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## **Appendix D**

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# Biological Resources Assessment

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## The Preserve Development

Rancho Cordova, California

**Prepared For:**

Winn Communities, Inc.

July 27, 2021

**SUPERSEDED**

December 13, 2019



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## **LIST OF ACRONYMS AND ABBREVIATIONS**

|         |   |
|---------|---|
| AMM     | SSHCP Avoidance and Minimization Measure        |
| ARP     | SSHCP Aquatic Resources Program                 |
| BA      | Biological assessment                           |
| BCC     | Birds of conservation concern                   |
| BO      | Biological opinion                              |
| BRA     | Biological resources assessment                 |
| CDFW    | California Department of Fish and Wildlife      |
| CEQA    | California Environmental Quality Act            |
| CFR     | Code of Federal Regulations                     |
| CNDDB   | California Natural Diversity Database           |
| CNPS    | California Native Plant Society                 |
| CRPR    | California Rare Plant Rank                      |
| CWA     | Clean Water Act                                 |
| CWR     | Clean Water Rule                                |
| dsh     | Diameter at standard height                     |
| EPA     | Environmental Protection Agency                 |
| ESA     | Endangered Species Act                          |
| ITP     | Incidental Take Permit                          |
| MBTA    | Migratory Bird Treaty Act                       |
| MSL     | Mean sea level                                  |
| NMFS    | National Marine Fisheries Service               |
| NPDES   | National Pollutant Discharge Elimination System |
| NPPA    | Native Plant Protection Act                     |
| NRCS    | Natural Resources Conservation Service          |
| OHWM    | Ordinary high-water mark                        |
| Project | The Preserve Development                        |
| RWQCB   | Regional Water Quality Control Board            |
| SSC     | Species of special concern                      |
| SSHCP   | South Sacramento Habitat Conservation Plan      |

**LIST OF ACRONYMS AND ABBREVIATIONS**

|            |  |
|------------|--|
| Study Area | ±112-acre area including The Preserve Development and offsites |
| TNW        | Traditionally Navigable Water                                  |
| USACE      | U.S. Army Corps of Engineers                                   |
| USC        | U.S. Code  |
| USEPA      | U.S. Environmental Protection Agency                           |
| USFWS      | U.S. Fish and Wildlife Service                                 |
| USGS       | U.S. Geological Survey   |
| WBWG       | Western Bat Working Group                                      |

## 1.0 INTRODUCTION

On behalf of Winn Communities, Inc., ECORP Consulting, Inc. conducted a biological resources assessment (BRA) for a ±112-acre Study Area for The Preserve Development (Project), a proposed project located in Rancho Cordova, Sacramento County, California. The Study Area includes the 98.92-acre Project area, as well as potential Offsite areas totaling 13.16 acres. In this document the Offsite areas are referred to as the Rio del Oro Offsite (located to the west of the Project), the Raymer Way Offsite (located to the east of the Project), the Morrison Creek Offsite (located to the north of the Project around an existing crossing of Morrison Creek), and the North Douglas Offsites (road stubs located to the south of the Project). Representative photographs of the Study Area are provided as Attachment A.

### 1.1 Study Area Location

The Study Area is located to the west of Raymer Way and Grant Line Road in Rancho Cordova, California. The Study Area corresponds to an unsectioned portion of the Rio de los Americanos Land Grant within the "Buffalo Creek, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1980) (Figure 1. *Study Area Location and Vicinity*). The approximate center of the site is located at 38.574614° North and -121.196708° West within the Lower Sacramento Watershed (Hydrologic Unit Code #18020163, USGS 2016).

