

## **Appendix B**

### **Biological Resources Reports and Arborist Report**

# Application Form and Planning Survey Report

## To Comply With and Receive Permit Coverage Under The East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan

Please complete this application to apply for take authorization under the state and federal East Contra Costa County HCP/NCCP incidental take permits. The East Contra Costa County Habitat Conservancy ("Conservancy") or local jurisdiction (City of Brentwood, City of Clayton, City of Oakley, City of Pittsburg, and Contra Costa County) may request more information in order to deem the application complete.

### I. PROJECT OVERVIEW

PROJECT INFORMATION	
PROJECT NAME: Oak Creek Canyon Development	
PROJECT TYPE: <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Transportation <input type="checkbox"/> Utility <input type="checkbox"/> Other	
PROJECT DESCRIPTION (BRIEF): Development of 6 single family residential units	
PROJECT ADDRESS/LOCATION: Marsh Creek Road at Diablo Parkway, Clayton, CA	
PARCEL/PROJECT SIZE (ACRES): Project Size: 9.03 acres	
PROJECT APN(S): 119-070-008	
APPLICATION SUBMITTAL DATE:	FINAL PSR DATE: (City/County/Conservancy use)
LEAD PLANNER: Mindy Gentry, Community Development Director	
JURISDICTION: <input type="checkbox"/> City of Brentwood <input checked="" type="checkbox"/> City of Clayton <input type="checkbox"/> City of Oakley <input type="checkbox"/> City of Pittsburg <input type="checkbox"/> Contra Costa County <input type="checkbox"/> Participating Special Entity*	
<small>*Participating Special Entities are organizations not subject to the authority of a local jurisdiction. Such organizations may include school districts, irrigation districts, transportation agencies, local park districts, geological hazard abatement districts, or other utilities or special districts that own land or provide public services.</small>	
DEVELOPMENT FEE ZONE: <input type="checkbox"/> Zone I <input checked="" type="checkbox"/> Zone II <input type="checkbox"/> Zone III <input type="checkbox"/> Zone IV	
<small>See figure 9-1 of the HCP/NCCP at <a href="http://www.cocohcp.org">www.cocohcp.org</a> for a generalized development fee zone map. Detailed development fee zone maps by jurisdiction are available from the jurisdiction.</small>	

PROJECT APPLICANT INFORMATION	
APPLICANT'S NAME: Discovery Builders, Incorporated	
AUTHORIZED AGENT'S NAME AND TITLE: Louis Parsons, President	
PHONE NO.: 925-682-6419	APPLICANT'S E-MAIL: <a href="mailto:lp Parsons@discoverybuilders.com">lp Parsons@discoverybuilders.com</a>
MAILING ADDRESS: 4061 Port Chicago Highway, Concord, CA 94520	

BIOLOGIST INFORMATION <sup>1</sup>	
BIOLOGICAL/ENVIRONMENTAL FIRM: Swaim Biological, Incorporated	
CONTACT NAME AND TITLE: Leslie Koenig, Senior Biologist	
PHONE NO.: 916-849-0513	CONTACT'S E-MAIL: <a href="mailto:lkoenig@swaimbio.com">lkoenig@swaimbio.com</a>
MAILING ADDRESS: 4435 First St. PMB 312, Livermore, CA 94551	

<sup>1</sup> A USFWS/CDFW-approved biologist (project-specific) is required to conduct the surveys. Please submit biologist(s) approval request to the Conservancy.

## II. PROJECT DETAILS

Please complete and/or provide the following attachments:

### 1) Project Description

Attach as **Attachment A: Project Description**. Provide a detailed written description that concisely and completely describes the project and location. Include the following information:

- All activities proposed for the site or project, including roads utilized, construction staging areas, and the installation of underground facilities, to ensure the entire project is covered by the HCP/NCCP permit
- Proposed construction dates, including details on construction phases, if applicable
- Reference a City/County application number for the project, if applicable
- General Best Management Practices, if applicable
- If the project will have temporary impacts, please provide a restoration plan describing how the site will be restored to pre-project conditions, including revegetation seed mixes or plantings and timing

### 2) Project Vicinity Map

Provide a project vicinity map. Attach as **Figure 1 in Attachment B: Figures**.

### 3) Project Site Plans

Provide any project site plans for the project. Attach as **Figure 2 in Attachment B: Figures**.

### 4) CEQA Document

Indicate the status of CEQA documents prepared for the project. Provide additional comments below table if necessary.

Type of Document	Status	Date Completed
<input checked="" type="checkbox"/> Initial Study	In progress	
<input type="checkbox"/> Notice of Preparation		
<input type="checkbox"/> Draft EIR		
<input type="checkbox"/> Final EIR		
<input type="checkbox"/> Notice of Categorical Exemption		
<input type="checkbox"/> Notice of Statutory Exemption		
<input type="checkbox"/> Other (describe)		

## III. EXISTING CONDITIONS AND IMPACTS

Please complete and/or provide the following attachments:

### 1) Field-Verified Land Cover Map<sup>2</sup>

Attach a field-verified land cover map in **Attachment B: Figures** and label as **Figure 3**. The map should contain all land cover types present on-site overlaid on aerial/satellite imagery. Map colors for the land cover types should conform to the HCP/NCCP (see *Figure 3-3: Landcover in the Inventory Area* for land cover type legend).

### 2) Photographs of the Project Site

Attach representative photos of the project site in **Attachment B: Figures** and label as **Figure 4**. Please provide captions for each photo.

<sup>2</sup> For PSEs and city or county public works projects, please also identify permanent and temporary impact areas by overlaying crosshatching (permanent impacts) and hatching (temporary impacts) on the land cover map.

### 3) Land Cover Types and Impacts and Supplemental Tables

- For all terrestrial land cover types please provide calculations to the nearest **hundredth of an acre (0.01)**. For aquatic land cover types please provide calculations to the nearest **thousandth of an acre (0.001)**.
- Permanent Impacts** are broadly defined in the ECCC HCP/NCCP to include all areas removed from an undeveloped or habitat-providing state and includes land in the same parcel or project that is not developed, graded, physically altered, or directly affected in any way but is isolated from natural areas by the covered activity. Unless such undeveloped land is dedicated to the Preserve System or is a deed-restricted creek setback, the development mitigation fee will apply (if proposed, would require Conservancy approval).
- Temporary Impacts** are broadly defined in the ECCC HCP/NCCP as any impact on vegetation or habitat that does not result in permanent habitat removal (i.e. vegetation can eventually recover).
- If **wetland (riparian woodland/scrub, wetland, or aquatic)** land cover types are present on the parcel but will not be impacted please discuss in the following section 4) Jurisdictional Wetlands and Waters. Wetland impact fees will only be charged if wetland features are impacted. However, development fees will apply to the entire parcel.
- Stream** land cover type is considered a linear feature where impacts are calculated based on length impacted. The acreage within a stream, below Top of Bank (TOB), must be assigned to the adjacent land cover type(s). Insert area of impact to stream below TOB in parentheses after the Land Cover acreage number (e.g., Riparian Woodland/Scrub: 10 (0.036) – where 10 is the total impacted acreage including 0.036 acre, which is the acreage within stream TOB). Complete following supplemental **Stream Feature Detail** table to provide information for linear feet.
- Total Impacts** acreage should be the total parcel acreage (development project) or project footprint acreage (rural infrastructure or utility project).

**Table 1: Land Cover Types and Impacts**

*Proposed for HCP/NCCP  
Dedication on the Parcel  
(Requires Conservancy Approval)*

Land Cover Type	Permanent Impacts	Temporary Impacts	Stream Setback	Preserve System Dedication
<i>Grassland</i>				
Annual Grassland	6.57			
Alkali Grassland				
Ruderal	2.46			
<i>Shrubland</i>				
Chaparral and Scrub				
<i>Woodland</i>				
Oak Savannah				
Oak Woodland				
<i>Riparian</i>				
Riparian Woodland/Scrub				
<i>Wetland</i>				
Permanent Wetland				
Seasonal Wetland				
Alkali Wetland				
<i>Aquatic</i>				
Aquatic (Reservoir/Open Water)				
Slough/Channel				
Pond				
Stream (in linear feet)	-	-	-	-
<i>Irrigated Agriculture</i>				
Pasture				
Cropland				
Orchard				
Vineyard				
<i>Other</i>				
Nonnative woodland				
Wind turbines				
<i>Developed (not counted toward Fees)</i>				
Urban				
Aqueduct				
Turf				
Landfill				
<b>TOTAL IMPACTS</b>	9.03			



Identify any uncommon vegetation and uncommon landscape features<sup>3</sup>:

**Supplemental to Table 1: Uncommon Vegetation and Landscape Features**

	Permanent Impacts	Temporary Impacts
<i>Uncommon Grassland Alliances</i>		
Purple Needlegrass Grassland		
Blue Wildrye Grassland		
Creeping Ryegrass Grassland		
Wildflower Fields		
Squirreltail Grassland		
One-sided Bluegrass Grassland		
Serpentine Bunchgrass Grassland		
Saltgrass Grassland		
Alkali Sacaton Bunchgrass Grassland		
<input type="checkbox"/> Other		
<i>Uncommon Landscape Features</i>		
Rock Outcrops		
Caves		
Springs and seeps		
Scalds		
Sand Deposits		
<input type="checkbox"/> Mines <sup>4</sup>		
<input type="checkbox"/> Buildings (bat roosts) <sup>3</sup>		
<input type="checkbox"/> Potential nest sites (trees or cliffs) <sup>3</sup>		

Please provide details of impacts to stream features:

**Stream Name:** Unnamed drainage – Jurisdictional determination needed

**Watershed:** Suisun Bay HUC-8-18050001

**Supplemental to Table 1: Stream Feature Detail<sup>5</sup>**

Stream Width	Stream Type <sup>6</sup>	Permanent Impacts (linear feet) <sup>7</sup>	Temporary Impacts (linear feet) <sup>7</sup>
<input checked="" type="checkbox"/> ≤ 25 feet wide <input type="checkbox"/> > 25 feet wide	<input type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral, 3rd or higher order <input checked="" type="checkbox"/> Ephemeral, 1st or 2nd order	TBD	
<input type="checkbox"/> ≤ 25 feet wide <input type="checkbox"/> > 25 feet wide	<input type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral, 3rd or higher order <input type="checkbox"/> Ephemeral, 1st or 2nd order		
<input type="checkbox"/> ≤ 25 feet wide <input type="checkbox"/> > 25 feet wide	<input type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral, 3rd or higher order <input type="checkbox"/> Ephemeral, 1st or 2nd order		

<sup>3</sup> These acreages are for Conservancy tracking purposes. Impacts to these uncommon vegetation and landscape features should be accounted for within the land cover types in Table 1 (e.g., x acres of purple needlegrass in this supplemental table should be accounted for within annual grassland in Table 1).

<sup>4</sup> Insert amount/number, not acreage. Provide additional information on these features in Attachment A: Project Description.

<sup>5</sup> Use more than 1 row as necessary to describe impacts to streams on site.

<sup>6</sup> See glossary (Appendix A) for definition of stream type and order.

<sup>7</sup> Stream length is measured along stream centerline, based on length of impact to any part of the stream channel, TOB to TOB.

#### 4) Summary of Land Cover Types

Please provide a written summary of descriptions for land cover types found on site including characteristic vegetation.

The Project Site is shown on the Final ECCHCP/NCCP Land Cover map as future urban land cover type and also falls within the Initial Urban Development Area. A planning survey determined the Project Site contains 6.57 acres of annual grassland land cover and 2.46 acres of ruderal land cover. The planning survey results determined ruderal land cover was present on the lower portion of the site during the planning survey. On the upper portion of the Project Site annual grassland habitat was present including wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*) mixed with non-native plants including yellow star thistle (*Centaurea solstitialis*) and purple star thistle (*Centaurea calcitrapa*). See Figure 3 for the field verified land cover types.

Two black locust trees (*Robinia pseudoacacia*) and one Mexican fan palm tree (*Washingtonia robusta*) are present on the Project Site. There are three additional black locust trees on the parcel that is adjacent to Marsh Creek Road. The Contra Costa Water District Property has many trees and shrubs surrounding the perimeter including *Eucalyptus* sp, pine trees (*Pinus* sp.), and Peruvian pepper trees (*Schinus molle*). On the northern most border of the parcel are several oak trees (*Quercus* sp.) and mixed oaks are present on the neighboring parcels.

#### 5) Jurisdictional Wetlands and Waters

If wetlands and waters are present on the project site, project proponents must conduct a delineation of jurisdictional wetlands and waters. Jurisdictional wetlands and waters are defined on pages 1-18 and 1-19 of the ECCC HCP/NCCP as the following land cover types: permanent wetland, seasonal wetland, alkali wetland, aquatic, pond, slough/channel, and stream. It should be noted that these features differ for federal and state jurisdictions. If you have identified any of these land cover types in Table 1, complete the section below.

- a) Attach the wetland delineation report as **Attachment E: Wetland Delineation**. If a wetland delineation has not been completed, please explain below in section 4c.
- b) **Please check the following permits the project may require. Please submit copies of these permits to the Conservancy prior to the start of construction:**
- |  |  |
|--|--|
| <input type="checkbox"/> CWA Section 404 Permit <sup>8</sup> | <input type="checkbox"/> CWA Section 401 Water Quality Certification |
| <input type="checkbox"/> Waste Discharge Requirements        | <input type="checkbox"/> Lake and Streambed Alteration Agreement     |
- c) **Provide any additional information on impacts to jurisdictional wetland and waters below, including status of the permit(s):**

No wetlands were observed during planning surveys on the Project Site, therefore no jurisdictional wetlands or waters are anticipated to be impacted by project activities. There is an unnamed, historical, ephemeral drainage present to the east. The jurisdictional nature of this unnamed drainage will be confirmed through consultation with the resource agencies. Upon completion of the consultation with the resource agencies, the results will be provided to the City of Clayton.

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<sup>8</sup> The USACE Sacramento District issued a Regional General Permit 1 (RGP) related to ECCC HCP/NCCP covered activities. The RGP is designed to streamline wetland permitting in the entire ECCC HCP/NCCP Plan Area by coordinating the avoidance, minimization, and mitigation measures in the Plan with the Corps' wetland permitting requirement. Applicants seeking a authorization under this RGP shall notify the Corps in accordance with RGP general condition number 18 (Notification).

## 6) Species-Specific Planning Survey Requirements

Based on the land cover types found on-site and identified in Table 1, check the applicable boxes in Table 2a.

**Table 2a. Species –Specific Planning Survey Requirements**

Land Cover Type in Project Area	Required Survey Species	Habitat Element in Project Area	Planning Survey Requirement <sup>9</sup>	Info in HCP
<input checked="" type="checkbox"/> Grasslands, oak savannah, agriculture, or ruderal	<input checked="" type="checkbox"/> San Joaquin kit fox	Assumed if within modeled range of species	If within modeled range of species, identify and map potential breeding or denning habitat within the project site and a 250-ft radius around the project footprint.	pp. 6-37 to 6-38
	<input checked="" type="checkbox"/> Western burrowing owl	Assumed	Identify and map potential breeding habitat within the project site and a 500-ft radius around the project footprint. Please note the HCP requires buffers for occupied burrows. Surveys may need to encompass an area larger than the project footprint.	pp. 6-39 to 6-41
<input type="checkbox"/> Aquatic (ponds, wetlands, streams, sloughs, channels, and marshes)	<input type="checkbox"/> Giant garter snake	Aquatic habitat accessible from the San Joaquin River	Identify and map potential habitat.	pp. 6-43 to 6-45
	<input type="checkbox"/> California tiger salamander	Ponds and wetlands Vernal pools Reservoirs Small lakes	Identify and map potential breeding habitat. Document habitat quality and features. Provide the Conservancy with photo-documentation and report.	pp. 6-45
	<input type="checkbox"/> California red-legged frog	Slow-moving streams, ponds and wetlands	Identify and map potential breeding habitat. Document habitat quality and features. Provide the Conservancy with photo-documentation and report.	p. 6-46
	<input type="checkbox"/> Covered shrimp	Seasonal wetlands Vernal pools Sandstone rock outcrops Sandstone depressions	Identify and map potential habitat. Please note the HCP requires a 50 foot non-disturbance buffer from seasonal wetlands that may be occupied by covered shrimp. Surveys may need to encompass an area larger than the project footprint.	pp. 6-46 to 6-48
<input checked="" type="checkbox"/> Any	<input type="checkbox"/> Townsend's big-eared bat	Rock formations with caves Mines Abandoned buildings outside urban area	Map and document potential breeding or roosting habitat.	pp. 6-36 to 6-37
	<input checked="" type="checkbox"/> Swainson's hawk	Potential nest sites within 1,000 feet of project	Inspect large trees for presence of nest sites. Document and map.	pp. 6-41 to 6-43
	<input checked="" type="checkbox"/> Golden Eagle	Potential nest sites with ½ mile of project	Inspect large trees for presence of nest sites. Document and map.	pp. 6-38 to 6-39

Surveys for all covered species must be conducted by a qualified biologist (USFWS/CDFW project-specific approved). Please submit biologist approval request to the East Contra Costa County Habitat Conservancy.

Surveys for all covered species must be conducted according to the respective USFWS or CDFW survey protocols, as identified in Chapter 6.4.3 in the HCP/NCCP.

## 7) Planning Survey Species Habitat Maps

Provide Planning Survey Species Habitat Maps as required in Table 2a, attach as **Figure 5 in Attachment B: Figures**.

<sup>9</sup> The planning survey requirements in this table are not comprehensive. Please refer to Chapter 6.4.3 in the ECCC HCP/NCCP for more detail.

## 8) Results of Species Specific Surveys

Provide a written summary describing the results of the planning surveys. Please discuss the location, quantity, and quality of suitable habitat for specified covered wildlife species on the project site.

Below is a summary describing the results of the planning surveys for all species identified in Table 2a.

### San Joaquin kit fox (*Vulpes macrotis mutica*)

The Project Site is located within the modeled suitable core habitat of San Joaquin kit fox. However, indications of use by San Joaquin kit fox – including large keyhole-shaped burrows, tracks, scat, prey remains or fur were not observed during the planning surveys. No burrows of suitable size to accommodate the San Joaquin kit fox (greater than five inches in diameter for a minimum of one foot underground) were observed within the Project Site or within 250 feet of the Project Site. While annual grassland is present within the Project Site, the proximity to residential housing developments directly south of the Project Site provides low potential for use by San Joaquin kit fox. The nearest CNDDDB observation is 3.6 miles away and is from 1992. Due to the low potential for use by San Joaquin kit fox and the lack of suitable burrows identified during the planning surveys, no potential breeding or denning habitat is present and therefore no additional surveys or conservation measures are required.

### Western burrowing owl (*Athene cunicularia*)

The area is located within the modeled suitable habitat of western burrowing owl. However, no burrows of suitable size to support the species (four inches or greater in diameter) were observed during the planning survey within the Project Site or within 500 feet of the Project Site. California ground squirrels (*Spermophilus beecheyi*) were observed as well as active ground squirrel burrows within the Project Site and surrounding parcels. The potential for western burrowing owls on the property is limited by the lack of suitable burrows, however, there is moderate to high potential for the burrowing owl to use the Project Site for foraging and low to moderate potential for the owl to use the Project Site for nesting. The two nearest CNDDDB observations are both 4.8 miles away from 1989 and 1991. Preconstruction surveys and avoidance and minimization measures (if necessary) will be completed for western burrowing owl as described below in Section IV.2 and in Attachment A.

### Golden eagle (*Aquila chrysaetos*)

The Project Site is located within the modeled suitable habitat of the golden eagle. No trees providing suitable nesting habitat are present within the Project Site, however, large oaks to the north of the Project Site could serve as potential nest sites. No active or inactive nests were observed during the planning survey. The suitability of the nest sites surrounding the property are marginal as golden eagles do not generally nest near urban habitat. Preconstruction surveys and avoidance and minimization measures (if necessary) will be completed for golden eagles as described below in Section IV.2 and in Attachment A.

### Swainson's hawk (*Buteo swainsoni*)

The Project Site is not located within the modeled suitable habitat of the Swainson's hawk. No trees providing suitable nesting habitat are present within the Project Site, however, the riparian corridor of Mount Diablo Creek to the south could serve as potential nest sites. There is not extensive foraging habitat present in the form of agricultural fields or pasture, however, there are some small agricultural fields located to the east that could serve as marginal foraging habitat. No active or inactive nests were observed during the planning survey. Preconstruction surveys and avoidance and minimization measures (if necessary) will be completed for Swainson's hawks as described below in Section IV.2 and in Attachment A.

### References:

California Department of Fish and Wildlife (CDFW). 2017. California Natural Diversity Database query for the Tassajara, Diablo, Antioch South, and Clayton U.S. Geological Survey 7.5-minute quadrangles. October 2017.

Jones & Stokes. 2007. Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. Retrieved October 2017, from [http://www.co.contra-costa.ca.us/depart/cd/water/hcp/archive/final-hcp-rev/final\\_hcp\\_nccp.html](http://www.co.contra-costa.ca.us/depart/cd/water/hcp/archive/final-hcp-rev/final_hcp_nccp.html)

**9) Covered and No-Take Plants**

Please check the applicable boxes in Table 2b based on the land cover types found in the project area. If suitable land cover types are present on site, surveys must be conducted using approved CDFW/USFWS methods during the appropriate season for identification of covered and no-take species (see page 6-9 of the ECCC HCP/NCCP). Reference populations of covered and no-take plants should be visited, where possible, prior to conducting surveys to confirm that the plant species is visible and detectable at the time surveys are conducted. In order to complete all the necessary covered and no-take plant surveys, spring, summer, and fall surveys may be required.

**Table 2b. Covered and No-Take Plant Species**

Plant Species	Covered (C) or No-Take (N)	Associated Land Cover Type	Typical Habitat or Physical Conditions, if Known	Typical Blooming Period	Suitable Land Cover Type Present
Adobe navarretia ( <i>Navarretia nigelliformis</i> ssp. <i>radians</i> ) <sup>a</sup>	C	Annual Grassland	Generally found on clay barrens in Annual Grassland <sup>b</sup>	Apr–Jun	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Alkali milkvetch ( <i>Astragalus tener</i> ssp. <i>tener</i> )	N	Alkali grassland Alkali wetland Annual grassland Seasonal wetland	Generally found in vernal moist habitat in soils with a slight to strongly elevated pH	Mar–Jun	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Big tarplant ( <i>Blepharizonia plumosa</i> )	C	Annual grassland	Elevation below 1500 feet <sup>d</sup> most often on Altamont Series or Complex soils	Jul–Oct	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Brewer's dwarf flax ( <i>Hesperolinon breweri</i> )	C	Annual grassland Chaparral and scrub Oak savanna Oak woodland	Generally, restricted to grassland areas within a 500+ buffer from oak woodland and/or chaparral/scrub <sup>d</sup>	May–Jul	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Brittlescale ( <i>Atriplex depressa</i> )	C	Alkali grassland Alkali wetland	Restricted to soils of the Pescadero or Solano soil series; generally found in southeastern region of plan area <sup>d</sup>	May–Oct	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Caper-fruited tropidocarpum ( <i>Tropidocarpum capparideum</i> )	N	Alkali grassland		Mar–Apr	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Contra Costa goldfields ( <i>Lasthenia conjugens</i> )	N	Alkali grassland Alkali wetland Annual grassland Seasonal wetland	Generally found in vernal pools	Mar–Jun	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Diablo Helianthella ( <i>Helianthella castanea</i> )	C	Chaparral and scrub Oak savanna Oak woodland	Elevations generally above 650 feet <sup>d</sup>	Mar–Jun	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Diamond-petaled poppy ( <i>Eschscholzia rhombipetala</i> )	N	Annual grassland		Mar–Apr	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Large-flowered fiddleneck ( <i>Amsinckia grandiflora</i> )	N	Annual grassland	Generally on clay soil	Apr–May	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mount Diablo buckwheat ( <i>Eriogonum truncatum</i> )	N	Annual grassland Chaparral and scrub	Ecotone of grassland and chaparral/scrub	Apr–Sep	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Mount Diablo fairy-lantern ( <i>Calochortus pulchellus</i> )	C	Annual grassland Chaparral and scrub Oak savanna Oak woodland	Elevations generally between 650 and 2,600 <sup>d</sup>	Apr–Jun	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mount Diablo Manzanita ( <i>Arctostaphylos auriculata</i> )	C	Chaparral and scrub	Elevations generally between 700 and 1,860 feet; restricted to the eastern and northern flanks of Mt. Diablo <sup>d</sup> and the vicinity of Black Diamond Mines	Jan–Mar	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Recurved larkspur ( <i>Delphinium recurvatum</i> )	C	Alkali grassland Alkali wetland		Mar–Jun	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Round-leaved filaree ( <i>California macrophylla</i> ) <sup>c</sup>	C	Annual grassland		Mar–May	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
San Joaquin spearscale ( <i>Extriplex joaquiniana</i> ) <sup>e</sup>	C	Alkali grassland Alkali wetland		Apr–Oct	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Showy madia ( <i>Madia radiata</i> )	C	Annual grassland Oak savanna Oak woodland	Primarily occupies open grassland or grassland on edge of oak woodland	Mar–May	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<sup>a</sup> The species *Navarretia nigelliformis* subsp. *nigelliformis* is no longer considered to occur within Contra Costa County based on specimen annotations at the UC and Jepson Herbaria at the University of California Berkeley as well as the opinions of experts in the genus. This taxon is now recognized as *Navarretia nigelliformis* subsp. *radians*. Any subspecies of *Navarretia nigelliformis* encountered as a part of botanical surveys in support of a PSR should be considered as covered under this HCP/NCCP.

<sup>b</sup> Habitat for the *Navarretia nigelliformis* subspecies that occurs within the inventory are inaccurately described in the HCP/NCCP as vernal pools. The entity within the Inventory generally occupies clay barrens within Annual Grassland habitat, which is an upland habitat type.

<sup>c</sup> From California Native Plant Society. 2007. *Inventory of Rare and Endangered Plants* (online edition, v7-07d). Sacramento, CA. Species may be identifiable outside of the typical blooming period; a professional botanist shall determine if a covered or no take plant occurs on the project site. Reference population of covered and no-take plants should be visited, where possible, prior to conducting surveys to confirm that the plant is visible and detectable at the time surveys are conducted.

<sup>d</sup> See Species Profiles in Appendix D of the Final HCP/NCCP. Reference populations of covered and no-take plants should be visited, where possible, prior to conducting surveys to confirm that the plant species is visible and detectable at the time surveys are conducted.

<sup>e</sup> In the recent update to the Jepson flora (JFP 2013) *Atriplex joaquiniana* has been circumscribed and segregated into a new genus called *Extriplex* based on the work of Elizabeth Zacharias and Bruce Baldwin (2010). The etymology of the genus *Extriplex* means, "beyond or outside Atriplex".

## 10) Results of Covered and No-Take Plant Species

Provide a written summary describing the results of the planning surveys conducted as required in Table 2b. Describe the methods used to survey the site for all covered and no-take plants, including the dates and times of all surveys conducted (see Tables 3-8 and 6-5 of the ECCC HCP/NCCP for covered and no-take plants), including reference populations visited prior to conducting surveys.

If any covered or no-take plant species were found, include the following information in the results summary:

- Description and number of occurrences and their rough population size.
- Description of the “health” of each occurrence, as defined on pages 5-49 and 5-50 of the HCP/NCCP.
- A map of all the occurrences.
- Justification of surveying time window, if outside of the plant’s blooming period.
- The CNDDDB form(s) submitted to CDFW (if this is a new occurrence).
- A description of the anticipated impacts that the covered activity will have on the occurrence and how the project will avoid impacts to all covered and no-take plant species. If impacts to covered plant species cannot be avoided and plants will be removed by covered activity, the Conservancy must be notified and has the option to salvage the covered plants. All projects must demonstrate avoidance of all six no-take plants (see table 6-5 of the HCP/NCCP).

Planning surveys were conducted in October 2017. Research has been conducted to select special-status plant species with the potential to be found within the Project Site. Sources consulted include CNDDDB, Table 2b above and the California Native Plant Society Inventory of Rare and Endangered Plants. Rare plant species were identified that occur in annual grassland settings. This list was further refined by comparing geographic range and habitat preferences for each species with the geographic location and habitat types found within the Project Site. Five of the seven species listed in Table 2b are determined to require rare plant surveys. Surveys will be conducted during the appropriate bloom period for each species in 2018 and this information will be provided to the City of Clayton. The species that require rare plant surveys include big tarplant (*Blepharizonia plumose*), round-leaved filaree (*California macrophylla*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), diamond petaled poppy (*Eschscholzia rhombipetala*), large flowered fiddleneck (*Amsinckia grandiflora*), and showy madia (*Madia radiata*).

Adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*) was determined to not have potential to occur on the Project Site as it requires vernal mesic habitat conditions which are not present. Brewer’s dwarf flax (*Hesperolinon breweri*) was determined to not have potential to occur on the Project Site as it grows in rocky soils on serpentine, sandstone or volcanic substrates which are not present.

### References:

Calflora. 2017. Calflora: Information on California plants for education, research and conservation. Retrieved from <http://www.calflora.org/>.

California Department of Fish and Wildlife (CDFW). 2017. California Natural Diversity Database query for the Tassajara, Diablo, Antioch South, and Clayton U.S. Geological Survey 7.5-minute quadrangles. October 2017.

