area for foraging.</p>	No further actions are recommended for this species.
<p>Yellow-headed blackbird</p> <p><i>Xanthocephalus xanthocephalus</i></p>	SSC	Migrant and local summer resident. Nests colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or larger ponds. Forages primarily on large aquatic insects during the breeding period.	<p><b>Unlikely.</b> The Study Area is within the current breeding range of the species; however, this species is a rare breeder in the San Francisco Bay Area and wetlands within the Study Area lack the deep water typically found at breeding sites. This species may occasionally forage in the Study Area outside the breeding season.</p>	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Lawrence's goldfinch <i>Spinus lawrencei</i>	BCC	Inhabits oak woodlands, chaparral, riparian woodlands, pinyon-juniper associations, and weedy areas near water during breeding season.	<b>Unlikely.</b> This species breeds in Solano County (Rippey et al. 2014); however, the Study Area does not contain woodland, chaparral, pinyon-juniper, or other suitable habitat for the species.	No further actions are recommended for this species.
<b>REPTILES AND AMPHIBIANS</b>				
California tiger salamander – central California DPS <i>Ambystoma californiense</i>	FT, ST, SSC	Inhabits annual grasslands, spending most of the year underground in mammal burrows. Breeding occurs in vernal pools and other seasonal aquatic features.	<b>No Potential.</b> There are no vernal pools or seasonal wetland features that would likely retain sufficient water depths for the 10 weeks required for larvae to metamorphose. Also, no burrows were observed in the Study Area that may serve as refugia, and this species has not been documented within 8 miles of the Study Area (CDFW 2017).	No further actions are recommended for this species.
California giant salamander <i>Dicamptodon ensatus</i>	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	<b>No Potential.</b> The Study Area does not contain cool permanent or semi-permanent streams that would allow this species to complete its life cycle.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Western pond turtle <i>Actinemys marmorata</i>	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter. Overwinters in both aquatic and terrestrial habitats. Aquatic refugia consist of rocks, logs, mud, submerged vegetation, and undercut areas along banks. Terrestrial overwintering habitat consists of burrows in leaf litter or soil.	<b>Unlikely.</b> The Study Area does not contain suitable open water ponded aquatic habitat for the species. The nearest documented occurrence is 2.5 miles northwest of the Study Area (CDFW 2017); however, dispersal of this species rarely exceeds one mile (Tompson 2016). The land directly adjacent to the Study Area is urbanized and highly trafficked roads present a serious barrier to dispersing turtles.	No further actions are recommended for this species.
Giant garter snake <i>Thamnophis gigas</i>	FT, ST, DRP	Endemic to the Central Valley and Sacramento-San Joaquin Delta. Prefers freshwater marsh and low gradient streams with dense emergent vegetation. May also be found in drainage channels and irrigation ditches in agricultural areas. Currently, ranges from Glenn County to the southern edge of the San Francisco Bay Delta, and from Merced County to northern Fresno County, apparently no longer occurring from south of northern Fresno County (Calherps 2013).	<b>No Potential.</b> The Study Area is within the year-round range of this species; however, the Study Area does not contain marshes, sloughs, mud-bottom canals, slow moving streams, or other similar aquatic habitat for the species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT, ST	Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area. Prefers south-facing slopes and ravines with rock outcroppings where shrubs form a vegetative mosaic with oak trees and grasses and small mammal burrows provide basking and refuge.	<b>No Potential.</b> This species does not occur in Solano County, and is limited to counties south of the Delta.	No further actions are recommended for this species.
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	<b>Unlikely.</b> The Study Area is within the current range of the species and the nearest documented occurrences are approximately 0.7 and 2.3 miles east of the site (CDFW 2017). However, no suitable aquatic breeding habitat is present in the Study Area. At the time of writing this assessment, five out of the eight required protocol-level surveys have been completed by WRA, and CRLF has not been detected. Upon completion of the protocol-level surveys, the survey results will be presented in a standalone report.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<p>Foothill yellow-legged frog</p> <p><i>Rana boylei</i></p>	SSC	Found in or near rocky streams in a variety of habitats. Feeds on both aquatic and terrestrial invertebrates.	<b>No Potential.</b> The Study Area does not contain rocky stream habitat for the species, and the nearest documented occurrence of this species is over 12 miles north of the Study Area (CDFW 2017).	No further actions are recommended for this species.
<b>FISHES</b>				
<p>Green sturgeon</p> <p><i>Acipenser medirostris</i></p>	FT, SSC, NMFS	Spawn in deep pools or "holes" in large, turbulent, freshwater river mainstems. Adults live in oceanic waters, bays, and estuaries when not spawning. Species is known to forage in estuaries and bays.	<b>No Potential.</b> The stream that crosses the southwest corner of the Study Area is routed underground by development, precluding access by this species into the Study Area from its primary habitat in estuary waters.	No further actions are recommended for this species.
<p>Coho salmon, central California coast ESU</p> <p><i>Oncorhynchus kisutch</i></p>	FE, SE, NMFS	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	<b>No Potential.</b> The Study Area is located outside the current range of the species and Coho salmon are considered extirpated in San Francisco Bay and associated watersheds.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Steelhead, Central Valley DPS <i>Oncorhynchus mykiss</i>	FT, NMFS	Anadromous, spending most of life cycle in the ocean. Occurs in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	<b>No Potential.</b> The stream that crosses the southwest corner of the Study Area is routed underground by development, precluding access by this species into the Study Area.	No further actions are recommended for this species.
Chinook salmon, Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i>	FT, ST, NMFS	Occurs in the Feather River and the Sacramento River and its tributaries, including Butte, Mill, Deer, Antelope and Beegum Creeks. Adults enter the Sacramento River from late March through September. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams from mid-August through early October. Juveniles migrate soon after emergence as young-of-the-year, or remain in freshwater and migrate as yearlings.	<b>No Potential.</b> The stream that crosses the southwest corner of the Study Area is routed underground by development, precluding access by this species into the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Chinook salmon, Sacramento River winter-run ESU <i>Oncorhynchus tshawytscha</i>	FE, SE, NMFS	Occurs in the Sacramento River below Keswick Dam. Spawns in the Sacramento River but not in tributary streams. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 degrees C for spawning. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles typically migrate to the ocean soon after emergence from the gravel.	<b>No Potential.</b> The stream that crosses the southwest corner of the Study Area is routed underground by development, precluding access by this species into the Study Area.	No further actions are recommended for this species.
Chinook Salmon - Central Valley Fall/Late Fall-run ESU <i>Oncorhynchus tshawytscha</i>	SSC, NMFS	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean	<b>No Potential.</b> The stream that crosses the southwest corner of the Study Area is routed underground by development, precluding access by this species into the Study Area.	No further actions are recommended for this species.
Delta smelt <i>Hypomesus transpacificus</i>	FT, SE	Endemic to the Sacramento Delta, where it is distributed from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. The delta smelt is a pelagic and euryhaline species	<b>No Potential.</b> No estuarine or other suitable aquatic habitat is present in the Study Area for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Longfin smelt <i>Spirinchus thaleichthys</i>	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	<b>No Potential.</b> No estuarine or other suitable aquatic habitat is present in the Study Area for this species.	No further actions are recommended for this species.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	SSC	Endemic to California's Central Valley. Primarily freshwater fish, but are tolerant of moderate salinity and can survive in water with salinities of 10-18 parts per thousand. Spawn on submerged vegetation in temporarily flooded upland and riparian habitat. Spawning occurs in the lower reaches of rivers, dead-end sloughs and in the larger sloughs. Found in Sacramento-San Joaquin Delta.	<b>No Potential.</b> The stream that crosses the southwest corner of the Study Area is routed underground by development, precluding access by this species into the Study Area.	No further actions are recommended for this species.
Tidewater goby <i>Eucyclogobius newberryi</i>	FE, SSC	Habitat is characterized by brackish water in shallow lagoons and in lower stream reaches where the water is fairly still but not stagnant. Restricted to waters with low to moderate salinities in California's coastal wetland habitats.	<b>No Potential.</b> No coastal wetlands or other suitable aquatic habitat is present in the Study Area for this species. This species is also considered extirpated from the San Francisco Bay area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>INVERTEBRATES</b>				
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE	This subspecies is found exclusively within grassy hills surrounding San Francisco Bay that support its native host plant, <i>Viola pedunculata</i> . Adults nectar on several native and non-native flowering plants.	<b>No Potential.</b> The Study Area is dominated by non-native annual grasses and ruderal vegetation. Botanical surveys of the area did not reveal the presence of <i>Viola pendunculata</i> and Callippe silverspot butterflies have not been observed. The nearest known locality to the Study Area is 1.75 miles to the east on Swett Ranch (CDFW 2017).	No further actions are recommended for this species.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE, SSI	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in 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 plant, <i>Sedum spathulifolium</i> .	<b>No Potential.</b> The nearest documented population of the species is around Mt. Diablo, which is over 20 miles southeast of the Study Area.	No further actions are recommended for this species.
Monarch butterfly <i>Danaus plexippus</i>	Roosts protected by CDFW and CCC	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	<b>Unlikely.</b> Individuals may occur within the Study Area during periods of migration; however, no roosting habitat is present in or adjacent to the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Western bumble bee	SSI	Once widespread in the western United States and Canada, populations of this insect have drastically declined in recent decades. Pollinates a variety of wild flowering plants and crops.	<b>Unlikely.</b> This insect may be occasionally found within the Study Area, however, the Study Area does not contain communities of flowering plants whose removal would constitute a significant loss of habitat for the species.	No further actions are recommended for this species.
California freshwater shrimp <i>Syncaris pacifica</i>	FE, SE	Found within the low elevation-low gradient streams in Napa, Sonoma, and Marin Counties. The most suitable reaches are characterized by submerged undercut banks, overhanging plants such as blackberry, woody debris, and the exposed live root systems of willow or alder.	<b>No Potential.</b> The Study Area is outside the current known range of the species and there is no suitable shaded stream aquatic habitat present.	No further actions are recommended for this species.
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	<b>No Potential.</b> This species has only been documented in the Jepson Prairie area within Solano County (USFWS 2007). This is the closest documented occurrence to the Study Area, and the Study Area does not contain the alluvial pools this species inhabits (CDFW 2017).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	<b>No Potential.</b> Wetlands within the Study Area are not vernal pools with underlying hardpan soils necessary to support this species.	No further actions are recommended for this species.
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	FE	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	<b>No Potential.</b> Wetlands within the Study Area are not vernal pools with underlying hardpan soils necessary to support this species.	No further actions are recommended for this species.
California linderiella <i>Linderiella occidentalis</i>	SSI	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.	<b>No Potential.</b> Wetlands within the Study Area are not vernal pools with underlying hardpan soils necessary to support this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	Occurs only in the central valley of California, in association with blue elderberry ( <i>Sambucus mexicana</i> ). Prefers to lay eggs in elderberry two to eight inches in diameter; some preference shown for "stressed" elderberry.	<b>Unlikely.</b> Valley elderberry longhorn beetle is dependent on its host plant, <i>Sambucus mexicana</i> . Though a single <i>Sambucus</i> plant was found within the Study Area, no beetles were observed, and the Study Area is west of this species' documented range (CDFW 2017). Populations of the species are known to occur within 8 miles northeast of the Study Area.	No further actions are recommended for this species.
Delta green ground beetle <i>Elaphrus viridis</i>	FT, RP	To date, the delta green ground beetle has only been found in the greater Jepson Prairie area in south-central Solano County, California. The delta green ground beetle lives in areas of grassland interspersed with vernal pools including several larger vernal pools (sometimes called playa pools or vernal lakes). The extent to which the delta green ground beetle also uses the grasslands beyond the less vegetated areas where it is usually seen remains unknown.	<b>No Potential.</b> This species has only been found in the greater Jepson Prairie area, which is over 20 miles northeast of the Study Area.	No further actions are recommended for this species.



**\* Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
FD	Federal Delisted
BCC	USFWS Birds of Conservation Concern
SE	State Endangered
ST	State Threatened
SC	State Candidate
SD	State Delisted
SSC	CDFW Species of Special Concern
SSI	CDFW Special-Status Invertebrate
CFP	CDFW Fully Protected Animal
WBWG	Western Bat Working Group (High or Medium) Priority species
Rank 1B.1	California Native Plant Society (CNPS) Rank 1B.1: Plants rare, threatened, or endangered in California and elsewhere (seriously threatened in California)
Rank 1B.2	California Native Plant Society (CNPS) Rank 1B.2: Plants rare, threatened, or endangered in California and elsewhere (moderately threatened in California)
Rank 2B.1	California Native Plant Society (CNPS) Rank 2B.1: Plants rare, threatened, or endangered in California, but more common elsewhere (seriously threatened in California)
Rank 2B.2	California Native Plant Society (CNPS) Rank 2B.2: Plants rare, threatened, or endangered in California, but more common elsewhere (moderately threatened in California)
Rank 3	CRPR Rank 3: Plants about which CNPS needs more information (a review list)
Rank 3.2	CRPR Rank 3.2: Plants about which CNPS needs more information (a review list; moderately threatened in California)
Rank 4.2	California Rare Plant Rank 4.2: Plants of Limited Distribution - A Watch List (moderately threatened in California)
Rank 4.3	California Rare Plant Rank 4.3: Plants of Limited Distribution - A Watch List (not very threatened in California)

**\*\*Potential species occurrence definitions:**

Present. Species was observed on the site during site visits or has been recorded (i.e. CNDDDB, other reports) on the site recently.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species has a low probability of being found on the site.