### 1.2 Purpose of this Biological Resources Assessment

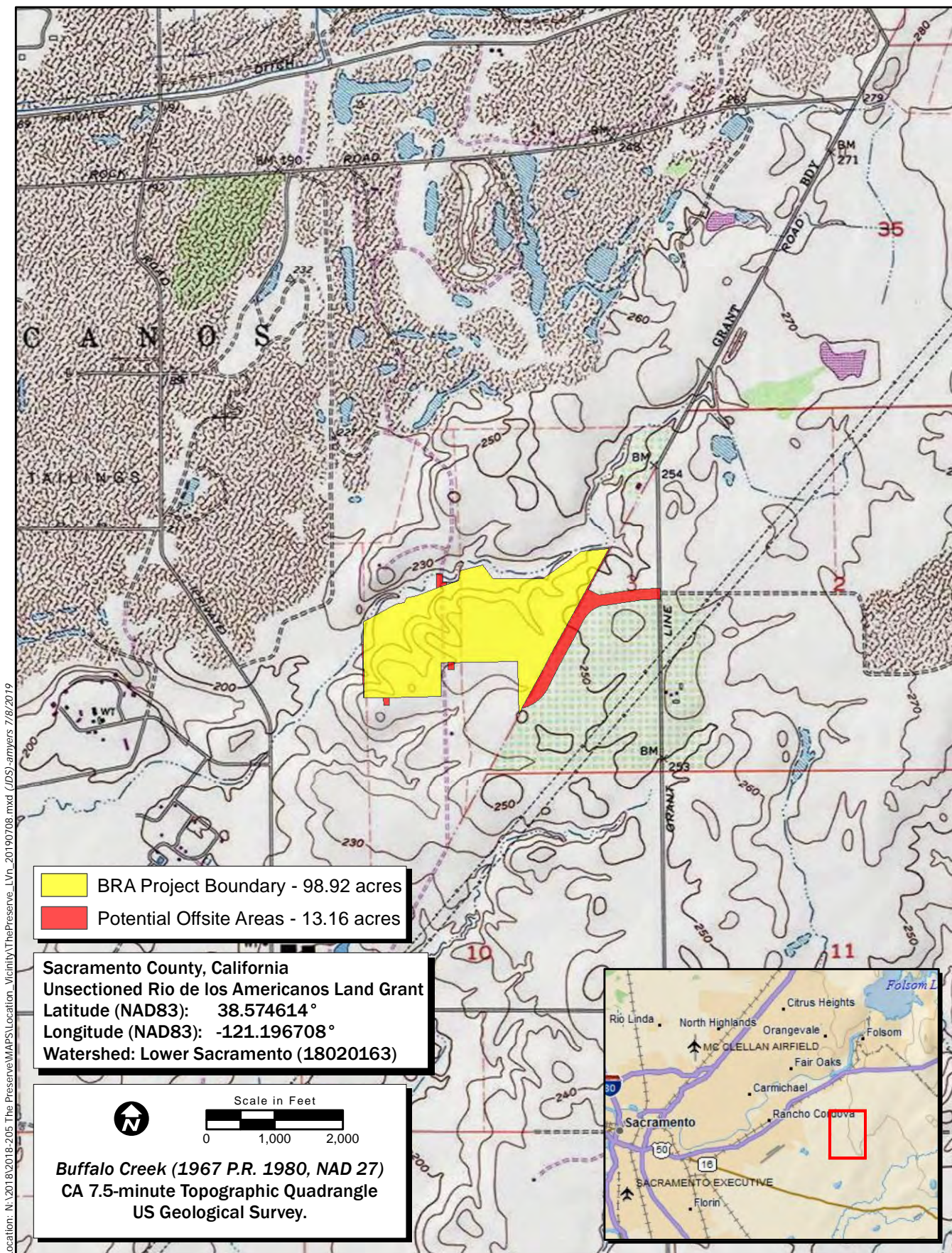
The purpose of this BRA was to collect information on the biological resources present or with the potential to occur in the Study Area, to provide an analysis of potential Project impacts on these resources, and to recommend mitigation measures. This BRA is intended to support preparation of an environmental document pursuant to the California Environmental Quality Act (CEQA), and to support an application for a South Sacramento Habitat Conservation Plan (SSHCP) Permit.

### 1.3 Project Description

The Project is a residential development containing approximately 434 lots, parks, and open spaces including a trail system, residential and collector streets, and stormwater management infrastructure.

An open space trail system and parks are located immediately south of Morrison Creek as a buffer between the creek and the proposed residential neighborhood.