California Native Plant Society (CNPS), Rare Plant Program. 2017. Inventory of Rare and Endangered Plants (online edition, v8- 03 0.39). Sacramento, CA. Retrieved October 2017, from <http://www.rareplants.cnps.org>

Jones & Stokes. 2007. Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. Retrieved October 2017, from [http://www.co.contra-costa.ca.us/depart/cd/water/hcp/archive/final-hcp- rev/final\\_hcp\\_nccp.html](http://www.co.contra-costa.ca.us/depart/cd/water/hcp/archive/final-hcp- rev/final_hcp_nccp.html)



## IV. SPECIES-SPECIFIC AVOIDANCE AND MINIMIZATION REQUIREMENTS

Please complete and/or provide the following attachments:

### 1) Species-Specific Avoidance and Minimization for Selected Covered Wildlife

Complete the following table and check the applicable box for covered species determined by the planning surveys.

**Table 3. Summary of Applicable Preconstruction Surveys, Avoidance and Minimization, and Construction Monitoring Requirements<sup>10</sup>**

Species	Preconstruction Survey Requirements	Avoidance and Minimization Requirements	Construction Monitoring Required	Info in HCP
<input checked="" type="checkbox"/> San Joaquin kit fox	<ul style="list-style-type: none"> <li>On project footprint and 250-ft radius, map all dens (&gt;5 in. diameter) and determine status</li> <li>Provide written survey results to USFWS within 5 working days after surveying</li> </ul>	<ul style="list-style-type: none"> <li>Monitor dens</li> <li>Destroy unoccupied dens</li> <li>Discourage use of occupied (non-natal) dens</li> </ul>	<ul style="list-style-type: none"> <li>Establish exclusion zones (&gt;50 ft for potential dens, and &gt;100 ft for known dens)</li> <li>Notify USFWS of occupied natal dens</li> </ul>	pp. 6-37 to 6-38
<input checked="" type="checkbox"/> Western burrowing owl	<ul style="list-style-type: none"> <li>On project footprint and 500-ft radius, identify and map all owls and burrows, and determine status</li> <li>Document use of habitat (e.g. breeding, foraging)</li> </ul>	<ul style="list-style-type: none"> <li>Avoid occupied nests during breeding season (Feb-Sep)</li> <li>Avoid occupied burrows during nonbreeding season (Sep – Feb)</li> <li>Install one-way doors in occupied burrow (if avoidance not possible)</li> <li>Monitor burrows with doors installed</li> </ul>	<ul style="list-style-type: none"> <li>Establish buffer zones (250 ft around nests)</li> <li>Establish buffer zones (160 ft around burrows)</li> </ul>	pp. 6-39 to 6-41
<input type="checkbox"/> Giant garter snake	<ul style="list-style-type: none"> <li>Delineate aquatic habitat up to 200 ft from water's edge on each side</li> <li>Document any occurrences</li> </ul>	<ul style="list-style-type: none"> <li>Limit construction to Oct-May</li> <li>Dewater habitat April 15 – Sep 30 prior to construction</li> <li>Minimize clearing for construction</li> </ul>	<ul style="list-style-type: none"> <li>Delineate 200 ft buffer around potential habitat near construction</li> <li>Provide field report on monitoring efforts</li> <li>Stop construction activities if snake is encountered; allow snake to passively relocate</li> <li>Remove temporary fill or debris from construction site</li> <li>Mandatory training for construction personnel</li> </ul>	pp. 6-43 to 6-45
<input type="checkbox"/> California tiger salamander	<ul style="list-style-type: none"> <li>Provide written notification to USFWS and CDFW regarding timing of construction and likelihood of occurrence on site</li> </ul>	<ul style="list-style-type: none"> <li>Allow agency staff to translocate species, if requested</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	p. 6-45
<input type="checkbox"/> California red-legged frog	<ul style="list-style-type: none"> <li>Provide written notification to USFWS and CDFW regarding timing of construction and likelihood of occurrence on site</li> </ul>	<ul style="list-style-type: none"> <li>Allow agency staff to translocate species, if requested</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	p. 6-46
<input type="checkbox"/> Covered shrimp	<ul style="list-style-type: none"> <li>Establish presence/absence</li> <li>Document and evaluate use of all habitat features (e.g. vernal pools, rock outcrops)</li> </ul>	<ul style="list-style-type: none"> <li>Establish buffer near construction activities</li> <li>Prohibit incompatible activities</li> </ul>	<ul style="list-style-type: none"> <li>Establish buffer around outer edge of all hydric vegetation associated with habitat (50 ft or immediate watershed, whichever is larger)</li> <li>Mandatory training for construction personnel</li> </ul>	pp. 6-46 to 6-48
<input type="checkbox"/> Townsend's big-eared bat	<ul style="list-style-type: none"> <li>Establish presence/absence</li> <li>Determine if potential sites were recently occupied (guano)</li> </ul>	<ul style="list-style-type: none"> <li>Seal hibernacula before Nov</li> <li>Seal nursery sites before April</li> <li>Delay construction near occupied sites until hibernation or nursery seasons are over</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	pp. 6-36 to 6-37
<input checked="" type="checkbox"/> Swainson's hawk	<ul style="list-style-type: none"> <li>Determine whether potential nests are occupied</li> </ul>	<ul style="list-style-type: none"> <li>No construction within 1,000 ft of occupied nests within breeding season (March 15 - Sep 15)</li> <li>If necessary, remove active nest tree after nesting season to prevent occupancy in second year.</li> </ul>	<ul style="list-style-type: none"> <li>Establish 1,000 ft buffer around active nest and monitor compliance (no activity within established buffer)</li> </ul>	pp. 6-41 to 6-43
<input checked="" type="checkbox"/> Golden Eagle	<ul style="list-style-type: none"> <li>Establish presence/absence of nesting eagles</li> </ul>	<ul style="list-style-type: none"> <li>No construction within ½ mile near active nests (most activity late Jan – Aug)</li> </ul>	<ul style="list-style-type: none"> <li>Establish ½ mile buffer around active nest and monitor compliance with buffer</li> </ul>	pp. 6-38 to 6-39

<sup>10</sup> The requirements in this table are not comprehensive; they are detailed in the next section on the following page.



## 2) Required Preconstruction Surveys, Avoidance and Minimization, and Construction Monitoring

All preconstruction surveys shall be conducted in accordance with the requirements set forth in Section 6.4.3, Species-Level Measures, and Table 6-1 of the ECCC HCP/NCCP. Detailed descriptions of preconstruction surveys, avoidance and minimization, and construction monitoring applicable to each of the wildlife species in Table 3 are located below. Please remove the species-specific measures that do not apply to your project (highlight entire section and delete).

### WESTERN BURROWING OWL

#### Preconstruction Surveys

Prior to any ground disturbance related to covered activities, a USFWS/CDFW-approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (California Department of Fish and Game 1995).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

#### Avoidance and Minimization and Construction Monitoring

This measure incorporates avoidance and minimization guidelines from CDFW's *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995).

If burrowing owls are found during the breeding season (February 1 – August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a non-disturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1 – January 31), the project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below).

During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing.

If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors should be in place for 48 hours prior to excavation. The project area should be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation (California Department of Fish and Game 1995). Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

## **GOLDEN EAGLE**

### **Preconstruction Survey**

Prior to implementation of covered activities, a qualified biologist will conduct a preconstruction survey to establish whether nests of golden eagles are occupied (see Section 6.3.1, *Planning Surveys*). If nests are occupied, minimization requirements and construction monitoring will be required.

### **Avoidance and Minimization**

Covered activities will be prohibited within 0.5 mile of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer should be implemented, the Implementing Entity will coordinate with CDFW/USFWS to determine the appropriate buffer size.

### **Construction Monitoring**

Construction monitoring will focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the ULL, covered activities inside and outside of the Preserve System have the potential to disturb golden eagle nest sites. Construction monitoring will ensure that direct effects to golden eagles are minimized.

## **SWAINSON'S HAWK**

### **Preconstruction Survey**

Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist will conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the project site are occupied. If potentially occupied nests within 1,000 feet are off the project site, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the project site. If nests are occupied, minimization measures and construction monitoring are required (see below).

### **Avoidance and Minimization and Construction Monitoring**

During the nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction will be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the Implementing Entity will coordinate with CDFW/USFWS to determine the appropriate buffer size. If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the project site by other development, topography, or other features, the project applicant can apply to the Implementing Entity for a waiver of this avoidance measure. Any waiver must also be approved by USFWS and CDFW. While the nest is occupied, activities outside the buffer can take place. All active nest trees will be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the project proponent according to the requirements below.

### **Mitigation for Loss of Nest Trees**

The loss of non-riparian Swainson's hawk nest trees will be mitigated by the project proponent by:

- If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below.

AND either

- 1) Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR
- 2) The project proponent will plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Implementing Entity (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below.

The following requirements will be met for all planting options:

- Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years will be replaced. Success will be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation.
- Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival.
- Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees will be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety will help to ensure that nest trees will be available in the short term (5-10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will also minimize the temporal loss of nest trees.
- Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.
- Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site).
- Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA.
- Trees planted in the HCP/NCCP preserves or other approved offsite location will occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat.

### 3) Construction Monitoring Plan

Before implementing a covered activity, the applicant will develop and submit a construction monitoring plan to the planning department of the local land use jurisdiction and the East Contra Costa County Habitat Conservancy for review and approval. Elements of a brief construction monitoring plan will include the following:

- Results of planning and preconstruction surveys.<sup>11</sup>
- Description of avoidance and minimization measures to be implemented, including a description of project-specific refinements to the measures or additional measures not included in the HCP/NCCP.
- Description of monitoring activities, including monitoring frequency and duration, and specific activities to be monitored.
- Description of the onsite authority of the construction monitor to modify implementation of the activity.

☒ Check box to acknowledge this requirement.

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<sup>11</sup> If the preconstruction surveys do not trigger construction monitoring, results of preconstruction surveys should still be submitted to the local jurisdiction and the East Contra Costa County Habitat Conservancy.

## V. SPECIFIC CONDITIONS ON COVERED ACTIVITIES

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### 1) Check off the HCP conservation measures that apply to the project.

#### APPLIES TO ALL PROJECTS

☒ **Conservation Measure 1.11. Avoid Direct Impacts on Extremely Rare Plants, Fully Protected Wildlife Species, or Migratory Birds.** This conservation measure applies to all projects. All projects will avoid all impacts on extremely rare plants and fully protected species listed in Table 6-5 of the ECCC HCP/NCCP. See HCP pp. 6-23 to 6-25, and Table 6-5.

#### APPLIES TO PROJECTS THAT IMPACT COVERED PLANT SPECIES

☐ **Conservation Measure 3.10. Plant Salvage when Impacts are Unavoidable.** This condition applies to projects that cannot avoid impacts on covered plants and help protect covered plants by prescribing salvage whenever avoidance of impacts is not feasible. Project proponents wishing to remove populations of covered plants must notify the Conservancy of their construction schedule to allow the Conservancy the option of salvaging the populations. See HCP pp. 6-48 to 6-50.

#### APPLIES TO PROJECTS THAT INCLUDE ARE ADJACENT TO STREAMS, PONDS, OR WETLANDS

☐ **Conservation Measure 2.12. Wetland, Pond, and Stream Avoidance and Minimization.** All projects will implement measures described in the HCP to avoid and minimize impacts on wetlands, ponds, streams, and riparian woodland/scrub. See HCP pp. 6-33 to 6-35.

#### APPLIES TO NEW DEVELOPMENT PROJECTS

☒ **Conservation Measure 1.10. Maintain Hydrologic Conditions and Minimize Erosion.** All new development must avoid or minimize direct and indirect impacts on local hydrological conditions and erosion by incorporating the applicable Provision C.3 Amendments of the Contra Costa County Clean Water Program's (CCCCWP's) amended NPDES Permit (order no. R2-2003-0022; permit no. CAS002912). The overall goal of this measure is to ensure that new development covered under the HCP has no or minimal adverse effects on downstream fisheries to avoid take of fish listed under ESA or CESA. See HCP pp. 6-21 to 6-22.

#### APPLIES TO NEW DEVELOPMENT PROJECTS THAT INCLUDE OR ARE ADJACENT TO STREAMS, PONDS, OR WETLANDS

☐ **Conservation Measure 1.7. Establish Stream Setbacks.** A stream setback will be applied to all development projects covered by the HCP according to the stream types listed in Table 6-2 of the HCP. See HCP pp. 6-15 to 6-18 and Table 6-2.

#### APPLIES TO NEW DEVELOPMENT PROJECTS ADJACENT TO EXISTING PUBLIC OPEN SPACE, HCP PRESERVES, OR LIKELY HCP ACQUISITION SITES

☐ **Conservation Measure 1.6. Minimize Development Footprint Adjacent to Open Space.** Project applicants are encouraged to minimize their development footprint and set aside portions of their land to contribute to the HCP Preserve System. Land set aside that contributes to the HCP biological goals and objectives may be credited against development fees. See HCP pages 6-14 to 6-15.

☐ **Conservation Measure 1.8. Establish Fuel Management Buffer to Protect Preserves and Property.** Buffer zones will provide a buffer between development and wildlands that allows adequate fuel management to minimize the risk of wildlife damage to property or to the preserve. The minimum buffer zone for new development is 100 feet. See HCP pages 6-18 to 6-19.

☐ **Conservation Measure 1.9. Incorporate Urban-Wildlife Interface Design Elements.** These projects will incorporate design elements at the urban-wildlife interface to minimize the indirect impacts of development on the adjacent preserve. See HCP pp. 6-20 to 6-21.

#### APPLIES TO ROAD MAINTENANCE PROJECTS OUTSIDE THE UDA

☐ **Conservation Measure 1.12. Implement Best Management Practices for Rural Road Maintenance.** Road maintenance activities have the potential to affect covered species by introducing sediment and other pollutants into downstream waterways, spreading invasive weeds, and disturbing breeding wildlife. In order to avoid and minimize these impacts, BMPs described in the HCP will be used where appropriate and feasible. See HCP pp. 6-25 to 6-26.

#### APPLIES TO NEW ROADS OR ROAD IMPROVEMENTS OUTSIDE THE UDA

☐ **Conservation Measure 1.14. Design Requirements for Covered Roads Outside the Urban Development Area (UDA).** New roads or road improvements outside the UDA have impacts on many covered species far beyond the direct impacts of their project footprints. To minimize the impacts of new, expanded, and improved roads in agricultural and natural areas of the inventory area, road and bridge construction projects will adopt siting, design, and construction requirements described in the HCP and listed in Table 6-6. See HCP pp. 6-27 to 6-33 and Table 6-6.

#### APPLIES TO FLOOD CONTROL MAINTENANCE ACTIVITIES

☐ **Conservation Measure 1.13. Implement Best Management Practices for Flood Control Facility Maintenance.** Flood control maintenance activities have the potential to affect covered species by introducing sediment and other pollutants into downstream waterways and disturbing breeding wildlife. In order to avoid and minimize these impacts, BMPs described in the HCP will be used where appropriate and feasible. See HCP pp. 6-26 to 6-27.

- 2) For all checked conservation measures, describe how the project will comply with each measure. Attach as Attachment C: Project Compliance to HCP Conditions.

## VI. MITIGATION MEASURES

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- 1) **Mitigation Fee Calculator(s)**

Complete and attach the fee calculator (use permanent and/or temporary impact fee calculator as appropriate), and attach as **Attachment D: Fee Calculator(s)**.

- 2) **Briefly describe the amount of fees to be paid and when applicant plans to submit payment.**

A total of 9.03 acres will be developed as part of the Project. The Project Site occurs in the HCP/NCCP Zone 2 of the Fee Zone map. The current development fee calculation in Attachment D includes impacts to the grassland and ruderal habitats and are calculated at the 2018 rates.

Upon receiving verification of any jurisdictional waters the fee calculator may be updated as necessary.

Final fees will be paid prior to the initiation of construction. If the fee schedule changes prior to construction the fees will be recalculated in accordance with the current Fee Calculator.

**ATTACHMENT A: PROJECT DESCRIPTION**

## ATTACHMENT A: PROJECT DESCRIPTION

### Project Description

Discovery Builders, Incorporated plans to develop a portion of a vacant parcel at the Oak Creek Canyon Residential Development (Project Site) located in the City of Clayton, California. The proposed project includes the development of 6 single family residential units, landscaping, one new private road and stormwater management infrastructure. The Project Site is located in the East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) Zone 2 and is therefore eligible to be covered by the HCP/NCCP permit. The Project Site is shown on the Final ECCHCP/NCCP Land Cover map as future urban land cover type although planning surveys determined a mix of ruderal and annual grassland land cover. The Project Site occurs within the Initial Urban Development Area.

The Project Site will be accessed off of Marsh Creek Road. One new private road, Sage Lane, will be built to allow for access to the home sites. All construction and staging will occur within the Project Site. Underground wet and dry utilities including water, sewer, storm drain, electrical, cable, fiber optics, and natural gas will be installed as well.

### Project Location

The 9.03 acre Project Site is located on Marsh Creek Road in Clayton, CA. The project will occur on parcel 119-070-008. The Project Site is bounded by annual grassland to the north and east. Contra Costa Water District owns 1.68 acres adjacent to the parcel and maintains an access easement through the parcel. Marsh Creek Road serves as the southwestern boundary.

### General Best Management Practices and Avoidance and Minimization Measures

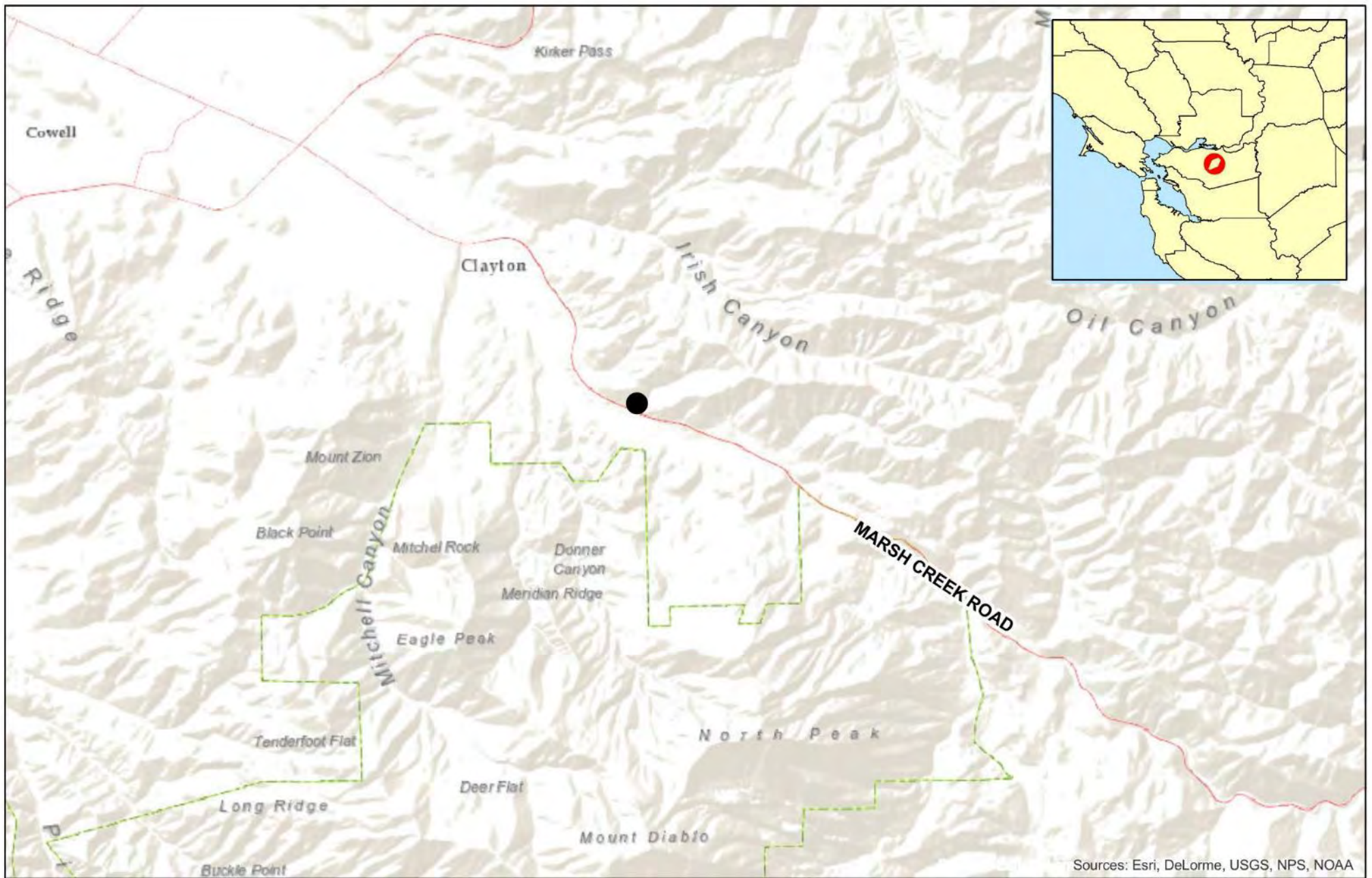
- Applicable measures from the Provision C.3 Amendments of the Contra Costa County Clean Water Program's amended NPDES Permit will be incorporated into construction documents and the Stormwater Pollution Prevention Plan developed for the Project Site.
- Pre-construction surveys and appropriate Avoidance and Minimization Measures for the following species will be required to comply with the ECCC HCP/NCCP guidelines. Survey methods, reporting requirements and construction measures if necessary are included in Attachment C.
  - Western burrowing owl (*Athene cunicularia*)
  - Golden eagle (*Aquila chrysaetos*)
  - Swainson's hawk (*Buteo swainsoni*)
  - Nesting passerines and raptors.

### Construction Schedule

Work activities are anticipated to occur in summer 2018 through summer 2019.

## **ATTACHMENT B: FIGURES**





● Project Location

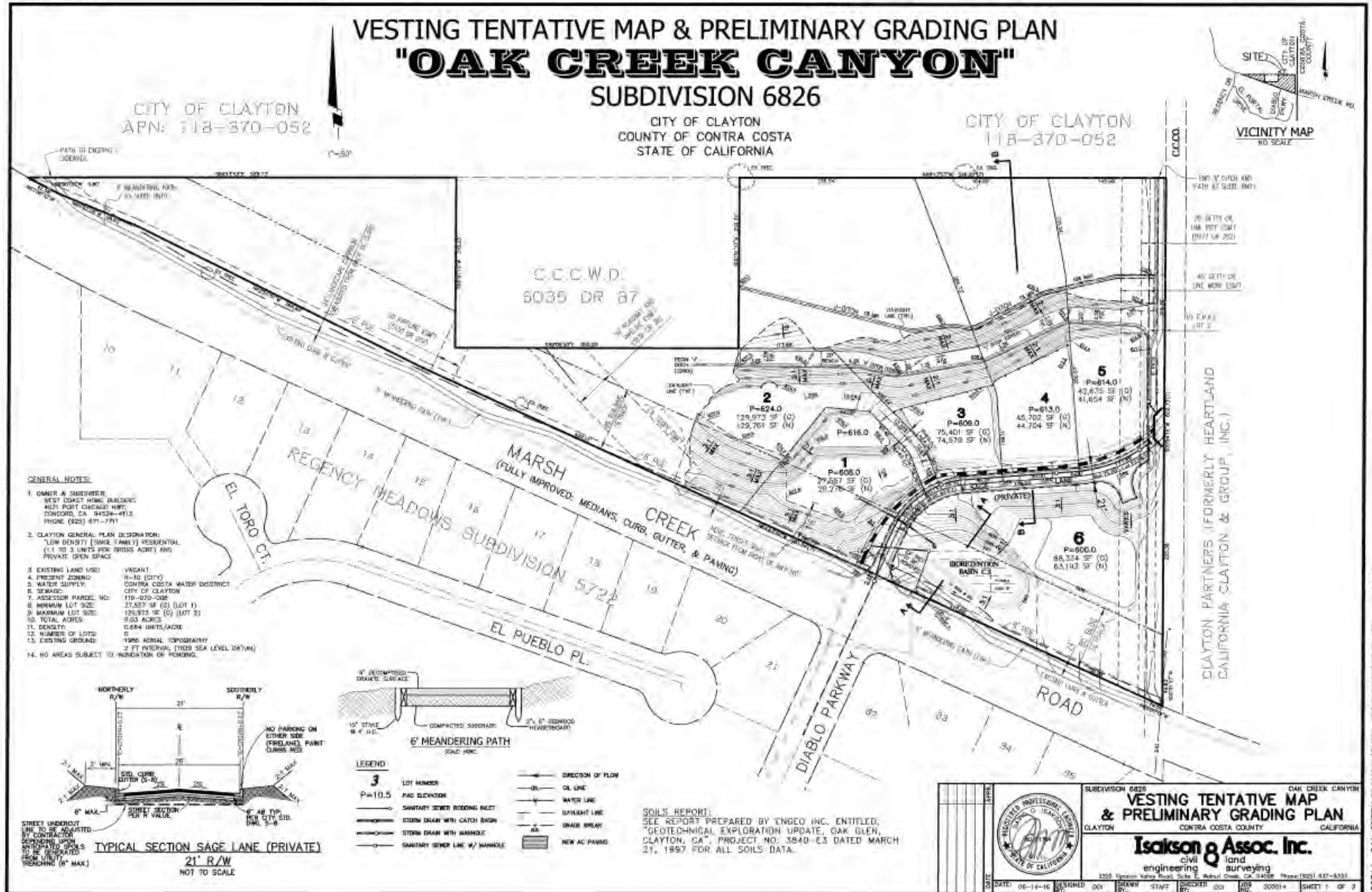


0 0.5 1 2 Miles

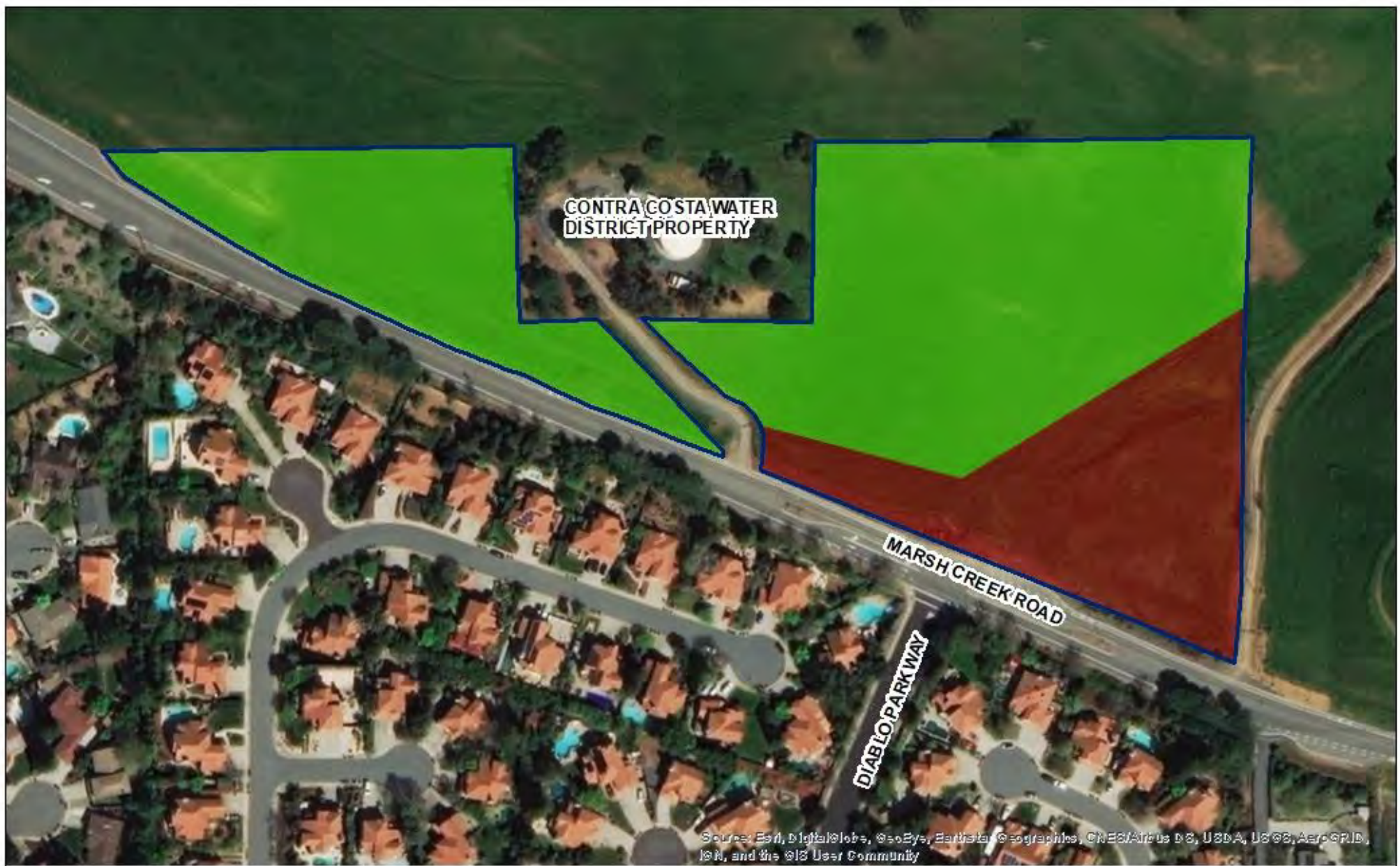
## Oak Creek Canyon Residential Development Figure 1. Proximity Map



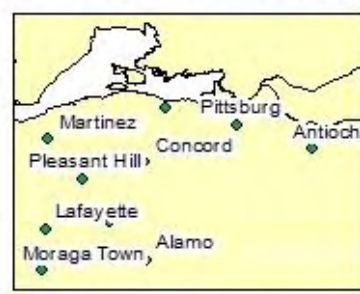
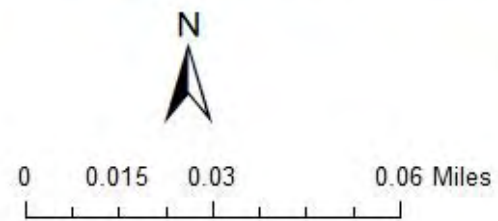








- Project Boundary
- Annual Grassland
- Ruderal Land Cover



**Oak Creek Canyon Residential Development**  
**Figure 3. Field Verified Land Cover Map**





FIGURE 4. Representative Photographs of the Oak Creek Canyon Project Site



Photo 1. Project Site looking south towards Marsh Creek Road showing mixed annual grassland and ruderal land covers. Red line shows the approximate parcel boundary to the east and south.