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APPENDIX C  
SITE PHOTOGRAPHS

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Representative view facing south of the anthropogenic depression sample as SP15 within the west-central portion of the Study Area. Photo taken on May 17, 2017.



Representative view facing south east of seasonal wetland seep within the south east corner of the Study Area. Photo taken on May 3, 2017.





Representative view facing south of coyote brush scrub within the northwestern portion of the Study Area. Photo taken on May 3, 2017.



View facing south of large seasonal wetland swale in the center of the Study Area. Photo taken on May 3, 2017.





View facing west of perennial stream in the southeastern corner of the Study Area. Photo taken on May 3, 2017.





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# Delineation of Waters of the U.S. Report

FAIRVIEW AT NORTHGATE  
VALLEJO, SOLANO COUNTY, CALIFORNIA

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**Prepared For:**

Lewis Management Corp.  
9216 Kiefer Blvd.  
Sacramento, CA 95826  
Contact: Jeb Elmore

**WRA Contact:**

Leslie Lazarotti  
lazarotti@wra-ca.com

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Appendix C – Representative Photographs of the Study Area
Appendix D – List of All Plant Species Observed within the Study Area

## **LIST OF ACRONYMS**

CFR	Code of Federal Regulations
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	Facultative plant species
FACU	Facultative Upland plant species
FACW	Facultative Wetland plant species
NL/UPL	Not Listed/Upland plant species
NRCS	National Resources Conservation Service
OBL	Obligate wetland plant species
OHWM	Ordinary High Water Mark
WRA	WRA, Inc.

## 1.0 INTRODUCTION

### 1.1 Study Background

On behalf of the Lewis Management Corp., this report presents the results of a delineation of waters of the U.S. (“waters”) under Section 404 of the Clean Water Act (CWA) within the proposed Fairview at Northgate Project (Project). The Study Area comprises approximately 52.62 acres in Vallejo, Solano County, California (Figure 1). The Study Area is located approximately 2.50 miles northeast of downtown Vallejo, southeast of the Turner Parkway and Admiral Callaghan Lane intersection.

This report is an update to the original delineation report, prepared in June of 2017. Updates include: (1) modification of the Study Area boundary to include a narrow strip of land east of Admiral Callaghan Lane and removal of the parcel on the west side of Interstate 80;<sup>1</sup> (2) discussion of anthropogenic depressions as potential Waters of the U.S.

### 1.2 Regulatory Background

#### *Clean Water Act Section 404*

Section 404 of the Clean Water Act gives the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding discharge of dredged or fill material into “navigable waters of the United States”. Section 502(7) of the Clean Water Act defines navigable waters as “waters of the United States, including territorial seas.” Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term “waters of the United States” as it applies to the jurisdictional limits of the authority of the Corps under the Clean Water Act. A summary of this definition of “waters of the U.S.” in 33 CFR 328.3 includes (1) waters used for commerce; (2) interstate waters and wetlands; (3) “other waters” such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries to the above waters; (6) territorial seas; and (7) wetlands adjacent to waters. Therefore, for purposes of the determining Corps jurisdiction under the Clean Water Act, “navigable waters” as defined in the Clean Water Act are the same as “waters of the U.S.” defined in the Code of Federal Regulations above.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: (a) *Territorial seas*: 3 nautical miles in a seaward direction from the baseline; (b) *Tidal waters of the U.S.*: high tide line or to the limit of adjacent non-tidal waters; (c) *Non-tidal waters of the U.S.*: ordinary high water mark or to the limit of adjacent wetlands; (d) *Wetlands*: to the limit of the wetland. A discussion of the methods used to delineate wetlands and waters is presented in Section 3.1.

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<sup>1</sup> The appendices contain some data that pertains to the parcel west of Interstate 80, such as sample points and plant species observed in this area.

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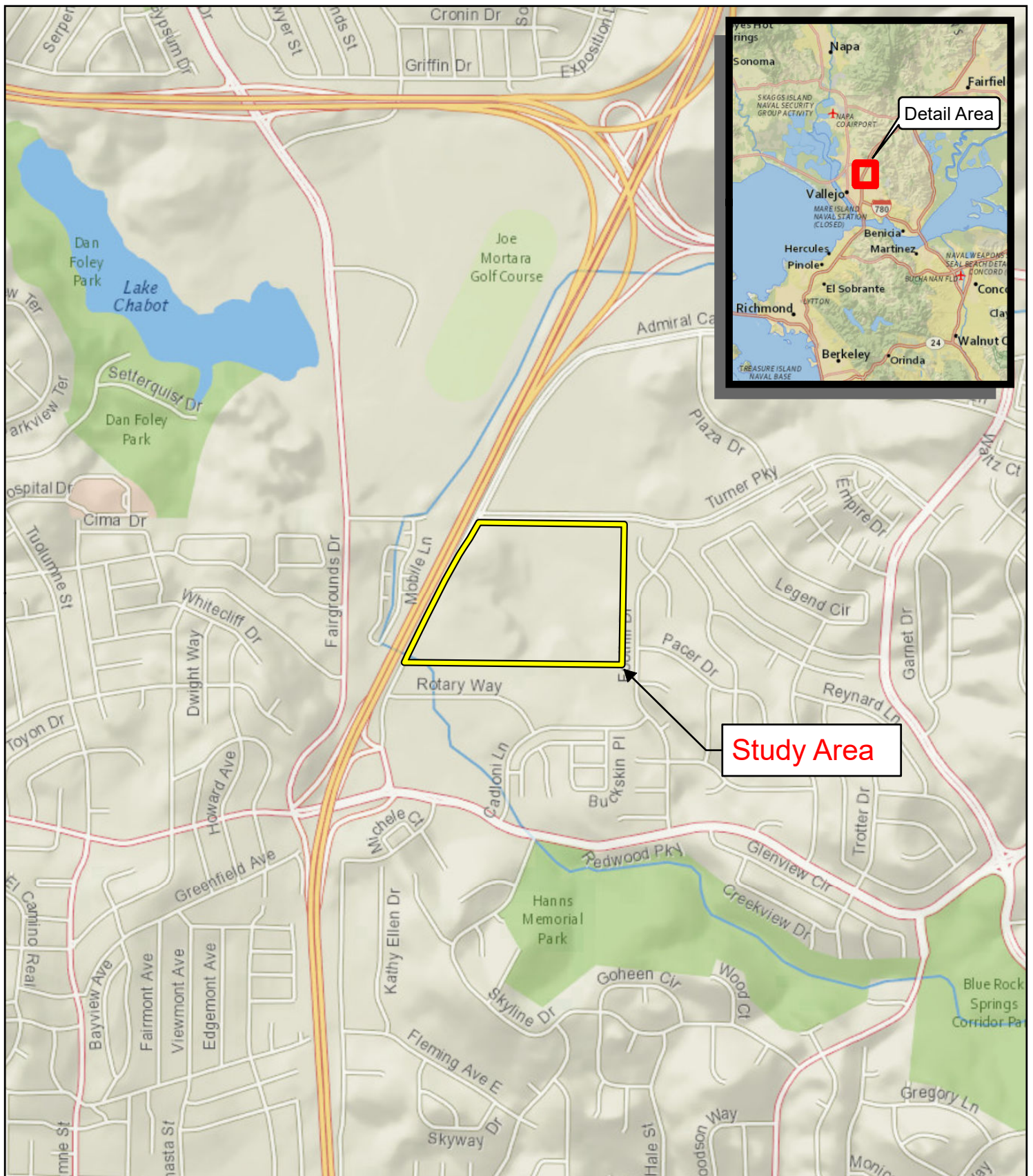
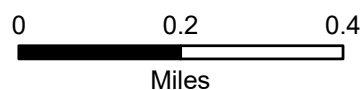


Figure 1. Regional Location Map

Fairview at Northgate  
Solano County, California



Map Prepared Date: 1/16/2018  
Map Prepared By: czumwalt  
Base Source: Esri Streaming - National Geographic  
Data Source(s): WRA



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## 2.0 SUMMARY OF POTENTIAL JURISDICTIONAL AREAS

Areas determined to be jurisdictional under Section 404 of the CWA were delineated based on field surveys conducted by WRA, Inc. (WRA) on May 3 and 17, 2017. The results of the delineation are summarized below.

### 2.1 Waters of the U.S.

Appendix A depicts the extent of Corps jurisdiction within the Study Area based on the wetland delineation. The acreage and length of potential jurisdictional areas are summarized in Table 1.

Table 1. Summary of Potential CWA Section 404 Jurisdictional Areas.

Feature Type (FGDC 2013)	Potential Jurisdictional Waters of the U.S. (acres/linear feet)
<b>Potential Jurisdictional Section 404 Wetlands</b>	
Seasonal Wetland Swale (PEM1)	5.02
Anthropogenic Depressions	0.08
<b>Potential Jurisdictional Section 404 Non-wetland Waters</b>	
Perennial Stream (R2UB)	0.02/85
<b>TOTAL SECTION 404 JURISDICTIONAL AREAS</b>	<b>5.12/85</b>

Within the Study Area, approximately 5.10 acres meet wetland criteria and 0.02 acre (85 linear feet) meet the criteria for non-wetland waters, totaling approximately 5.12 acres (85 linear feet) of potential wetlands and non-wetland waters. All potential wetlands and non-wetland waters delineated within the Study Area are considered to be potential jurisdictional features under CWA Section 404.

## 3.0 METHODS

Prior to conducting field surveys, available reference materials were reviewed, including soil survey data for the Study Area (CSRL 2017), the U.S. Geological Survey 7.5-minute quadrangle map for Cordelia (USGS 2015), the U.S. Fish and Wildlife Service National Wetland Inventory (USFWS 2017), rainfall data (NOAA 2017), WETS precipitation data (USDA 2017), and available aerial photographs of the site (Google Earth 2017). Following the background data search, WRA biologists performed a focused evaluation of indicators of wetlands and waters at the Study Area on May 3 and 17, 2017.

The methods used in this study to delineate jurisdictional wetlands and non-wetland waters are based on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* ("Corps Manual"; Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* ("Arid West Supplement"; Corps 2008a), and *A Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States* ("OHWM Guide;" Corps 2008b). The routine method for wetland delineation described in the Corps Manual was used to identify areas potentially subject to Corps Section 404 jurisdiction within the Study Area.

A general description of the Study Area, including the on-site biological communities, topography, and land use was also generated during site visits. The methods for evaluating the presence of wetlands and non-wetland waters employed during the delineation are described in detail below.

### **3.1 Potential Section 404 Waters of the U.S.**

#### **3.1.1 Wetlands**

The Study Area was evaluated for the presence or absence of indicators of the three wetland parameters described in the Corps Manual (Environmental Laboratory 1987) and the Arid West Supplement (Corps 2008a).

Section 328.3 of the Federal Code of Regulations defines wetlands as:

*"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

EPA, 40 CFR 230.3 and CE, 33 CFR 328.3 (b)

The three parameters used to delineate wetlands are the presence of: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. According to the Corps Manual, for areas not considered "problem areas" or "atypical situations":

*"...[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland determination."*

Data on vegetation, hydrology, and soils collected at sample points during the delineation site visits were reported on Arid West Supplement data forms. Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using GPS equipment and mapped on a topographic map. The areas of potential jurisdictional wetlands were measured digitally using ArcGIS software. Indicators described in the Arid West Supplement were used to make wetland determinations at each sample point in the Study Area and are summarized below.

#### **Vegetation**

Plant nomenclature follows the Jepson Flora Project (2017). Plant species identified on the Study Area were assigned a wetland status according to the National Wetland Plant List (Lichvar et al. 2016). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

OBL:	Obligate wetland species	Almost always a hydrophyte, rarely in uplands
FACW:	Facultative Wetland species	Usually a hydrophyte, but occasionally found in uplands
FAC:	Facultative species	Commonly either a hydrophyte or non-hydrophyte
FACU:	Facultative Upland species	Occasionally a hydrophyte, but usually found in uplands
NL/UPL:	Upland/Not Listed species	Rarely a hydrophyte, almost always in uplands

The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Supplement. The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the “50/20 rule” (Indicator 1; Dominance Test) described in the manual. To apply the “50/20 rule”, dominant species are chosen independently from each stratum of the community. Dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total vegetative cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The Prevalence Index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate the Prevalence Index using the following formula, where A equal's total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion.

## Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

*“A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.”*

Federal Register July 13, 1994,  
U.S. Department of Agriculture, NRCS

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, generally designated 0, 1, or 2, used to identify them as hydric, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators that can be used to determine whether a soil is hydric for the purposes of wetland delineation are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2010). The Arid West Supplement provides a list of 23 of these hydric soil indicators which are known to occur in the Arid West region. Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the 23 hydric soil indicators described in the Arid West Supplement.

## Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains 16 primary hydrology indicators and 10 secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

### 3.1.2 Non-wetland Waters

This study also evaluated the presence of “waters of the U.S.” other than wetlands potentially subject to Corps jurisdiction under Section 404 of the CWA. Other areas, besides wetlands, subject to Corps jurisdiction include lakes, rivers, and streams (including intermittent streams) in addition to all areas below the high tide line in areas subject to tidal influence. Jurisdiction in non-tidal areas extends to the OHWM defined as:

*“...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”*

Federal Register Vol. 51, No. 219,  
Part 328.3 (e). November 13, 1986

Identification of the ordinary high water mark followed the OHWM Guide (Corps 2008b).

### 3.2 Problem Areas and Difficult Wetland Situations in the Arid West

The Arid West Supplement (Corps 2008a) includes recommended procedures for completing wetland delineations in areas of “difficult wetland situations.” The Corps Manual describes “problem areas,” defined as naturally occurring wetland types which periodically lack wetland indicators due to normal seasonal or annual variability.