Location: N:\2018\2018-205 The Preserve\MAPS\Location\_Vicinity\ThePreserve\_VLn\_20190708.mxd (JDS)-amyers 7/8/2019

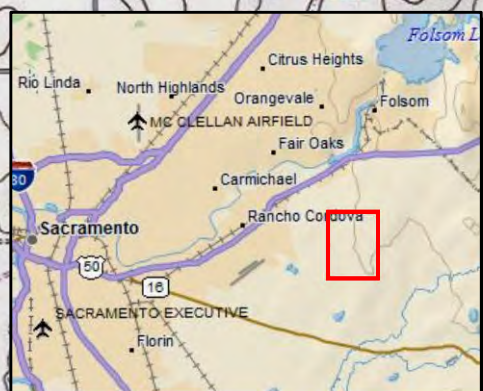
- BRA Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

**Sacramento County, California**  
**Unsectioned Rio de los Americanos Land Grant**  
**Latitude (NAD83): 38.574614°**  
**Longitude (NAD83): -121.196708°**  
**Watershed: Lower Sacramento (18020163)**

Scale in Feet

0      1,000      2,000

**Buffalo Creek (1967 P.R. 1980, NAD 27)**  
**CA 7.5-minute Topographic Quadrangle**  
**US Geological Survey.**



Map Date: 7/8/2019  
 iService Layer Credits: Copyright© 2013 National Geographic Society, i-cubed  
 Copyright:(c) 2018 Garmin

**Figure 1. Study Area Location and Vicinity**

The Project will offer a variety of housing choices that will be consistent with the Medium Density Residential General Plan designation, which allows for small lot single-family homes. The Project has a compact urban design that allows for less land to be developed than typical large lot developments, creating a more efficient land use pattern. The Project would build out to the eastern boundary of the City, which was forecasted in the General Plan as the Grant Line West Planning Area. This location allows for connection to existing infrastructure, reducing the impact footprint and need for offsite improvements. The circulation pattern of the project was designed to utilize the aesthetic views of Morrison Creek while keeping safe vehicular patterns in conjunction with inviting and enhanced pedestrian routes. The Project will have four points of access: two points from Raymer Way, one point from Thornberg Way, and one point from the extension of Edington Drive.

### **1.3.1 Project Offsites**

An offsite area along Raymer Way (Raymer Way Offsite) has been included in this assessment in anticipation that future improvements to the roadway may be required to support the Project. In addition, there are four other potential offsite areas described in this assessment as the Morrison Creek Offsite, North Douglas Offsites, and Rio del Oro Offsite. Within the Morrison Creek Offsite, an existing berm to the east of a gravel road crossing Morrison Creek is proposed to be removed to minimize flooding of the adjacent areas during 100-year storms. The North Douglas Offsites are the locations of future roadway connections to the existing North Douglas Project. Within the Rio del Oro Offsite, a small amount of grading may be required in association with the slopes at the western side of the Project. The Rio del Oro Offsite is located entirely within a disc'd firebreak on the Rio del Oro property.

## **2.0 REGULATORY SETTING**

### **2.1 Federal Regulations**

#### **2.1.1 Endangered Species Act**

The Endangered Species Act (ESA) protects plants and animals that are listed as endangered or threatened by U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits, without authorization, the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in any other area in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals and funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion (BO), USFWS and NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of ESA provides for the issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.



Permitting under the SSHCP, which was developed pursuant to Section 10 of the ESA, allows for take authorization of certain Covered Species through a streamlined permitting process. The SSHCP is discussed further in Section 2.5.8.

### **Critical Habitat**

Critical Habitat is defined in Section 3 of ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and
2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features essential to the conservation of the species (16 USC 1533). Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

1. Space for individual and population growth and for normal behavior;
2. Food, water, air, light, minerals, or other nutritional or physiological requirements;
3. Cover or shelter;
4. Sites for breeding, reproduction, or rearing (or development) of offspring; and
5. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

#### **2.1.2 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State

of California has incorporated the protection of non-game birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

### **2.1.3 Clean Water Act**

The federal Clean Water Act's (CWA's) purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "Waters of the U.S." without a permit from the U.S. Army Corps of Engineers (USACE). The Clean Water Rule (CWR) was published in April 2015, but implementation of the rule was stayed until July 2018. It is currently (2018) in effect for California and a few other states. The CWR defines which features are considered Waters of the U.S. (and thus subject to the CWA). The CWR defines Waters of the U.S. as features having a significant effect on the chemical, physical, or biological integrity of a Traditional Navigable Water (TNW), interstate water, or territorial seas. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency (USEPA) also has authority over wetlands, including the authority to veto permits issued by USACE under CWA Section 404(c).