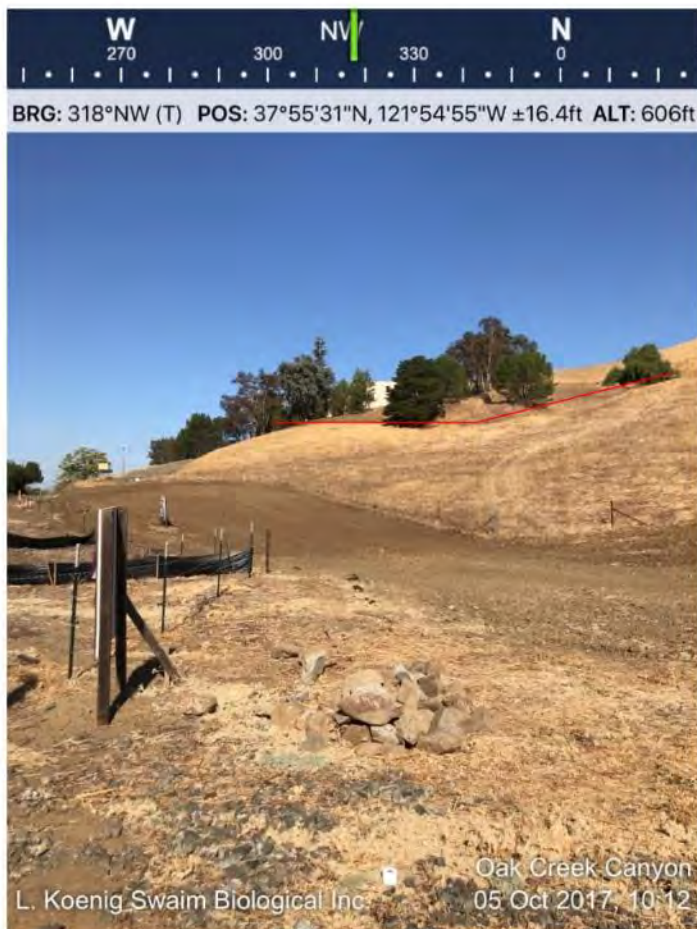


Photo 2. Looking northwest towards Contra Costa Water District property. Showing mixed annual grassland and ruderal land covers. Red line shows approximate parcel boundary, fence line on lower left is southern parcel boundary.



Photo 3: Showing ruderal, annual grassland. Oaks are on adjacent parcel to north. Red line shows approximate parcel boundary.





Photo 4: Project Site looking east with Marsh Creek Road on the right, showing ruderal and annual grassland land cover. Red line shows the approximate parcel boundary to the east and south.



Photo 5. Ground squirrel burrows

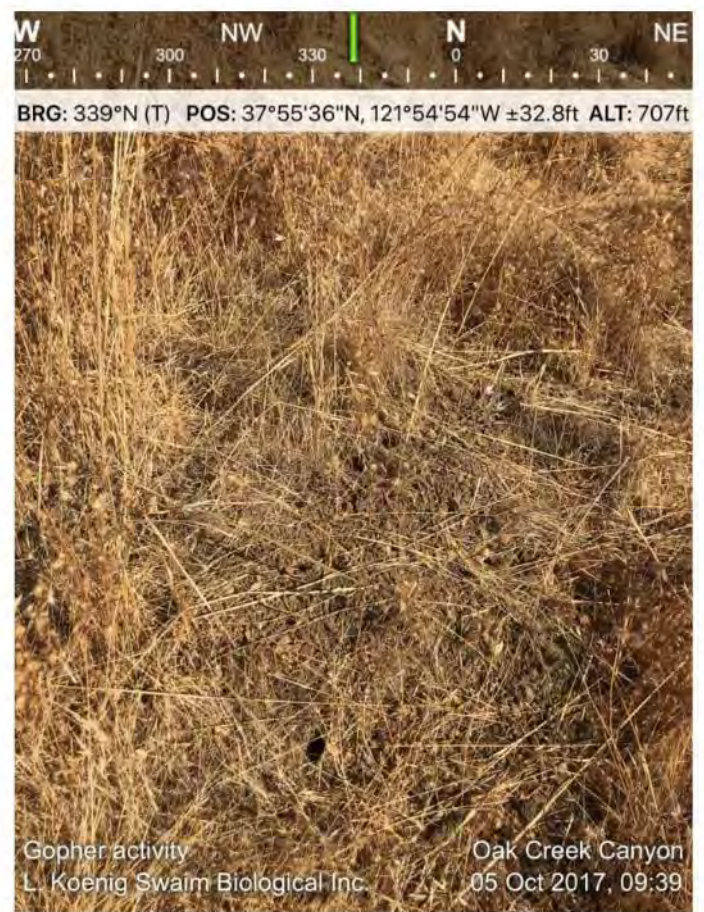


Photo 6. Gopher activity





Photo 6: Black locust on west end of property, adjacent to Marsh Creek Road and parcel boundary

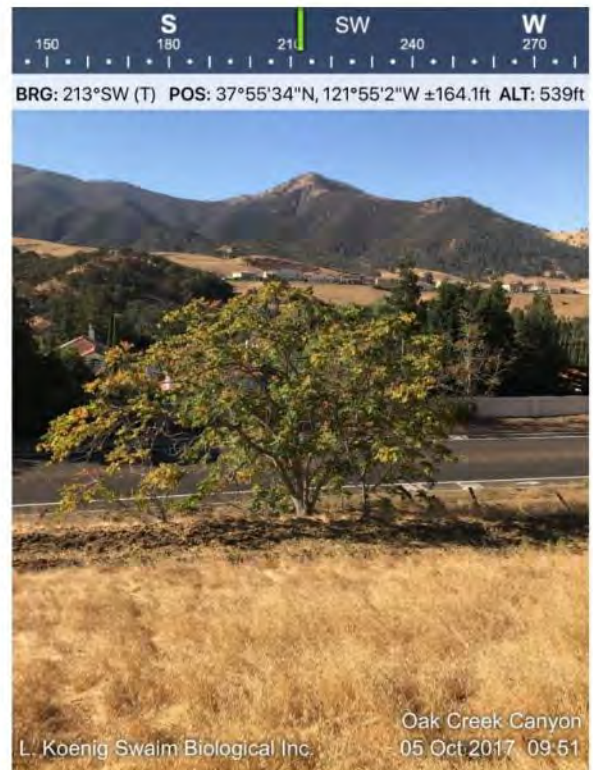


Photo 7: Black locust on west end of property, adjacent to Marsh Creek Road and parcel boundary.

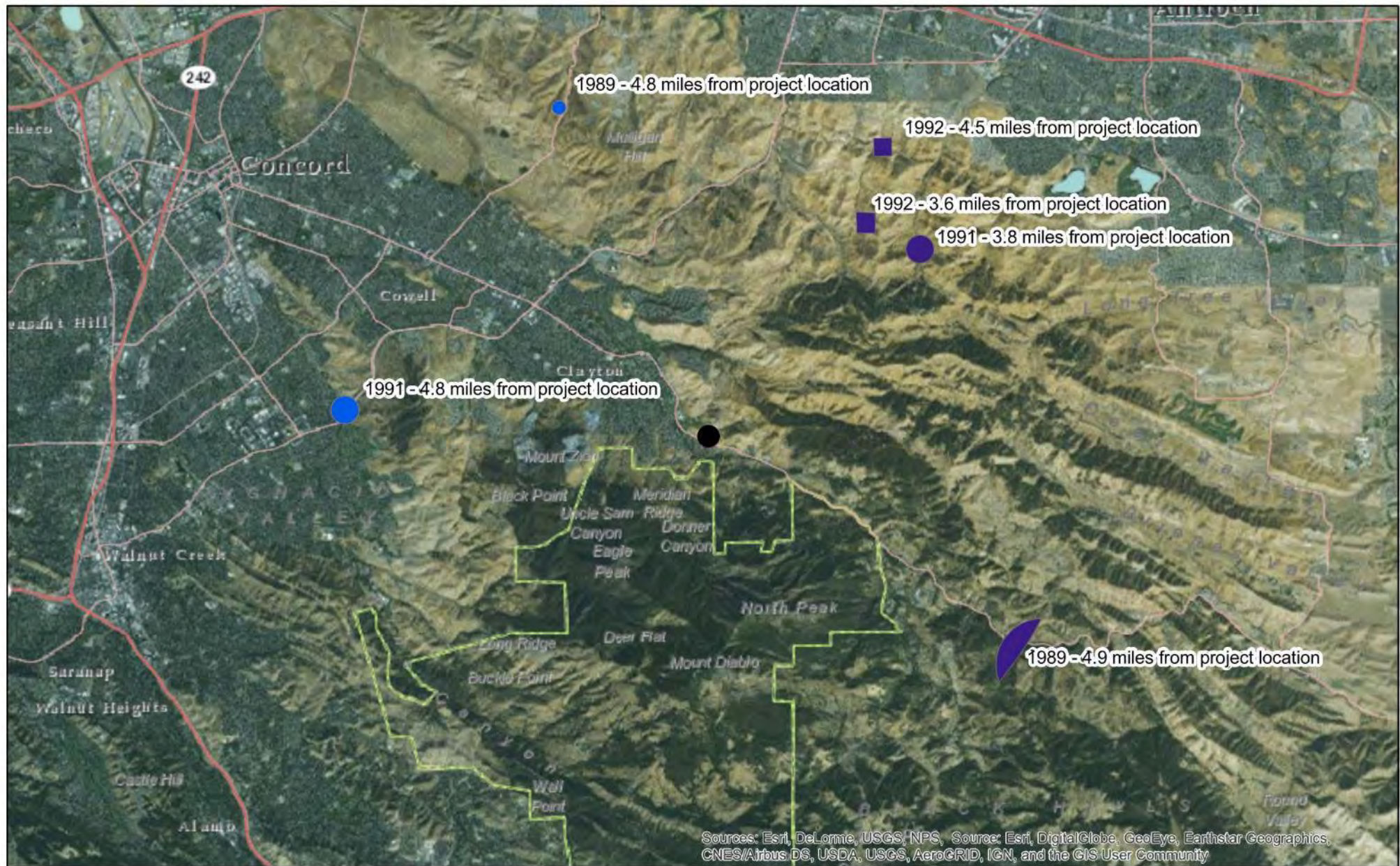


Photo 8: Black locusts on other side of the fence line that serves as the approximate parcel boundary.

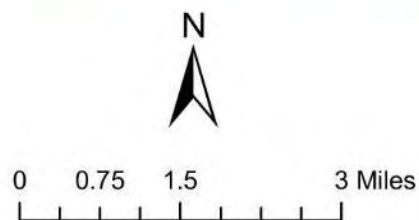


Photo 9: Trees on Contra Costa Water District Property





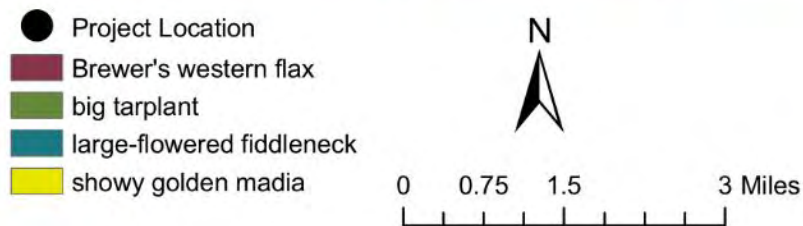
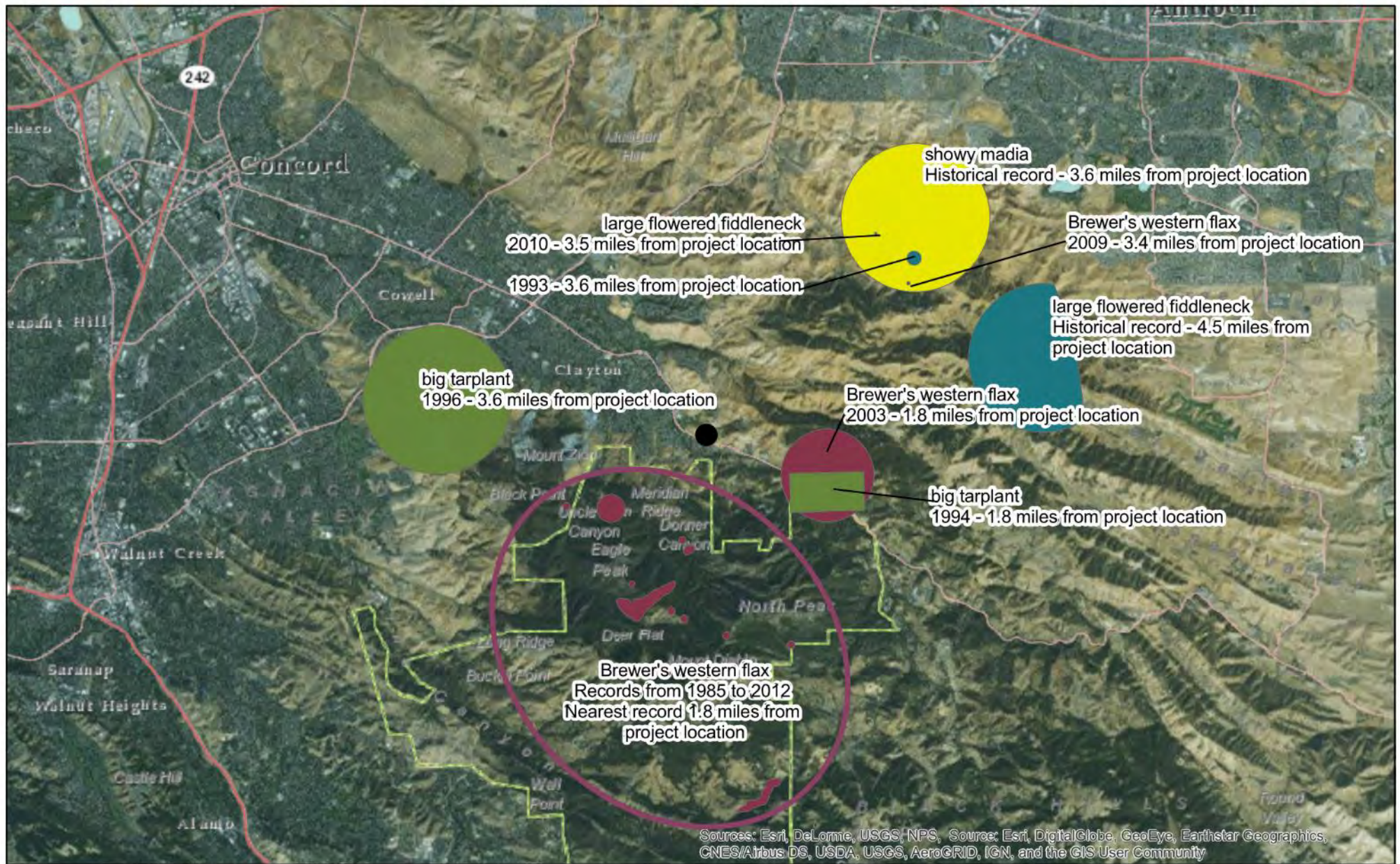
- Project Location
- San Joaquin kit fox
- burrowing owl



**Oak Creek Canyon Residential Development**  
**Figure 5. Planning Survey Species Habitat Map**  
**Map 1 of 4**







**Oak Creek Canyon Residential Development**  
**Figure 5. Planning Survey Species Habitat Map**  
**Covered and No Take Plants Records**  
**Map 2 of 4**



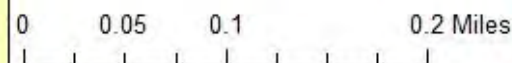


- Project Boundary
- Burrowing owl 500 foot buffer
- Burrowing owl habitat

Burrowing owl habitat was only surveyed within parcel boundaries shown on map.



**Oak Creek Canyon Residential Development**  
**Figure 5. Planning Survey Species Habitat Map**  
**Planning Survey Confirmed Habitat**  
**Western Burrowing Owl**  
**Map 3 of 4**







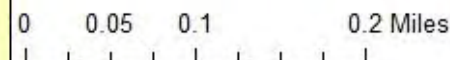
- Project Boundary
- San Joaquin kit fox 250 foot buffer

San Joaquin kit fox habitat was only surveyed within parcel boundaries shown on map.

No potential breeding or denning habitat was observed.



**Oak Creek Canyon Residential Development**  
**Figure 5. Planning Survey Species Habitat Map**  
**Planning Survey Confirmed Habitat**  
**San Joaquin Kit Fox**  
**Map 4 of 4**



**ATTACHMENT C: PROJECT COMPLIANCE TO HCP CONDITIONS**



## ATTACHMENT C: PROJECT COMPLIANCE TO HCP/NCCP CONDITIONS

Conservation Measures 1.10 and 1.11 are applicable for the Oak Creek Canyon Residential Development Project. The following sections discuss these conservation measures and how they will be complied with.

### Conservation Measure 1.10. Maintain Hydrologic Conditions and Minimize Erosion

In order to comply with Measure 1.10, applicable measures from the Provision C.3 Amendments of the Contra Costa County Clean Water Program's amended NPDES Permit will be incorporated into construction documents and the Stormwater Pollution Prevention Plan developed for the Project Site. There are no streams, wetlands or jurisdictional waters present on or near the Project Site.

### Conservation Measure 1.11. Avoid Direct Impacts on Extremely Rare Plants, Fully Protected Wildlife Species, or Migratory Birds.

The required planning surveys for wildlife species and migratory birds were conducted by biologist Leslie Koenig on October 5, 2017. The sections below summarize applicable conservation measures.

#### *Rare Plant Species*

Planning surveys were conducted in October 2017, however, due to the timing, rare plant surveys were not conducted for plant species with the potential to occur on the Project Site. Surveys will be conducted during the appropriate bloom period for each species in 2018 and the results and any necessary conservation measures will be provided as an addendum to this Application and Planning Survey Report. The species that require rare plant surveys include big tarplant (*Blepharizonia plumose*), round-leaved filaree (*California macrophylla*), diamond petaled poppy (*Eschscholzia rhombipetala*), large flowered fiddleneck (*Amsinckia grandiflora*), and showy madia (*Madia radiata*).

#### *Fully Protected Wildlife Species*

Three wildlife species that have potential to occur in the vicinity of the project are listed as fully protected (as defined under Sections 3511 and 4700 of the California Fish and Game Code). These are white-tailed kite (*Elanus leucurus*), peregrine falcon (*Falco peregrinus*), and golden eagle (*Aquila chrysaetos*). The golden eagle is also an HCP/NCCP covered species. All three species forage widely throughout the ECCC HCP/NCCP inventory area but nest in discrete locations. To ensure there will be no take of these species, pre-construction surveys will take place following the requirements in the ECCC HCP/NCCP and within Section IV of the Application Form and Planning Survey Report. If any nests associated with these species are determined to be active during the pre-construction surveys, the appropriate no-work buffer will be set up around the nest. Work will not proceed until the young fledge, the nest fails, or a reduced buffer is determined to be necessary around the nest.

#### *Migratory Birds*

The three trees present on the property and adjacent trees present on the surrounding properties could serve as nesting locations for common and sensitive passerine and raptor species. To comply with the federal Migratory Bird Treaty Act pre-construction surveys will be conducted and construction avoidance measures will be implemented if necessary. The survey requirements and Avoidance and Minimization Measure (AMM) included below will be implemented to protect migratory birds.

- If work is scheduled to take place between February 1 and August 31, a pre-construction nesting bird survey will be conducted by a qualified biologist within 14 days of construction, covering a radius of 250 feet for non-listed raptors and 100 feet for non-listed passerines at all locations. If an active bird nest is found within these buffers, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of a nest shall be postponed until the young birds have fledged. If an active nest is present, a minimum exclusion buffer of 100 feet shall be maintained during construction, depending on the species and location. The perimeter of the nest setback zone shall be fenced or adequately demarcated with stakes and flagging at 20-foot intervals, and construction personnel and activities restricted from the area. A survey report by a qualified biologist verifying that no active nests are present, or that the young have fledged, shall be submitted prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a biological monitor during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts on these nests occur.

#### *Other Sensitive Wildlife Species*

The required planning surveys were also conducted for wildlife that has the potential to occur in the habitats surrounding the project area. In addition to the species discussed above, western burrowing owl (*Athene cunicularia*) and Swainson's hawk (*Buteo swainsoni*) will require conservation measures to avoid impacts. The pre-construction surveys and AMMs included in Section IV of the Application Form and Planning Survey Report will be implemented for the western burrowing owl and Swainson's hawk.

**ATTACHMENT D: FEE CALCULATOR(S)**



# ECCC HCP/NCCP 2018 Fee Calculator Worksheet

## Permanent Impacts

PROJECT APPLICANT: Discovery Builders, Incorporated

PROJECT NAME: Oak Creek Canyon Residential Development

APN(s): 119-070-008

JURISDICTION: City of Clayton

DATE: May 15, 2018

DEVELOPMENT FEE	ACREAGE		2018 FEE PER ACRE	
	PERMANENTLY IMPACTED (TABLE 1) <sup>1</sup>		(SUBJECT TO CHANGE) <sup>2</sup>	
See appropriate ordinance or HCP/NCCP Figure 9-1 to determine Fee Zone	Fee Zone 1	x	\$15,724.46	= \$0.00
	Fee Zone 2	x 9.03	\$31,448.92	= \$283,983.75
	Fee Zone 3	x	\$7,862.89	= \$0.00
	Development Fee Total			= \$283,983.75

WETLAND MITIGATION FEE	ACREAGE		2018 FEE PER ACRE	
	PERMANENTLY IMPACTED (TABLE 1) <sup>1</sup>		(SUBJECT TO CHANGE) <sup>2</sup>	
Riparian woodland / scrub		x	\$78,682.52	= \$0.00
Perennial Wetland		x	\$107,670.82	= \$0.00
Seasonal Wetland		x	\$233,286.78	= \$0.00
Alkali Wetland		x	\$220,863.22	= \$0.00
Ponds		x	\$117,333.59	= \$0.00
Aquatic (open water)		x	\$59,356.99	= \$0.00
Slough / Channel		x	\$133,898.33	= \$0.00
STREAMS	LINEAR FEET		2018 FEE PER LINEAR	
	PERMANENTLY IMPACTED (TABLE 1)		FT (SUBJECT TO CHANGE) <sup>2</sup>	
Streams 25 feet wide or less		x	\$641.48	= \$0.00
Streams greater than 25 feet wide		x	\$966.28	= \$0.00
Wetland Mitigation Fee Total				= \$0.00

FEE REDUCTION <sup>3</sup>	Development Fee reduction for land in lieu of fee	=	
	Development Fee reduction (up to 33% ) for permanent assessments	=	
	Wetland Mitigation Fee reduction for wetland restoration/creation performed by applicant	=	
	Reduction Total	=	\$0.00

FINAL FEE CALCULATION	Development Fee Total	\$283,983.75
	Wetland Mitigation Fee Total	+ \$0.00
	Fee Subtotal	= \$283,983.75
	Contribution to Recovery	+
TOTAL AMOUNT TO BE PAID		= <span style="border: 1px solid black;">\$283,983.75</span>

<sup>1</sup> City/County planning staff will consult the land cover map in the Final HCP/NCCP and will reduce the acreage subject to the Development Fee by the acreage of the subject property that was identified in the Final HCP/NCCP as urban, turf, landfill or aqueduct land cover.

<sup>2</sup> Development Fees are adjusted annually according to a formula that includes both a Home Price Index (HPI) and a Consumer Price Index (CPI). The Wetland Mitigation Fees are adjusted according to a CPI. The Conservancy conducted the 2013 periodic fee audit required by the HCP/NCCP. Action by the County and participating cities is pending, which could result in adjustments to some or all fees in 2018.

<sup>3</sup> Fee reductions must be reviewed and approved by the Conservancy.

**ATTACHMENT E: WETLAND DELINEATION (if applicable)**

To be provided to City of Clayton upon completion of wetland delineation.

**BIOLOGICAL RESOURCES ASSESSMENT FOR THE  
OAK CREEK CANYON RESIDENTIAL DEVELOPMENT  
CONTRA COSTA COUNTY, CALIFORNIA**



*Prepared for:*

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*Prepared by:*

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May 2018



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Attachment A. Representative Photographs  
Attachment B. USFWS IPac Species List  
Attachment C. CNDDDB Rare Find Report  
Attachment D. CNPS Rare Plant Inventory Results

## Abbreviations Used

CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
ECCHCP/NCCP	East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan
FESA	Federal Endangered Species Act
MBTA	Migratory Bird Treaty Act
USFWS	United States Fish and Wildlife Service
WBWG	Western Bat Working Group

## **1.0 Introduction**

The following biological resources assessment report describes a detailed assessment of potential sensitive natural resources located within and/or immediately adjacent to the Liberty Residential Development Project Site (Project Site). This assessment includes a literature review, site reconnaissance characterizing existing conditions, impact analysis and development of proposed mitigation measures.

## **2.0 Project Location**

The 9.03 acre Project Site is located on Marsh Creek Road in Clayton, CA (Figure 1). The project will occur on a portion of parcel 119-070-008. The Project Site is bounded by annual grassland to the north and east. Contra Costa Water District owns 1.68 acres adjacent to the project site and maintains an access easement through the parcel. Marsh Creek Road serves as the southwestern boundary. The Project Site is located within the East Contra Costa Habitat Conservation Plan/Natural Communities Conservation Plan (ECCHCP/NCCP) Development Fee Zone 2 and a Planning Survey Report and Application was completed for the Project to meet compliance with the HCP/NCCP.

## **3.0 Methods**

The analysis presented in this report included a review of existing information regarding biological resource conditions known to occur in the project region followed by field surveys to evaluate conditions at the Project Site.

### **3.1 Literature Review and Database Queries**

Existing biological resource conditions within and adjacent to the Project Site were investigated prior to conducting field surveys. A query of federally listed wildlife species for the Project Site, was obtained from the USFWS's Sacramento Endangered Species Office IPac website. The list generated is provided in Appendix B. Additional information about the locations of known occurrences of sensitive species in the vicinity of the Project Site was compiled from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) within 5 miles of the Project Site and by searching within the six U.S. Geological Survey 7.5-minute quadrangles that surround the Project Site (Appendix C, Figure 3, Table 1). The California Rare Plant Inventory was searched for special status plant species within the six U.S. Geological Survey 7.5-minute quadrangles that surround the Project Site (Appendix D, Figure 4, Table 1).

### **3.2 Field Surveys**

Visual reconnaissance surveys of the project area were conducted by biologist Leslie Koenig on October 5, 2017 and May 9, 2018. During the field survey the biologist walked the entire Project Site in meandering transects to evaluate biological resource conditions at the site.

### **3.3 Species Considered for Analysis**

The potential for wildlife species to occur within the assessment area was classified as high, moderate, low, or absent using the guidelines described below. Table 1 includes descriptions of the special status wildlife species that were identified through research and database queries along with their potential to occur in the assessment area.

**High:** The potential for a species to occur was considered high when the project was located within the range of the species, recorded observations were identified within normal movement distance of the project, and suitable habitat was present within the project area.

**Moderate:** The potential for a species to occur was considered moderate when the project was located within the range of the species, recorded observations were identified nearby but outside normal movement distance of the project, and habitat within the project area was suitable. Alternatively, the potential was classified as moderate when recorded observations were identified within normal movement distance of the project but habitat in the project area was limited or of marginal quality.

**Low:** The potential for a species to occur was considered low when the project was within the range of the species, but no recorded observations within normal movement distance were identified, and habitat within the project area was limited or of marginal quality. Alternatively, the potential was classified as low when the project was located at the edge of the range of a species and recorded observations were extremely rare, but habitat in the project area was suitable.

## **4.0 Existing Environmental Setting**

### **4.1 Vegetation Communities and Plant Species Observed**

The Project Site is characterized as mixed disturbed ruderal and annual grassland habitats. The field survey determined the Project Site contains 6.57 acres of annual grassland land cover and 2.46 acres of ruderal land cover (Figure 2). The survey determined the lower portion of the Project Site recently disked. As a result of the disking, no ground cover was present on that portion of the site during the field survey. On the upper portion of the Project Site annual grassland habitat was present including wild oat (*Avena fatua*) and rigput brome (*Bromus diandrus*) mixed with non-native plants including yellow star thistle (*Centaurea solstitialis*) and purple star thistle (*Centaurea calcitrapa*).

Two black locust trees (*Robinia pseudoacacia*) and one Mexican fan palm tree (*Washingtonia robusta*) are present on the Project Site. There are three additional black locust trees on the parcel adjacent to Marsh Creek Road. The Contra Costa Water District Property has many trees and shrubs surrounding the perimeter including *Eucalyptus* sp, pine trees (*Pinus* sp.), and Peruvian pepper trees (*Schinus molle*). On the northern most border of the parcel are several oak trees (*Quercus* sp.) and mixed oaks are present on the neighboring parcel.