The list of difficult wetland situations methods provided in the Arid West Supplement includes wetlands with problematic hydrophytic vegetation, problematic hydric soils, and wetlands that periodically lack indicators of wetland hydrology. Although the Corps Manual and Arid West Supplement were utilized in the wetland determination, they do not provide exhaustive lists of the difficult situations and problem areas that can arise during delineations in the Arid West. Thus, it is important to use best professional judgment and knowledge of the ecology of the wetlands in the region during the collection and interpretation of wetland delineation data for problematic sites.

## 4.0 SITE DESCRIPTION

### 4.1 Location

The 52.62-acre Study Area, located approximately 2.5 miles northeast of downtown Vallejo, Solano County, California, is southeast of the Turner Parkway and Admiral Callaghan Lane intersection, and east of Interstate 80 (Figure 1). The Study Area is located within a portion of the City of Vallejo that consists primarily of commercial and residential properties. It is bordered to the north by commercial buildings and the Solano County Fairgrounds; to the east by a residential area; to the south by a residential area and a car dealership; and to the west by Admiral Callaghan Lane, Interstate 80, and a residential area.

Based on historic aerial imagery, Interstate 80 was constructed along the western boundary at some time prior to 1948 (NETR 2017). Admiral Callaghan Lane was constructed between 1968

and 1987 (NETR 2017). Blue Rock Springs Creek, which is a small perennial stream and of which a small portion is located within the southwestern corner of the Study Area, was crossed and culverted by Interstate 80 and Admiral Callaghan Lane. South of the Study Area, Blue Rock Springs Creek was culverted by a residential and commercial development complex at some time between 1968 and 1987 (NETR 2017).

The Study Area has been undeveloped since at least 1948 to the present day (Google Earth 2017, NETR 2017). However, the area was used extensively by off-road vehicles which resulted in an extensive network of vehicle paths and tire ruts throughout the Study Area. Although the site is now fenced along the northern edge on Turner Parkway, unauthorized access can still occur on the western edge of the property, and the site is used by people for temporary campsites. In addition, ground disturbance, caused by excavation and other earth-moving activities occurred in the northern portion of the Study Area. As a result of this construction activity, several small depressions were created in the property.

The Study Area consists primarily of low hills that converge at the central portion of the area. Slopes range from flat to steep. Elevations within the Study Area range from approximately 85 to 130 feet above sea level.

## **4.2 Vegetation**

Vegetation within the Study Area was observed to be largely composed of non-native annual species adapted to the disturbed, upland conditions resulting from off-roading activities and other ground disturbance. However, there is also a large swale complex and several small depressions that were characterized by hydrophytic vegetation. These areas also experienced extensive disturbance from off-road vehicle activity. In addition, a small daylighted reach of Blue Rock Springs Creek, a perennial stream, runs east to west in southwestern corner of the Study Area.

Species assemblages throughout the upland portions of the site were primarily non-native annual grassland plant communities; however, small, open patches of coyote brush (*Baccharis pilularis*; NL) scrub were observed on the western slope of the East Area. Wetland plant communities in the Study Area contained a mix of native and non-native annual and perennial species, many of which are typical of disturbed wetland plant communities in the San Francisco Bay Area.

Non-native annual grasslands occupy the majority of the Study Area. This community was located within the drier areas on all aspects. The dominant species observed within this community were Italian rye grass (*Festuca perennis*; FAC), ripgut brome (*Bromus diandrus*; NL), soft chess (*Bromus hordeaceus*; FACU), seaside barely (*Hordeum marinum*; FAC), foxtail barely (*Hordeum murinum*; FACU), and slender oat grass (*Avena barbata*; NL). Indian teasel (*Dipsacus sativus*; NL), sweet fennel (*Foeniculum vulgare*; NL), curly dock (*Rumex crispus*; FAC), spring vetch (*Vicia sativa*; FACU), and bristly ox tongue (*Helminthotheca echioides*; FAC) were observed mixed within the stands of annual grasses. Very few native species were observed within the non-native annual grasslands, and they occurred at extremely low cover. Native species observed included narrow leaf mule ears (*Wyethia angustifolia*; FACU) and white brodiaea (*Triteleia hyacinthina*; FAC).

Small stands of coyote brush scrub occur on the western slope of the Study Area. The dominant shrub species is coyote brush, with occasional toyon (*Heteromeles arbutifolia*; NL) and cherry plum (*Prunus cerasifera*; NL). Herbaceous cover is dominated by non-native herbs including soft

chess, Italian rye grass, ripgut brome, foxtail barely, and slender oat grass. In lesser abundance, sweet fennel, purple vetch (*Vicia benghalensis*; NL), short podded mustard (*Hirschfeldia incana*; NL), Mediterranean linseed (*Bellardia trixago*; NL), purple salsify (*Tragopogon porrifolius*; NL), and spring vetch was observed. Native species were sparse, and included the occasional narrow leaf mule ears and white brodiaea.

A large seasonal wetland swale complex is present at the base of the hills within the Study Area. The swale complex is characterized by hydrophytic vegetation, but as stated above, it has been extensively disturbed by a still-visible network of off-road vehicle pathways and tire ruts. The wettest portions of the swales are generally at the upper ends, near the Study Area boundary, and are dominated by obligate and facultative perennial wetland species, including cattails (*Typha* sp.; OBL), bulrushes (*Bolboschoenus* sp.; OBL), and iris-leaved rush (*Juncus xiphioides*; OBL). Drier portions of the wetland swale are dominated by annual facultative and facultative wetland species, including salt grass (*Distichlis spicata*; FAC), Italian ryegrass, curly dock, rabbit's foot grass (*Polypogon monspeliensis*; FACW), bristly ox-tongue, and creeping wildrye (*Elymus triticoides*; FAC). Occasional red willows (*Salix laevigata*; FACW) are present, particularly along the southern boundary of the Study Area, but the wetlands are generally treeless. Seasonal wetlands swales are discussed in further detail in Section 5.1.

Sparse vegetation is present along the fringes of Blue Rock Springs Creek, including chairmaker's bulrush (*Schoenoplectus americanus*; OBL), cattail, and arroyo willow (*Salix lasiolepis*; FACW), but the feature is generally unvegetated. Above OHWM, the vegetation is dense and dominated by non-native annual species such as wild radish (*Raphanus sativus*; NL), slender wild oats, and bristly ox-tongue.

Excavations and tire ruts were observed in the north-central and western portions of the Study Area where off road activity has been occurring for a number of years. These excavations and tire ruts support hydrophytic vegetation characterized by annual species such as Mediterranean barley, Italian ryegrass, rabbit's foot grass, and waxy mannagrass (*Glyceria declinata*; FACW), though some depressions support perennial species such as iris-leaved rush and cattails.

A list of all plant species observed within the Study Area during the field surveys is provided in Appendix D.

### 4.3 Soils

The online soil survey of the Study Area (CSRL 2017) indicates that the Study Area has three native soil mapping units, composed of two soil series: Clear Lake clay, 0 to 2 percent slopes, MLRA 17; Dibble Los Osos loams, 2 to 9 percent slopes; and Dibble-Los Osos clay loams, 9 to 30 percent slopes (Figure 2). The soil series that make up these mapping units are described below.

**Clear Lake Series.** The Clear Lake series consists of very deep, poorly drained soils located on plains and flat basins, which formed in alluvium derived from sandstone and shale. This soil is a very hard, firm, and very sticky clay. It has been directly and indirectly modified by humans through the deepening of natural channels by erosion and by the extensive pumping of water for irrigation and for domestic use. This soil is slowly permeable, and runoff is very slow. Drainage is moderately good. This soil type is listed as hydric in the National List of Hydric Soils (USDA 2017a).



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Cooke Property  
Vallejo

Solano County,  
California

Figure 2.  
Soils Map



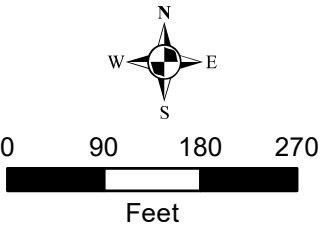
Study Area (52.62 ac.)

**Mapunit Name**

Clear Lake clay, 0 to 2 percent slopes, MLRA 17

Dibble-Los Osos clay loams, 9 to 30 percent slopes

Dibble-Los Osos loams, 2 to 9 percent slopes



Map Prepared Date: 1/15/2019  
Map Prepared By: czumwalt  
Base Source: USGS EROS Ortho 1ft.  
Data Source(s): WRA



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A representative pedon of the Clear Lake series consists of an A-horizon of a neutral (pH 7.0) dark gray (3/0), when moist, clay from approximately 0 to 13 inches. This is underlain by two Bss-horizons. The first BSS horizon contains a moderately alkaline (pH 8.0), very dark gray (N 3/0) when moist, clay with a clear wavy boundary. This is underlain by a second Bss layer from 13-19 inches of moderately alkaline (pH 8.0), very dark gray (N 3/0) when moist, clay with a diffuse wavy boundary. Beneath this is a Bssk horizon from 45-60 inches containing a moderately alkaline (pH 8.0), light olive brown (2.5Y 5/4) when moist, clay. This horizon is slightly calcareous with few soft lime masses. The Clear Lake Clay mapping unit is typically located on basins and in swales of drainageways (CSRL 2017).

**Dibble Series.** The Dibble series consists of moderately deep well drained soils that formed in material weathered from shale and sandstone. Dibble soils are on uplands and have slopes of 2 to 75 percent (CSRL 2017).

A representative pedon from the Dibble Series consists of seven horizons: A1, A2, Bat, Bt1, Bt2, BCt, and Cr. The A1 horizon consists of a medium acid (pH 5.8), olive brown (2.5Y 4/4) when moist; silt loam from 0 to 2 inches with an abrupt smooth boundary. This is underlain by a second A horizon (A2) consisting of a medium acid (pH 5.8); brown (10YR 4/3) when moist, light clay loam from 2 to 6 inches. Beneath this, is a BA<sub>t</sub> horizon from 6 to 9 inches. This horizon consists of a medium acid (pH 5.8), yellowish brown (10YR 5/4) when moist, heavy clay loam. This is underlain by two B<sub>t</sub> horizons. The first B<sub>t</sub> horizon (Bt1) consists of a medium acid (pH 5.8), yellowish brown (10YR 5/4) when moist, clay from 9 to 17 inches. The second B<sub>t</sub> horizon (Bt2) consists of a medium acid (pH 5.8), yellowish brown (10YR 5/4), when moist, heavy clay loam from 17-24 inches. This is underlain by a BC<sub>t</sub> horizon that consists of a medium acid (pH 5.7), yellowish brown (10YR 5/6) when moist, heavy clay loam from 24-34 inches. The last horizon (Cr) consists of a yellow (10YR 8/8) siltstone from 34-40 inches.

**Los Osos Series.** The Los Osos series consists of moderately deep, well drained soils on uplands with slopes of 5 to 75 percent. They formed in material weathered from firm to hard sandstone and shale. These soils have very high runoff and slow permeability. A typical profile includes five soil horizons: A, Btss1, Btss2, C, and Cr.

The first horizon from a representative pedon from the Los Osos series consists of an A horizon from 0-14 inches. The A horizon consists of a moderately acid (pH 6.0), very dark grayish brown (10YR 3/2) when moist, loam. This is underlain by two Btss horizons. The first Btss horizon (Btss1) consists of moderately acid (pH 6.0), dark yellowish brown (10YR 4/4) when moist, clay, with a gradual wavy boundary from 14-24 inches. The second Btss horizon (Btss2) consists of a slightly acid (pH 6.5), dark yellowish brown (10YR 4/4) when moist, clay loam from 24-32 inches. This is underlain by a C horizon which consists of a neutral (pH 7.0), light olive brown (2.5Y 5/4) when moist, sandy loam from 32-39 inches. This is underlain by a Cr horizon that consists of brown (10YR 4/3) when moist, sandstone from 39-43 inches.

#### **4.4 Hydrology**

All precipitation occurs as rainfall within the Study Area. The water source for the seasonal wetland swale present within the Study Area is primarily runoff from the Study Area and adjacent developed lands, subsurface input, and direct precipitation. Rainwater provides a water source for the entire site during the winter and spring months. However, the seasonal wetland swale along the central portion of the parcel remains inundated and saturated to a much greater degree

than other areas within the parcel, possibly as a result of groundwater seepage, a low position in the landscape, and clayey soils. The seasonal wetland swale complex drains to the north into a culvert outside of the Study Area, though at the time of the May site visits, the swales were not flowing. In the southwest portion of the Study Area, a small daylighted segment of Blue Rock Springs Creek runs through the southwest corner of the Study Area. This perennial creek is supplied by runoff originating offsite.

The annual average rainfall for the Fairfield 5.9 WSW climate station, located northeast of the Study Area, is 23.38 inches, and the average rainfall for the February through April is 9.33 inches (USDA 2017b). A WETS analysis for the Fairfield 5.9 WSW weather station, located northeast of the Study Area, was performed for the 3-month period preceding the site visits, and record levels of precipitation (a total of 18.15 inches) occurred. In February, 9.82 inches of precipitation occurred (above normal), 4.85 inches occurred in March (above normal), and 3.48 inches occurred in April (above normal) (NOAA 2017). The total of 18.15 inches of precipitation that occurred in the 3 months prior to the May 2017 site visits was 195 percent of the average for that period.

## **5.0 RESULTS**

Areas within the Study Area that are potentially jurisdictional under Section 404 of the Clean Water Act are summarized in Table 1 and depicted in Appendix A. Standard Corps Arid West wetland delineation data forms are included in Appendix B. Photographs of representative portions of the Study Area and sample points are presented in Appendix C. A list of all plant species observed during the site visits is included in Appendix D.