Projects involving activities that have no more than minimal individual and cumulative adverse environmental effects may meet the conditions of one of the Nationwide Permits already issued by USACE (Federal Register 82:1860, January 6, 2017). If impacts on wetlands could be substantial, an individual permit is required. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB). The SSHCP includes an Aquatic Resources Program (ARP) to allow for streamlined permitting pursuant to CWA Sections 404 and 401. The SSHCP is discussed further in Section 2.5.8.

## **2.2 State and Local Regulations**

### **2.2.1 California Endangered Species Act**

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the state as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful projects under permits issued by California Department of Fish and Wildlife (CDFW). Permitting under the SSHCP provides take authorization of certain Covered Species through a streamlined permitting process. The SSHCP is discussed further in Section 2.5.8.

### **2.2.2 Fully Protected Species**

The State of California first began to designate species as “fully protected” prior to the creation of the federal and the California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing incidental take permits for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan (NCCP) within which such species are covered. The SSHCP is not an approved NCCP; however, it is consistent with California Fish and Game Code sections related to fully protected species, and SSHCP Covered Species include some fully protected species. The SSHCP is discussed further in Section 2.5.8.

### **2.2.3 Native Plant Protection Act**

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to “preserve, protect and enhance rare and endangered plants in this state.” The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as “endangered” or “rare”. The NPPA prohibits the take of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA, but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.

### **2.2.4 California Fish and Game Code Special Protections for Birds**

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds.

Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.

Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.



Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests

Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic non-native species, or any part of these birds.

Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

### ***2.2.5 Lake or Streambed Alteration Agreements***

Section 1600-1616 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the Lake or Streambed Alteration Agreement. The SSHCP complies with Sections 1600-1616 of the California Fish and Game Code. The SSHCP is discussed further in Section 2.5.8.

### ***2.2.6 Porter-Cologne Water Quality Act***

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities. The SSHCP's ARP allows for streamlined permitting pursuant to the CWA and complies with the Porter-Cologne Water Quality Act. The SSHCP is discussed further in Section 2.5.8.

### ***2.2.7 California Environmental Quality Act***

In accordance with CEQA Guidelines § 15380, a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria include definitions similar to definitions used in ESA, the California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under ESA, the California ESA, or NPPA, but that may meet the

definition of endangered, rare, or threatened. Animal species identified as species of special concern (SSC) by CDFW, and plants identified by the California Native Plant Society (CNPS) as rare, threatened, or endangered may meet the CEQA definition of rare or endangered. The SSHCP is consistent with CEQA. The SSHCP is discussed further in Section 2.5.8.

### Species of Special Concern

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA, or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role;
- The species is listed as federally (but not state) threatened or endangered, or meets the state definition of threatened or endangered but has not formally been listed;
- The species has or is experiencing serious (nonscyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status;
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status; and
- SSC are typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

### U.S. Fish and Wildlife Service Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA.” To meet this requirement, USFWS published a list of birds of conservation concern (BCC) (USFWS 2008) for the United States. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS’s highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

### Sensitive Natural Communities

The CDFW maintains the *California Natural Community List* (CDFW 2018a), which provides a list of vegetation alliances, associations, and special stands as defined in the *Manual of California Vegetation* (Sawyer et al. 2009), along with their respective state and global rarity ranks. Natural communities with a

state rarity rank of 1, 2, or 3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

### California Rare Plant Ranks

The CNPS maintains the *Inventory of Rare and Endangered Plants of California* (CNPS 2018a), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six California Rare Plant Ranks (CRPRs). The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDDB). The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere
- Rare Plant Rank 3 – a review list of plants about which more information is needed
- Rare Plant Rank 4 – a watch list of plants of limited distribution