### **4.2 Jurisdictional Wetland Resources**

No wetlands regulated by the US Army Corps of Engineers or the Regional Water Quality Board were observed within the Project Site during surveys. There is an unnamed, historical, ephemeral drainage to the east (Figure 2). The jurisdictional nature of this unnamed drainage will be confirmed through consultation with the resource agencies.



## 4.2 General Wildlife Species Observed

General wildlife species documented during the assessment include many bird species as detailed in Table 1 below. California ground squirrel (*Otospermophilus beecheyi*) burrows and evidence of pocket gophers (*Thomomys bottae*) were also observed on the Project Site. No other wildlife were observed during surveys.

**Table 1. Bird Species Observed during Field Survey**

Common Name	Scientific Name
California scrub jay	<i>Aphelocoma californica</i>
oak titmouse	<i>Baeolophus inornatus</i>
red-tailed hawk	<i>Buteo jamaicensis</i>
Anna's hummingbird	<i>Calypte anna</i>
rock pigeon	<i>Columba livia</i>
house finch	<i>Haemorhous mexicanus</i>
acorn woodpecker	<i>Melanerpes formicivorus</i>
northern mockingbird	<i>Mimus polyglottos</i>
black capped chickadee	<i>Poecile atricapillus</i>
black phoebe	<i>Sayornis nigricans</i>
Say's phoebe	<i>Sayornis saya</i>
mourning dove	<i>Zenaida macroura</i>

## 5.0 Sensitive Biological Resources

The following discussion describes the sensitive biological resources that have the potential to be present within the Project Site based on the literature review results. Sensitive biological resources include habitats and/or individual plant and animal species that have special recognition by federal, state or local conservation agencies. For purposes of this analysis, special-status animal species are defined as animals that are protected under the California and Federal Endangered Species Acts (CESA and FESA) or other regulations, and species that are considered rare by the scientific community. Special-status plant species are defined as plants that are protected under the CESA and FESA or listed as rare by CDFW and the California Native Plant Society (CNPS). Special-status species include:

- Animals and plants listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 et seq.; 14 CCR §670.1 et seq.) or the FESA (50 CFR 17.11);
- Animals and plants that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);
- Animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;
- Animals that are designated as "species of special concern" by CDFW (2016);
- Animal species that are designated as "fully protected" under California (Fish and Game Code 3511, 4700, 5050, and 5515).
- Animal species that are designated as "covered" species under the ECCHCP/NCCP

- Bat Species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as: "Red or High." These species are considered to be "imperiled or are at high risk of imperilment."
- Plants that are listed by CNPS Rare Plant Program as rank 1A – plants presumed extirpated in California and either rare or extinct elsewhere, 1B – plants rare, threatened or endangered in California or elsewhere, 2A – plants presumed extirpated in California but common elsewhere, 2B – plants rare, threatened or endangered in California by common elsewhere, 3 – plants about which more is needed and 4 – plants of limited distribution.
- Plants that are listed by the ECCHCP/NCCP as "covered" or "no take" species.

A total of 28 special status wildlife species and 54 special status plant species were identified through the literature review and database queries as having the potential to occur (Table 2, Figure 3 and 4). Of these, seven plant species and one wildlife species were determined to have a moderate potential to occur within the Project Site. Species with a moderate potential to occur are discussed in further detail below. The complete list of plant and wildlife species with the potential to occur within the assessment area are included in Table 2.

### *Special Status Wildlife*

#### **Western burrowing owl (*Athene cunicularia*)**

State Species of Special Concern

The western burrowing owl is designated by CDFW as a Species of Special Concern. Burrowing owls are found in open arid and semiarid habitats with short or sparse vegetation, including grasslands, deserts, agricultural fields, ruderal areas and open, landscaped areas. They are dependent on mammals such as the California ground squirrel that dig underground burrows, which the owls occupy. Some burrowing owls have adapted to urban landscapes, and in some instances, open lots, roadsides, and landscaped areas can provide suitable habitat. Breeding typically occurs from March to August but can begin as early as February and can last into December.

The Project Site is located within the ECCHCP/NCCP modeled suitable habitat for the western burrowing owl. The two nearest CNDDDB observations are both 4.8 miles away from 1989 and 1991. The project site contains a mix of annual grassland and disturbed grassland which provides potential suitable breeding and foraging habitat for the owl. California ground squirrel burrows were observed during surveys, however, no burrows of suitable size to support the species (four inches or greater in diameter) were observed during field surveys conducted on the parcel within 500 feet of the Project Site.

#### **Nesting Birds**

Protected under Migratory Bird Treaty Act

The three trees present on the property and on adjacent parcels could serve as nesting locations for common and sensitive passerine and raptor species if work occurs during the nesting season (February 1-August 31).

### ***Special Status Plants***

#### **Large flowered fiddleneck (*Amsinckia grandiflora*)**

Federally endangered, State Candidate Endangered, California Native Plant Society 1B.1, ECCHCP/NCCP No Take Species

Large flowered fiddleneck is an annual herb that generally blooms from April to May. The plant occurs in grasslands and on clay and loamy soils (USFWS 1997). It is a very rare plant with all known natural occurring populations extirpated in Contra Costa County.

The annual grassland present and mapped Capay clay and Los Osos clay-loam soil types (NRCS 2017) provide appropriate potential habitat for large flowered fiddleneck at the Project Site.

#### **Big tarplant (*Blepharizonia plumose*)**

California Native Plant Society 1B.1, ECCHCP/NCCP Covered Species.

Big tarplant is an herbaceous annual that grows to between 1 and 3 feet tall. Seedlings appear in early spring by the plants do not begin to bloom until mid-summer. The blooming period, during which the plants produce many heads with white flowers, general occurs between August and October. Big tarplant occurs in annual grassland on clay to clay-loam soils below 1,500 feet. In Contra Costa County, the occurrences are primarily on soils of the Altamont series (Jones and Stokes, 2007).

The Project Site is within ECCHCP/NCCP modeled suitable low potential habitat. The annual grassland present and mapped soil types provide appropriate potential habitat for big tarplant.

#### **Round-leaved filaree (*California macrophylla*)**

California Native Plant Society 1B.2, ECCHCP/NCCP Covered Species

Round-leaved filaree is an annual herb that generally blooms between March and May producing small (1 cm) white flowers. Round-leaved filaree occurs in grasslands on friable clay soils (CNPS 2017). It most often occurs in foothill locations at elevations between 200 and 2,000 feet, but is has been collected from locations as low as 30 feet and as high as 4,000 feet (Jones and Stokes, 2007).

The Project Site is within ECCHCP/NCCP modeled primary habitat. The annual grassland present and mapped clay soil types provide appropriate potential habitat for round-leaved filaree.

#### **Mt. Diablo fairy lantern (*Calochortus pulchellus*)**

California Native Plant Society 1B.2, ECCHCP/NCCP Covered Species

Mt. Diablo fairy lantern is a bulbiferous perennial herb that blooms from April through June (CNPS 2017). It grows on grassy slopes and openings in chaparral and oak woodland communities.

The Project Site is within ECCHCP/NCCP modeled suitable habitat. The annual grassland present and proximity to mixed oak woodland on neighboring parcels provides appropriate potential habitat for Mt. Diablo fairy lantern.



**Diamond-petaled poppy (*Eschscholzia rhombipetala*)**

California Native Plant Society 1B.1, ECCHCP/NCCP No Take Species

Diamond-petaled poppy is an annual herb that blooms from March to April. It is a very rare plant that is only known to occur in San Luis Obispo and Alameda Counties (USFWS 1998). The Project Site's annual grassland and mapped clay soil types provide appropriate potential habitat for diamond-petaled poppy.

**Showy golden madia (*Madia radiata*)**

California Native Plant Society 1B.1, ECCHCP/NCCP Covered Species

Showy golden madia is an annual herb that blooms from March to May. It grows in grasslands and oak woodlands on heavy clay soils (CNPS 2017). The Project Site is within ECCHCP/NCCP modeled primary habitat. The Project Site's annual grassland and mapped clay soil types provide appropriate potential habitat for showy golden madia.

## **6.0 Mitigation and Recommended Avoidance and Minimization Measures**

Mitigation for impacts to special status plant and animal species is addressed through the ECCHCP/NCCP development fee for the project. Per the Planning Survey Report and Application completed for the project, a development fee will be paid to offset impacts to the loss of annual grassland and ruderal habitats associated with the development project.

The following measures are required by the ECCHCP/NCCP for projects to avoid and/or minimize the risk of potential impacts to listed species and their habitats. To comply with the ECCHCP/NCCP requirements, the federal Migratory Bird Treaty Act and to minimize impacts to special status species and jurisdictional waters, the following conservation measures for species listed above are recommended.

### ***Western Burrowing Owl***

#### **Preconstruction Surveys**

Prior to any ground disturbance related to covered activities, a USFWS/CDFW- approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (California Department of Fish and Game 1995).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February

1– August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

#### Avoidance and Minimization and Construction Monitoring

This measure incorporates avoidance and minimization guidelines from CDFW's Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 1995).

If burrowing owls are found during the breeding season (February 1 – August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a non-disturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1 – January 31), the project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below).

During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing.

If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors should be in place for 48 hours prior to excavation. The project area should be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation (California Department of Fish and Game 1995). Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

#### ***Nesting Birds***

If work is scheduled to take place between February 1 and August 31, a pre-construction nesting bird survey will be conducted by a qualified biologist within 14 days of construction, covering a radius of 250 feet for non-listed raptors and 100 feet for non-listed passerines at all locations. If an active bird nest is found within these buffers, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of a nest shall be postponed until the young birds have fledged. If an active nest is present, a minimum exclusion buffer of 100 feet shall be maintained during construction, depending on the species and location. The perimeter of the nest setback zone shall be fenced or adequately demarcated with stakes and flagging at 20-foot intervals, and construction personnel and activities restricted from the area. A survey report by a qualified biologist verifying that no active nests are present, or that the young have fledged, shall be submitted prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a biological monitor

during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts on these nests occur.

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

Surveys for rare plant species should be conducted using approved CDFW/USFWS methods during the appropriate season for identification of the species described above with moderate potential to occur at the Project Site.

If during surveys ECCHCP/NCCP covered or no take species are found, the location, extent and condition of all occurrences will be documented in a survey report and submitted to the City of Clayton. CNDDDB California Native Species Field Survey Forms for all covered or no-take plants encountered on the site will also be completed and submitted to the City of Clayton and CNDDDB.

Results of surveys will inform project design. In order to comply with the ECCHCP/NCCP, Project activities will avoid all impacts on extremely rare no take species and will implement plant salvage when impacted covered plant species are unavoidable. Conservation measures described in the ECCHCP/NCCP will be adhered to. If a rare plant is found that is not covered by the ECCHCP/NCCP, appropriate conservation measures similar to those required by the ECCHCP/NCCP will be developed on a plant by plant basis and in accordance with CDFW and CNPS.

### ***Jurisdictional Waters***

A verified wetland delineation following guidance provided by the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board, will need to be completed to confirm if there is a jurisdictional feature present on the property.

## **7.0 Conclusions**

The results of this analysis indicate that based on field surveys and review of available scientific literature, the western burrowing owl (*Athene cunicularia*), nesting bird species and seven special status plant species: large flowered fiddleneck (*Amsinckia grandiflora*), big tarplant (*Blepharizonia plumose*), round-leaved filaree (*California macrophylla*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), Diamond-petaled poppy (*Eschscholzia rhombipetala*), and Showy golden madia (*Madia radiata*) have the potential to occur within or immediately adjacent to the Project Site.

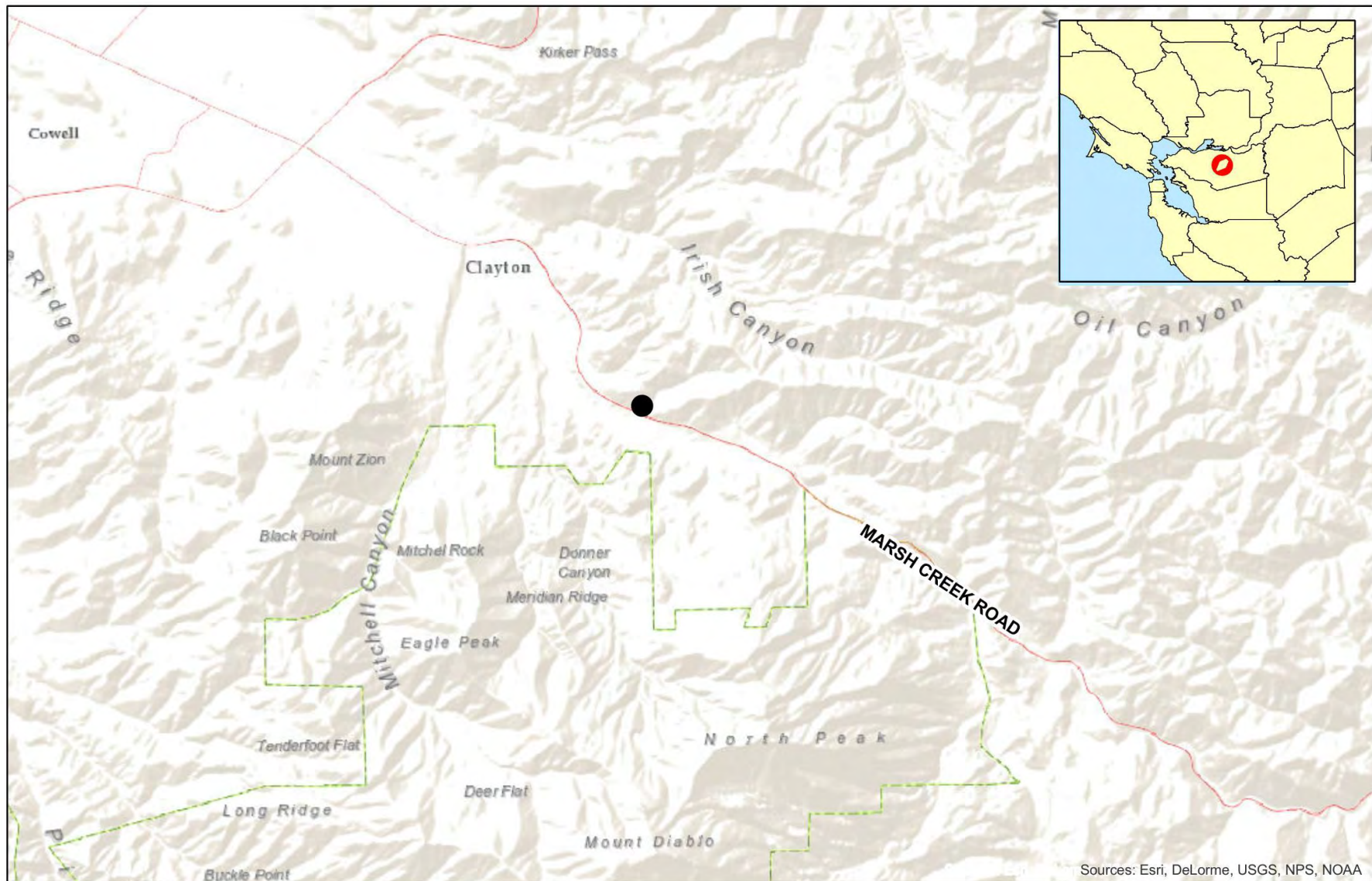
Impacts to western burrowing owls, nesting raptors and other birds can be avoided by conducting appropriately-timed preconstruction nesting surveys and implementing protection measures, if necessary. Rare plant surveys will be conducted during the appropriate bloom period for each plant and if rare plants are observed on the Project Site, appropriate design and conservation measures will be developed to address impacts on special status plant species. A verified wetland delineation will determine if there are jurisdictional waters present on site.

## **8.0 References**

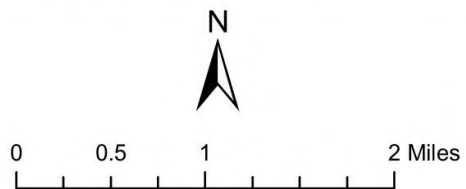
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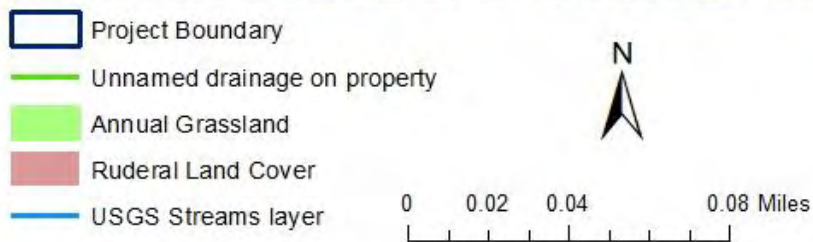
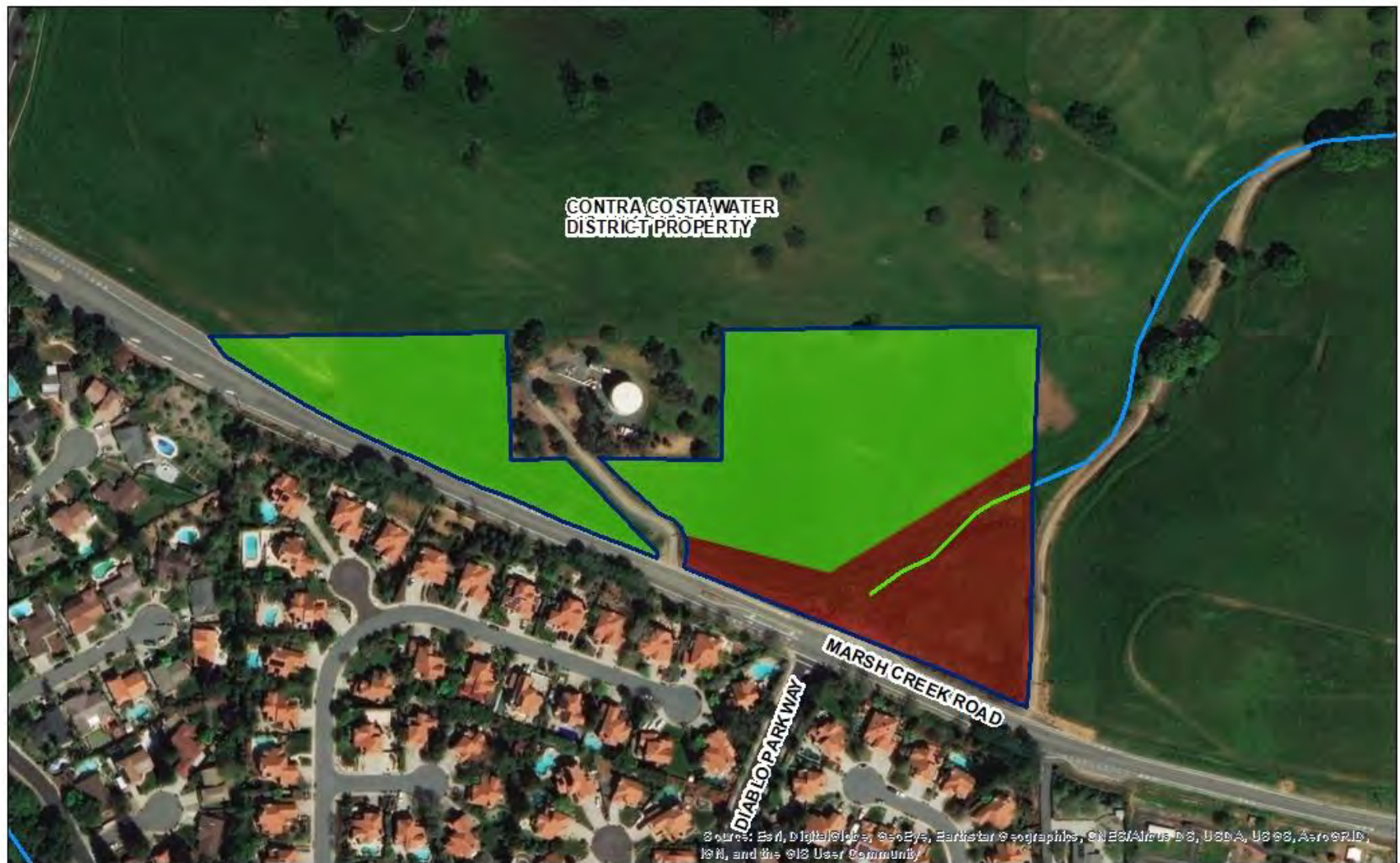
● Project Location



**Oak Creek Canyon Residential Development**  
**Figure 1. Proximity Map**



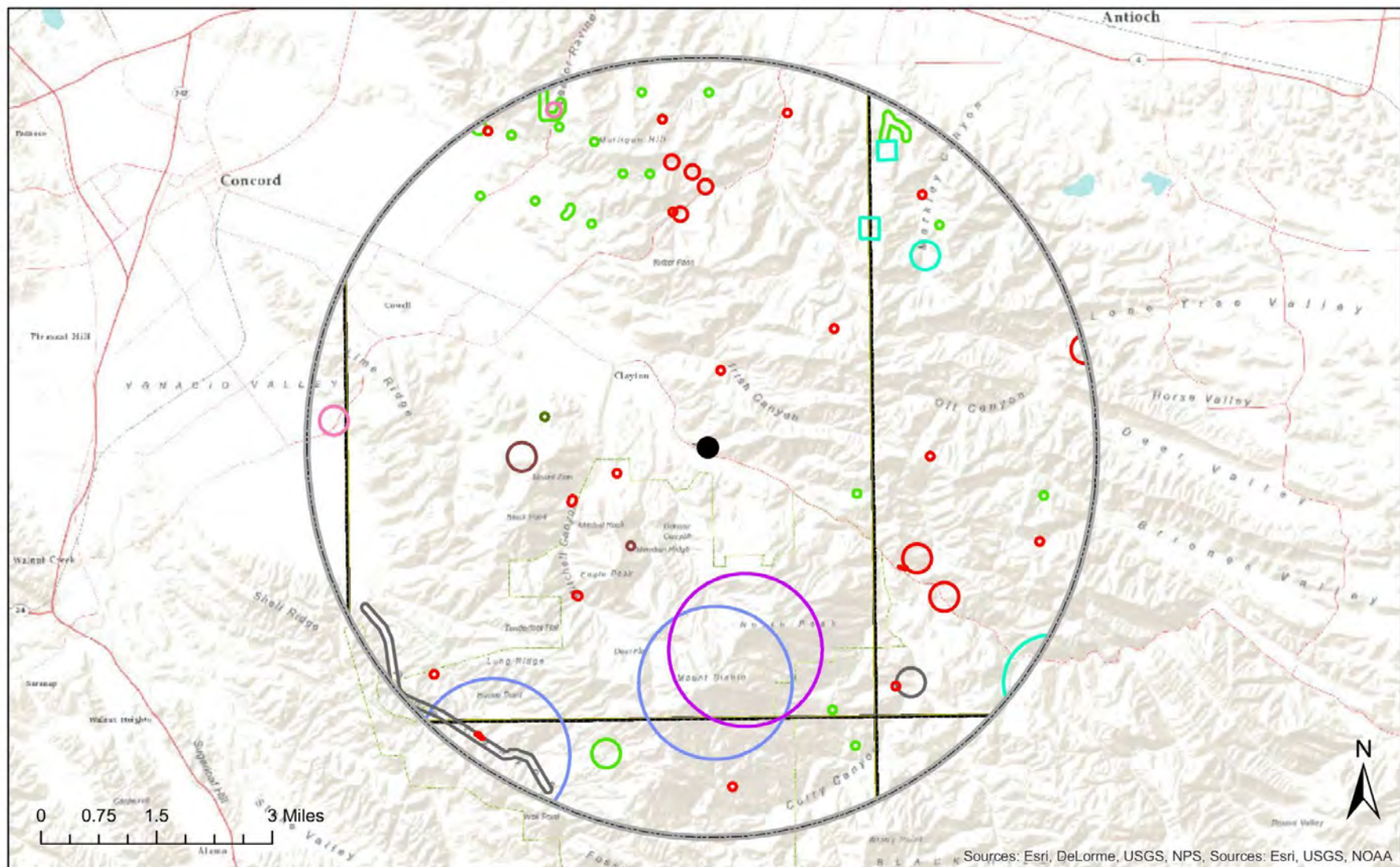




**Oak Creek Canyon Residential Development**  
**Figure 2. Land Cover and Jurisdictional**  
**Waters Map**







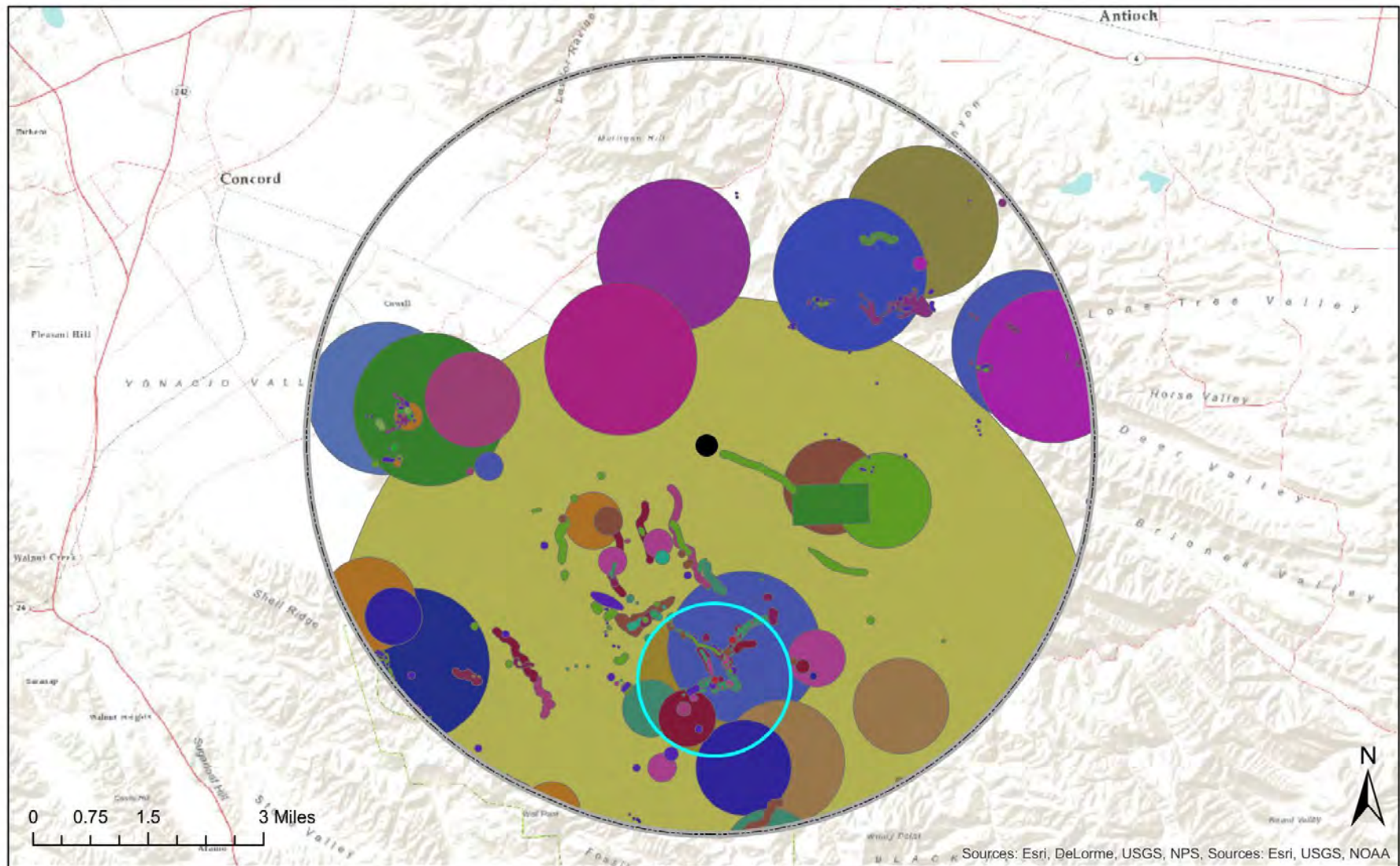
Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- |                            |                                    |                          |
|----------------------------|------------------------------------|--------------------------|
| ● Project Location         | California tiger salamander        | Townsend's big-eared bat |
| 5 Mile Buffer              | San Bruno elfin butterfly          | burrowing owl            |
| Alameda whipsnake          | San Francisco dusky-footed woodrat | coast horned lizard      |
| American peregrine falcon  | San Joaquin kit fox                | pallid bat               |
| California red-legged frog | Swainson's hawk                    | western pond turtle      |

**Oak Creek Canyon  
Residential Development  
Figure 3. CNDDB Animal  
Records 5 miles**







**Oak Creek Canyon  
Residential Development  
Figure 4. CNDDDB Plant  
Records 5 miles**



**Table 2. List of Species with Potential to Occur.**

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
Invertebrates							
<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	FE				Occurs in coastal grassy mountainous areas near San Francisco Bay. Located on steep northfacing slopes above 500' elevation that contain populations of host plant; Sedum spathulifolium. Uses a variety of nectar plants occurring in upper elevation grasslands and scrub.	None. No habitat suitable to support this species is present.
Crustaceans							
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT				Vernal pools and ditches in the Central Valley.	None. No habitat suitable to support this species is present.
<i>Lepidurus packardi</i>	vernal pool tadpole shrimp	FE				Vernal pools and ditches in the Central Valley.	None. No habitat suitable to support this species is present.
Fishes							
<i>Hypomesus transpacificus</i>	Delta Smelt	FT	SE			Endemic to California; occurs only in the brackish and freshwaters of the Sacramento-San Joaquin River Delta. Exhibits seasonal migration within the estuary, moving upstream before spawning.	None. No habitat suitable to support this species is present.
<i>Oncorhynchus mykiss irideus</i>	Steelhead	FT				Anadromous. Tributary streams to Suisun Marsh including Suisun Creek; Green Valley Creek; and an unnamed tributary to Cordelia Slough (commonly referred to as Red Top Creek). Adults need access to natal streams; eggs and fry need cool water with adequate dissolved oxygen; clean gravel; juveniles migrate out to the ocean.	None. No habitat suitable to support this species is present.



Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
Amphibians							
<i>Ambystoma californiense</i>	California tiger salamander	FT	ST			Occurs in grassland or open woodland habitats, where it lives in vacant or mammal-occupied burrows, and occasionally in other underground retreats, throughout most of the year. Eggs are laid on submerged stems and leaves, usually in shallow ephemeral or semi permanent pools and ponds that fill during heavy winter rains, sometimes in permanent ponds	Low. Ground squirrel burrows present during survey. Project is within HCP modeled suitable upland habitat. Nearest potential breeding site within normal movement distances (up to 1.3 miles) is 0.5 miles away but Marsh Creek Road serves as a barrier. No suitable breeding habitat on site but site provides suitable upland habitat.
<i>Rana boylei</i>	foothill yellow-legged frog		SCT			Rocky streams and rivers with rocky substrate and open; sunny banks; in forests; chaparral; and woodlands.	Not Expected. No habitat suitable to support this species is present.
<i>Rana draytonii</i>	California red-legged frog	FT		SSC		Requires slow moving or still water for juvenile development. Occurs in freshwater marshes; stock ponds; and riparian habitats. May aestivate in rodent burrows or cracks during dry periods.	Low. Project is within HCP modeled suitable upland habitat. The unnamed stream that runs adjacent to the property is modeled as potential breeding habitat. No suitable breeding or moist refugia habitat on site.
Reptiles							
<i>Anniella pulchra</i>	Northern California legless lizard			SSC		Occurs in moist warm loose soil with plant cover. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	Not Expected. No habitat suitable to support this species is present.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Emys leucurus</i>	western pond turtle			SSC		Marshes, streams, rivers, ponds, and lakes	Not Expected. No habitat suitable to support this species is present. Project is 0.25 miles from HCP modeled suitable core habitat, however Marsh Creek Road serves as a barrier and no breeding habitat or moist refugia habitat is present.
<i>Masticophis lateralis euryxanthus</i>	Alameda Whipsnake	FT	ST			Alameda whipsnakes are typically found in chaparral—northern coastal sage scrub and coastal sage. Rock outcrops are an important feature of Alameda whipsnake habitat because they provide retreat opportunities for whipsnakes and promote lizard populations.	Low. Project site is within HCP modeled suitable movement habitat and core habitat is 1 mile away.
<i>Phrynosoma blainvillii</i>	coast horned lizard			SSC		Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.	Not Expected. No habitat suitable to support this species is present.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Thamnophis gigas</i>	giant garter snake	FT	ST			Associated with aquatic habitats. Often occurs in or near agricultural wetlands and other waterways such as irrigation and drainage canals; sloughs; ponds; small lakes; low gradient streams; rice fields; freshwater marshes; and adjacent uplands in the Central Valley.	Not Expected. No habitat suitable to support this species is present.
Birds							
<i>Agelaius tricolor</i>	tricolored blackbird		SCE			Emergent wetlands; grasslands; and agricultural fields. Breeds near fresh water; preferably in emergent wetlands in cattails or tules; but also in thickets of willow; wild rose; blackberry; or tall herbaceous species.	Not Expected. No habitat suitable to support this species is present. Site is HCP modeled primary foraging habitat. No breeding habitat present on or adjacent to project site.
<i>Aquila chrysaetos</i>	golden eagle			FP		Open country; in prairies; tundra; open coniferous forest and barren areas; especially in hilly or mountainous regions. Typically nest on cliff ledges and in trees around large bodies of water.	Low. Suitable foraging habitat is present in and surrounding the Project Site. Site is HCP modeled suitable habitat. Potential nest trees can be found on surrounding parcel to the north.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Athene cunicularia</i>	western burrowing owl			SSC		Open, dry annual or perennial grasslands with low-growing vegetation and on the margins of disturbed/developed habitats. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Moderate. Suitable foraging habitat is present. Site is within HCP modeled suitable habitat. Active ground squirrel burrows were observed during surveys. A portion of the site is regularly disked for fire control so habitat potential is limited to the annual grassland on and adjacent to the project site.
<i>Buteo swainsoni</i>	Swainson's hawk		ST			Nests in scattered trees or along riparian systems adjacent to agricultural fields or pastures; which are their primary foraging areas. Preferred nest trees are valley oak; cottonwood; willow; sycamore; and walnut.	Not Expected. No habitat suitable to support this species is present.
<i>Circus cyaneus</i>	northern harrier			SSC		Sloughs; wet meadows; marshlands; swamps; prairies; plains; grasslands; and shrublands; large forest openings; open; low woody or herbaceous vegetation for nesting and hunting; nest on ground.	Low. Suitable foraging habitat is present in the Project Site and surrounding grasslands. Nesting habitat is not present.
<i>Elanus leucurus</i>	white-tailed kite			FP		Open grasslands; meadows; or marshes for foraging close to isolated; dense topped trees for nesting and perching.	Low. Suitable foraging habitat is present in and surrounding the Project Site. Potential nest trees can be found on surrounding parcels to the north, east and west.



Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Falco peregrinus</i>	peregrine falcon			FP		Can be found foraging in any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains. Require open landscapes with cliffs (or skyscrapers) for nest sites.	Low. Suitable foraging habitat is present in the Project Site and surrounding grasslands. Nesting habitat is not present.
<i>Rallus obsoletus</i>	Ridgway's rail (formerly California clapper rail)	FE	SE			Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	Not Expected. No habitat suitable to support this species is present.
<i>Sterna antillarum browni</i>	California least tern	FE	SE	FP		Abandoned salt ponds and along estuarine shores in San Francisco Bay. Feeds primarily in shallow estuaries or lagoons where small fish are abundant. Nests on barren to sparsely vegetated site near water; usually on sandy or gravelly substrate.	Not Expected. No habitat suitable to support this species is present.
Mammals							
<i>Antrozous pallidus</i>	pallid bat			SSC		Mostly found in desert habitat. Favors rocky outcroppings for roosting, but have been recorded in open farmland, rock piles, mines, hollow trees, and buildings.	Low. No suitable roosting habitat available. Limited foraging habitat.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat			SSC		Hibernates in caves, lava tubes, and mines. May form large maternal colonies.	Low. No suitable roosting habitat available. Limited foraging habitat.
<i>Lasiurus blossevillei</i>	western red bat			SSC		Riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores. Only roost in tree foliage.	Low. Nearest riparian area is approximately 0.5 mile away. No suitable roosting habitat available. Limited foraging habitat

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat			SSC		Chaparral, oak woodlands. Frequently build houses in poison oak understory.	Not Expected. No habitat suitable to support this species is present. No woodrat houses observed
<i>Taxidea taxus</i>	American badger			SSC		Open grasslands, desert scrub, brushy areas	Low. Suitable habitat is present but no burrows of the appropriate size for denning were observed during surveys.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE	ST			desert scrub, chaparral, and grasslands	Low. Suitable habitat is present but no burrows of the appropriate size for denning were observed during surveys.
Plants							
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	FE	SE		1B.1	Cismontane woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Androsace elongata ssp. acuta</i>	California androsace				4.2	Chaparral, Foothill Woodland, Northern Coastal Scrub, Coastal Sage Scrub	Not Expected. No habitat suitable to support this species is present.
<i>Anomobryum julaceum</i>	slender silver moss				4.2	Damp rock and soil outcrops. Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest	Not Expected. No habitat suitable to support this species is present.
<i>Arabis blepharophylla</i>	coast rockcress				4.3	Broadleaved upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Arctostaphylos auriculata</i>	Mt. Diablo manzanita				1B.3	Chaparral (sandstone), Cismontane woodland	Not Expected. No habitat suitable to support this species is present.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Arctostaphylos manzanita</i> <i>ssp. laevigata</i>	Contra Costa manzanita				1B.2	Chaparral (rocky)	Not Expected. No habitat suitable to support this species is present.
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale				1B.2	Saline or alkaline. Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy)	Not Expected. No saline or sandy soils suitable to support this species is present.
<i>Atriplex coronata</i> var. <i>coronata</i>	crownscale				4.2	Alkaline, often clay. Chenopod scrub, Valley and foothill grassland, Vernal pools	Low. Annual grassland and clay soils present however alkaline soils, and wet grassland/vernal habitat were not observed.
<i>Atriplex depressa</i>	brittlescale				1B.2	Alkaline, clay. Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools	Low. Annual grassland and clay soils present however alkaline soils, and wet grassland/vernal habitat were not observed.
<i>Blepharizonia plumosa</i>	big tarplant				1B.1	Usually clay. Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Calandrinia breweri</i>	Brewer's calandrinia				4.2	Chaparral, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>California macrophylla</i>	round-leaved filaree				1B.2	Cismontane woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern				1B.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Calochortus umbellatus</i>	Oakland star-tulip				4.2	Strong serpentinite affinity, Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Campanula exigua</i>	chaparral harebell				1B.2	Chaparral (rocky, usually serpentinite)	Not Expected. No habitat suitable to support this species is present.
<i>Centromadia parryi ssp. congdonii</i>	Congdon's tarplant				1B.1	Valley and foothill grassland (alkaline)	Low. Annual grassland is present however alkaline soils were not observed on site.
<i>Collomia diversifolia</i>	serpentine collomia				4.3	Chaparral, Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Convolvulus simulans</i>	small-flowered morning-glory				4.2	Clay, serpentinite seeps. Chaparral (openings), Coastal scrub, Valley and foothill grassland	Not Expected. No serpentinite habitat or seeps suitable to support this species was observed.
<i>Cordylanthus nidularius</i>	Mt. Diablo bird's-beak		SR		1B.1	Chaparral (serpentinite)	Not Expected. No habitat suitable to support this species is present.
<i>Cryptantha hooveri</i>	Hoover's cryptantha				1A	Inland dunes, Valley and foothill grassland (sandy)	Not Expected. No sanding habitat suitable to support this species is present.
<i>Delphinium californicum ssp. interius</i>	Hospital Canyon larkspur				1B.2	Chaparral (openings), Cismontane woodland (mesic), Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Dirca occidentalis</i>	western leatherwood				1B.2	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland	Not Expected. No habitat suitable to support this species is present.
<i>Eriastrum erterae</i>	Lime Ridge eriastrum				1B.1	Chaparral (openings or edges)	Not Expected. No habitat suitable to support this species is present.



Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat				1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, sandy	Low. Annual grassland is present however sandy habitats were not observed on site.
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower				4.3	Chaparral, Cismontane woodland, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Eryngium jepsonii</i>	Jepson's coyote thistle				1B.2	Clay, Valley and foothill grassland, Vernal pools	Low. Clay soils and grassland are present however wet grassland/vernal habitats were not observed on site.
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy				1B.1	Valley and foothill grassland (clay)	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Extriplex joaquinana</i>	San Joaquin spearscale				1B.2	Alkaline. Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland	Low. Annual grassland present but alkaline habitat and wet grassland supporting seeps were not observed.
<i>Fritillaria agrestis</i>	stinkbells				4.2	Chaparral, Valley Grassland, Foothill Woodland, wetland-riparian. Strong affinity to serpentine soil.	Low. Annual grassland present but no serpentine habitat was observed.
<i>Fritillaria liliacea</i>	fragrant fritillary				1B.2	Often serpentine. Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland	Low. Annual grassland present but no serpentine habitat was observed.
<i>Galium andrewsii ssp. gatense</i>	phlox-leaf serpentine bedstraw				4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Not Expected. No habitat suitable to support this species is present.
<i>Grimmia torenii</i>	Toren's grimmia				1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Not Expected. No habitat suitable to support this species is present.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Helianthella castanea</i>	Diablo helianthella				1B.2	Usually rocky, anoxal soils. Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland	Low. Annual grassland present but rocky, anoxal soils were not observed.
<i>Hesperolinon breweri</i>	Brewer's western flax				1B.2	Usually serpentinite. Chaparral, Cismontane woodland, Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE			1B.1	Mesic. Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools	Low. Annual grassland present however wet grassland/vernal habitat were not observed.
<i>Madia radiata</i>	showy golden madia				1B.1	Cismontane woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Malacothamnus hallii</i>	Hall's bush-mallow				1B.2	Chaparral, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Monardella antonina ssp. antonina</i>	San Antonio Hills monardella				3	Chaparral, Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Monolopia gracilens</i>	woodland woollythreads				1B.2	Serpentine. Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.
<i>Navarretia gowenii</i>	Lime Ridge navarretia				1B.1	Chaparral	Not Expected. No habitat suitable to support this species is present.
<i>Navarretia heterandra</i>	Tehama navarretia				4.3	Valley and foothill grassland (mesic), Vernal pools	Low. Annual grassland present however wet grassland/vernal habitat were not observed.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Navarretia nigelliformis ssp. nigelliformis</i>	adobe navarretia				4.2	Valley and foothill grassland vernal mesic, Vernal pools sometimes	Low. Annual grassland present however wet grassland/vernal habitat were not observed.
<i>Navarretia nigelliformis ssp. radians</i>	shining navarretia				1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	Low. Annual grassland present however wet grassland/vernal habitat were not observed.
<i>Oenothera deltoides ssp. howellii</i>	Antioch Dunes evening-primrose	FE	FE		1B.1	Inland dunes	Not Expected. No habitat suitable to support this species is present.
<i>Phacelia phacelioides</i>	Mt. Diablo phacelia				1B.2	Chaparral, Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup				4.2	Mesic. Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools	Low. Annual grassland present however wet grassland/vernal habitat were not observed.
<i>Sanicula saxatilis</i>	rock sanicle		SR		1B.2	Rocky, talus. Broadleafed upland forest, Chaparral, Valley and foothill grassland	Low. Annual grassland present however rocky/talus habitat was not observed.
<i>Senecio aphanactis</i>	chaparral ragwort				2B.2	Chaparral, Cismontane woodland, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Streptanthus albidus ssp. peramoenus</i>	most beautiful jewelflower				1B.2	Serpentine. Chaparral, Cismontane woodland, Valley and foothill grassland	Low. Annual grassland present however serpentine habitat was not observed.
<i>Streptanthus hispidus</i>	Mt. Diablo jewelflower				1B.3	Rocky. Chaparral, Valley and foothill grassland	Low. Annual grassland present however rocky/chaparral habitat was not observed.

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Stuckenia filiformis ssp. alpina</i>	slender-leaved pondweed				2B.2	Marshes and swamps (assorted shallow freshwater)	Not Expected. No habitat suitable to support this species is present.
<i>Triquetrella californica</i>	coastal triquetrella				1B.2	Coastal bluff scrub, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum				1B.1	Valley and foothill grassland (alkaline hills)	Low. Alkaline grassland not observed during surveys.
<i>Viburnum ellipticum</i>	oval-leaved viburnum				2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Not Expected. No habitat suitable to support this species is present.

\*Status:

Federal Endangered Species Act (FESA) Designations: (FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed for listing as Endangered, (FPT) Federally Proposed for listing as Threatened, (FPD) Federally proposed for delisting, (FC) Federal candidate species  
California Endangered Species Act (CESA) Designations: (SE) State Endangered, (ST) State Threatened, (SCE) Candidate Endangered, (SCT) Candidate Threatened, (SR) State Rare.

California Department of Fish and Wildlife (CDFW) Designations: (SSC) Species of Special Concern, (FP) Fully Protected Species

California Native Plant Society (CNPS) Rare Plant Rank: (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list  
 Threat Rank: 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened / moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

\*\*Species list developed from CNDDDB Records, IPaC species list and CNPS Rare Plant Inventory. All sources accessed October 2017.



ATTACHMENT A. Representative Photographs of the Oak Creek Canyon Project Site



Photo 1. Project Site looking south towards Marsh Creek Road showing mixed annual grassland and ruderal land covers. Red line shows the approximate parcel boundary to the east and south.



Photo 2. Looking northwest towards Contra Costa Water District property. Showing mixed annual grassland and ruderal land covers. Red line shows approximate parcel boundary, fenceline on lower left is southern parcel boundary.



Photo 3: Showing ruderal, annual grassland. Oaks are on adjacent parcel to north. Red line shows approximate parcel boundary.





Photo 4: Project Site looking east with Marsh Creek Road on the right, showing ruderal and annual grassland land cover. Red line shows the approximate parcel boundary to the east and south.



Photo 5. Ground squirrel burrows

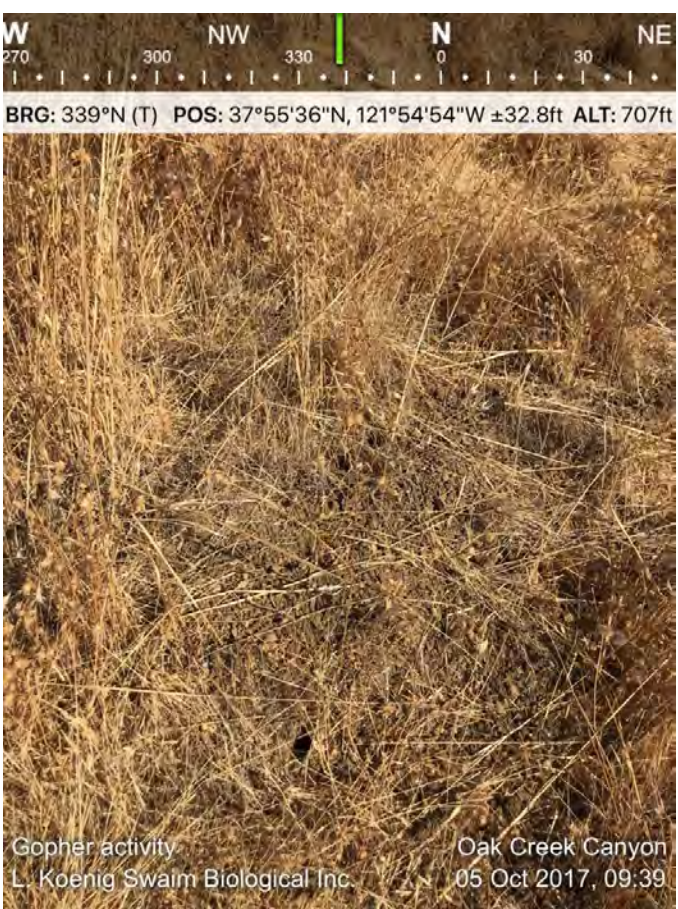


Photo 6. Gopher activity





Photo 6: Black locust on west end of property, adjacent to Marsh Creek Road and parcel boundary

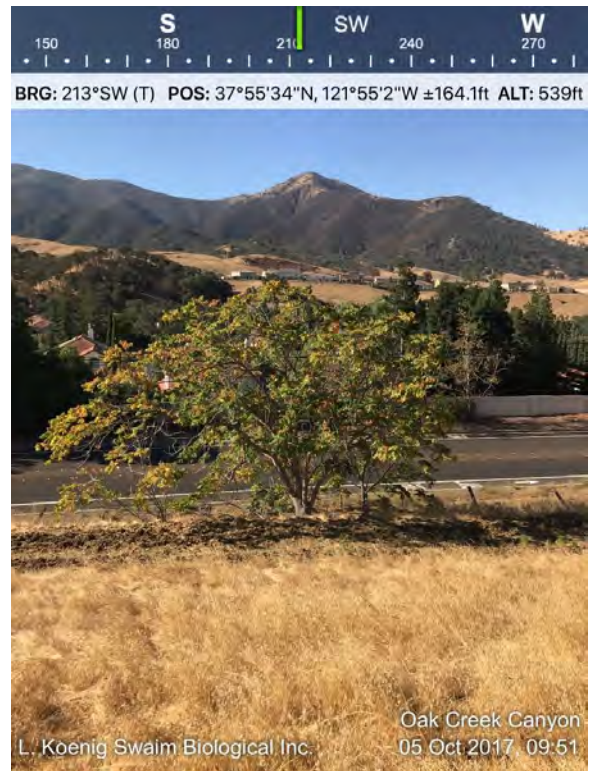


Photo 7: Black locust on west end of property, adjacent to Marsh Creek Road and parcel boundary.

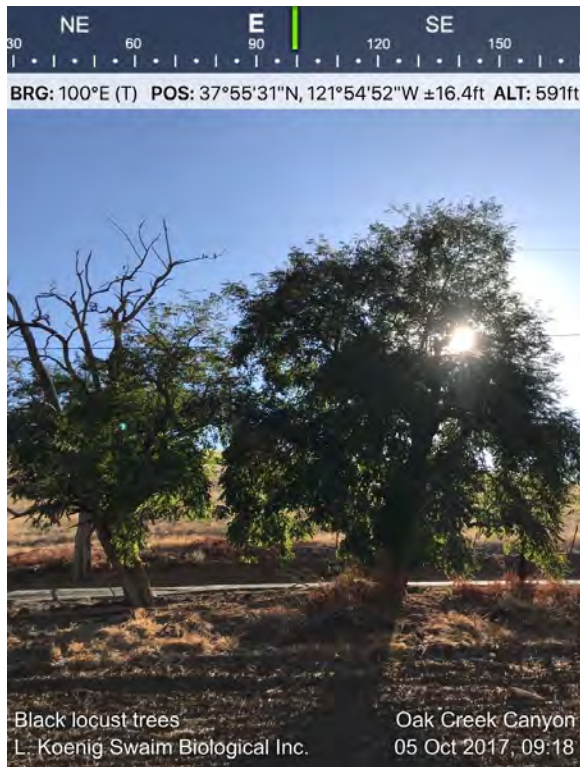


Photo 8: Black locusts on other side of the fenceline that serves as the approximate parcel boundary.



Photo 9: Trees on Contra Costa Water District Property

## IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

### Location

Contra Costa County, California



### Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846



# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2873">https://ecos.fws.gov/ecp/species/2873</a>	Endangered

## Birds

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

## Reptiles

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

## Amphibians

NAME	STATUS
<b>California Red-legged Frog</b> <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
<b>California Tiger Salamander</b> <i>Ambystoma californiense</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Threatened

## Fishes

NAME	STATUS
<b>Delta Smelt</b> <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened
<b>Steelhead</b> <i>Oncorhynchus (=Salmo) mykiss</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/1007">https://ecos.fws.gov/ecp/species/1007</a>	Threatened

## Insects

NAME	STATUS
<b>San Bruno Elfin Butterfly</b> <i>Callophrys mossii bayensis</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. <a href="https://ecos.fws.gov/ecp/species/3394">https://ecos.fws.gov/ecp/species/3394</a>	Endangered

## Crustaceans

NAME	STATUS
<b>Vernal Pool Fairy Shrimp</b> <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened

## Flowering Plants

NAME	STATUS
<b>Antioch Dunes Evening-primrose</b> <i>Oenothera deltoides</i> ssp. <i>howellii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/5970">https://ecos.fws.gov/ecp/species/5970</a>	Endangered
<b>Large-flowered Fiddleneck</b> <i>Amsinckia grandiflora</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/5558">https://ecos.fws.gov/ecp/species/5558</a>	Endangered

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service<sup>3</sup>. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that

may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwiderstandardconservationmeasures.pdf>

The birds listed below are [USFWS Birds of Conservation Concern](#) that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of occurrence, please refer to resources such as the [E-bird data mapping tool](#) (year-round bird sightings by birders and the general public) and [Breeding Bird Survey](#) (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the [E-bird Explore Data Tool](#).

NAME	BREEDING SEASON
Allen's Hummingbird <i>Selasphorus sasin</i> <a href="https://ecos.fws.gov/ecp/species/9637">https://ecos.fws.gov/ecp/species/9637</a>	Breeds Feb 1 to Jul 15
Black Oystercatcher <i>Haematopus bachmani</i> <a href="https://ecos.fws.gov/ecp/species/9591">https://ecos.fws.gov/ecp/species/9591</a>	Breeds Apr 15 to Oct 31
Black Rail <i>Laterallus jamaicensis</i> <a href="https://ecos.fws.gov/ecp/species/7717">https://ecos.fws.gov/ecp/species/7717</a>	Breeds Mar 1 to Sep 15
Black Skimmer <i>Rynchops niger</i> <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a>	Breeds May 20 to Sep 15
Black Turnstone <i>Arenaria melanocephala</i>	Breeds elsewhere
Black-chinned Sparrow <i>Spizella atrogularis</i> <a href="https://ecos.fws.gov/ecp/species/9447">https://ecos.fws.gov/ecp/species/9447</a>	Breeds Apr 15 to Jul 31
Burrowing Owl <i>Athene cunicularia</i> <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a>	Breeds Mar 15 to Aug 31
California Thrasher <i>Toxostoma redivivum</i>	Breeds Jan 1 to Jul 31
Clark's Grebe <i>Aechmophorus clarkii</i>	Breeds Jan 1 to Dec 31
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> <a href="https://ecos.fws.gov/ecp/species/2084">https://ecos.fws.gov/ecp/species/2084</a>	Breeds May 20 to Jul 31
Costa's Hummingbird <i>Calypte costae</i> <a href="https://ecos.fws.gov/ecp/species/9470">https://ecos.fws.gov/ecp/species/9470</a>	Breeds Jan 15 to Jun 10
Lawrence's Goldfinch <i>Carduelis lawrencei</i> <a href="https://ecos.fws.gov/ecp/species/9464">https://ecos.fws.gov/ecp/species/9464</a>	Breeds Mar 20 to Sep 20
Lewis's Woodpecker <i>Melanerpes lewis</i> <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
Long-billed Curlew <i>Numenius americanus</i> <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds elsewhere



Marbled Godwit <i>Limosa fedoa</i> <a href="https://ecos.fws.gov/ecp/species/9481">https://ecos.fws.gov/ecp/species/9481</a>	Breeds elsewhere
Nuttall's Woodpecker <i>Picoides nuttallii</i> <a href="https://ecos.fws.gov/ecp/species/9410">https://ecos.fws.gov/ecp/species/9410</a>	Breeds Apr 1 to Jul 20
Oak Titmouse <i>Baeolophus inornatus</i> <a href="https://ecos.fws.gov/ecp/species/9656">https://ecos.fws.gov/ecp/species/9656</a>	Breeds Mar 15 to Jul 15
Red Knot <i>Calidris canutus ssp. roselaari</i> <a href="https://ecos.fws.gov/ecp/species/8880">https://ecos.fws.gov/ecp/species/8880</a>	Breeds elsewhere
Rufous Hummingbird <i>elasphorus rufus</i> <a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a>	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a>	Breeds elsewhere
Snowy Plover <i>Charadrius nivosus nivosus</i>	Breeds Mar 5 to Sep 15
Song Sparrow <i>Melospiza melodia maxillaris</i> <a href="https://ecos.fws.gov/ecp/species/7716">https://ecos.fws.gov/ecp/species/7716</a>	Breeds Feb 20 to Sep 5
Spotted Towhee <i>Pipilo maculatus clementae</i> <a href="https://ecos.fws.gov/ecp/species/4243">https://ecos.fws.gov/ecp/species/4243</a>	Breeds Apr 15 to Jul 20
Tricolored Blackbird <i>Agelaius tricolor</i> <a href="https://ecos.fws.gov/ecp/species/3910">https://ecos.fws.gov/ecp/species/3910</a>	Breeds Mar 15 to Aug 10
Whimbrel <i>Numenius phaeopus</i> <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a>	Breeds elsewhere
Willet <i>Tringa semipalmata</i>	Breeds elsewhere
Wrentit <i>Chamaea fasciata</i>	Breeds Mar 15 to Aug 10
Yellow-billed Magpie <i>Pica nuttalli</i> <a href="https://ecos.fws.gov/ecp/species/9726">https://ecos.fws.gov/ecp/species/9726</a>	Breeds Apr 1 to Jul 31

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.