### **5.1 Potential Section 404 Waters of the U.S.**

#### **5.1.1 Wetlands**

The Study Area contains two wetland categories, as illustrated in Appendix A. All wetlands mapped and presented in this report are likely to be considered jurisdictional by the Corps as they all drain (or would potentially drain) to the San Francisco Bay, a navigable waterway.

#### **5.1.2 Seasonal Wetland Swale (PEM1)**

Seasonal wetland swales were sampled at SP01, SP03, SP07, SP09, and SP11; the three wetland criteria were met at all sample points. All sample points met the Dominance Test hydrophytic vegetation indicator and the Redox Dark Surface hydric soil indicator. All sample points met one or more wetland hydrology indicators, including Saturation, Oxidized Rhizospheres Along Living Roots, and Water-Stained Leaves. Seasonal wetland swales in the Study Area met the three wetland criteria and are assumed to drain into receiving waters that are jurisdictional waters of the U.S. and therefore are expected to be considered jurisdictional under Section 404 of the CWA.

#### **5.1.3 Anthropogenic Depressions**

As discussed in Section 4.2, excavations and tire ruts exist within the Study Area that were formed by extensive and regular off road vehicle use and other forms of ground disturbance. These depressions were sampled at SP05 and SP15. These depressions are clearly the result of

anthropogenic disturbance, as evidenced by historic aerial imagery (Google Earth 2017, NETR 2017) and still evident tire ruts observed in the field. Both sample points met the Dominance Test hydrophytic vegetation indicator and one or more hydric soil indicators, including Loamy Gleyed Matrix, Redox Dark Surface and Redox Depressions. Both sample points met one or more wetland hydrology indicators, including Surface Water and Saturation, and are assumed to drain into receiving waters that are jurisdictional waters of the U.S. Although the excavations and tire ruts are manmade within otherwise upland areas, Corps personnel indicated during a site visit that the Corps would claim jurisdiction over these features as Waters of the U.S. Therefore, anthropogenic depressions mapped within the Study Area are considered to be jurisdictional under Section 404 of the CWA.

## **5.2 Potential Section 404 Non-wetland Waters**

### **5.2.1 Perennial Stream (R2UB)**

A small daylighted segment of Blue Rock Springs Creek, a perennial stream, is present in the southwestern corner of the Study Area. The stream enters the Study Area from the south via a culvert that runs under an automobile dealership. It then exits the Study Area to the west via a culvert under Admiral Callaghan Lane. Sparse vegetation is present along the fringes of the creek below OHWM, but the feature is generally unvegetated. Indicators of an OHWM are present, including a clear bed and bank. The perennial stream in the Study Area is assumed to drain into receiving waters that are jurisdictional waters of the U.S. and therefore is expected to be considered jurisdictional under Section 404 of the CWA.

## **6.0 POTENTIAL JURISDICTIONAL AREAS**

The conclusions of this report are based on conditions observed at the time of the field delineation conducted May 3 and 17, 2017, and on subsequent input received from the Corps.

### **6.1 Potential Corps Jurisdiction**

Based on the findings of the wetland delineation, the Study Area contains approximately 5.10 acres of potentially jurisdictional wetlands and 0.02 acres (85 linear feet) of potentially jurisdictional non-wetland waters (as summarized in Table 1).

Areas mapped as wetlands were dominated by hydrophytic vegetation, with FAC, FACW and OBL classified plants, and also contained hydric soil and wetland hydrology indicators. Wetlands were distinguished from non-wetland waters by the presence of greater than 5 percent absolute cover of hydrophytic vegetation. The two wetland types delineated within the Study Area are seasonal wetland swale and anthropogenic depressions.

Non-wetland waters were determined based on the presence of an OHWM; the one type of non-wetland waters delineated within the Study Area was perennial stream.

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## APPENDIX A -- Preliminary Section 404 Jurisdiction Map

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Potentially Jurisdictional Features	
Seasonal Wetland Swale	Acres
W01	5.00
W02	0.02
Anthropogenic Depressions	Acres
AD01	0.02
AD02	0.01
AD03	0.00
AD04	0.01
AD05	0.02
AD06	0.01
AD07	0.01
Waters	Acres/Linear Ft.
S01	0.02/85
<b>Total</b>	<b>5.12/85</b>

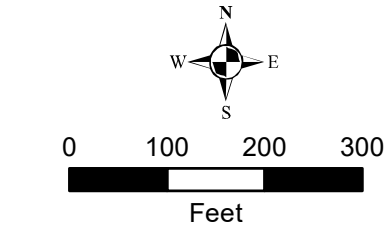


Fairview at  
Northgate

Solano County,  
California

Figure 2.

Delineation Map



Map Prepared Date: 5/15/2018  
Map Prepared By: czumwalt  
Base Source: NAIP 2016  
Data Source(s): WRA



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## APPENDIX B -- Arid West Wetland Delineation Data Sheets

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# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP01  
 Investigator(s) Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Concave Slope(%) 0-1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12747637 Long: -122.2208919 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Wetland Sample Point located within southeast corner of Study Area at base of slope on fringe of large seasonal swale. Sample point does contain hydrophytic vegetation, hydric soil indicators, and hydrology indicators. The wetland boundary was determined primarily by a change to hydrophytic vegetation. Sample point paired with Sample Point 02. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1. _____						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>2</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____						
3. _____						
4. _____						
Tree Stratum Total Cover: _____						
SAPLING/SHRUB STRATUM	Plot Size:	N/A				<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____						
2. _____						
3. _____						
4. _____						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM	Plot Size:	5' Radius				<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Hordeum marinum</i>			60	Yes	FAC	
2. <i>Festuca perennis</i>			25	Yes	FAC	
3. <i>Bromus hordeaceus</i>			10	No	FACU	
4. <i>Vicia sativa</i>			3	No	FACU	
5. <i>Rumex crispus</i>			1	No	FAC	
6. <i>Dipsacus sativus</i>			1	No	NL	
7. _____						
8. _____						
Herb Stratum Total Cover: <u>100</u>						
WOODY VINE STRATUM	Plot Size:	N/A				<b>Hydrophytic Vegetation Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. _____						
2. _____						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** The vegetation within the Sample Point passes the dominance test, therefore Hydrophytic vegetation is present within the Sample Point.



## SOIL

Sampling Point SP01

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-14	10YR 3/1	93	7.5YR 4/4	7	C	M,PL	Clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2cm Muck (A10)(LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)(LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/> 1cm Muck (A9)(LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> <b>Type:</b> _____ <b>Depth (inches):</b> _____	<b>Hydric Soil Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

**Remarks:** The Redox Dark Surface (F6) hydric soil indicator was observed within the Sample Point. Therefore, hydric soils are present.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1)(Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2)(Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3)(Riverine)
<input type="checkbox"/> Water Marks (B1)(Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2)(Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)(Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 14 (includes capillary fringe)	<b>Wetland Hydrology Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Describe recorded data (stream gauge, monitoring well, aerial photos, etc.) if available.

**Remarks:** The Oxidized Rhizospheres along Living Roots (C3) and Saturation (A3) hydrology indicators were observed within the Sample Point. Saturation was observed at a depth of 14 inches, and because the Sample Point meets hydrophytic vegetation, hydric soil, and another primary wetland hydrology indicator, it is assumed that a water table is present at a depth below 14 inches. Therefore, wetland hydrology is present within Sample Point.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP02  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Convex Slope(%) 1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12748728 Long: -122.2208312 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Sample Point located within south east corner of Study Area within upland terrace. No hydrophytic vegetation or hydric soil indicators were present. However, saturation was present deep within the Sample Point from 10-16 inches. No other hydrology indicators were present. The wetland boundary was determined primarily by a change to hydrophytic vegetation. Sample Point paired with SP01. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1.						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>0</u> (A) Total number of dominant species across all strata? <u>4</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>0</u> (A/B)
2.						
3.						
4.						
Tree Stratum Total Cover: _____						<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
SAPLING/SHRUB STRATUM Plot Size: N/A						
1.						
2.						
3.						
4.						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM Plot Size: 5' Radius						
1.	<i>Bromus diandrus</i>		26	Yes	NL	<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<i>Avena barbata</i>		17	Yes	NL	
3.	<i>Vicia sativa</i>		15	Yes	FACU	
4.	<i>Dipsacus sativus</i>		15	Yes	NL	
5.	<i>Bromus hordeaceus</i>		10	No	FACU	
6.	<i>Geranium dissectum</i>		7	No	NL	
7.	<i>Rumex crispus</i>		5	No	FAC	
8.	<i>Helminthotheca echioides</i>		3	No	FAC	
Herb Stratum Total Cover: 100						
WOODY VINE STRATUM Plot Size: N/A						
1.						<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** Sample point is dominated by *Bromus diandrus*. Additional cover includes 2% *Tragopogon porrifolius*, NL. Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP02

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-4	10YR 2/2	100					Clay	
4-10	10YR 3/2	100					Clay	
10-16	10YR 3/2	100					Clay	Saturation present

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)
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<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--

**Remarks:** No hydric soil indicators were observed.

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 10-16 (includes capillary fringe)	<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

**Remarks:** Saturation was observed from 10-16 inches, but a high water table or restrictive layer were not observed at a depth at or above 16 inches. Therefore, the Sample Point does not meet wetland hydrology indicators. It is possible that a water table is present at a greater depth. If so, the Sample Point would meet the Saturation (F3) wetland hydrology indicator.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP03  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Depression Local Relief (concave, convex, none) Concave Slope(%) 2  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12918138 Long: -122.2205738 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification R4SBA

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Sample point is located central eastern portion of the Study Area within a slight depression adjacent a drainage feature. Sample Point is dominated by <i>Hordeum marinum</i> . Hydrophytic vegetation, hydric soil indicators, and wetland hydrology are present within Sample Point. A elevation change is present between Sample Point and surrounding upland areas. SP03 and SP04 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1. _____						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>2</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____						
3. _____						
4. _____						
Tree Stratum Total Cover: _____						<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
SAPLING/SHRUB STRATUM Plot Size: N/A						
1. _____						
2. _____						
3. _____						
4. _____						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM Plot Size: 5' Radius						<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Hordeum marinum</i>		55	Yes	FAC		
2. <i>Distichlis spicata</i>		25	Yes	FAC		
3. <i>Rumex crispus</i>		13	No	FAC		
4. <i>Festuca perennis</i>		5	No	FAC		
5. <i>Dipsacus sativus</i>		2	No	NL		
6. <i>Geranium dissectum</i>		+	No	NL		
7. _____						
8. _____						
Herb Stratum Total Cover: 100						
WOODY VINE STRATUM Plot Size: N/A						<b>Hydrophytic Vegetation Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. _____						
2. _____						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** *Hordeum marinum* is dominate within the Sample Point. Sample Point passes the dominance test for hydrophitic vegetation therefore, hydrophitic vegetation is present.

## SOIL

Sampling Point SP03

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-9	10YR 2/1	100					Clay	Saturated
9-16	2.5YR 2.5/1	98	5YR 3/1	2	C	M	Clay	Saturated

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):	Hydric Soil Present ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Type: _____ Depth (inches): _____	

**Remarks:** Soil is comprised of extremely hard clay. Hydric soil indicator Redox Dark Surface (F6) was observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:	Wetland Hydrology Present ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input type="checkbox"/> No Depth (inches): 2 (includes capillary fringe)	

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

**Remarks:** No water table observed, but assumed to be below 16 inches due to no rain in several weeks. Wetland hydrology indicator Saturation (A3) was observed within Sample point therefore, wetland hydrology is present within Sample Point.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP04  
 Investigator(s) David Zwick & Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Hillslope Local Relief (concave, convex, none) Convex Slope(%) 1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12909212 Long: -122.2206321 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Sample Point located on hillside towards the toe of the slope within central eastern portion of the Study Area. Sample Point located on edge of wetland. Sample point does contain hydric soil indicators. However, no hydrophytic vegetation or wetland hydrology indicators were observed. SP03 and SP04 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1.						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>0</u> (A) Total number of dominant species across all strata? <u>0</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>0</u> (A/B)
2.						
3.						
4.						
<b>Tree Stratum Total Cover:</b>						
<b>SAPLING/SHRUB STRATUM</b> Plot Size: <u>N/A</u>						
1.						<b>Prevalence Index Worksheet</b> Total % cover of: <u>        </u> Multiply by: <u>        </u> OBL species <u>        </u> x1 <u>        </u> FACW species <u>        </u> x2 <u>        </u> FAC species <u>        </u> x3 <u>        </u> FACU species <u>        </u> x4 <u>        </u> UPL species <u>        </u> x5 <u>        </u> Column Totals <u>        </u> (A) <u>        </u> (B) Prevalence Index = B/A = <u>        </u>
2.						
3.						
4.						
<b>Sapling/Shrub Stratum Total Cover:</b>						
<b>HERB STRATUM</b> Plot Size: <u>5' Radius</u>						
1.	<u>Dipsacus sativus</u>		<u>60</u>	<u>Yes</u>	<u>NL</u>	<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Helminthotheca echioides</u>		<u>10</u>	<u>No</u>	<u>FAC</u>	
3.	<u>Triteleia hyacinthina</u>		<u>9</u>	<u>No</u>	<u>FAC</u>	
4.	<u>Geranium dissectum</u>		<u>7</u>	<u>No</u>	<u>NL</u>	
5.	<u>Medicago polymorpha</u>		<u>6</u>	<u>No</u>	<u>FACU</u>	
6.	<u>Vicia sativa</u>		<u>4</u>	<u>No</u>	<u>FACU</u>	
7.	<u>Bromus Hordeaceus</u>		<u>4</u>	<u>No</u>	<u>FACU</u>	
8.						
<b>Herb Stratum Total Cover:</b> <u>100</u>						
<b>WOODY VINE STRATUM</b> Plot Size: <u>N/A</u>						
1.						<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.						
<b>Woody Vines Total Cover:</b>						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** Sample point located within a dense patch of Dipsacus sativus with Helminthotheca echioides and Triteleia hyacinthina mixed in. Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP04

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	10YR 2/1	93	7.5YR 3/4	7	C	m	Clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

**Remarks:** Hydric soil indicator Redox Dark Surface (F6) was observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
<b>Primary Indicators (any one indicator is sufficient)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ (includes capillary fringe)	<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.	
Remarks: No wetland hydrology indicators were observed.	