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20-80 percent occurrences threatened/moderate degree and immediacy of threat)
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2018a).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

## California Environmental Quality Act Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, § 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

### **2.2.8 South Sacramento Habitat Conservation Plan**

The SSHCP is a regional effort that provides development and infrastructure projects with streamlined federal and state permitting processes while creating a preserve system to protect habitat, open space, and agricultural lands (County of Sacramento et al. 2018). The SSHCP allows project proponents within the Plan Area to simplify and expedite the state and federal ESA permitting process. In addition to streamlining the ESA permitting processes, a parallel ARP has been developed to address permitting pursuant to the Clean Water Act Section 404 and 401 permitting process. The SSHCP will allow Sacramento County, the City of Rancho Cordova, City of Galt, and the Southeast Connector Joint Powers Authority to receive Incidental Take Permits (ITP) for Covered Species from USFWS and CDFW for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) can extend incidental take coverage provided by the SSHCP ITPs to activities and projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. See [www.southsachcp.com](http://www.southsachcp.com) for more information.

Table 1 provides a list of the SSHCP Covered Species, adapted from Table 1-2 of the SSHCP (County of Sacramento et al. 2018).

| Table 1. SSHCP Covered Species   |         |        |      |
|--|---------|--------|------|
| Scientific Name<br>Common Name   | Status  |        |      |
|  | Federal | State  | CRPR |
| Invertebrates  |         |        |      |
| <i>Lepidurus packardi</i><br>Vernal pool tadpole shrimp                                    | E       | —      | —    |
| <i>Branchinecta lynchi</i><br>Vernal pool fairy shrimp                                     | T       | —      | —    |
| <i>Branchinecta mesovallensis</i><br>Mid-valley fairy shrimp                               | —       | —      | —    |
| <i>Desmocerus californicus dimorphus</i><br>Valley elderberry longhorn beetle              | T       | —      | —    |
| <i>Hydrochara rickseckeri</i><br>Ricksecker's water scavenger beetle                       | —       | —      | —    |
| Amphibians   |         |        |      |
| <i>Ambystoma californiense</i><br>California tiger salamander, (Central Valley population) | T       | T      | —    |
| <i>Spea hammondi</i><br>Western spadefoot  | —       | CSC    | —    |
| Reptiles   |         |        |      |
| <i>Actinemys marmorata</i><br>Western pond turtle  | —       | CSC    | —    |
| <i>Thamnophis gigas</i><br>Giant garter snake  | T       | T      | —    |
| Birds  |         |        |      |
| <i>Accipiter cooperii</i><br>Cooper's hawk   | —       | WL     | —    |
| <i>Agelaius tricolor</i><br>Tricolored blackbird   | BCC     | T      | —    |
| <i>Athene cunicularia hypugaea</i><br>Western burrowing owl                                | BCC     | CSC    | —    |
| <i>Buteo regalis</i><br>Ferruginous hawk   | BCC     | —      | —    |
| <i>Buteo swainsoni</i><br>Swainson's hawk  | BCC     | T      | —    |
| <i>Circus cyaneus</i><br>Northern harrier  | —       | CSC    | —    |
| <i>Elanus leucurus</i><br>White-tailed kite  | —       | CFP    | —    |
| <i>Grus canadensis tabida</i><br>Greater sandhill crane                                    | —       | T; CFP | —    |
| <i>Lanius ludovicianus</i><br>Loggerhead shrike  | BCC     | CSC    | —    |
| Mammals  |         |        |      |
| <i>Lasiurus blossevillii</i><br>Western red bat  | —       | CSC    | —    |