**Breeding Season** (🟡)

Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort** (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

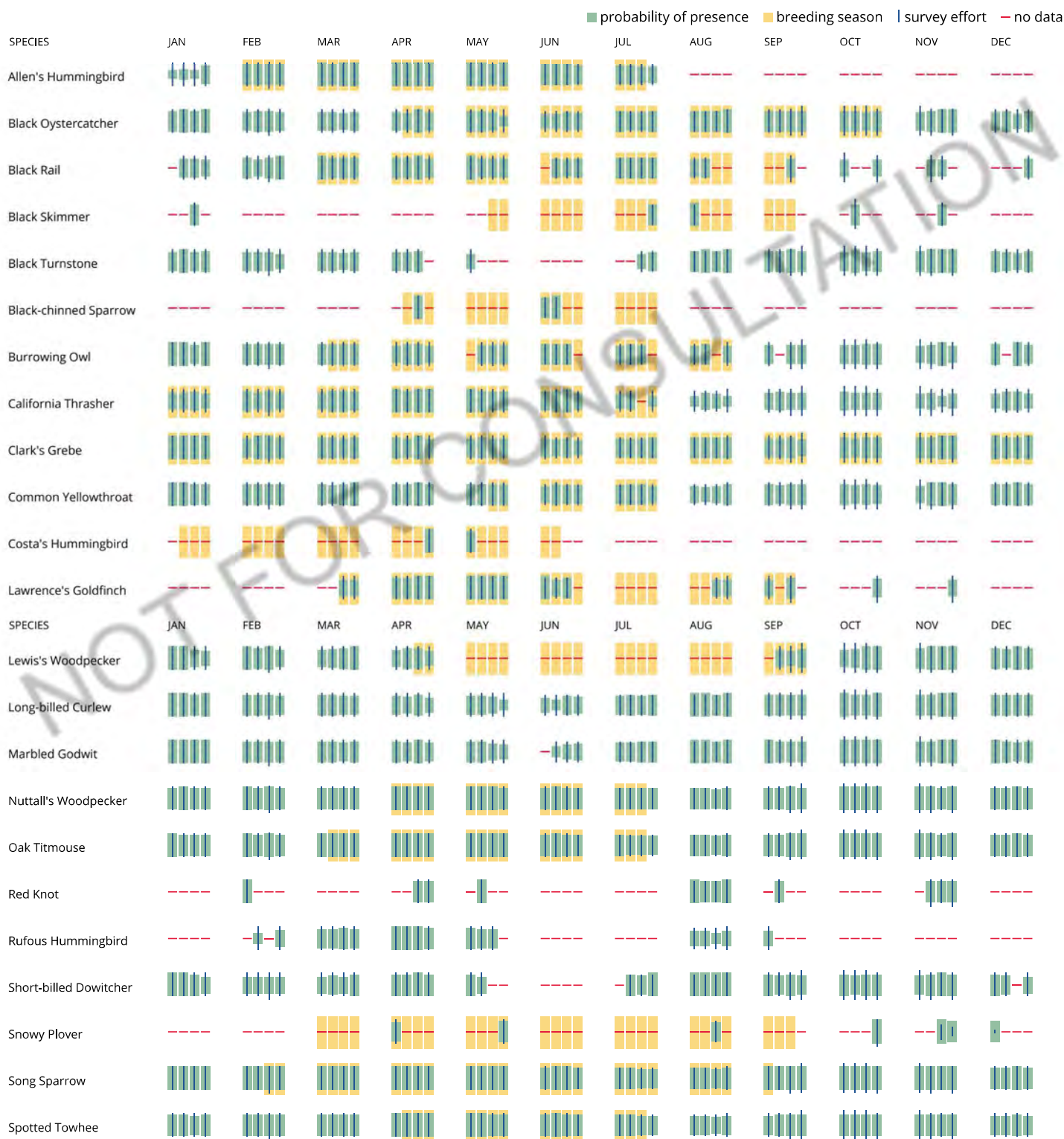
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

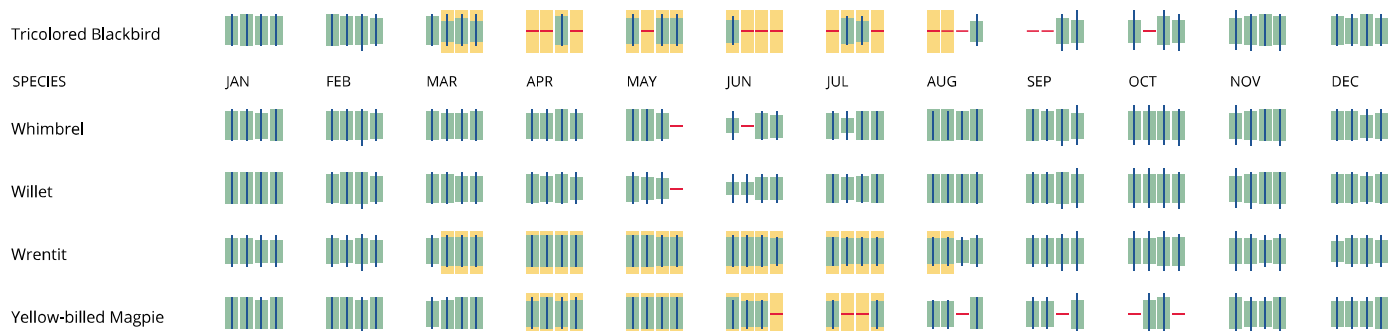
**No Data** (—)

A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## Facilities

### Wildlife refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



# Attachment C: CNDDDB Rare Find Report

## Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad<span style='color:Red'> IS </span>(Tassajara (3712177)<span style='color:Red'> OR </span>Diablo (3712178)<span style='color:Red'> OR </span>Antioch South (3712187)<span style='color:Red'> OR </span>Clayton (3712188))

Name (Scientific/Common)	CNDDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>Agelaius tricolor</i></b> tricolored blackbird	G2G3 S1S2	None Candidate Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	314 759	951 S:5	0	1	2	0	0	2	4	1	5	0	0
<b><i>Ambystoma californiense</i></b> California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	50 1,950	1157 S:83	4	39	6	0	2	32	27	56	81	0	2
<b><i>Amsinckia grandiflora</i></b> large-flowered fiddleneck	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	1,150 1,800	8 S:4	0	0	0	0	3	1	3	1	1	0	3
<b><i>Andrena blennospermatis</i></b> Blennosperma vernal pool andrenid bee	G2 S2	None None		900 900	15 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Anniella pulchra</i></b> northern California legless lizard	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	450 450	102 S:1	1	0	0	0	0	0	0	1	1	0	0
<b><i>Anomobryum julaceum</i></b> slender silver moss	G5? S2	None None	Rare Plant Rank - 4.2		13 S:1	0	0	0	0	0	1	0	1	1	0	0
<b><i>Antrozous pallidus</i></b> pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	170 780	409 S:4	0	0	0	0	0	4	4	0	4	0	0
<b><i>Aquila chrysaetos</i></b> golden eagle	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	155 1,360	312 S:5	4	1	0	0	0	0	2	3	5	0	0





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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b>Arctostaphylos auriculata</b> Mt. Diablo manzanita	G2 S2	None None	Rare Plant Rank - 1B.3	600 1,850	17 S:17	2	5	5	0	0	5	11	6	17	0	0
<b>Arctostaphylos manzanita ssp. laevigata</b> Contra Costa manzanita	G5T2 S2	None None	Rare Plant Rank - 1B.2	500 2,000	10 S:10	0	1	1	0	0	8	7	3	10	0	0
<b>Athene cunicularia</b> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	57 888	1941 S:21	6	6	6	3	0	0	3	18	21	0	0
<b>Atriplex depressa</b> brittlescale	G2 S2	None None	Rare Plant Rank - 1B.2	160 210	61 S:2	0	0	1	0	0	1	1	1	2	0	0
<b>Blepharizonia plumosa</b> big tarplant	G2 S2	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	300 1,000	47 S:14	1	6	2	0	1	4	5	9	13	1	0
<b>Bombus caliginosus</b> obscure bumble bee	G4? S1S2	None None	IUCN_VU-Vulnerable	3,150 3,150	181 S:1	0	0	0	0	0	1	1	0	1	0	0
<b>Bombus crotchii</b> Crotch bumble bee	G3G4 S1S2	None None		50 2,000	233 S:2	0	0	0	0	0	2	2	0	2	0	0
<b>Bombus occidentalis</b> western bumble bee	G2G3 S1	None None	USFS_S-Sensitive XERCES_IM-Imperiled	350 2,000	282 S:4	0	0	0	0	0	4	4	0	4	0	0
<b>Branchinecta lynchi</b> vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	220 330	756 S:5	0	0	3	0	0	2	1	4	5	0	0
<b>Buteo regalis</b> ferruginous hawk	G4 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	400 640	107 S:2	1	0	1	0	0	0	0	2	2	0	0
<b>Buteo swainsoni</b> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	50 2,000	2431 S:6	1	2	2	0	0	1	1	5	6	0	0



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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>California macrophylla</i></b> round-leaved filaree	G4 S4	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	170 600	204 S:8	0	1	0	0	2	5	4	4	6	2	0
<b><i>Callophrys mossii bayensis</i></b> San Bruno elfin butterfly	G4T1 S1	Endangered None	XERCES_CI-Critically Imperiled	2,000 2,000	10 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Calochortus pulchellus</i></b> Mt. Diablo fairy-lantern	G2 S2	None None	Rare Plant Rank - 1B.2	495 3,000	40 S:31	3	9	4	1	0	14	12	19	31	0	0
<b><i>Campanula exigua</i></b> chaparral harebell	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	1,500 3,200	32 S:5	1	1	0	0	0	3	4	1	5	0	0
<b><i>Centromadia parryi ssp. congdonii</i></b> Congdon's tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	425 800	93 S:16	2	6	4	1	1	2	2	14	15	1	0
<b><i>Circus cyaneus</i></b> northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	900 900	53 S:1	1	0	0	0	0	0	1	0	1	0	0
<b><i>Cordylanthus nidularius</i></b> Mt. Diablo bird's-beak	G1 S1	None Rare	Rare Plant Rank - 1B.1 BLM_S-Sensitive	1,600 2,400	2 S:2	0	1	0	0	0	1	0	2	2	0	0
<b><i>Corynorhinus townsendii</i></b> Townsend's big-eared bat	G3G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	700 3,790	626 S:2	0	0	0	0	0	2	2	0	2	0	0
<b><i>Cryptantha hooveri</i></b> Hoover's cryptantha	GH SH	None None	Rare Plant Rank - 1A		4 S:1	0	0	0	0	1	0	1	0	0	1	0
<b><i>Delphinium californicum ssp. interius</i></b> Hospital Canyon larkspur	G3T3 S3	None None	Rare Plant Rank - 1B.2	630 3,300	28 S:6	1	2	0	0	0	3	1	5	6	0	0



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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Dipodomys heermanni berkeleyensis</i> Berkeley kangaroo rat	G3G4T1 S1	None None		3,200 3,200	7 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Efferia antiochi</i> Antioch efferian robberfly	G1G2 S1S2	None None		350 350	4 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Elanus leucurus</i> white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	600 600	164 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	290 1,980	1246 S:16	2	5	2	0	0	7	7	9	16	0	0
<i>Eremophila alpestris actia</i> California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	600 680	93 S:2	0	2	0	0	0	0	2	0	2	0	0
<i>Eriastrum erterae</i> Lime Ridge eriastrum	G1 S1	None None	Rare Plant Rank - 1B.1	700 900	2 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Eriogonum truncatum</i> Mt. Diablo buckwheat	G1 S1	None None	Rare Plant Rank - 1B.1	350 1,150	7 S:6	1	0	0	0	1	4	4	2	5	1	0
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	G2 S2	None None	Rare Plant Rank - 1B.2	775 1,000	19 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Extriplex joaquinana</i> San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	160 730	109 S:11	1	2	3	2	2	1	4	7	9	1	1
<i>Falco mexicanus</i> prairie falcon	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	1,535 1,860	458 S:5	5	0	0	0	0	0	0	5	5	0	0
<i>Falco peregrinus anatum</i> American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern	1,581 1,581	55 S:1	0	0	0	0	0	1	0	1	1	0	0



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<i>Fritillaria liliacea</i> fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	850 850	81 S:2	0	1	0	0	0	1	1	1	2	0	0
<i>Grimmia torenii</i> Toren's grimmia	G2 S2	None None	Rare Plant Rank - 1B.3	3,025 3,805	13 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Helianthella castanea</i> Diablo helianthella	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	580 3,500	107 S:47	6	17	10	1	0	13	12	35	47	0	0
<i>Helminthoglypta nickliniana bridgesi</i> Bridges' coast range shoulderband	G3T1 S1S2	None None	IUCN_DD-Data Deficient	1,950 1,950	6 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Hesperolinon breweri</i> Brewer's western flax	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	650 2,900	25 S:18	2	5	0	0	0	11	8	10	18	0	0
<i>Lasiurus blossevillii</i> western red bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	15 15	125 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Lasthenia conjugens</i> Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	50 50	33 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	G4 S3S4	Endangered None	IUCN_EN-Endangered	330 330	320 S:1	0	0	1	0	0	0	0	1	1	0	0
<i>Linderiella occidentalis</i> California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	160 260	433 S:5	0	0	0	0	0	5	2	3	5	0	0
<i>Lytta molesta</i> molestan blister beetle	G2 S2	None None		400 400	17 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Madia radiata</i> showy golden madia	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	250 250	51 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Malacothamnus hallii</i> Hall's bush-mallow	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	600 1,500	36 S:7	1	0	0	1	1	4	4	3	6	1	0
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	G4T2 S2	Threatened Threatened		305 3,785	160 S:45	15	6	0	0	1	23	14	31	44	1	0





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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>Monolopia gracilens</i></b> woodland woollythreads	G3 S3	None None	Rare Plant Rank - 1B.2	1,500 3,000	57 S:5	0	0	0	0	0	5	2	3	5	0	0
<b><i>Navarretia gowenii</i></b> Lime Ridge navarretia	G1 S1	None None	Rare Plant Rank - 1B.1	600 1,000	3 S:2	0	0	0	0	0	2	0	2	2	0	0
<b><i>Navarretia nigelliformis ssp. radians</i></b> shining navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	260 1,700	72 S:3	0	0	1	0	0	2	0	3	3	0	0
<b><i>Neotoma fuscipes annectens</i></b> San Francisco dusky-footed woodrat	G5T2T3 S2S3	None None	CDFW_SSC-Species of Special Concern	756 1,600	21 S:2	1	0	0	0	0	1	0	2	2	0	0
<b><i>Oenothera deltoides ssp. howellii</i></b> Antioch Dunes evening-primrose	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden		10 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Perognathus inornatus</i></b> San Joaquin Pocket Mouse	G2G3 S2S3	None None	BLM_S-Sensitive IUCN_LC-Least Concern	500 750	122 S:3	1	2	0	0	0	0	3	0	3	0	0
<b><i>Phacelia phacelioides</i></b> Mt. Diablo phacelia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	2,000 3,400	16 S:6	0	1	0	1	0	4	5	1	6	0	0
<b><i>Phrynosoma blainvillii</i></b> coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,224 1,462	758 S:2	1	1	0	0	0	0	0	2	2	0	0
<b><i>Puccinellia simplex</i></b> California alkali grass	G3 S2	None None	Rare Plant Rank - 1B.2		71 S:1	0	0	0	0	1	0	1	0	0	1	0
<b><i>Rana boylei</i></b> foothill yellow-legged frog	G3 S3	None Candidate Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	1,130 1,130	1230 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Rana draytonii</i></b> California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	130 2,175	1410 S:94	9	42	11	3	1	28	28	66	93	1	0
<b><i>Sanicula saxatilis</i></b> rock sanicle	G2 S2	None Rare	Rare Plant Rank - 1B.2 BLM_S-Sensitive	2,200 3,400	7 S:3	0	2	1	0	0	0	1	2	3	0	0



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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>Senecio aphanactis</i></b> chaparral ragwort	G3 S2	None None	Rare Plant Rank - 2B.2	1,000 1,000	82 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Serpentine Bunchgrass</i></b> Serpentine Bunchgrass	G2 S2.2	None None		1,300 2,000	22 S:2	0	1	0	0	0	1	2	0	2	0	0
<b><i>Streptanthus albidus ssp. peramoenus</i></b> most beautiful jewelflower	G2T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	700 2,400	96 S:3	0	2	0	0	0	1	2	1	3	0	0
<b><i>Streptanthus hispidus</i></b> Mt. Diablo jewelflower	G2 S2	None None	Rare Plant Rank - 1B.3	820 3,200	8 S:8	0	4	3	1	0	0	5	3	8	0	0
<b><i>Stuckenia filiformis ssp. alpina</i></b> slender-leaved pondweed	G5T5 S3	None None	Rare Plant Rank - 2B.2	600 600	21 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Taxidea taxus</i></b> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	179 800	542 S:8	1	2	2	0	0	3	4	4	8	0	0
<b><i>Triquetrella californica</i></b> coastal triquetrella	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	3,849 3,849	13 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Tropidocarpum capparideum</i></b> caper-fruited tropidocarpum	G1 S1	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	400 540	18 S:2	0	0	0	0	0	2	2	0	2	0	0
<b><i>Valley Needlegrass Grassland</i></b> Valley Needlegrass Grassland	G3 S3.1	None None			45 S:1	0	0	0	0	0	1	1	0	1	0	0
<b><i>Viburnum ellipticum</i></b> oval-leaved viburnum	G4G5 S3?	None None	Rare Plant Rank - 2B.3	1,200 1,500	38 S:4	1	0	0	0	0	3	3	1	4	0	0
<b><i>Vulpes macrotis mutica</i></b> San Joaquin kit fox	G4T2 S2	Endangered Threatened		220 800	982 S:11	2	4	0	0	0	5	11	0	11	0	0

## Plant List

### Inventory of Rare and Endangered Plants

53 matches found. *Click on scientific name for details*

#### Search Criteria

Found in Quads 3712188, 3712187 3712178 and 3712177;

[Modify Search Criteria](#)
[Export to Excel](#)
[Modify Columns](#)
[Modify Sort](#)
[Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
<a href="#">Amsinckia grandiflora</a>	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
<a href="#">Androsace elongata ssp. acuta</a>	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
<a href="#">Anomobryum julaceum</a>	slender silver moss	Bryaceae	moss		4.2	S2	G5?
<a href="#">Arabis blepharophylla</a>	coast rockcress	Brassicaceae	perennial herb	Feb-May	4.3	S4	G4
<a href="#">Arctostaphylos auriculata</a>	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.3	S2	G2
<a href="#">Arctostaphylos manzanita ssp. laevigata</a>	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar(Apr)	1B.2	S2	G5T2
<a href="#">Atriplex cordulata var. cordulata</a>	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
<a href="#">Atriplex coronata var. coronata</a>	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
<a href="#">Atriplex depressa</a>	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
<a href="#">Blepharizonia plumosa</a>	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S2	G2
<a href="#">Calandrinia breweri</a>	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4
<a href="#">California macrophylla</a>	round-leaved filaree	Geraniaceae	annual herb	Mar-May	1B.2	S4	G4
<a href="#">Calochortus pulchellus</a>	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
<a href="#">Calochortus umbellatus</a>	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S4	G4
<a href="#">Campanula exigua</a>	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
<a href="#">Centromadia parryi ssp. congdonii</a>	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	1B.1	S2	G3T2
<a href="#">Collomia diversifolia</a>	serpentine collomia	Polemoniaceae	annual herb	May-Jun	4.3	S4	G4
<a href="#">Convolvulus simulans</a>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
<a href="#">Cordylanthus nidularius</a>	Mt. Diablo bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Aug	1B.1	S1	G1
<a href="#">Cryptantha hooveri</a>	Hoover's cryptantha	Boraginaceae	annual herb	Apr-May	1A	SH	GH
	Hospital Canyon	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3

<u><a href="#">Delphinium californicum ssp. interius</a></u>	larkspur							
<u><a href="#">Dirca occidentalis</a></u>	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	1B.2	S2	G2	
<u><a href="#">Eriastrum ertterae</a></u>	Lime Ridge eriastrum	Polemoniaceae	annual herb	Jun-Jul	1B.1	S1	G1	
<u><a href="#">Eriogonum truncatum</a></u>	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	1B.1	S2	G2	
<u><a href="#">Eriophyllum jepsonii</a></u>	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	4.3	S3	G3	
<u><a href="#">Eryngium jepsonii</a></u>	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?	
<u><a href="#">Eschscholzia rhombipetala</a></u>	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1	
<u><a href="#">Extriplex joaquinana</a></u>	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2	
<u><a href="#">Fritillaria agrestis</a></u>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3	
<u><a href="#">Fritillaria liliacea</a></u>	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2	
<u><a href="#">Galium andrewsii ssp. gatense</a></u>	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	Apr-Jul	4.2	S3	G5T3	
<u><a href="#">Grimmia torenii</a></u>	Toren's grimmia	Grimmiaceae	moss		1B.3	S2	G2	
<u><a href="#">Helianthella castanea</a></u>	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2	
<u><a href="#">Hesperolinon breweri</a></u>	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2?	G2?	
<u><a href="#">Madia radiata</a></u>	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S2	G2	
<u><a href="#">Malacothamnus hallii</a></u>	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2	
<u><a href="#">Monardella antonina ssp. antonina</a></u>	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	3	S1S3	G4T1T3Q	
<u><a href="#">Monolopia gracilens</a></u>	woodland woollythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3	
<u><a href="#">Navarretia gowenii</a></u>	Lime Ridge navarretia	Polemoniaceae	annual herb	May-Jun	1B.1	S1	G1	
<u><a href="#">Navarretia heterandra</a></u>	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	4.3	S4	G4	
<u><a href="#">Navarretia nigelliformis ssp. nigelliformis</a></u>	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3	
<u><a href="#">Navarretia nigelliformis ssp. radians</a></u>	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2	
<u><a href="#">Oenothera deltoides ssp. howellii</a></u>	Antioch Dunes evening-primrose	Onagraceae	perennial herb	Mar-Sep	1B.1	S1	G5T1	
<u><a href="#">Phacelia phacelioides</a></u>	Mt. Diablo phacelia	Hydrophyllaceae	annual herb	Apr-May	1B.2	S2	G2	
<u><a href="#">Ranunculus lobbii</a></u>	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4	
<u><a href="#">Sanicula saxatilis</a></u>	rock sanicle	Apiaceae	perennial herb	Apr-May	1B.2	S2	G2	
<u><a href="#">Senecio aphanactis</a></u>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3	
<u><a href="#">Streptanthus albidus ssp. peramoenus</a></u>	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	1B.2	S2	G2T2	



<a href="#"><u>Streptanthus hispidus</u></a>	Mt. Diablo jewelflower	Brassicaceae	annual herb	Mar-Jun	1B.3	S2	G2
<a href="#"><u>Stuckenia filiformis ssp. alpina</u></a>	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S3	G5T5
<a href="#"><u>Triquetrella californica</u></a>	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2
<a href="#"><u>Tropidocarpum capparideum</u></a>	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
<a href="#"><u>Viburnum ellipticum</u></a>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

### Suggested Citation

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**RARE PLANT SURVEY REPORT**  
for the **OAK CREEK CANYON RESIDENTIAL DEVELOPMENT**  
**CONTRA COSTA COUNTY, CALIFORNIA**



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## INTRODUCTION

Swaim Biological, Incorporated (SBI) was contracted by Discovery Builders, Inc. (DBI) to conduct floristic surveys for the Oak Creek Canyon Residential Development Project (project) in Clayton, Contra Costa County, CA. The project is within the East Contra Costa County Habitat Conservation Plan (ECCC HCP) area. Floristic surveys encompassed all special-status plant species with potential to occur, including large-flowered fiddleneck (*Amsinckia grandiflora*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), and showy golden madia (*Madia radiata*). The surveys were conducted in four distinct survey efforts to account for varying blooming periods. No special-status plants were observed during these surveys. This document describes the environmental conditions, methods, and results of these surveys.

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## SURVEY AREA

The 9-acre survey parcel is located on Marsh Creek Road in Clayton, CA (**Figure 1**). The project will occur on a portion of parcel 119-070-008. Contra Costa Water District owns 1.68 acres adjacent to the project site and maintains an access easement through the parcel. Marsh Creek Road serves as the southwestern boundary.

## Environmental Setting

The project is located in the Clayton 7.5-minute U.S. Geological Survey quadrangle, north of Mount Diablo, and slightly north of Mount Diablo Creek which roughly follows the contour of Marsh Creek Road.

### Topography

The terrain consists of steep rolling grasslands and peripheral oak savannah/woodland at elevations between 600 and 700 feet.

### Hydrology

The survey parcel is sited within a watershed measuring approximately 0.3-square mile in area, with an unnamed ephemeral drainage traversing the eastern portion (**Figure 2**). Topographic maps imply that the drainage is spring-fed, or at least ponds uphill, with ponded water visible in satellite imagery in 2008. Within the survey area, no ponded water is visible in satellite imagery and no ponded water was observed during surveys, though dense growth of facultative Italian rye grass (*Festuca perennis*) and lesser amounts of facultative beardless wild rye (*Elymus triticoides*) were observed during the April 2018 survey and redoxomorphic features were observed in the soils during the August 2018

survey. The onsite drainage culvert conveying flows beneath Marsh Creek Road measures approximately 36 inches in diameter (see **Appendix D, Site Photos**).

## Soil

Three soil types occur in the study area (USDA 2017):

- *Capay clay (CaC)*—1 to 15 percent slopes; MLRA 17. Consists of clayey alluvium derived from sedimentary rock and is found in the concave treads and toeslopes of stream terraces. The upper 18 inches of a typical soil profile is clay. Soils are nonsaline to very slightly saline. Soils are not hydric but the available water storage in the soil profile is high.
- *Los Osos clay loam (LhF)*—30 to 50 percent slopes, MLRA 15. Consists of residuum weathered from sandstone and shale and is found in both concave and convex sideslopes, backslopes, and flanks of hillslopes. The upper 10 inches of a typical soil profile is clay loam, with the next 8 inches being clay. Soils are not hydric and the available water storage in the soil profile is low.
- *Perkins gravelly loam (PaC)*—2 to 9 percent slopes. Consists of alluvium soils derived from igneous and sedimentary rock and is found in the linear treads of terraces. The upper 18 inches of a typical soil profile is gravelly loam. Soils are not hydric but the available water storage in the soil profile is moderate.

## Vegetation

Three vegetation communities occur in or adjacent to the survey area:

- *Nonnative Annual Grassland*—found in the majority of the survey area. Dominated by slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail brome (*Bromus madritensis*), foxtail barley (*Hordeum murinum*), and yellow star thistle (*Centaurea solstitialis*).
- *Ruderal*—found in the ephemeral drainage/wash area of the southwest corner. Dominated by Italian rye, beardless wild rye, black mustard (*Brassica nigra*), fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativus*), fiddle dock (*Rumex pulcher*), and charlock (*Sinapis arvensis*).
- *Oak savannah/woodland*—found peripheral to the survey area. Dominated by oaks that are possibly hybrids of blue oak (*Quercus douglasii*) and valley oak (*Q. lobata*).



## METHODS

Floristic surveys followed protocols described in the following guidelines:

- *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (California Department of Fish and Wildlife [CDFW], 2018);
- *CNPS Botanical Survey Guidelines* (California Native Plant Society [CNPS], 2001); and
- *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (U.S. Fish and Wildlife Service [USFWS], (1996).

## Background Research

### Desktop Consultation

Prior to surveys, background research was conducted to determine the potential for special-status species to occur within the study area. Consulted sources included the California Natural Diversity Database [CNDDDB] (CDFW, 2018); California Native Plant Society's Online Inventory of Rare and Endangered Plants (CNPS, 2018); and the botanical list compiled for *ECCC HCP Planning Survey Report Form, Table 2b* for projects occurring in annual grassland settings (Jones & Stokes 2007). **Figure 3** identifies CNDDDB records of special-status plants within 5 miles of the survey area.

### Refined Target Species List

The list of the ECC HCP rare plants is provided in **Appendix A** along with an assessment of their potential to occur on the project site based on known habitat conditions. SBI refined this list to target specific survey dates by comparing the known geographic range and habitat preferences for each species with the geographic location and habitat type found within the survey area. The refined list identified six (6) California Rare Plant Rank (CRPR) and ECC HCP Covered and No Take plant species that require focused surveys: large-flowered fiddleneck (*Amsinckia grandiflora*, ECC HCP No Take species), big tarplant (*Blepharizonia plumosa*, ECC HCP Covered species), round-leaved filaree (*California macrophylla*, ECC HCP Covered species), Mt. Diablo fairy lantern (*Calochortus pulchellus*, ECC HCP Covered species), diamond-petaled California poppy (*Eschscholzia rhombipetala*, ECC HCP No Take species), and showy golden madia (*Madia radiata*, ECC HCP Covered species).

## Reference Site Visits and Herbarium Specimens

No reference sites for these species were visited in 2018. Ms. Dvorak is familiar with big tarplant (having visited reference sites in 2017 and 2016), round-leaved filaree (observed circa 2009), and Mt. Diablo fairy lantern (observed 2016). She has previously observed big tarplant at Lawrence Livermore National Laboratories' Experimental Test Site (Site 300) in Alameda and San Joaquin Counties, located approximately 15 miles east of the City of Livermore on the eastern slope of the Coast Ranges. Site 300 is a 7,000-acre grassland habitat where big tarplant is present and often found abundantly (Paterson and Woollett, 2014). She has previously observed round-leaved filaree in the grasslands surrounding Dyer Reservoir, a California Department of Water Resources reservoir located in eastern Alameda County, California. She has previously observed Mt. Diablo fairy lantern on Mt. Diablo, Contra Costa County.

## Surveys

Four rounds of floristic surveys were determined appropriate to encompass the blooming periods of target species, and thus a single survey was conducted each month in April, June August, and early October. Ms. Dvorak and Ms. Pexton surveyed the proposed project area on the following dates in 2018: April 20, June 18, August 21, and October 2. Surveyors walked parallel transects spaced approximately 15 feet apart to ensure 100 percent visual coverage. All plants encountered, whether live or dead, were identified to the most specific taxonomic level possible.

Timing for the first round of surveys in April corresponded with the blooming period for large-flowered fiddleneck, round-leaved filaree, Mt. Diablo fairy lantern, diamond-petaled California poppy, and showy madia. Timing for the second round of surveys in June corresponded with the blooming period for Mt. Diablo fairy lantern and could have also detected early growth of big tarplant or late senescence of large-flowered fiddleneck, round-leaved filaree, diamond-petaled California poppy, and showy madia. Timing for the third round of surveys in August corresponded with the early half of the blooming period of big tarplant (July through October) and a final survey on October 2nd corresponded with the late half of the blooming period.

Showy madia and diamond-petaled California poppy are two species that are extremely rare/nearly extinct and are known to occur in only a few locations distant from the project area. Thus, floristic surveys were more tailored to the blooming periods of other species, although surveys were conducted during the appropriate bloom periods to observe all ECC HCP plant species. Surveys were also timed to detect all lesser-potential species identified in **Appendix B**.