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP05  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Depression Local Relief (concave, convex, none) Concave Slope(%) 0  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12997829 Long: -122.2221765 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> SP located within depression within central northern portion of the Study Area. Area is dominated by <i>Polypogon monspeliensis</i> . Depression caused by off-road vehicle tire ruts and/or possible excavation. Hydrophytic vegetation, hydric soil indicators, and wetland hydrology are present within Sample Point. SP05 and SP06 are paired. AThe wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. bove normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1. _____						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>2</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____						
3. _____						
4. _____						
Tree Stratum Total Cover: _____						<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
SAPLING/SHRUB STRATUM Plot Size: N/A						
1. _____						
2. _____						
3. _____						
4. _____						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM Plot Size: 5' Radius						
1. <i>Polypogon monspeliensis</i>			77	Yes	FACW	<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Juncus xiphioides</i>			20	Yes	OBL	
3. <i>Cyperus eragrostis</i>			3	No	FACW	
4. <i>Dittrichia graveolens</i>			3	No	NL	
5. <i>Plantago lanceolata</i>			2	No	FAC	
6. <i>Rumex crispus</i>			2	No	FAC	
7. <i>Hordeum marinum</i>			2	No	FAC	
8. <i>Lythrum hyssopifolia</i>			1	No	OBL	
Herb Stratum Total Cover: 100						
WOODY VINE STRATUM Plot Size: N/A						
1. _____						<b>Hydrophytic Vegetation Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. _____						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** Sample Point contains a dense mat of *Polypogon monspeliensis*. The vegetation within the Sample Point passes the dominance test, therefore Hydrophytic vegetations is present within the Sample Point.



## SOIL

Sampling Point SP05

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-10	10YR 3/3	97	2.5YR 3/6	3	C	PL	Clay	Saturated
10-16	10YR 3/2	65	7.5YR 4/4	35	C	M, PL	Clay	Saturated, water table present

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input checked="" type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

**Remarks:** Hydric soil indicators Redox Dark Surface (F6) and Redox Depressions (F8) were observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 14 Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 1 (includes capillary fringe)		<b>Wetland Hydrology Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.		
<b>Remarks:</b> Water filled the bottom of the soil pit several minutes after the pit was dug. Sample Point was heavily saturated throughout the profile. Wetland hydrology indicators Saturation (A3) was observed within Sample point therefore, wetland hydrology is present within Sample Point.		

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP06  
 Investigator(s) Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Convex Slope(%) 0  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12999002 Long: -122.2221266 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Upland SP on slight mound with area of significant past disturbance within central northern portion of the Study Area. Sample Point located above depressions formed from tire ruts and excavated areas. Sample point does not contain hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP05 and SP06 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the visit.	

## VEGETATION (use scientific names)

<b>TREE STRATUM</b> Plot Size: <u>N/A</u> <table style="width: 100%;"> <tr> <th style="width: 35%;">1. _____</th> <th style="width: 15%;">Absolute % cover</th> <th style="width: 20%;">Dominant Species?</th> <th style="width: 30%;">Indicator Status</th> </tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> </table> <p style="text-align: right;">Tree Stratum Total Cover: _____</p> <b>SAPLING/SHRUB STRATUM</b> Plot Size: <u>N/A</u> <table style="width: 100%;"> <tr> <th style="width: 35%;">1. _____</th> <th style="width: 15%;">Absolute % cover</th> <th style="width: 20%;">Dominant Species?</th> <th style="width: 30%;">Indicator Status</th> </tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> </table> <p style="text-align: right;">Sapling/Shrub Stratum Total Cover: _____</p> <b>HERB STRATUM</b> Plot Size: <u>5' Radius</u> <table style="width: 100%;"> <tr> <th style="width: 35%;">1. <u>Avena barbata</u></th> <th style="width: 15%;">35</th> <th style="width: 20%;">Yes</th> <th style="width: 30%;">NL</th> </tr> <tr> <td>2. <u>Vicia sativa</u></td> <td>15</td> <td>Yes</td> <td>FACU</td> </tr> <tr> <td>3. <u>Plantago lanceolata</u></td> <td>5</td> <td>No</td> <td>FAC</td> </tr> <tr> <td>4. <u>Vicia benghalensis</u></td> <td>5</td> <td>No</td> <td>NL</td> </tr> <tr> <td>5. <u>Festuca perennis</u></td> <td>5</td> <td>No</td> <td>FAC</td> </tr> <tr> <td>6. <u>Baccharis pilularis</u></td> <td>4</td> <td>No</td> <td>NL</td> </tr> <tr> <td>7. <u>Foeniculum vulgare</u></td> <td>2</td> <td>No</td> <td>NL</td> </tr> <tr> <td>8. <u>Medicago polymorpha</u></td> <td>1</td> <td>No</td> <td>FACU</td> </tr> </table> <p style="text-align: right;">Herb Stratum Total Cover: <u>84</u></p> <b>WOODY VINE STRATUM</b> Plot Size: <u>N/A</u> <table style="width: 100%;"> <tr> <th style="width: 35%;">1. _____</th> <th style="width: 15%;">Absolute % cover</th> <th style="width: 20%;">Dominant Species?</th> <th style="width: 30%;">Indicator Status</th> </tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> </table> <p style="text-align: right;">Woody Vines Total Cover: _____</p> <p>% Bare ground in herb stratum <u>16</u> % cover of biotic crust <u>0</u></p>	1. _____	Absolute % cover	Dominant Species?	Indicator Status	2. _____				3. _____				4. _____				1. _____	Absolute % cover	Dominant Species?	Indicator Status	2. _____				3. _____				4. _____				1. <u>Avena barbata</u>	35	Yes	NL	2. <u>Vicia sativa</u>	15	Yes	FACU	3. <u>Plantago lanceolata</u>	5	No	FAC	4. <u>Vicia benghalensis</u>	5	No	NL	5. <u>Festuca perennis</u>	5	No	FAC	6. <u>Baccharis pilularis</u>	4	No	NL	7. <u>Foeniculum vulgare</u>	2	No	NL	8. <u>Medicago polymorpha</u>	1	No	FACU	1. _____	Absolute % cover	Dominant Species?	Indicator Status	2. _____				<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>0</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>0</u> (A/B)
1. _____	Absolute % cover	Dominant Species?	Indicator Status																																																																						
2. _____																																																																									
3. _____																																																																									
4. _____																																																																									
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2. <u>Vicia sativa</u>	15	Yes	FACU																																																																						
3. <u>Plantago lanceolata</u>	5	No	FAC																																																																						
4. <u>Vicia benghalensis</u>	5	No	NL																																																																						
5. <u>Festuca perennis</u>	5	No	FAC																																																																						
6. <u>Baccharis pilularis</u>	4	No	NL																																																																						
7. <u>Foeniculum vulgare</u>	2	No	NL																																																																						
8. <u>Medicago polymorpha</u>	1	No	FACU																																																																						
1. _____	Absolute % cover	Dominant Species?	Indicator Status																																																																						
2. _____																																																																									
<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____																																																																									
<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																																									
<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																																																																									

**Remarks:** Other species observed within Sample Point include: Festuca bromoides, Bromus hordeaceus, and Trifolium hirtum. The Sample Point did not pass the dominance test therefore, the Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP06

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-6	10YR 3/2	100					Loamy Clay	
6-12	10YR 3/2	98	7.5YR 3/4	2	C	M	Loamy Clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.<sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

## Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5)(LRR C)     | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1cm Muck (A9)(LRR D)              | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          |   |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 1cm Muck (A9) (LRR C)  
☐ 2cm Muck (A10)(LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

## Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: No hydric soil indicators were observed.

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1)(Nonriverine)             | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine)       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)(Nonriverine)          | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Recent Iron Reduction in PLoed Soils (C6)     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |  |

## Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)  
☐ Sediment Deposits (B2)(Riverine)  
☐ Drift Deposits (B3)(Riverine)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Thin Muck Surface (C7)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

## Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches): \_\_\_\_\_Water table present? ☐ Yes ☒ No Depth (inches): \_\_\_\_\_Saturation Present? ☐ Yes ☒ No Depth (inches): \_\_\_\_\_  
(includes capillary fringe)Wetland Hydrology Present ? ☐ Yes ☒ No

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No wetland hydrology indicators were observed.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP07  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Concave Slope(%) 0  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12993961 Long: -122.223629 Datum: WGS 84  
 Soil Map Unit Name Clear Lake clay, 0 to 2 percent slopes, MLRA 17 NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Sample Point located on a terrace adjacent a seasonal wetland swale in the northwest corner of the Study Area. Hydrophytic vegetation, hydric soil indicators, and wetland hydrology are present within Sample Point. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP07 and SP08 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. _____	<u>N/A</u>	_____	_____	_____	<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>2</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Tree Stratum Total Cover: _____					
SAPLING/SHRUB STRATUM	Plot Size:				<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Sapling/Shrub Stratum Total Cover: _____					
HERB STRATUM	Plot Size:				<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus balticus</u>	<u>5' Radius</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Festuca perennis</u>		<u>25</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Rumex crispus</u>		<u>15</u>	<u>No</u>	<u>FAC</u>	
4. <u>Geranium dissectum</u>		<u>10</u>	<u>No</u>	<u>FAC</u>	
5. _____		_____	_____	_____	
6. _____		_____	_____	_____	
7. _____		_____	_____	_____	
8. _____		_____	_____	_____	
Herb Stratum Total Cover: <u>100</u>					
WOODY VINE STRATUM	Plot Size:				
1. _____	<u>N/A</u>	_____	_____	_____	
2. _____		_____	_____	_____	
Woody Vines Total Cover: _____					
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>					

**Remarks:** The vegetation within the Sample Point passes the dominance test, therefore Hydrophytic vegetations is present within the Sample Point.

## SOIL

Sampling Point SP07

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	2.5Y 3/1	98	7.5YR 4/6	2	C	M,PL	Clay	Saturated

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

**Remarks:** Hydric soil indicator Redox Dark Surface (F6) was observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 1 (includes capillary fringe)		<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Wetland Hydrology Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Describe recorded data (stream gauge, monitoring well, aerial photos, etc.) if available.		
<b>Remarks:</b> No water table observed, but assumed to be below 16 inches due to no rain in several weeks and the fact that the Sample Point meets hydrophytic vegetation and hydric soil indicators. Wetland hydrology indicator Saturation (A3) and Water-Stained Leaves (B9) were observed within Sample point therefore, wetland hydrology is present within Sample Point.		

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP08  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Hillslope Local Relief (concave, convex, none) Convex Slope(%) 1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12995689 Long: -122.2235541 Datum: WGS 84  
 Soil Map Unit Name Clear Lake clay, 0 to 2 percent slopes, MLRA 17 NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Sample Point is located on a hillside above a pond within the north west corner of the Study Area. Sample point does not contain hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP07 and SP08 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1.						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>0</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>0</u> (A/B)
2.						
3.						
4.						
Tree Stratum Total Cover: _____						
SAPLING/SHRUB STRATUM Plot Size: N/A						
1.						<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
2.						
3.						
4.						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM Plot Size: 5' Radius						
1.						<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.						
3.						
4.						
5.						
6.						
7.						
8.						
Herb Stratum Total Cover: 100						
WOODY VINE STRATUM Plot Size: N/A						
1.						<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** The Sample Point did not pass the dominance test therefore, the Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP08

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	10YR 3/1	19	7.5YR	1	C	M, PL	Loamy Clay	
	10YR 3/2	80						

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> <b>Type:</b> _____ <b>Depth (inches):</b> _____	<b>Hydric Soil Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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**Remarks:** No hydric soil indicators were observed.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
<b>Primary Indicators (any one indicator is sufficient)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): _____ (includes capillary fringe)		<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.		
<b>Remarks:</b> No wetland hydrology indicators were observed.		

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP09  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Depression Local Relief (concave, convex, none) Concave Slope(%) 1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12859871 Long: -122.2232962 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Sample Point is located within a depression at the base of a hill in the west central portion of the Study Area. Hydrophytic vegetation, hydric soil indicators, and wetland hydrology are present within Sample Point. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP09 and SP10 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1. _____						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>2</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____						
3. _____						
4. _____						
Tree Stratum Total Cover: _____						
SAPLING/SHRUB STRATUM	Plot Size:	N/A				<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____						
2. _____						
3. _____						
4. _____						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM	Plot Size:	5' Radius				<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus xiphioides</u>			41	Yes	OBL	
2. <u>Festuca perennis</u>			25	Yes	FAC	
3. <u>Geranium dissectum</u>			15	No	FAC	
4. <u>Rumex crispus</u>			8	No	FAC	
5. <u>Tragopogon porrifolius</u>			6	No	NL	
6. <u>Bromus hordeaceus</u>			5	No	FACU	
7. _____						
8. _____						
Herb Stratum Total Cover: <u>100</u>						
WOODY VINE STRATUM	Plot Size:	N/A				<b>Hydrophytic Vegetation Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. _____						
2. _____						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** The vegetation within the Sample Point passes the dominance test therefore, Hydrophytic vegetations is present within the Sample Point.