| Table 1. SSHCP Covered Species                                      |         |       |      |
|---|---------|-------|------|
| Scientific Name<br>Common Name                                      | Status  |       |      |
|   | Federal | State | CRPR |
| <i>Taxidea taxus</i><br>American badger                             | —       | CSC   | —    |
| Plants  |         |       |      |
| <i>Downingia pusilla</i><br>Dwarf downingia                         | —       | —     | 2.2  |
| <i>Gratiola heterosepala</i><br>Boggs Lake hedge-hyssop             | —       | E     | 1B.2 |
| <i>Juncus leiospermus</i> var. <i>ahartii</i><br>Ahart's dwarf rush | —       | —     | 1B.2 |
| <i>Legenere limosa</i><br>Legenere                                  | —       | —     | 1B.1 |
| <i>Navarretia myersii</i><br>Pincushion navarretia                  | —       | —     | 1B.1 |
| <i>Orcuttia tenuis</i><br>Slender Orcutt grass                      | T       | E     | 1B.1 |
| <i>Orcuttia viscida</i><br>Sacramento Orcutt grass                  | E       | E     | 1B.1 |
| <i>Sagittaria sanfordii</i><br>Sanford's arrowhead                  | —       | —     | 1B.2 |

Status Definitions

Federal:

- E = Listed as endangered under the federal ESA
- T = Listed as threatened under the federal ESA
- = No federal ESA listing
- BCC = Bird of Conservation Concern, USFWS 2008.

State:

- E = Listed as endangered under state ESA
- T = Listed as threatened under state ESA
- CFP = Fully protected under the California Fish and Game Code
- CSC = Species of special concern in California
- WL = Watch List
- = No state status

California Native Plant Society California Rare Plant Rank (CRPR):

- 1B = Rare, threatened, or endangered in California and elsewhere
- 2 = Rare, threatened, or endangered in California but more common elsewhere

CRPR Threat Ranks

- 0.1 = Seriously threatened in California (high degree/immediacy of threat)
- 0.2 = Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)

### 2.2.9 City of Rancho Cordova Tree Ordinance

The City of Rancho Cordova Tree Ordinance defines Protected Trees as follows:

- Native oak trees – *Quercus lobata*, valley oak; *Quercus wislizenii*, interior live oak; *Quercus douglasii*, blue oak; or *Quercus x. morehus*, oracle oak – having a trunk diameter of at least six inches or greater; or
- Any tree species other than a native oak having a trunk diameter of at least 12 inches or greater on nonresidential property; or
- Any tree species other than a native oak having a trunk diameter of at least 24 inches or greater on residential property; or
- Any tree planted as a requirement tree for site development, tree permit condition, landscape plan removal replacement, or other designated condition by the public works director or planning director.

The City Ordinance defines the methods by which trunk diameter is determined as:

- “Diameter at standard height” or “dsh” means the diameter of a tree measured at four and one-half feet above natural grade, except as specified below. The diameter shall be calculated by using the following formula: diameter equals circumference/3.14.
- For a tree that branches at or below four and one-half feet, dsh means the diameter at the narrowest point between the grade and the branching point.
- For a tree with a common root system that branches at the ground, dsh means the sum of the diameter of the largest trunk and one-half the cumulative diameter of the remaining trunks at four and one-half feet above natural grade.

Trees designated with protected status under the City Ordinance may require additional reporting and planning requirements. The City ordinances require a report, to be prepared by a certified arborist, detailing the preservation, removal, replacement, or relocation of any protected trees prior to the preliminary approval of any parcel map. Protected Trees require a permit from the City of Rancho Cordova if pruning or removal of these trees is necessary.

### 3.0 METHODS

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the ESA;
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under § 15380 of the CEQA Guidelines;
- are identified as a SSC by the CDFW;
- are birds identified as BCC by the USFWS;

- are considered by the CNPS to be "rare, threatened, or endangered in California", "plants about which more information is needed", or "plants of limited distribution – a watch list" (i.e., species with a CRPR of 1B, 2, 3, or 4);
- are plants listed as rare under the NPPA (California Fish and Game Code, § 1900 et seq.);
- are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes); or
- are Covered Species as defined by the SSHCP.

Species that are tracked by the CNDDDB but having no other special status are not considered to be special-status species.

Two different procedures were used to assess the potential for SSHCP Covered Species and species that are not Covered Species to occur within the Study Area. These are described below.

### **3.1 Analysis of SSHCP Covered Species**

SSHCP Modeled Species Habitat data were used to determine which SSHCP Covered Species are considered to have the potential to occur within the Study Area (SSHCP Covered Species are listed in Table 1). Modeled Species Habitat data were obtained from Dudek and no revisions to the extent of Modeled Species Habitat were made by ECORP. Maps of Modeled Species Habitat are presented in Attachment B.