## RESULTS

No special-status plants were observed during 2018 surveys. A list of all identified plants observed in the survey area is provided in **Appendix C**. The first survey, conducted in April, included an inventory checklist of all identifiable plants whether alive or dead. Subsequent surveys only identified living plants on the inventory checklist, unless an identifiable dead plant was a new addition to the overall inventory and/or was potentially special-status.

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## SURVEY LIMITATIONS

Portions of the hillside grasslands were grazed during April, June, and August surveys. The southwestern drainage/wash portion of the survey area was disced during the June and August and October surveys and nearly devoid of vegetation. Thus, plants that may have been present and blooming prior to grazing and discing would not have been visible to the floristic surveyors, potentially creating false negative survey results.

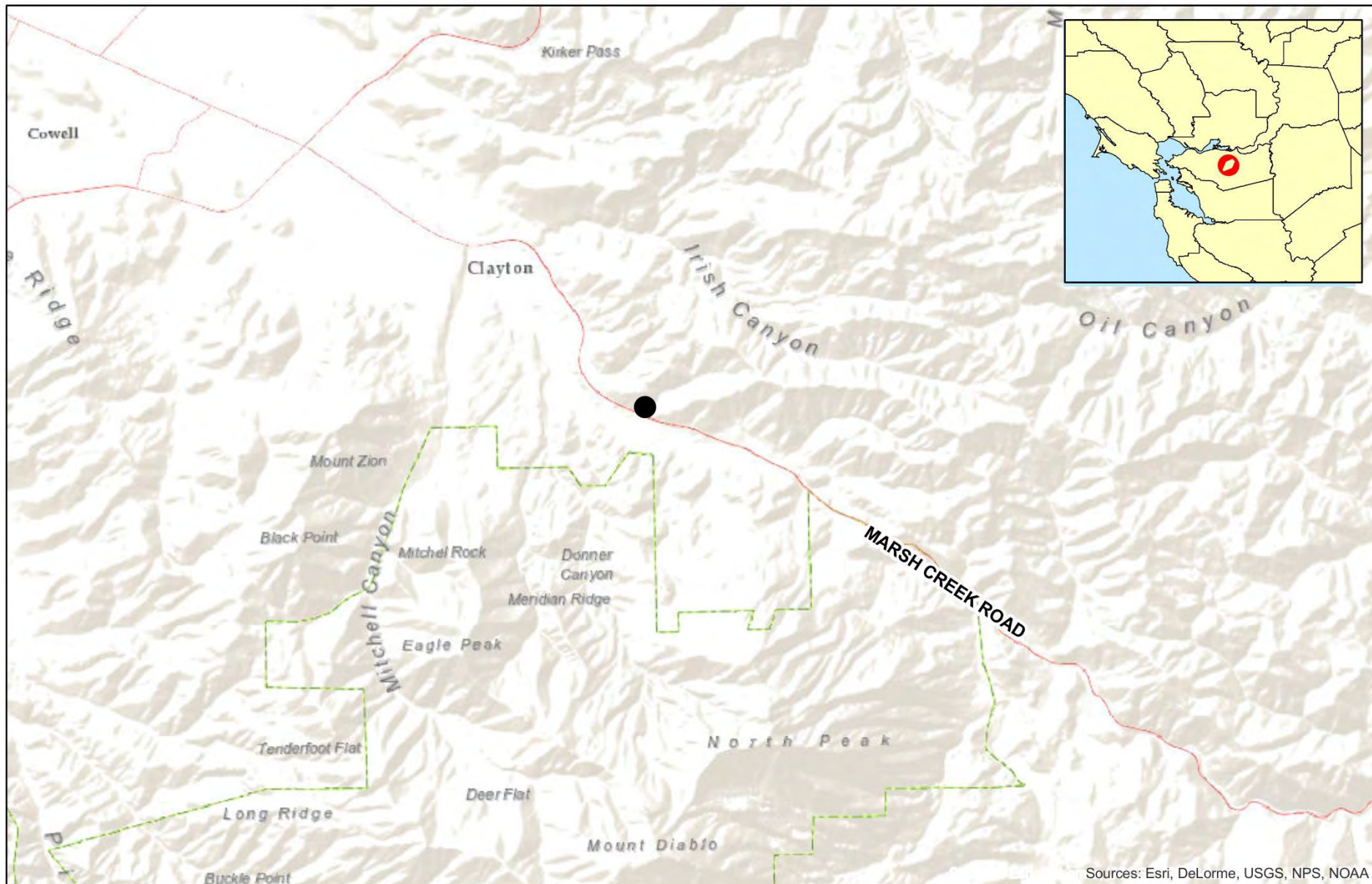
The 2018 rainy season, extending from October 1, 2017 through September 30, 2018, is currently at 60% of average as reported from the nearest station in Fairfield, CA, and 73 percent of normal as reported from the nearest station in Livermore (NOAA, 2018). The previous year exceeded 30-year rainfall normals by nearly 10 inches, and the previous year also exceeded normal rainfall by 0.58 inches (PRISM, 2017). Prior to that, rainfall was below-average since 2012. Annual rainfall conditions may accelerate, delay, or reduce the length of the growing season or blooming period, potentially creating false negative survey results.

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● Project Location

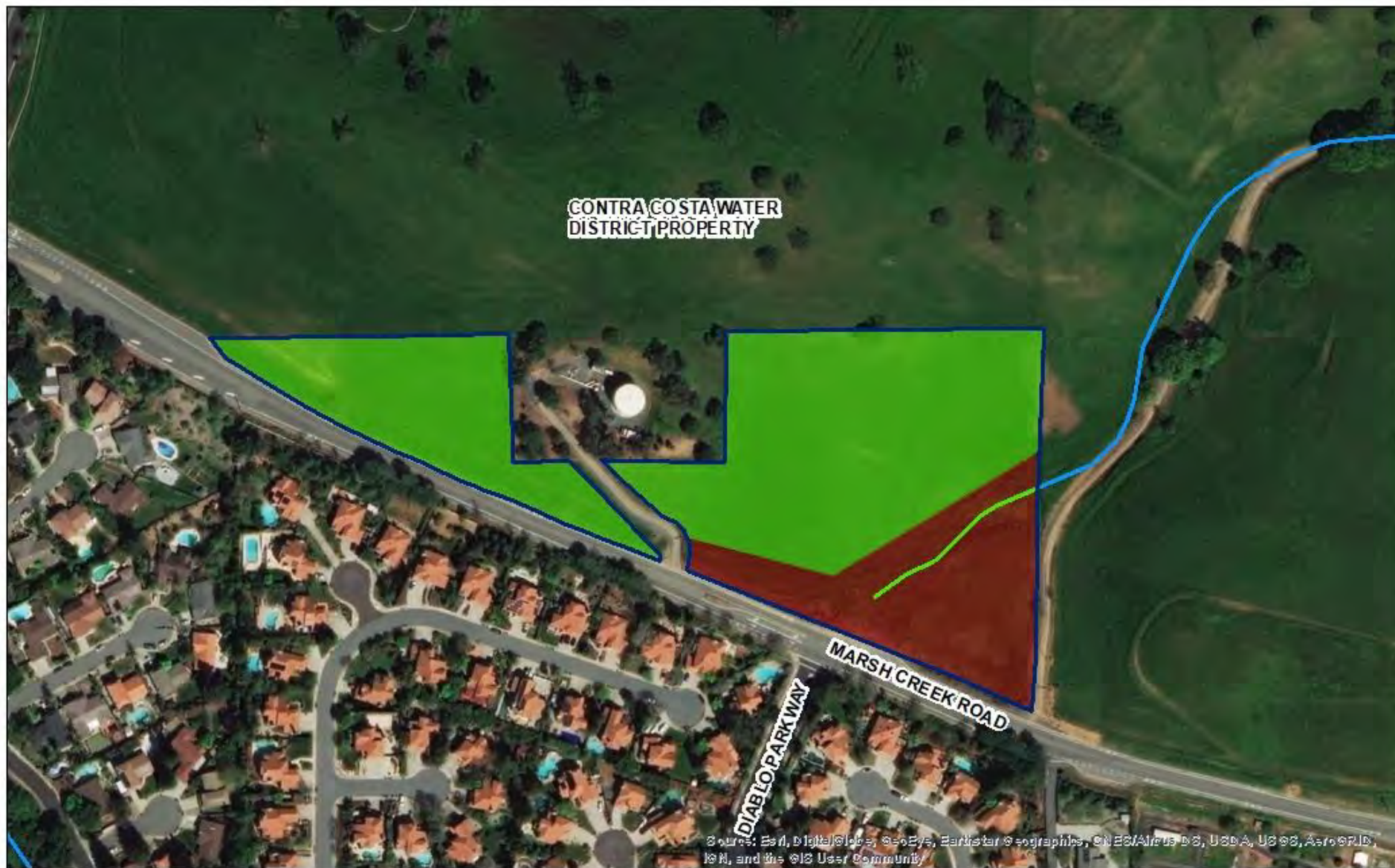


0 0.5 1 2 Miles

**Oak Creek Canyon Residential Development**  
**Figure 1. Proximity Map**







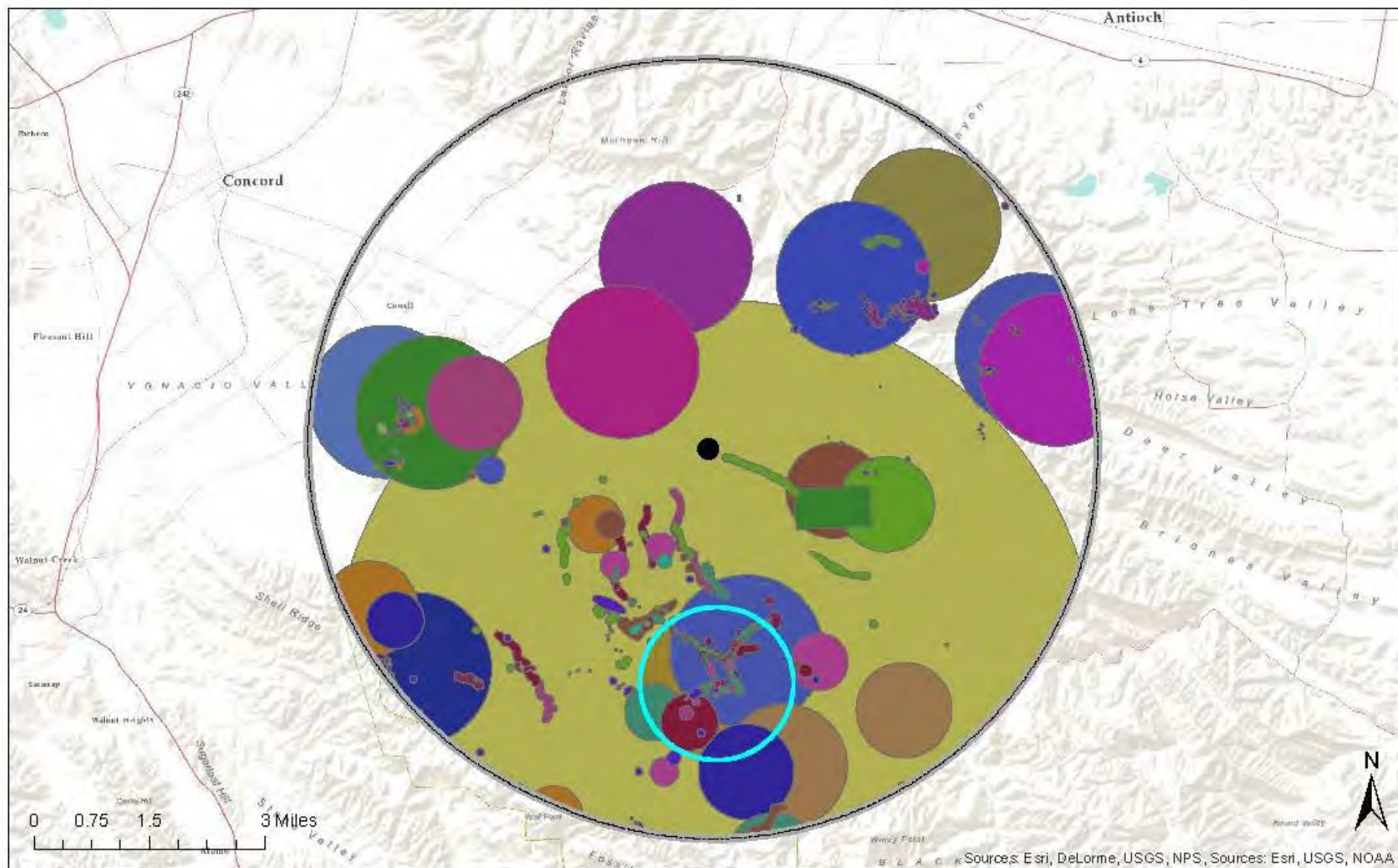
- Project Boundary
- Unnamed drainage on property
- Annual Grassland
- Ruderal Land Cover
- USGS Streams layer



Oak Creek Canyon Residential Development  
Figure 2. Land Cover and Jurisdictional Waters Map







- |                                  |                            |                               |                               |                           |
|----------------------------------|----------------------------|-------------------------------|-------------------------------|---------------------------|
| ● Project Location               | ■ Hospital Canyon larkspur | ■ Mt. Diablo jewel flower     | ■ chaparral ragwort           | ■ shining navaretia       |
| ■ 5 Mile Buffer                  | ■ Jepson's coyote-thistle  | ■ Mt. Diablo manzanita        | ■ coastal triquetrella        | ■ showy golden madia      |
| ■ Antioch Dunes evening-primrose | ■ Lime Ridge eriastrum     | ■ Mt. Diablo phacelia         | ■ large-flowered fiddleneck   | ■ slender silver moss     |
| ■ Brewer's western flax          | ■ Lime Ridge navaretia     | ■ Toren's grimmia             | ■ most beautiful jewel flower | ■ slender-leaved pondweed |
| ■ Contra Costa manzanita         | ■ Mt. Diablo bird's-beak   | ■ big tarplant                | ■ oval-leaved viburnum        | ■ woodland woollythreads  |
| ■ Diablo helianthella            | ■ Mt. Diablo buckwheat     | ■ caper-fruited tropidocarpum | ■ rock sanicle                |                           |
| ■ Hall's bush-mallow             | ■ Mt. Diablo fairy-lantern | ■ chaparral harebell          | ■ round-leaved filaree        |                           |

**Oak Creek Canyon  
Residential Development  
Figure 3. CNDDB Plant  
Records 5 miles**



## APPENDIX A. East Contra Costa County Habitat Conservation Plan special status plant species

Scientific Name	Common Name	Status <sup>1</sup>	ECC HCP Covered (C) or No-Take (N)	Associated land cover type <sup>2</sup>	Typical Habitat or Physical Conditions if known <sup>2</sup>	Typical Blooming Period	Suitable Land Cover Type Present	2018 Survey Results
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	FE; SE; 1B.1	N	Annual grassland	Generally found in clay soil	April to May	Yes, surveys required	Not observed during appropriately-timed rare plant surveys
<i>Arctostaphylos auriculata</i>	Mt. Diablo manzanita	1B.3	C	Chaparral and scrub	Elevations generally between 700 and 1,860 feet; restricted to the eastern and northern flanks of Mt. Diablo and the vicinity of Black Diamond Mines	January to March	No, surveys not required	Not observed, no suitable habitat present
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	1B.2	N	Alkali grassland Alkali wetland Annual grassland Seasonal wetland	Generally found in vernal moist habitat in soils with a slight to strongly elevated pH	March to June	Yes, surveys required	Not observed during appropriately-timed rare plant surveys
<i>Atriplex depressa</i>	brittlescale	1B.2	C	Alkali grassland Alkali wetland	Restricted to soils of the Pescadero or Solano soil series; generally found in southeastern region of plan area	May to October	No, surveys not required	Not observed, no suitable habitat present
<i>Blepharizonia plumosa</i>	big tarplant	1B.1	C	Annual grassland	Elevation below 1500 feet most often on Altamont Series or Complex soils	July to October	Yes, surveys required	Not observed during appropriately-timed rare plant surveys.
<i>California macrophylla</i>	round-leaved filaree	---	C	Annual grassland	Occurs in grasslands on friable clay soils, most often in foothill locations at elevations between 200 and 2,000 feet.	March to May	Yes, surveys required	Not observed during appropriately-timed rare plant surveys.
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	1B.2	C	Annual grassland Chaparral and scrub Oak savanna Oak woodland	Elevations generally between 650 and 2,600 feet	April to June	No, surveys not required	Not observed, no suitable habitat present
<i>Delphinium recurvatum</i>	recurved larkspur	1B.2	C	Alkali grassland Alkali wetland		March to June	No, surveys not required	Not observed, no suitable habitat present



## APPENDIX A. East Contra Costa County Habitat Conservation Plan special status plant species

Scientific Name	Common Name	Status <sup>1</sup>	ECC HCP Covered (C) or No-Take (N)	Associated land cover type <sup>2</sup>	Typical Habitat or Physical Conditions if known <sup>2</sup>	Typical Blooming Period	Suitable Land Cover Type Present	2018 Survey Results
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat	1B.1	N	Annual grassland Chaparral and scrub	Ecotone of grassland and chaparral/scrub	April to September	No, surveys not required	Not observed, no suitable habitat present
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy	1B.1	N	Annual grassland	Annual grasslands in clay soils. A very rare plant known only to occur in San Luis Obispo and Alameda Counties.	March to April	Yes, surveys required	Not observed during appropriately-timed rare plant surveys
<i>Extriplex joaquinana</i>	San Joaquin spearscale	1B.2	C	Alkali grassland Alkali wetland	Meadows in valley grassland and shadscale scrub	April to October	No, surveys not required	Not observed, no suitable habitat present
<i>Helianthella castanea</i>	Diablo helianthella	1B.2	C	Chaparral and scrub Oak savanna Oak woodland	Elevations generally above 650 feet	March to June	No, surveys not required	Not observed, no suitable habitat present
<i>Hesperolinon breweri</i>	Brewer's dwarf flax	1B.2	C	Annual grassland Chaparral and scrub Oak savanna Oak woodland	Generally, restricted to grassland areas within a 500+ buffer from oak woodland and/or chaparral/scrub	May to July	No, surveys not required	Not observed, no suitable habitat present
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE; 1B.1	N	Alkali grassland Alkali wetland Annual grassland Seasonal wetland	Generally found in vernal pools	March to June	No, surveys not required	Not observed, no suitable habitat present
<i>Madia radiata</i>	Showy madia	1B.1	C	Annual grassland Oak savanna Oak woodland	Primarily occupies open grassland or grassland on edge of oak woodland	March to May	Yes, surveys required	Not observed during appropriately-timed rare plant surveys
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum	1B.1	N	Alkali grassland	Alkali soils in low hills	March to April	No, surveys not required	Not observed, no suitable habitat present

<sup>1</sup>Federal Endangered Species Act (FESA) Designations: (FE) Federally Endangered  
California Endangered Species Act (CESA) Designations: (SE) State Endangered  
California Native Plant Society (CNPS) Rare Plant Rank: (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list; Threat Rank: 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened/moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

<sup>2</sup> Source for habitat and land cover types: East Contra Costa County HCP Planning Survey Report Form July 2015, Table 2b; Calflora and Jepson eFlora

## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	FE	SE		1B.1	Cismontane woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Androsace elongata</i> ssp. <i>acuta</i>	California androsace				4.2	Chaparral, Foothill Woodland, Northern Coastal Scrub, Coastal Sage Scrub	Not Expected. No habitat suitable to support this species is present.
<i>Anomobryum julaceum</i>	slender silver moss				4.2	Damp rock and soil outcrops. Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Not Expected. No habitat suitable to support this species is present.
<i>Arabis blepharophylla</i>	coast rockcress				4.3	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Arctostaphylos auriculata</i>	Mt. Diablo manzanita				1B.3	Chaparral (sandstone), Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Arctostaphylos manzanita</i> ssp. <i>laevigata</i>	Contra Costa manzanita				1B.2	Chaparral (rocky)	Not Expected. No habitat suitable to support this species is present.
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale				1B.2	Saline or alkaline. Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy)	Not Expected. No saline or sandy soils suitable to support this species is present.
<i>Atriplex coronata</i> var. <i>coronata</i>	crownscale				4.2	Alkaline, often clay. Chenopod scrub, Valley and foothill grassland, Vernal pools	Low. Annual grassland and clay soils present however alkaline soils, and wet grassland/vernal habitat were not observed.

## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Atriplex depressa</i>	brittlescale				1B.2	Alkaline, clay. Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools	Low. Annual grassland and clay soils present however alkaline soils and vegetation were not observed.
<i>Blepharizonia plumosa</i>	big tarplant				1B.1	Usually clay. Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Calandrinia breweri</i>	Brewer's calandrinia				4.2	Chaparral, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>California macrophylla</i>	round-leaved filaree				1B.2	Cismontane woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern				1B.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Calochortus umbellatus</i>	Oakland star-tulip				4.2	Strong serpentinite affinity, Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.
<i>Campanula exigua</i>	chaparral harebell				1B.2	Chaparral (rocky, usually serpentinite)	Not Expected. No habitat suitable to support this species is present.
<i>Centromadia parryi ssp. condonii</i>	Congdon's tarplant				1B.1	Valley and foothill grassland (alkaline)	Low. Annual grassland is present however alkaline soils were not observed on site.

## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Collomia diversifolia</i>	serpentine collomia				4.3	Chaparral, Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Convolvulus simulans</i>	small-flowered morning-glory				4.2	Clay, serpentinite seeps. Chaparral (openings), Coastal scrub, Valley and foothill grassland	Not Expected. No serpentinite habitat or seeps suitable to support this species was observed.
<i>Cordylanthus nidularius</i>	Mt. Diablo bird's-beak		SR		1B.1	Chaparral (serpentinite)	Not Expected. No habitat suitable to support this species is present.
<i>Cryptantha hooveri</i>	Hoover's cryptantha				1A	Inland dunes, Valley and foothill grassland (sandy)	Not Expected. No sandy habitat suitable to support this species is present.
<i>Delphinium californicum ssp. interius</i>	Hospital Canyon larkspur				1B.2	Chaparral (openings), Cismontane woodland (mesic), Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Dirca occidentalis</i>	western leatherwood				1B.2	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland	Not Expected. No habitat suitable to support this species is present.
<i>Eriastrum erterae</i>	Lime Ridge eriastrum				1B.1	Chaparral (openings or edges)	Not Expected. No habitat suitable to support this species is present.
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat				1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, sandy	Low. Annual grassland is present however sandy habitats were not observed on site.



## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower				4.3	Chaparral, Cismontane woodland, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Eryngium jepsonii</i>	Jepson's coyote thistle				1B.2	Clay, Valley and foothill grassland, Vernal pools	Low. Clay soils and grassland are present however wet grassland/vernal habitats are comprised of dense non-native annual grasses and forbs.
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy				1B.1	Valley and foothill grassland (clay)	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Extriplex joaquinana</i>	San Joaquin spearscale				1B.2	Alkaline. Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland	Low. Annual grassland present but alkaline habitat was not observed.
<i>Fritillaria agrestis</i>	stinkbells				4.2	Chaparral, Valley Grassland, Foothill Woodland, wetland-riparian. Strong affinity to serpentine soil.	Low. Annual grassland present but no serpentinite habitat was observed.
<i>Fritillaria liliacea</i>	fragrant fritillary				1B.2	Often serpentinite. Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.
<i>Galium andrewsii ssp. gatense</i>	phlox-leaf serpentine bedstraw				4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Not Expected. No habitat suitable to support this species is present.
<i>Grimmia torenii</i>	Toren's grimmia				1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Not Expected. No habitat suitable to support this species is present.

## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Helianthella castanea</i>	Diablo helianthella				1B.2	Usually rocky, anoxal soils. Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland	Low. Annual grassland present but rocky, anoxal soils were not observed.
<i>Hesperolinon breweri</i>	Brewer's western flax				1B.2	Usually serpentinite. Chaparral, Cismontane woodland, Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE			1B.1	Mesic. Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools	Low. Annual grassland present however wet grassland/vernal habitats are comprised of dense non-native annual grasses and forbs.
<i>Madia radiata</i>	showy golden madia				1B.1	Cismontane woodland, Valley and foothill grassland	Moderate. Suitable annual grassland habitat with clay soils is present.
<i>Malacothamnus hallii</i>	Hall's bush-mallow				1B.2	Chaparral, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Monardella antonina ssp. antonina</i>	San Antonio Hills monardella				3	Chaparral, Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Monolopia gracilens</i>	woodland woolythreads				1B.2	Serpetinite. Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland	Low. Annual grassland present but no serpentinite habitat was observed.

## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Navarretia gowenii</i>	Lime Ridge navarretia				1B.1	Chaparral	Not Expected. No habitat suitable to support this species is present.
<i>Navarretia heterandra</i>	Tehama navarretia				4.3	Valley and foothill grassland (mesic), Vernal pools	Low. Annual grassland present wet grassland/vernal habitats are comprised of dense non-native annual grasses and forbs.
<i>Navarretia nigelliformis ssp. nigelliformis</i>	adobe navarretia				4.2	Valley and foothill grassland vernally mesic, Vernal pools sometimes	Low. Annual grassland present wet grassland/vernal habitats are comprised of dense non-native annual grasses and forbs.
<i>Navarretia nigelliformis ssp. radians</i>	shining navarretia				1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	Low. Annual grassland present wet grassland/vernal habitats are comprised of dense non-native annual grasses and forbs.
<i>Oenothera deltooides ssp. howellii</i>	Antioch Dunes evening-primrose	FE	FE		1B.1	Inland dunes	Not Expected. No habitat suitable to support this species is present.
<i>Phacelia phacelioides</i>	Mt. Diablo phacelia				1B.2	Chaparral, Cismontane woodland	Not Expected. No habitat suitable to support this species is present.
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup				4.2	Mesic. Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools	Low. Annual grassland present wet grassland/vernal habitats are comprised of dense non-native annual grasses and forbs.

## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		
<i>Sanicula saxatilis</i>	rock sanicle		SR		1B.2	Rocky, talus. Broadleaved upland forest, Chaparral, Valley and foothill grassland	Low. Annual grassland present however rocky/talus habitat was not observed.
<i>Senecio aphanactis</i>	chaparral ragwort				2B.2	Chaparral, Cismontane woodland, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Streptanthus albidus ssp. peramoenus</i>	most beautiful jewelflower				1B.2	Serpentine. Chaparral, Cismontane woodland, Valley and foothill grassland	Low. Annual grassland present however serpentine habitat was not observed.
<i>Streptanthus hispidus</i>	Mt. Diablo jewelflower				1B.3	Rocky. Chaparral, Valley and foothill grassland	Low. Annual grassland present however rocky/chaparral habitat was not observed.
<i>Stuckenia filiformis ssp. alpina</i>	slender-leaved pondweed				2B.2	Marshes and swamps (assorted shallow freshwater)	Not Expected. No habitat suitable to support this species is present.
<i>Triquetrella californica</i>	coastal triquetrella				1B.2	Coastal bluff scrub, Coastal scrub	Not Expected. No habitat suitable to support this species is present.
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum				1B.1	Valley and foothill grassland (alkaline hills)	Low. Alkaline grassland not observed during surveys.
<i>Viburnum ellipticum</i>	oval-leaved viburnum				2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Not Expected. No habitat suitable to support this species is present.

\*Status:

Federal Endangered Species Act (FESA) Designations: (FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed for listing as Endangered, (FPT) Federally Proposed for listing as Threatened, (FPD) Federally proposed for delisting, (FC) Federal candidate species



## APPENDIX B. CNDDDB and Calflora-reported plants within 5 miles of the survey area

Scientific Name**	Common Name	Status*				Habitat	Potential for Occurrence
		FESA	CESA	CDFW	CNPS		

California Endangered Species Act (CESA) Designations: (SE) State Endangered, (ST) State Threatened, (SCE) Candidate Endangered, (SCT) Candidate Threatened, (SR) State Rare.

California Department of Fish and Wildlife (CDFW) Designations:(SSC) Species of Special Concern, (FP) Fully Protected Species

California Native Plant Society (CNPS) Rare Plant Rank: (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list  
Threat Rank: 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened/moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

\*\*Species list developed from CNDDDB Records, IPaC species list and CNPS Rare Plant Inventory. All sources accessed October 2017.