## SOIL

Sampling Point SP09

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	2.5Y 3/1	96	5YR 3/4	4	C	M	Clay	Saturated

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2cm Muck (A10)(LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)(LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/> 1cm Muck (A9)(LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> <b>Type:</b> _____ <b>Depth (inches):</b> _____	<b>Hydric Soil Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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**Remarks:** Hydric soil indicator Redox Dark Surface (F6) was observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1)(Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2)(Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3)(Riverine)
<input type="checkbox"/> Water Marks (B1)(Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2)(Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)(Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 1 (includes capillary fringe)	<b>Wetland Hydrology Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Describe recorded data (stream gauge, monitoring well, aerial photos, etc.) if available.

**Remarks:** No water table observed, but assumed to be below 16 inches due to no rain in several weeks and the fact that the Sample Point meets hydrophytic vegetation and hydric soil indicators and another wetland hydrology indicator. Wetland hydrology indicator Saturation (A3) and Water-Stained leaves (B9) were observed within Sample point therefore, wetland hydrology is present within Sample Point.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP10  
 Investigator(s) Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Valley/Terrace Local Relief (concave, convex, none) Convex Slope(%) 0-1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.1285895 Long: -122.2233788 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Upland Sample Point in flat valley bottom at base of slope in central portion of the Study Area. Sample Point adjacent to west of large wetland and is paired with SP 09. Sample point does not contain hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP09 and SP10 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1. _____						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>0</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>0</u> (A/B)
2. _____						
3. _____						
4. _____						
Tree Stratum Total Cover: _____						<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
SAPLING/SHRUB STRATUM Plot Size: N/A						
1. _____						
2. _____						
3. _____						
4. _____						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM Plot Size: 5' Radius						
1. <i>Bromus hordeaceus</i>			40	Yes	FACU	<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Bromus diandrus</i>			20	Yes	NL	
3. <i>Vicia sativa</i>			15	No	FACU	
4. <i>Festuca perennis</i>			10	No	FAC	
5. <i>Avena barbata</i>			3	No	NL	
6. <i>Hordeum marinum</i>			2	No	FAC	
7. <i>Geranium dissectum</i>			1	No	FAC	
8. _____						
Herb Stratum Total Cover: 91						
WOODY VINE STRATUM Plot Size: N/A						
1. _____						<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. _____						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>9</u> % cover of biotic crust <u>0</u>						

**Remarks:** The Sample Point did not pass the dominance test therefore, the Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP10

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	10YR 3/2	93	7YR 3/4	+	C	M	Clay Loam	
	2.5YR 4/2	7						

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.<sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

## Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5)(LRR C)     | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1cm Muck (A9)(LRR D)              | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          |   |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 1cm Muck (A9) (LRR C)  
☐ 2cm Muck (A10)(LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

## Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: No hydric soil indicators were observed.

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1)(Nonriverine)             | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine)       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)(Nonriverine)          | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |  |

## Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)  
☐ Sediment Deposits (B2)(Riverine)  
☐ Drift Deposits (B3)(Riverine)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Thin Muck Surface (C7)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

## Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches): \_\_\_\_\_Water table present? ☐ Yes ☒ No Depth (inches): \_\_\_\_\_Saturation Present? ☐ Yes ☒ No Depth (inches): \_\_\_\_\_  
(includes capillary fringe)Wetland Hydrology Present ? ☐ Yes ☒ No

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No wetland hydrology indicators were observed.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP11  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Depression/Swale Local Relief (concave, convex, none) Concave Slope(%) 1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12733992 Long: -122.2234852 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification PEM1Ch

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Sample Point located within large swale that, in the vicinity of the sample point, is dominated by cattails. Located in south central portion of the Project Area. Hydrophytic vegetation, hydric soil indicators, and wetland hydrology are present within Sample Point. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP 11 and SP12 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	N/A	Absolute % cover	Dominant Species?	Indicator Status	
1. _____						<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>1</u> (A) Total number of dominant species across all strata? <u>1</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____						
3. _____						
4. _____						
Tree Stratum Total Cover: _____						<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
SAPLING/SHRUB STRATUM Plot Size: N/A						
1. _____						
2. _____						
3. _____						
4. _____						
Sapling/Shrub Stratum Total Cover: _____						
HERB STRATUM Plot Size: 5' Radius						
1. <i>Typha latifolia</i>			88	Yes	OBL	<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Rumex crispus</i>			6	No	FAC	
3. <i>Helminthotheca echioides</i>			5	No	FAC	
4. <i>Bromus hordeaceus</i>			1	No	FACU	
5. _____						
6. _____						
7. _____						
8. _____						
Herb Stratum Total Cover: 100						
WOODY VINE STRATUM Plot Size: N/A						
1. _____						<b>Hydrophytic Vegetation Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. _____						
Woody Vines Total Cover: _____						
% Bare ground in herb stratum <u>0</u> % cover of biotic crust <u>0</u>						

**Remarks:** The vegetation within the Sample Point passes the dominance test therefore, Hydrophytic vegetations is present within the Sample Point.

## SOIL

Sampling Point SP11

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	2.5Y 3/1	98	7.5Y 3/4	2	C	M	Clay	Saturated

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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**Remarks:** Hydric soil indicator Redox Dark Surface (F6) was observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): _____ Water table present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 15 Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Depth (inches): 1 (includes capillary fringe)		<b>Wetland Hydrology Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe recorded data (stream gauge, monitoring well, aerial photos, etc.) if available.		
<b>Remarks:</b> Sample Point was heavily saturated throughout the profile. Wetland hydrology indicator Saturation (A3) was observed within Sample point; therefore, wetland hydrology is present within Sample Point.		

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP12  
 Investigator(s) Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Valley Local Relief (concave, convex, none) None Slope(%) 0  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12731638 Long: -122.2234105 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos loams, 2 to 9 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Upland Sample Point in south central portion of the Project Area. Valley bottom at the base of slope adjacent to cattail-dominated area of a wetland swale. Sample point does not contain hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators. The wetland boundary was primarily determined by a break in slope and a change to hydrophytic vegetation. SP11 and SP12 are paired. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. _____	N/A	_____	_____	_____	<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>1</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>50</u> (A/B)
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Tree Stratum Total Cover: _____					
SAPLING/SHRUB STRATUM	Plot Size:	N/A			<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Sapling/Shrub Stratum Total Cover: _____					
HERB STRATUM	Plot Size:	5' Radius			<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Bromus diandrus</i>		25	Yes	NL	
2. <i>Geranium dissectum</i>		25	Yes	FAC	
3. <i>Vicia sativa</i>		15	No	FACU	
4. <i>Avena barbata</i>		15	No	NL	
5. <i>Foeniculum vulgare</i>		7	No	NL	
6. <i>Bromus hordeaceus</i>		5	No	FACU	
7. _____		_____	_____	_____	
8. _____		_____	_____	_____	
Herb Stratum Total Cover: <u>92</u>					
WOODY VINE STRATUM	Plot Size:	N/A			<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
Woody Vines Total Cover: _____					
% Bare ground in herb stratum <u>8</u> % cover of biotic crust <u>0</u>					

**Remarks:** The Sample Point did not pass the dominance test therefore, the Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP12

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-12	10YR 3/2	100					Clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)
---	---	---

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--

**Remarks:** No hydric soil indicators were observed.

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

**Remarks:** No wetland hydrology indicators were observed.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP13  
 Investigator(s) David Zwick Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Hillslope Local Relief (concave, convex, none) Convex Slope(%) 1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12692788 Long: -122.2269088 Datum: WGS 84  
 Soil Map Unit Name Clear Lake clay, 0 to 2 percent slopes, MLRA 17 NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Sample Point located in a willow thicket on a hillside above a creek in south western portion of the Study Area. Sample point does not contain hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>see below</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>	<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>1</u> (A) Total number of dominant species across all strata? <u>2</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>50</u> (A/B)
2. _____					
3. _____					
4. _____					
<b>Tree Stratum Total Cover:</b>		<u>60</u>			
<b>SAPLING/SHRUB STRATUM</b>	<b>Plot Size:</b>	<b>N/A</b>			<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____					
2. _____					
3. _____					
4. _____					
<b>Sapling/Shrub Stratum Total Cover:</b>					
<b>HERB STRATUM</b>	<b>Plot Size:</b>	<b>20' x 10'</b>			<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Gallium aparine</u>		<u>73</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus armeniacus</u>		<u>10</u>	<u>No</u>	<u>FAC</u>	
3. <u>Conium maculatum</u>		<u>7</u>	<u>No</u>	<u>FACW</u>	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
<b>Herb Stratum Total Cover:</b>		<u>90</u>			
<b>WOODY VINE STRATUM</b>	<b>Plot Size:</b>	<b>see below</b>			<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. _____					
2. _____					
<b>Woody Vines Total Cover:</b>					
% Bare ground in herb stratum <u>0</u>		% cover of biotic crust <u>0</u>			

**Remarks:** Additional cover: 10% basal area of willow stems. The Sample Point encompasses the entirety of the patch of willows. The Sample Point did not pass the dominance test therefore, the Sample Point does not contain hydrophytic vegetation.



## SOIL

Sampling Point SP13

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-16	7.5YR 3/2	100					Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> <b>Type:</b> _____ <b>Depth (inches):</b> _____	<b>Hydric Soil Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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**Remarks:** No hydric soil indicators were observed.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
<b>Primary Indicators (any one indicator is sufficient)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ (includes capillary fringe)		<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.		
<b>Remarks:</b> No wetland hydrology indicators were observed.		

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP14  
 Investigator(s) David Zwick & Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) None Slope(%) 0  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.13001052 Long: -122.2266153 Datum: WGS 84  
 Soil Map Unit Name Clear Lake clay, 0 to 2 percent slopes, MLRA 17 NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Remarks:</b> Upland Sample Point in 1 acre parcel west of I-80. Sample Point in understory of Quercus agrifolia. Representative of forested portion of parcel. Sample point does not contain hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators. Above normal rainfall (195% of average) occurred during the 3-month period preceding the site visit.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. <u>Quercus agrifolia</u>	<u>30'x30"</u>	<u>80</u>	<u>Yes</u>	<u>NL</u>	
2. _____					
3. _____					
4. _____					
<b>Tree Stratum Total Cover:</b>		<u>80</u>			
SAPLING/SHRUB STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. <u>Genista monspessulana</u>	<u>30"x30"</u>	<u>20</u>	<u>Yes</u>	<u>NL</u>	
2. _____					
3. _____					
4. _____					
<b>Sapling/Shrub Stratum Total Cover:</b>		<u>20</u>			
HERB STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. <u>Geranium robertianum</u>	<u>30'x30'</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Gallium aparine</u>		<u>1</u>	<u>No</u>	<u>FACU</u>	
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
<b>Herb Stratum Total Cover:</b>		<u>26</u>			
WOODY VINE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. _____	<u>N/A</u>				
2. _____					
<b>Woody Vines Total Cover:</b>					
% Bare ground in herb stratum <u>67</u>		% cover of biotic crust <u>0</u>			

**Dominance Test Worksheet**  
 Number of Dominant Species that are OBL, FACW, or FAC? 0 (A)  
 Total number of dominant species across all strata? 3 (B)  
 % of dominant species that are OBL, FACW, or FAC? 0 (A/B)

**Prevalence Index Worksheet**  

Total % cover of:	Multiply by:
OBL species _____	x1 _____
FACW species _____	x2 _____
FAC species _____	x3 _____
FACU species _____	x4 _____
UPL species _____	x5 _____
Column Totals _____	(A) _____ (B) _____

 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators**  
☐ Dominance Test is >50%  
☐ Prevalence Index is <= 3.0<sup>1</sup>  
☐ Morphological adaptations (provide supporting data in remarks)  
☐ Problematic hydrophytic vegetation<sup>1</sup> (explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present ?** ☐ Yes ☒ No

**Remarks:** Litter comprises 70% of the ground cover. Basal area of stems comprises 7% of ground cover. The Sample Point did not pass the dominance test therefore, the Sample Point does not contain hydrophytic vegetation.

## SOIL

Sampling Point SP14

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-4	10YR 2/2	100					Gravelly Clay	Gravel fill
4-12	10YR 4/6	100					Gravelly Clay	Gravel fill

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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**Remarks:** No hydric soil indicators were observed

## HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
<b>Primary Indicators (any one indicator is sufficient)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

**Remarks:** No wetland hydrology indicators were observed.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP15  
 Investigator(s) David Zwick & Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) ridgetop Local Relief (concave, convex, none) concave Slope(%) 0  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.1290532 Long: -122.2256667 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos clay loam, 9 to 30 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☒ Vegetation ☒ Soil ☒ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Wetland SP located in a dirt road depression on the ridgeline near the central-western boundary of the site. The depression appears to be the result of extensive vehicle disturbance, as evidenced by the still prominently visible tire tracks. Based on aerial imagery (Google Earth 2017), vehicle activity was continuous at the SP location since at least 2002 through 2013, after which time it appears to have ceased. Not enough time has passed for the current conditions to be considered normal. Site visit occurred during a period of above normal rainfall.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. _____	N/A	_____	_____	_____	<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>1</u> (A) Total number of dominant species across all strata? <u>1</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>100</u> (A/B)
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Tree Stratum Total Cover: _____					
SAPLING/SHRUB STRATUM	Plot Size:	N/A			<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Sapling/Shrub Stratum Total Cover: _____					
HERB STRATUM	Plot Size:	5' Radius			<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Glyceria declinata</u>		20	Yes	FACW	
2. <u>Juncus xiphioides</u>		5	No	OBL	
3. <u>Typha sp.</u>		1	No	OBL	
4. _____		_____	_____	_____	
5. _____		_____	_____	_____	
6. _____		_____	_____	_____	
7. _____		_____	_____	_____	
8. _____		_____	_____	_____	
Herb Stratum Total Cover: <u>26</u>					
WOODY VINE STRATUM	Plot Size:	N/A			<b>Hydrophytic Vegetation Present ?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
Woody Vines Total Cover: _____					
% Bare ground in herb stratum <u>49</u> % cover of biotic crust <u>0</u>					

**Remarks:** Additional cover: surface water, 25%  
 The vegetation within the Sample Point passes the dominance test therefore, Hydrophytic vegetations is present within the Sample Point.

## SOIL

Sampling Point SP15

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>1</sup>		
0-1	GLE1 3/10Y	100					gravelly clay loam	
1-16	10YR 4/4	100					gravelly clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)

<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):	Hydric Soil Present ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Type: _____ Depth (inches): _____	

**Remarks:** Hydric soil indicator Loamy Gleyed Matrix (F2) was observed within Sample Point. Therefore, hydric soils are present within Sample Point.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	
		<input type="checkbox"/> Water Marks (B1)(Riverine) <input type="checkbox"/> Sediment Deposits (B2)(Riverine) <input type="checkbox"/> Drift Deposits (B3)(Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Surface water present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Depth (inches): <u>1-2</u>	
Water table present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Depth (inches): <u>18</u>	
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Depth (inches): <u>0</u>	

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

**Remarks:** Wetland hydrology indicators Surface Water (A1) and Saturation (A3) were observed within Sample point therefore, wetland hydrology is present within Sample Point.

# Wetland Determination Data Form - Arid West Region

Project/Site Fairview at Northgate City Vallejo County Solano Sampling Date 5/3/2017  
 Applicant/Owner Lewis Acquisition Company, LLC State CA Sampling Point SP16  
 Investigator(s) David Zwick & Scott Batiuk Section, Township, Range S5 T3N R3W Mount Diablo  
 Landform (hillslope, terrace, etc.) ridgetop Local Relief (concave, convex, none) convex Slope(%) 0-1  
 Subregion(LRR) LRR C (Medit. CA) Lat: 38.12906554 Long: -122.2257175 Datum: WGS 84  
 Soil Map Unit Name Dibble-Los Osos clay loam, 9 to 30 percent slopes NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks)  
 Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

## SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is the Sampled Area within a Wetland?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Remarks:</b> Upland SP located adjacent to a dirt road depression on the ridgeline near the central-western boundary of the site. The depression appears to be the result of extensive vehicle disturbance, as evidenced by the still prominently visible tire tracks. Based on aerial imagery (Google Earth 2017), vehicle activity was continuous at the SP location since at least 2002 through 2013, after which time it appears to have ceased. Not enough time has passed for the current conditions to be considered normal. Site visit occurred during a period of above normal rainfall.	

## VEGETATION (use scientific names)

TREE STRATUM	Plot Size:	Absolute % cover	Dominant Species?	Indicator Status	
1. _____	N/A	_____	_____	_____	<b>Dominance Test Worksheet</b> Number of Dominant Species that are OBL, FACW, or FAC? <u>0</u> (A) Total number of dominant species across all strata? <u>3</u> (B) % of dominant species that are OBL, FACW, or FAC? <u>0</u> (A/B)
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Tree Stratum Total Cover: _____					
SAPLING/SHRUB STRATUM	Plot Size:	N/A			<b>Prevalence Index Worksheet</b> Total % cover of: _____ Multiply by: _____ OBL species _____ x1 _____ FACW species _____ x2 _____ FAC species _____ x3 _____ FACU species _____ x4 _____ UPL species _____ x5 _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
Sapling/Shrub Stratum Total Cover: _____					
HERB STRATUM	Plot Size:	5' Radius			<b>Hydrophytic Vegetation Indicators</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is <= 3.0 <sup>1</sup> <input type="checkbox"/> Morphological adaptations (provide supporting data in remarks) <input type="checkbox"/> Problematic hydrophytic vegetation <sup>1</sup> (explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Avena barbata</u>		25	Yes	NL	
2. <u>Medicago polymorpha</u>		25	Yes	FACU	
3. <u>Trifolium hirtum</u>		20	Yes	NL	
4. <u>Bellardia trixago</u>		15	No	NL	
5. <u>Erodium botrys</u>		5	No	FACU	
6. <u>Vicia benghalensis</u>		2	No	NL	
7. <u>Helminthotheca echioides</u>		1	No	FAC	
8. <u>Hirschfeldia incana</u>		1	No	NL	
Herb Stratum Total Cover: <u>94</u>					
WOODY VINE STRATUM	Plot Size:	N/A			<b>Hydrophytic Vegetation Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
Woody Vines Total Cover: _____					
% Bare ground in herb stratum <u>6</u> % cover of biotic crust <u>0</u>					

Remarks:

## SOIL

Sampling Point SP16

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>		
0-12	10YR 4/2	100					gravelly clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.      <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5)(LRR C) <input type="checkbox"/> 1cm Muck (A9)(LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1cm Muck (A9) (LRR C) <input type="checkbox"/> 2cm Muck (A10)(LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (explain in remarks)
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<sup>3</sup>Indicators of hydric vegetation and wetland hydrology must be present.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--

**Remarks:** The sample point location appears to contain fill soil, as evidenced by reddish gravels and occasional cobbles not observed elsewhere within the Project Area. No hydric soil indicators were observed

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1)(Nonriverine) <input type="checkbox"/> Sediment Deposits (B2)(Nonriverine) <input type="checkbox"/> Drift Deposits (B3)(Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in PLoWed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b> Surface water present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Water table present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present ?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.		
Remarks: No wetland hydrology indicators were observed.		

## APPENDIX C -- Representative Site Photographs



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Representative view facing south of the anthropogenic depression sample as SP15 within the west-central portion of the Study Area. Photo taken on May 17, 2017.



Representative view facing south east of seasonal wetland seep within the south east corner of the Study Area. Photo taken on May 3, 2017.





Representative view facing south of coyote brush scrub within the northwestern portion of the Study Area. Photo taken on May 3, 2017.



View facing south of large seasonal wetland swale in the center of the Study Area. Photo taken on May 3, 2017.





View facing west of perennial stream in the southeastern corner of the Study Area. Photo taken on May 3, 2017.

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## APPENDIX D – List of All Plant Species Observed Within the Study Area

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**Appendix D. Plant Species Observed in the Project Area.**

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Aizoaceae	<i>Carpobrotus edulis</i>	Iceplant	non-native (invasive)	perennial herb	-	High	-
Alliaceae	<i>Allium amplexans</i>	Narrow leaved onion	native	perennial herb (bulb)	-	-	-
Anacardiaceae	<i>Pistacia</i> sp.	Pistacio	non-native	tree	-	-	-
Anacardiaceae	<i>Toxicodendron diversilobum</i>	Poison oak	native	vine, shrub	-	-	FACU
Apiaceae	<i>Foeniculum vulgare</i>	Fennel	non-native (invasive)	perennial herb	-	High	-
Araliaceae	<i>Hedera helix</i>	English ivy	non-native (invasive)	vine, shrub	-	-	FACU
Asteraceae	<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote brush	native	shrub	-	-	-
Asteraceae	<i>Calendula arvensis</i>	Field marigold	non-native	annual herb	-	-	-
Asteraceae	<i>Centaurea calcitrapa</i>	Purple star thistle	non-native (invasive)	annual, perennial herb	-	Moderate	-
Asteraceae	<i>Centaurea solstitialis</i>	Yellow starthistle	non-native (invasive)	annual herb	-	High	-
Asteraceae	<i>Cichorium intybus</i>	Chicory	non-native	perennial herb	-	-	FACU
Asteraceae	<i>Cirsium vulgare</i>	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	<i>Cynara cardunculus</i> ssp. <i>flavescens</i>	Cardoon	non-native	perennial herb	-	-	-



Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Asteraceae	<i>Dittrichia graveolens</i>	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	<i>Helminthotheca echioides</i>	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Asteraceae	<i>Hypochaeris glabra</i>	Smooth cats ear	non-native (invasive)	annual herb	-	Limited	-
Asteraceae	<i>Hypochaeris radicata</i>	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	<i>Lactuca serriola</i>	Prickly lettuce	non-native (invasive)	annual herb	-	-	FACU
Asteraceae	<i>Psilocarphus tenellus</i>	Slender woolly heads	native	annual herb	-	-	OBL
Asteraceae	<i>Sonchus oleraceus</i>	Sow thistle	non-native	annual herb	-	-	UPL
Asteraceae	<i>Symphyotrichum cf. subspicatum</i>	Douglas aster	native	perennial herb	-	-	FACW
Asteraceae	<i>Tragopogon porrifolius</i>	Salsify	non-native	perennial herb	-	-	-
Asteraceae	<i>Wyethia angustifolia</i>	Narrow leaved mule ears	native	perennial herb	-	-	FACU
Betulaceae	<i>Alnus rhombifolia</i>	White alder	native	tree	-	-	FACW
Brassicaceae	<i>Brassica nigra</i>	Black mustard	non-native (invasive)	annual herb	-	Moderate	-
Brassicaceae	<i>Hirschfeldia incana</i>	Mustard	non-native (invasive)	perennial herb	-	Moderate	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Brassicaceae	<i>Nasturtium officinale</i>	Watercress	native	perennial herb (aquatic)	-	-	OBL
Brassicaceae	<i>Raphanus sativus</i>	Jointed charlock	non-native (invasive)	annual, biennial herb	-	Limited	-
Cactaceae	<i>Opuntia</i> sp.	Prickly pear	non-native	shrub	-	-	-
Caryophyllaceae	<i>Spergularia rubra</i>	Purple sand spurry	non-native	annual, perennial herb	-	-	FAC
Chenopodiaceae	<i>Atriplex prostrata</i>	Fat-hen	non-native	annual herb	-	-	FACW
Convolvulaceae	<i>Convolvulus arvensis</i>	Field bindweed	non-native (invasive)	perennial herb, vine	-	-	-
Crassulaceae	<i>Crassula aquatica</i>	Aquatic pygmy weed	native	annual herb	-	-	OBL
Cupressaceae	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	native	tree	Rank 1B.2*	-	-
Cyperaceae	<i>Bolboschoenus</i> sp.	Bulrush	native	perennial grasslike herb	-	-	OBL
Cyperaceae	<i>Cyperus eragrostis</i>	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Cyperaceae	<i>Eleocharis macrostachya</i>	Spike rush	native	perennial grasslike herb	-	-	OBL
Cyperaceae	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Tule	native	perennial grasslike herb	-	-	OBL
Cyperaceae	<i>Schoenoplectus americanus</i>	Chairmaker's bulrush	native	perennial grasslike herb	-	-	OBL

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Dipsacaceae	<i>Dipsacus sativus</i>	Indian teasel	non-native (invasive)	biennial herb	-	Moderate	-
Fabaceae	<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish lotus	native	annual herb	-	-	UPL
Fabaceae	<i>Genista monspessulana</i>	French broom	non-native (invasive)	shrub	-	High	-
Fabaceae	<i>Lotus corniculatus</i>	Bird's foot trefoil	non-native (invasive)	perennial herb	-	-	FAC
Fabaceae	<i>Lupinus formosus</i> var. <i>formosus</i>	Western lupine	native	perennial herb	-	-	-
Fabaceae	<i>Medicago polymorpha</i>	California burclover	non-native (invasive)	annual herb	-	Limited	FACU
Fabaceae	<i>Melilotus indicus</i>	Annual yellow sweetclover	non-native	annual herb	-	-	FACU
Fabaceae	<i>Trifolium dubium</i>	Shamrock	non-native	annual herb	-	-	UPL
Fabaceae	<i>Trifolium fragiferum</i>	Strawberry clover	non-native	perennial herb	-	-	FAC
Fabaceae	<i>Trifolium fucatum</i>	Bull clover	native	annual herb	-	-	FACU
Fabaceae	<i>Trifolium hirtum</i>	Rose clover	non-native (invasive)	annual herb	-	Limited	-
Fabaceae	<i>Vicia benghalensis</i>	Purple vetch	non-native	annual herb, vine	-	-	-
Fabaceae	<i>Vicia sativa</i>	Spring vetch	non-native	annual herb, vine	-	-	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Fabaceae	<i>Vicia villosa</i>	Hairy vetch	non-native (invasive)	annual herb, vine	-	-	-
Fagaceae	<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak	native	tree	-	-	-
Fagaceae	<i>Quercus ilex</i>	Holly oak	non-native	tree	-	-	-
Geraniaceae	<i>Erodium botrys</i>	Big heron bill	non-native (invasive)	annual herb	-	-	FACU
Geraniaceae	<i>Erodium cicutarium</i>	Coastal heron's bill	non-native (invasive)	annual herb	-	Limited	-
Geraniaceae	<i>Geranium dissectum</i>	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Geraniaceae	<i>Geranium robertianum</i>	Robert's geranium	non-native (invasive)	annual herb	-	-	FACU
Iridaceae	<i>cf. Chasmanthe</i> sp.	African corn flag	non-native	perennial herb	-	-	-
Iridaceae	<i>Iris</i> sp.	Ornamental iris	non-native	perennial herb	-	-	-
Iridaceae	<i>Sisyrinchium bellum</i>	Blue eyed grass	native	perennial herb	-	-	FACW
Juglandaceae	<i>Juglans hindsii</i>	Northern california black walnut	native	tree	Rank 1B.1*	-	FAC
Juncaceae	<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic rush	native	perennial grasslike herb	-	-	FACW
Juncaceae	<i>Juncus bufonius</i>	Common toad rush	native	annual grasslike herb	-	-	FACW