## APPENDIX C. Plants observed in the survey area

Discovery Builders - Oak Creek Canyon Plant Inventory							
Native (N) or Introduced (I)	Scientific Name	Common Name	Family	Survey 1	Survey 2	Survey 3	Survey 4
				20-Apr-18	21-Jun-18	21-Aug-18	2-Oct-18
N	<i>Amaranthus blitoides</i>	prostrate pigweed	Amaranthaceae		X	X	X
N	<i>Amsinckia intermedia</i>	common fiddleneck	Boraginaceae	X			
N	<i>Amsinckia menziesii</i>	Menzie's fiddleneck	Boraginaceae	X			
N	<i>Asclepias fascicularis</i>	narrowleaf milkweed	Apocynaceae			X	
I	<i>Avena barbata</i>	slender wild oat	Poaceae	X			
I	<i>Avena fatua</i>	wild oat	Poaceae	X	X		
I	<i>Bellardia trixago</i>	Mediterranean linseed	Scrophularaceae		X	X	
I	<i>Brassica nigra</i>	black mustard	Brassicaceae	X	X	X	X
I	<i>Brassica rapa</i>	field mustard	Brassicaceae	X	X		
I	<i>Bromus catharticus</i>	rescue grass	Poaceae	X			
I	<i>Bromus diandrus</i>	ripgut brome	Poaceae	X	X		
I	<i>Bromus hordeaceus</i>	soft chess	Poaceae	X	X		
I	<i>Bromus japonicus?</i>	hairy chess	Poaceae		X		
I	<i>Bromus madritensis</i>	foxtail brome	Poaceae	X	X		
N	<i>Calystegia malacophylla</i>	morning glory	Convolvulaceae	X			
N	<i>Calystegia purpurata</i> ssp. <i>purpurata</i>	smooth western morning glory	Convolvulaceae		X		
I	<i>Carduus pycnocephalus</i>	Italian thistle	Asteraceae	X	X		X
I	<i>Carduus tenuiflorus</i>	Slender-flowered thistle	Asteraceae	X	X		
N	<i>Castilleja exserta</i>	purple owl's clover	Orobanchaceae	X			
I	<i>Centaurea calcitrapa</i>	purple star thistle	Asteraceae				X
I	<i>Centaurea iberica</i>	Iberian knapweed	Asteraceae		X		
I	<i>Centaurea melitensis</i>	locote	Asteraceae	X	X	X	X
I	<i>Centaurea solstitialis</i>	yellow star thistle	Asteraceae		X	X	
I	<i>Centromadia fitchii</i>	spikeweed	Asteraceae			X	
I	<i>Chondrilla juncea</i>	skeletonweed	Asteraceae			X	X
I	<i>Cichorium intybus</i>	chicory	Asteraceae		X		
I	<i>Cirsium vulgare</i>	bull thistle	Asteraceae		X		
I	<i>Convolvulus arvensis</i>	field bind weed	Convolvulaceae	X	X	X	X
N	<i>Croton setiger</i>	turkey-mullein	Euphorbiaceae		X	X	X
I	<i>Cynara cardunculus</i>	cardoon	Asteraceae		X		
I	<i>Elymus ponticus</i>	tall wheat grass	Poaceae		X		

## APPENDIX C. Plants observed in the survey area

Discovery Builders - Oak Creek Canyon Plant Inventory							
Native (N) or Introduced (I)	Scientific Name	Common Name	Family	Survey 1	Survey 2	Survey 3	Survey 4
				20-Apr-18	21-Jun-18	21-Aug-18	2-Oct-18
N	<i>Elymus triticoides</i>	beardless wild rye	Poaceae		X	X	
N	<i>Epilobium sp.</i>	willowherb	Onagraceae	X	X	X	X
I	<i>Erodium botrys</i>	longbeak stork's bill	Geraniaceae	X	X		
I	<i>Erodium cicutarium</i>	redstem filaree	Geraniaceae	X	X	X	X
I	<i>Erodium moschatum</i>	white stemmed filaree	Geraniaceae	X			
I	<i>Euphorbia prostrata</i>	prostrate sandmat	Euphorbiaceae			X	X
N	<i>Euphorbia serpyllifolia ssp. serpyllifolia</i>	spurge	Euphorbiaceae		X		
I	<i>Festuca perennis</i>	Italian rye grass	Poaceae	X	X		
I	<i>Foeniculum vulgare</i>	fennel	Apiaceae	X	X	X	X
I	<i>Fraxinus uhdei (?)</i>	Shamel ash	Oleaceae	X	X	X	X
I	<i>Gastidium phleoides</i>	nit grass	Poaceae	X			
I	<i>Geranium dissectum</i>	cutleaf geranium	Geraniaceae	X			
I	<i>Hedypnois cretica</i>	cretanweed	Asteraceae	X			
I	<i>Hirschfeldia incana</i>	short-podded mustard	Brassicaceae		X		
I	<i>Hordeum marinum</i>	seaside barley	Poaceae	X			
I	<i>Hordeum murinum</i>	foxtail barley	Poaceae	X	X		
I	<i>Hordeum vulgare</i>	cultivated, common barley	Poaceae	X			
I	<i>Hypochaeris glabra</i>	smooth cat's ear	Asteraceae	X			
I	<i>Lactuca saligna</i>	willow lettuce	Asteraceae			X	
I	<i>Lactuca serriola</i>	prickly lettuce	Asteraceae	X	X		
I	<i>Lactuca virosa</i>	poison wild lettuce	Asteraceae		X	X	X
N	<i>Lupinus microcarpus</i>	chick lupine	Fabaceae	X			
I	<i>Medicago polymorpha</i>	bur clover	Fabaceae	X			
I	<i>Medicago sativa</i>	alfalfa	Fabaceae	X			
I	<i>Plantago lanceolata</i>	long leaf plantain	Plantaginaceae	X			
N	<i>Quercus douglasii</i>	blue oak	Fagaceae	X	X	X	X
I	<i>Raphanus sativus</i>	wild radish	Brassicaceae	X	X	X	X
I	<i>Robinia pseudoacacia</i>	black locust	Fabaceae	X	X	X	X
I	<i>Rumex crispus</i>	curly dock	Polygonaceae	X	X		
I	<i>Rumex pulcher</i>	fiddle dock	Polygonaceae		X	X	X
I	<i>Salsola tragus</i>	tumbleweed	Chenopodiaceae		X	X	X

## APPENDIX C. Plants observed in the survey area

Discovery Builders - Oak Creek Canyon Plant Inventory							
Native (N) or Introduced (I)	Scientific Name	Common Name	Family	Survey 1	Survey 2	Survey 3	Survey 4
				20-Apr-18	21-Jun-18	21-Aug-18	2-Oct-18
N	<i>Sambucus sp.</i>	elderberry	Adoxaceae	X	X	X	X
I	<i>Schinus molle</i>	Peruvian pepper tree	Anacardiaceae	X	X	X	X
I	<i>Senecio glomeratus</i>	cutleaf burnweed	Asteraceae			X	
I	<i>Silybum marianum</i>	milk thistle	Asteraceae	X			
I	<i>Sinapis arvensis</i>	charlock	Brassicaceae	X	X		
I	<i>Sisymbrium altissimum</i>	tumble mustard	Brassicaceae		X		
I	<i>Sonchus asper</i>	prickly sow thistle	Asteraceae	X	X		
I	<i>Sonchus oleraceus</i>	common sowthistle	Asteraceae	X			
I	<i>Tribulus terrestris</i>	puncture vine	Zygophyllaceae		X		
N	<i>Trichostema lanceolatum</i>	vinegar weed	Lamiaceae		X	X	X
I	<i>Trifolium hirtum</i>	rose clover	Fabaceae	X			
N	<i>Umbellularia californica</i>	California bay laurel	Lauracea	X	X	X	X
I	<i>Urospermum picriodes</i>	Bristly tail seed	Asteraceae		X		
N/I	<i>Washingtonia filifera</i>	California fan palm	Palmaceae	X	X	X	X
I	<i>Xanthium spinosum</i>	spiny cocklebur	Asteraceae		X	X	X



## APPENDIX D. Site Photos



Photo 1. Southwest corner. April 21, 2018. Capay clay soils. Ephemeral wash.



Photo 2. Southwest corner. April 20, 2018. Yellow mustard blooming in ephemeral wash.



## APPENDIX D. Site Photos



Photo 3. View looking up the ephemeral wash. June 21, 2018. Discd.



Photo 4. View looking up the ephemeral wash. August 21, 2018. Discd.



## APPENDIX D. Site Photos



Photo 4. View looking up the ephemeral wash. October 2, 2018. Disced.



Photo 5. Southwest corner from upper hillslope. June 21, 2018. Hillslope is Los Osos clay loam.



## APPENDIX D. Site Photos



Photo 6. Southwest corner. August 21, 2018. Capay clay soils. Ephemeral wash.



Photo 7. Ephemeral drainage. June 21, 2018. Disced. Culvert to the left with silt fencing.



## APPENDIX D. Site Photos



Photo 8. Ephemeral drainage. August 21, 2018. Disced. Culvert to the left with silt fencing.



Photo 9. Lower hillslope parallel to Marsh Creek Road. April 20, 2018. Perkins gravelly loam.



## APPENDIX D. Site Photos



Photo 10. Disked lower hillslope parallel to Marsh Creek Road. June 21, 2018. Perkins gravelly loam.



Photo 11. Disked lower hillslope parallel to Marsh Creek Road. October 2, 2018. Perkins gravelly loam.



## APPENDIX D. Site Photos



Photo 11. Main survey area on hillslopes. April 20, 2018. Los Osos clay loam.



Photo 12. Main survey area on hillslopes. June 21, 2018. Los Osos clay loam.



## APPENDIX D. Site Photos



Photo 13. Main survey area on hillslopes east of water tank. June 21, 2018. Los Osos clay loam.



Photo 14. Main survey area on hillslopes east of water tank. August 21, 2018. Los Osos clay loam.



## APPENDIX D. Site Photos



Photo 15. Main survey area on hillslopes east of water tank. August 21, 2018. Los Osos clay loam and Perkins gravelly loam.



Photo 15. Main survey area on hillslopes east of water tank. August 21, 2018. Los Osos clay loam.



4061 Port Chicago Highway Suite H  
Concord, CA 94520  
(925) 682-6419 Phone  
(925) 689-2047 Fax

## TRANSMITTAL

TO: City of Clayton  
60 Heritage Trail  
Clayton, CA 94517-1250

DATE: 12-13-2019

**RECEIVED**

**DEC 13 2019**

CITY OF CLAYTON  
COMMUNITY DEVELOPMENT DEPT.

ATTENTION: David Woltering

RE: Oak Creek Canyon

WE ARE FORWARDING THE FOLLOWING:

QUANTITY	DATE	DESCRIPTION
3 sets		Arborist Report 10-10-2019
3 sets		24 x 36 Arborist Tree Protection Plan
3 sets		Applicant response letter to city staff comment letter dated 8-14-2019

DELIVERED VIA: Hand delivered by Kevin English

US MAIL

TRANSMITTED AS INDICATED BELOW:

FOR YOUR USE

COMMENTS:

  
**Kevin English**  
Director of Forward Planning & Land Acquisitions

Cc:





October 10, 2019

West Coast Homebuilders, Inc.  
4061 Port Chicago Hwy Suite H  
Concord, CA 94520  
Attn: Kevin English  
925-682-6419 | [kenglish@discoverybuilders.com](mailto:kenglish@discoverybuilders.com)

**RECEIVED**

**DEC 13 2019**

CITY OF CLAYTON  
COMMUNITY DEVELOPMENT DEPT.

**Re: Arborist Report for Oak Creek Canyon, Marsh Creek Road & Diablo Parkway, Clayton**

Dear Kevin,

This arborist report addresses the proposed subdivision for the property at Marsh Creek Road & Diablo Parkway, APN 119-070-008. Per the City of Clayton's Tree Protection Ordinance Chapter 15.70, the scope of work includes:

- Tag, identify and measure trees with a single trunk or multiple trunks with a cumulative diameter of 6" or greater at 4.5' above grade, on or overhanging the property within 50' of proposed improvements.
- Note trees that are considered protected per city ordinance, defined as any tree of the following species: Ash (*Fraxinus dipetala*), Bay (*Umbellularia californica*), Box Elder (*Acer negundo*), Buckeye (*Aesculus californica*), Cherry (*Prunus emarginata*, *P. ilicifolia*, *P. subcordata*), Cottonwood (*Populus fremontii*), Elderberry (*Sambucus mexicana*), Hop Tree (*Ptelea crenulata*), Madrone (*Arbutus menziesii*), Maple (*Acer macrophyllum*), Oak (*Quercus agrifolia*, *Q. chrysolepis*, *Q. douglasii*, *Q. kelloggii*, *Q. lobata*, *Q. wislizeni*), Sycamore (*Platanus racemosa*), Walnut (*Juglans hindsii*)
- Identify dripline locations and tree numbers on site plan.
- Assess individual tree health and structural condition.
- Assess proposed improvements for potential encroachment.
- Based on proposed encroachment, tree health, structure, and species susceptibility, make recommendations for preservation.

**Project Summary**

The property is an undeveloped hilly site at the outskirts of Clayton (Figure 1). Current vegetation is consistent with the native hillsides of our region, consisting of annual grasses, weeds, with scattered trees. Existing improvements include asphalt paving, curbs & gutters, and water lines from the Contra Costa County Water District (CCCWD) property to the street.

A new subdivision will be constructed on the east half of the property, in addition to a new path parallel to Marsh Creek Road. Proposed V & J ditches may also affect two trees on the water district property.



Figure 1. The property is vacant and relatively clear of trees.

I included twenty-one (21) trees in my tree inventory. None are considered protected trees per city ordinance, though there are native oaks located in the CCCWD property and on the hillside far above the proposed subdivision. It is my opinion that nine (9) trees will need to be removed to accommodate the proposed project (Figure 2), seven (7) of which are notoriously weedy trees of heaven. The remaining twelve (12) trees can be retained given that the protection measures within this report are followed.

#### Assumptions & Limitations

This report is based on my site visit on 9/30/19, and vesting tentative map by Isakson & Associates, Inc. dated 9/5/19. It was assumed that the trees and proposed improvements were accurately surveyed. Off-site trees were not surveyed, so I approximately located them on the tree protection plan based on visual estimates of their locations.

The health and structure of the trees were assessed visually from ground level. No drilling, root excavation, or aerial inspections were performed. Internal or non-detectable defects may exist and could lead to part or whole tree failures. Due to the dynamic nature of trees and their environment, it is not possible for arborists to guarantee that trees will not fail in the future.



Figure 2. Two black locusts will need to be removed for a proposed path.

#### Tree Inventory & Assessment Table

#s: Each tree was given a number from #41-61 (off-site trees were not physically tagged). Their locations are given in the tree protection plan.

**DBH** (Diameter at Breast Height): Trunk diameters in inches were calculated from the circumference measured at 4.5' above average grade.

#### Health & Structural Condition Rating

**Dead:** Dead or declining past chance of recovery.

**Poor (P):** Stunted or declining canopy, poor foliar color, possible disease or insect issues. Severe structural defects that may or may not be correctable. Usually not a reliable specimen for preservation.

**Fair (F):** Fair to moderate vigor. Minor structural defects that can be corrected. More susceptible to construction impacts than a tree in good condition.

**Good (G):** Good vigor and color, with no obvious problems or defects. Generally more resilient to impacts.

**Very Good (VG):** Exceptional specimen with excellent vigor and structure. Unusually nice.

#### Age

**Young (Y):** Within the first 20% of expected life span. High resiliency to encroachment.

**Mature (M):** Between 20% - 80% of expected life span. Moderate resiliency to encroachment.

**Overmature (OM):** In >80% of expected life span. Low resiliency to encroachment.

**DE:** Dripline Encroachment (X indicates encroachment)

**CI:** Anticipated Construction Impact (L = Low, M = Moderate, H = High)



#	Species	DBH	Health	Structure	Dripline N E S W				Age	DE	CI	Comments	Action
41	Black locust ( <i>Robinia pseudoacacia</i> )	6	P	P	8	8	8	10	OM	X	H	4 of 5 stems dead. Major decay in remaining stem; girdled by barbed wire. 6" west of existing asphalt. Proposed path up to trunk.	Remove.
42	Black locust	14, 17	G-F	F-P	10	0	15	15	M	X	H	Co-dominant trunks. Sided for power line clearance. Barbed wire girdling stem. Asphalt road right up to trunk; trunk flare buried. Decay between stems. Proposed path up top trunk.	Remove.
43	Mexican fan palm ( <i>Washingtonia robusta</i> )	20	G	G	4	4	4	4	Y	X	M	DBH estimated due to dense skirt of dead fronds. Trunk pushing against fence. 10' clear trunk. Proposed path 2' from trunk.	Provide 2' additional clearance from path, install temporary protection fencing.
44	Tree of heaven ( <i>Ailanthus altissima</i> )	8.5, 12.5, 7, 6	F-P	F-P	15	18	18	15	M	X	H	Multiple stems at 2'. Barbed wire girdling smallest stem. Wire fence engulfed in lower trunk. 7' from proposed path. Notoriously weedy species.	Remove. Treat stumps with systemic herbicide.
45	Tree of heaven	4, 4	F	F	15	15	0	0	Y		L-M	Co-dominant stems at 1'. Stunted growth. Notoriously weedy species. 5' from proposed path.	
46	Tree of heaven	6.5, 6	F	F	10	15	10	10	M	X	H	Co-dominant stems at 3' with included bark. Barbed wire starting to embed into trunk. Notoriously weedy species. In proposed path.	
47	Tree of heaven	5, 6.5	F	P	0	20	0	0	Y	X	H	Recent large branch failure at attachment point. Notoriously weedy species. 2' from proposed path.	
48	Tree of heaven	3.5, 4.5	F	F-P	18S				Y	X	H	Co-dominant trunks. All canopy to S. Notoriously weedy species. In proposed path.	
49	Tree of heaven	15.5	F	VP	20	20	20	20	M	X	M-H	Co-dominant stems at 3.5' with severe included bark; again at 5' with serious included bark. Notoriously weedy species. 5' from proposed path.	
50	Tree of heaven	10.5, 10	F	F-P	15	0	18	10	M	X	H	Co-dominant stems at 1.5'; one with large failure of secondary co-dominant stem. Notoriously weedy species. In proposed path.	

#	Species	DBH	Health	Structure	Dripline			Age	DE	CI	Comments	Action
					N	E	S	W				
51	Eucalyptus ( <i>Eucalyptus</i> sp.)	2.5, 4, 2	F	F	0	6	8	6	Y	L	Off-site, no tag, DBH estimated; not surveyed. Foliage half brown half chewed. Phototropic lean. Clear of construction.	None.
52	Eucalyptus	6, 3	G-F	F	0	8	10	10	Y	L	Off-site, no tag, DBH estimated; not surveyed. Trunk cankers. Clear of construction.	None.
53	Eucalyptus	8	G-F	G-F	6	8	10	8	Y	L	Off-site, no tag, DBH estimated; not surveyed. Clear of construction.	None.
54	Eucalyptus	6.5, 4, 3.5	G-F	F	6	6	10	12	M	L	Off-site, no tag, DBH estimated; not surveyed. Co- dominant stems at 1'. Moderate chewing damage of leaves. Clear of construction.	None.
55	Italian stone pine ( <i>Pinus</i> <i>pinea</i> )	14, 17	G	G	10	12	18	20	M	L	Off-site, no tag, DBH estimated; not surveyed. Co- dominant stems at 3'. Trunk with minor lean down slope, partially corrected. Clear of construction.	None.
56	Eucalyptus	11	F	F	0	6	10	10	M	L	Off-site, no tag, DBH estimated; not surveyed. Decent structure in lower trunk; co-dominant stems at 8'. Clear of construction.	None.
57	Eucalyptus	19	F-P	F	20	8	20	18	M	L	Off-site, no tag, DBH estimated; not surveyed. More elongated scaffolds to S. Slightly sparse canopy. Clear of construction.	None.
58	Eucalyptus	15, 8	F	F	20	15	20	8	M	L	Off-site, no tag, DBH estimated; not surveyed. Elongated / large diameter scaffolds; decent single trunk. Small woody roots visible outside fence area. Clear of construction.	None.
59	Silver dollar gum ( <i>Eucalyptus</i> <i>polyanthemos</i> )	28	G	F-P	25	25	10	20	M	L	Off-site, no tag, DBH estimated; not surveyed. Multiple co-dominant stems at 8' twisted with included bark. Minor branch failures. Clear of construction.	None.
60	Monterey pine ( <i>Pinus radiata</i> )	30	G-F	G-F	15	15	18	15	M	L- M	Off-site, no tag, DBH estimated; not surveyed. Several 4" roots visible along fence line. Pitch flow may be due to birds/larger insects. 23' N of proposed V ditch.	Install temporary protection fencing.



#	Species	DBH	Health	Structure	Dripline			Age	DE	CI	Comments	Action
					N	E	S	W				
61	Italian stone pine	11, 7, 22	G	F	18	18	18	18	M	X	M	Off-site, no tag. DBH estimated; not surveyed. Multiple trunks. 15' from proposed end of J-ditch. Clearly prune roots $\geq 2"$ diameter if encountered.

#### Tree Encroachment Summary

- Trees that will need to be removed: 41, 42, 44-49, 50 (9 trees)
- Trees to be saved that will be subjected to dripline encroachment: 43, 60, 61 (3 trees)
- Trees to be saved that will not be encroached: 51-59 (9 trees)

#### Discussion

The proposed homes have a minor impact on existing trees, since they are located in open areas. Construction encroachment primarily comes from the proposed paths along the south and east property lines. Two black locusts (#41 & 42, Figure 2) along the east property line will need to be removed. Neither tree is in excellent condition; one is nearly dead and the other has relatively poor structure. Their canopies also conflict with adjacent power lines, and clearance pruning has resulted in lopsided canopies.

The remaining tree removals consist of seven trees of heaven. The species is highly undesirable in both urban and natural habitats due to the following characteristics: can grow anywhere, especially disturbed areas; grows quickly with weak branches and wood; produces abundant quantities of seeds; vigorously re-sprouts from the entire root system if the top is damaged. Ideally, the stumps should be treated with systemic herbicide immediately after the trees are removed. Systemic herbicides will be absorbed into the trees, which will help kill roots and mitigate re-sprouting. Unfortunately, treatment is perhaps 60%-70% effective at best and may require multiple applications.

Two trees on the CCCWD property may be affected by the construction of the proposed J & V ditches. I suspect the Monterey pine (#60) will not be significantly affected, but it's likely that large roots  $\geq 2"$  diameter will be encountered near the Italian stone pine (#61). If large roots are encountered, they should be cleanly pruned with a handsaw or sawzall.

The fan palm (#43, Figure 3) at the southeast corner of the property will be subject to moderate encroachment from the proposed path. Palms differ from trees in that they readily regenerate roots at the base of their trunks, so they tolerate disturbance closer than do trees. I still recommend moving the path a few feet further away to reduce encroachment.

**Recommendations (to be printed on site plans)**

Pre-construction

- Adjust proposed path design to provide 2' additional clearance from tree #43.
- Remove trees #41, 42 & 44-50. Treat stumps with systemic herbicide immediately after removal.
- Prior to construction or grading, contractor shall install fencing to construct a temporary Tree Protection Zone (TPZ) around trees #43 & 60 as indicated on the tree protection plan.
- TPZ fencing shall remain in an upright sturdy manner from the start of grading until the completion of construction. Fencing shall not be adjusted or removed without consulting the project arborist (PA).

Foundation, Grading, and Construction Phase

- If roots  $\geq 2"$  diameter are encountered by tree #61 during construction of the proposed J-ditch, roots shall be cleanly pruned with a handsaw or sawzall.
- Pruning shall be performed by personnel certified by the International Society of Arboriculture (ISA). All pruning shall adhere to ISA and American National Standards Institute (ANSI) Standards and Best Management Practices.
- Should TPZ encroachment be necessary, the contractor shall contact the project arborist (PA) for consultation and recommendations.
- Contractor shall keep TPZs free of all construction-related materials, debris, fill soil, equipment, etc. The only acceptable material is mulch spread out beneath the trees.
- Should any damage to the trees occur, the contractor shall promptly notify the PA to appropriately mitigate the damage.



Figure 3. Proposed path should be adjusted further from the palm tree (#43) to reduce encroachment.

Thank you for the opportunity to provide this report, and please do not hesitate to contact me if there are any questions or concerns.

*Please see attached tree protection plan.*

Sincerely,



Jennifer Tso  
Certified Arborist #WE-10270A  
Tree Risk Assessor Qualified

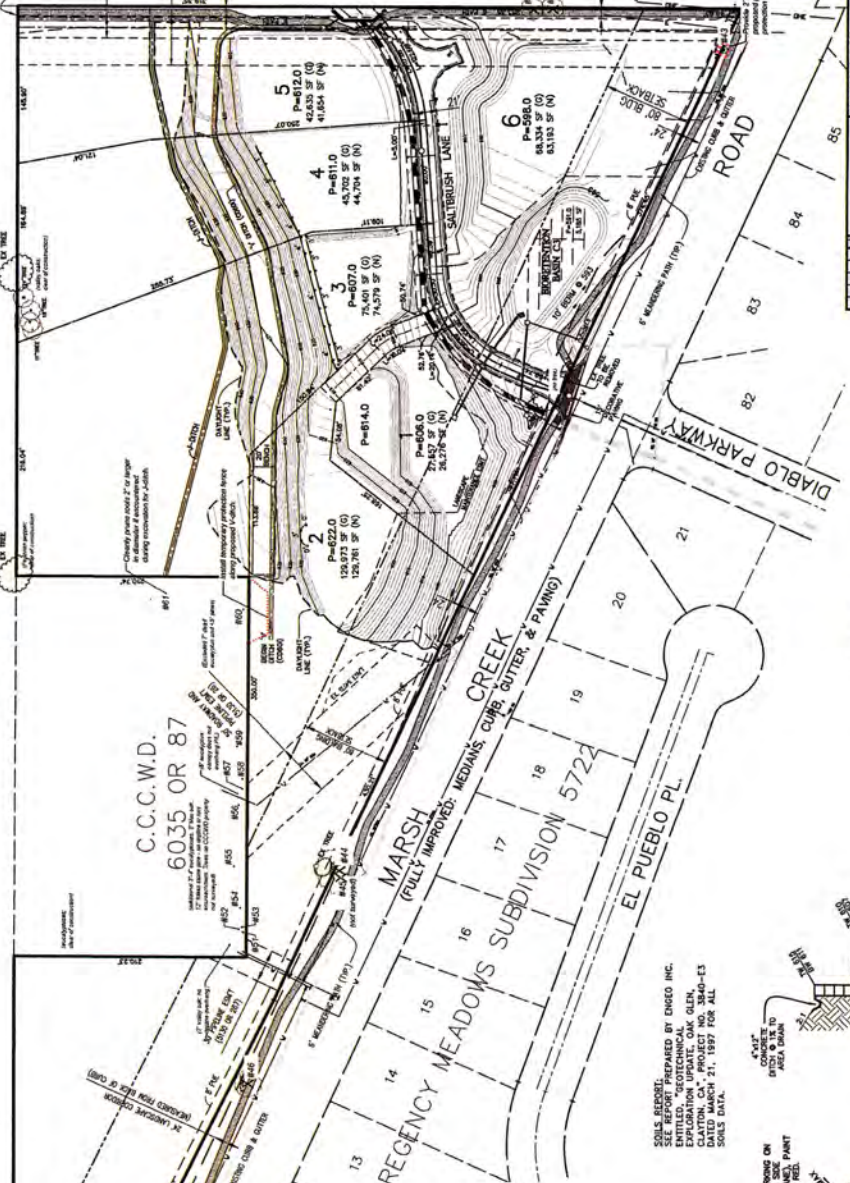
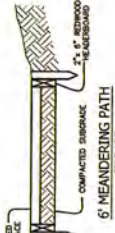


CITY OF CLAYTON  
COUNTY OF CONTRA COSTA  
STATE OF CALIFORNIA

By: Jennifer Tso  
Certified Arborist #WE-10270A  
Traverso Tree Service, Inc.  
October 10, 2019  
(drawn on vesting tentative map)

- PRE-CONSTRUCTION PHASE
- ADJUST PROPOSED PATH DESIGN TO PROVIDE 7' ADDITIONAL CLEARANCE FROM TREE #2
- PREPARE TREE #1, #2, 44-49
- PREPARE TREE #3 AND GRADING CONTRACTOR SHALL INSTALL FENCING TO CONSTRUCT A TEMPORARY TREE PROTECTION ZONE (TTZ) AROUND TREES #43 & 40 AS INDICATED ON THE TREE PROTECTION PLAN
- TTZ FENCING SHALL REMAIN IN AN UPRIGHT STURDY MANNER FROM THE START OF GRADING UNTIL THE COMPLETION OF CONSTRUCTION. FENCING SHALL NOT BE ADJUSTED OR REMOVED WITHOUT CONSULTING THE PROJECT

- \* IF ROOTS 2" DIAMETER ARE COUNTED BY TREE #1 DURING CONSTRUCTION OF THE PROPOSED LOT#1, ROOTS SHALL BE CLEARLY MARKED WITH A HANDSAW OR SAWZALL.
- \* CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CERTIFICATES, CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), ALL PRUNING SHALL BE IN ACCORDANCE WITH THE STANDARDS AND PRACTICES OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) AND AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
- \* CONTRACTOR SHALL FOLLOW ALL CITY, STATE AND FEDERAL STANDARDS AND BEST MANAGEMENT PRACTICES.
- \* SHOULD TREE ENRICHMENT BE NECESSARY, THE CONTRACTOR SHALL SUBMIT A TREE ENRICHMENT PLAN FOR CONSULTATION AND RECOMMENDATIONS.
- \* CONTRACTOR SHALL KEEP TYPES FREE OF ALL CONSTRUCTION RELATED MATERIALS, DEBRIS, FILL, SOIL, EQUIPMENT, ETC. THE ONLY ACCEPTABLE MATERIAL IS MULCH SPREAD OUT BENEATH THE TREES.
- \* CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING TREES AND PLANTS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES AND PLANTS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES AND PLANTS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES AND PLANTS.



- LEGEND
- 3
- P=10.5
- LOT NUMBER
- PAID ELEVATION
- SANITARY SINKER
- STORM DRAIN WITH
- STORM DRAIN WITH
- SANITARY SINKER
- DIRECTION OF FLOW
- OLE LINE
- WATER LINE
- DAYLIGHT LINE
- GRADE BREAK
- NEW AC PAVING

SUBROVISION 66268		VESTING TENTATIVE MAP		OAK CREEK CANTON	
CLAYTON		CENTRAL COSTA COUNTY		CALIFORNIA	
		<b>Isakson &amp; Assoc. Inc.</b> engineering & surveying civil land 2100 W. BLISS AVE. SUITE 200 CLAYTON, CA 94520			
DATE	09-05-11	FOUNDED	DO	200004	1 OF 1