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Juncaceae	<i>Juncus tenuis</i>	Slender rush	native	perennial grasslike herb	-	-	FACW
Juncaceae	<i>Juncus xiphioides</i>	Iris leaved rush	native	perennial grasslike herb	-	-	OBL
Lamiaceae	<i>Stachys albens</i>	Cobwebby hedge nettle	native	perennial herb	-	-	OBL
Lythraceae	<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	non-native	annual, perennial herb	-	-	OBL
Malvaceae	<i>Malva</i> sp.	Mallow	non-native	annual herb	-	-	-
Moraceae	<i>Ficus carica</i>	Common fig	non-native (invasive)	tree	-	Moderate	FACU
Myrsinaceae	<i>Lysimachia arvensis</i>	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Myrtaceae	<i>Eucalyptus globulus</i>	Blue gum	non-native (invasive)	tree	-	Limited	-
Oleaceae	<i>Ligustrum</i> sp.	Privet	non-native	tree, shrub	-	-	-
Oleaceae	<i>Olea europaea</i>	Olive	non-native (invasive)	tree, shrub	-	Limited	-
Onagraceae	<i>Epilobium brachycarpum</i>	Willow herb	native	annual herb	-	-	-
Onagraceae	<i>Epilobium ciliatum</i>	Slender willow herb	native	perennial herb	-	-	FACW
Onagraceae	<i>Taraxia ovata</i>	Sun cup	native	perennial herb	-	-	-
Orobanchaceae	<i>Bellardia trixago</i>	Mediterranean lineseed	non-native (invasive)	annual herb	-	Limited	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Orobanchaceae	<i>Parentucellia viscosa</i>	Yellow parentucellia	non-native (invasive)	annual herb	-	Limited	FAC
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	native	annual, perennial herb	-	-	-
Pinaceae	<i>Pinus</i> sp.	Pine	non-native	evergreen tree	-	-	-
Plantaginaceae	<i>Kickxia spuria</i>	Fluellin	non-native	perennial herb	-	-	-
Plantaginaceae	<i>Plantago lanceolata</i>	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Platanaceae	<i>Platanus xhispanica</i>	London plane tree	non-native	deciduous tree	-	-	-
Poaceae	<i>Avena barbata</i>	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Poaceae	<i>Avena fatua</i>	Wildoats	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	<i>Briza minor</i>	Little rattlesnake grass	non-native	annual grass	-	-	FAC
Poaceae	<i>Bromus catharticus</i>	Rescue grass	non-native	annual, perennial grass	-	-	-
Poaceae	<i>Bromus diandrus</i>	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	<i>Bromus hordeaceus</i>	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Poaceae	<i>Cortaderia selloana</i>	Pampas grass	non-native (invasive)	perennial grass	-	High	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Poaceae	<i>Crypsis schoenoides</i>	Swamp grass	non-native	annual grass	-	-	FACW
Poaceae	<i>Distichlis spicata</i>	Salt grass	native	perennial grass	-	-	FAC
Poaceae	<i>Elymus caput-medusae</i>	Medusa head	non-native	annual grass	-	-	-
Poaceae	<i>Elymus triticoides</i>	Beardless wild rye	native	perennial grass	-	-	FAC
Poaceae	<i>Festuca bromoides</i>	Brome fescue	non-native	annual grass	-	-	FACU
Poaceae	<i>Festuca myuros</i>	Rattail sixweeks grass	non-native (invasive)	annual grass	-	-	FACU
Poaceae	<i>Festuca perennis</i>	Italian rye grass	non-native	annual, perennial grass	-	-	FAC
Poaceae	<i>Glyceria declinata</i>	Waxy mannagrass	non-native (invasive)	perennial grass	-	Moderate	FACW
Poaceae	<i>Holcus lanatus</i>	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Poaceae	<i>Hordeum brachyantherum</i>	Meadow barley	native	perennial grass	-	-	FACW
Poaceae	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Barley	non-native (invasive)	annual grass	-	Moderate	FAC
Poaceae	<i>Hordeum murinum</i>	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Poaceae	<i>Paspalum dilatatum</i>	Dallis grass	non-native	perennial grass	-	-	FAC
Poaceae	<i>Phalaris aquatica</i>	Harding grass	non-native (invasive)	perennial grass	-	Moderate	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Poaceae	<i>Phalaris paradoxa</i>	Hood canarygrass	non-native	annual grass	-	-	FAC
Poaceae	<i>Polypogon monspeliensis</i>	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
Polygonaceae	<i>Rumex acetosella</i>	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
Polygonaceae	<i>Rumex crispus</i>	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Polygonaceae	<i>Rumex pulcher</i>	Fiddleleaf dock	non-native	perennial herb	-	-	FAC
Rhamnaceae	<i>Rhamnus alaternus</i>	Italian buckthorn	non-native	shrub	-	-	FACU
Rosaceae	<i>Cotoneaster pannosus</i>	Woolly cotoneaster	non-native (invasive)	shrub	-	Moderate	-
Rosaceae	<i>Fragaria vesca</i>	Wild strawberry	native	perennial herb	-	-	UPL
Rosaceae	<i>Heteromeles arbutifolia</i>	Toyon	native	shrub	-	-	-
Rosaceae	<i>Prunus cerasifera</i>	Cherry plum	non-native (invasive)	tree	-	Limited	-
Rosaceae	<i>Prunus dulcis</i>	Almond	non-native	tree	-	-	-
Rosaceae	<i>Prunus persica</i>	Peach	non-native	tree	-	-	-
Rosaceae	<i>Pyracantha</i> sp.	Firethorn	non-native	shrub	-	-	-
Rosaceae	<i>Pyrus</i> sp.	Pear	non-native	tree	-	-	-
Rosaceae	<i>Rubus armeniacus</i>	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rubiaceae	<i>Galium aparine</i>	Cleavers	native	annual herb	-	-	FACU



Family	Scientific Name	Common Name	Origin	Form	Rarity Status <sup>1</sup>	CAL-IPC Status <sup>2</sup>	Wetland Status <sup>3</sup>
Salicaceae	<i>Salix gooddingii</i>	Gooding's willow	native	tree	-	-	FACW
Salicaceae	<i>Salix laevigata</i>	Red willow	native	tree	-	-	FACW
Salicaceae	<i>Salix lasiolepis</i>	Arroyo willow	native	shrub, tree			FACW
Tamaricaceae	<i>Tamarix</i> sp.	Tamarisk	non-native	shrub, tree	-	High	-
Themidaceae	<i>Triteleia hyacinthina</i>	Wild hyacinth	native	perennial herb	-	-	FAC
Typhaceae	<i>Typha</i> sp.	Cattail	unknown	perennial herb	-	-	OBL
Ulmaceae	<i>Ulmus</i> sp.	Elm	non-native	tree	-	-	-
Vitaceae	<i>Vitis vinifera</i>	Cultivated grape	non-native	vine, shrub	-	-	-

▪ All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2017]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2017]

\*Special-status only in its native range. The Project Area is outside of the native range of this species

<sup>1</sup>Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2017)

FE: Federal Endangered

FT: Federal Threatened

SE: State Endangered

ST: State Threatened

SR: State Rare

Rank 1A: Plants presumed extinct in California

Rank 1B: Plants rare, threatened, or endangered in California and elsewhere. Generally regarded as special-status in native stands only.

Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere

Rank 3: Plants about which we need more information – a review list

Rank 4: Plants of limited distribution – a watch list

<sup>2</sup>Invasive Status: California Invasive Plant Inventory (Cal-IPC 2017)

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.

Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically

Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically

Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

<sup>3</sup>Wetland Status: National List of Plant Species that Occur in Wetlands, California – Arid West (Lichvar et al. 2016)

OBL: Almost always found in wetlands; >99% frequency

FACW: Usually found in wetlands; 67-99% frequency

FAC: Equally found in wetlands and uplands; 34-66% frequency

FACU: Usually not found in wetlands; 1-33% frequency

UPL: Almost never found in wetlands; >1% frequency

NL:	Not listed, assumed almost never found in wetlands; >1% frequency
NI:	No information; not factored during wetland delineation





DEPARTMENT OF THE ARMY  
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
1455 MARKET STREET, 16<sup>TH</sup> FLOOR  
SAN FRANCISCO, CALIFORNIA 94103-1398

JULY 25, 2018

Regulatory Division

Subject: File No. SPN-2016-00350

Dr. Mike Josselyn  
WRA, Inc.  
2169-G East San Francisco Blvd.  
San Rafael, CA 94901

Dear Dr. Josselyn:

This correspondence is in reference to your submittal of June 12, 2018, on behalf of Vallejo-Fairview Developers, LLC, requesting a preliminary jurisdictional determination of the extent of navigable waters of the United States (U.S.) and waters of the U.S. occurring on an approximately 52.62-acre project area located within a commercially and residentially developed area, in the City of Vallejo, Solano County, California (38.12892°N, 122.223265°W)

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the U.S.; or below the high tide line in tidal waters of the U.S.; or within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*). Waters of the U.S. generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the U.S. may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.

The enclosed delineation map titled "Preliminary Jurisdictional Determination, Pursuant to Section 404 Clean Water Act Fairview at Northgate Vallejo, Solano, California," in one sheet date certified June 13, 2018, depicts the extent and location of wetlands and other waters of the U.S. within the boundary area of the site that **may be** subject to U.S. Army Corps of Engineers' regulatory authority under Section 404 of the Clean Water Act. This preliminary jurisdictional determination is based on the current conditions of the site, as verified during a field investigation of August 11, 2017, and a review of other data included in your submittal. While this preliminary jurisdictional determination was conducted pursuant to Regulatory Guidance Letter No. 16-01, *Jurisdictional Determinations*, it may be subject to future revision if new

information or a change in field conditions becomes subsequently apparent. The basis for this preliminary jurisdictional determination is fully explained in the enclosed *Preliminary Jurisdictional Determination Form* which has been signed and dated by you and this office.

You are advised that the preliminary jurisdictional determination may **not** be appealed through the U.S. Army Corps of Engineers' *Administrative Appeal Process*, as described in 33 C.F.R. § 331 (65 Fed. Reg. 16,486; Mar. 28, 2000). Under the provisions of 33 C.F.R. § 331.5(b)(9), non-appealable actions include preliminary jurisdictional determinations since they are considered to be only advisory in nature and make no definitive conclusions on the jurisdictional status of the water bodies in question. However, you may request this office to provide an approved jurisdictional determination that precisely identifies the scope of jurisdictional waters on the site; an approved jurisdictional determination may be appealed through the *Administrative Appeal Process*. If you anticipate requesting an approved jurisdictional determination at some future date, you are advised not to engage in any on-site grading or other construction activity in the interim to avoid potential violations and penalties under Section 404 of the Clean Water Act. Finally, you may provide this office new information for further consideration and request a reevaluation of this preliminary jurisdictional determination.

You may refer any questions on this matter to William M. Connor of my Regulatory staff by telephone at 415-503-6631 or by e-mail at [william.m.connor@usace.army.mil](mailto:william.m.connor@usace.army.mil). All correspondence should be addressed to the Regulatory Division, North Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website:  
<http://www.spn.usace.army.mil/Missions/Regulatory.aspx>.

Sincerely,



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Rick M. Bottoms, Ph.D.  
Chief, Regulatory Division

Enclosures

cc (w/ encls):

Vallejo-Fairview Developers, LLC, Jeb Elmore, [jeb.elmore@lewismc.com](mailto:jeb.elmore@lewismc.com)

CA RWQCB, Agnes Fares, [Agnes.Farres@waterboards.ca.gov](mailto:Agnes.Farres@waterboards.ca.gov)



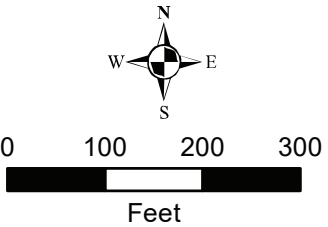
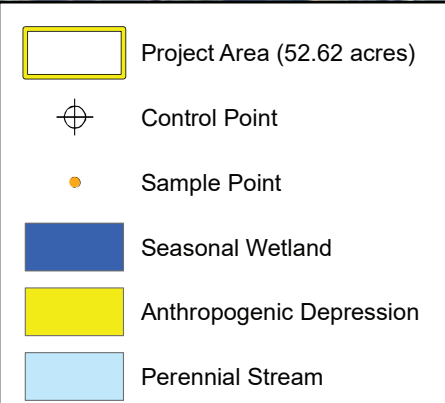


Potentially Jurisdictional Features	
Seasonal Wetland Swale	Acres
W01	5.00
W02	0.02
Anthropogenic Depressions	Acres
AD01	0.02
AD02	0.01
AD03	0.00
AD04	0.01
AD05	0.02
AD06	0.01
AD07	0.01
Waters	Acres/Linear Ft.
S01	0.02/85
Total	5.12/85

Fairview at  
Northgate

Solano County,  
California

Delineation of  
Waters of the U.S.



Map Prepared Date: 5/15/2018  
Map Prepared By: czumwalt  
Base Source: NAIP 2016  
Data Source(s): WRA