#### **3.1.1 Field Assessment for Covered Species**

Surveys for potential habitat for tricolored blackbird, burrowing owl, Swainson's hawk, other raptors, and western red bat were conducted per requirements of SSHCP Avoidance and Minimization Measures (AMMs) TCB-1, WBO-1, SWHA-1, RAPTOR-1, and BAT-1. The methods used and results of these surveys are described in Attachment C. Information from these surveys was used to determine whether specific potential habitat features (e.g., nesting trees, burrows) for these species were present onsite.

In addition, surveys for special-status plant species were conducted per AMMs PLANT-1 and ORCUTT-1 in spring 2019. The results of these surveys are described in Attachment D.

### **3.2 Analysis of Other Special-Status Species**

#### **3.2.1 Literature Review**

The following resources were queried to determine whether any species other than SSHCP Covered Species have potential to occur within the Study Area.

- CDFW CNDDDB record search for the "Buffalo Creek, California" 7.5-minute quadrangle and the eight surrounding USGS quadrangles (CDFW 2018b);



- USFWS Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2018);
- CNPS' electronic *Inventory of Rare and Endangered Plants of California* was queried for the "Buffalo Creek, California" 7.5-minute quadrangle and the eight surrounding USGS quadrangles (CNPS 2018a).

### 3.2.2 *Field Assessment for Other Species*

Several surveys were conducted by ECORP biologists during fall 2018 and spring 2019. During these surveys, the Study Area was walked on foot where accessible, and topographic maps and aerial imagery were referenced. The Raymer Way Offsite was observed from the publicly accessible roadway, and the Rio del Oro Offsite was observed from within the Project.

Biological communities occurring within the Study Area were characterized and the following biological resource information was collected:

- Potential aquatic features (also described separately in the Aquatic Resources Delineation [ECORP 2018]);
- Protected Trees occurring onsite;
- Animal and plant species directly observed;
- Habitat and vegetation communities; and
- Representative photographs of the Study Area, provided as Attachment A.

### 3.2.3 *Evaluation of Special-Status Species*

Based on SSHCP modeled species habitat, species occurrence information from the literature review, and field assessments, a list of special-status plant and animal species considered to have the potential to occur within the Study Area was generated. This list is provided in Attachment E and the potentially occurring species are summarized in Section 4.0.

Each of the species that were considered as potentially occurring within the Study Area or vicinity was evaluated based on the following criteria:

- **Present** - Species was observed during field surveys or is known to occur within the Study Area based on documented occurrences within the CNDDDB, SSHCP, or other literature.
- **Potential to Occur** - Habitat (including soil and elevation requirements) for the species occurs within the Study Area based on site assessment, literature research, or SSHCP Modeled Species Habitat data.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Study Area based on CNDDDB records and other available documentation. This designation is only used for species that are not SSHCP Covered Species.

- **Absent** - No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the Study Area based on CNDDDB records and other documentation, or SSHCP Modeled Species Habitat data does not indicate that habitat for the species occurs within the site.

## 4.0 RESULTS

### 4.1 Site Characteristics and Land Use

The Study Area is situated at an elevation range between approximately 200 and 250 feet above mean sea level (MSL) in Rancho Cordova, California. The Study Area is located in the Great Valley region, Sacramento Valley subregion of the California Floristic Province (Baldwin et al. 2012). This region is characterized by agricultural areas, grasslands, wetlands, and valley oaks (Baldwin et al. 2012). The average annual precipitation for the region is 36.9 inches (with the wettest period during November-March), and average daily temperatures range from 47.7°F in winter to 73.8°F in summer (National Oceanic and Atmospheric Administration [NOAA] 2018).

The Study Area is characterized by flat to gently rolling terrain and consists primarily of grazed annual grasslands with two residences and other outbuildings. A private road, sometimes identified as Douglas Road, leads from south of the Study Area into the two residences.

The Study Area is located within the USFWS Mather Core Area (USFWS 2005a). Core Areas are areas prioritized for the conservation and recovery of threatened and endangered vernal pool species.

### 4.2 Soils

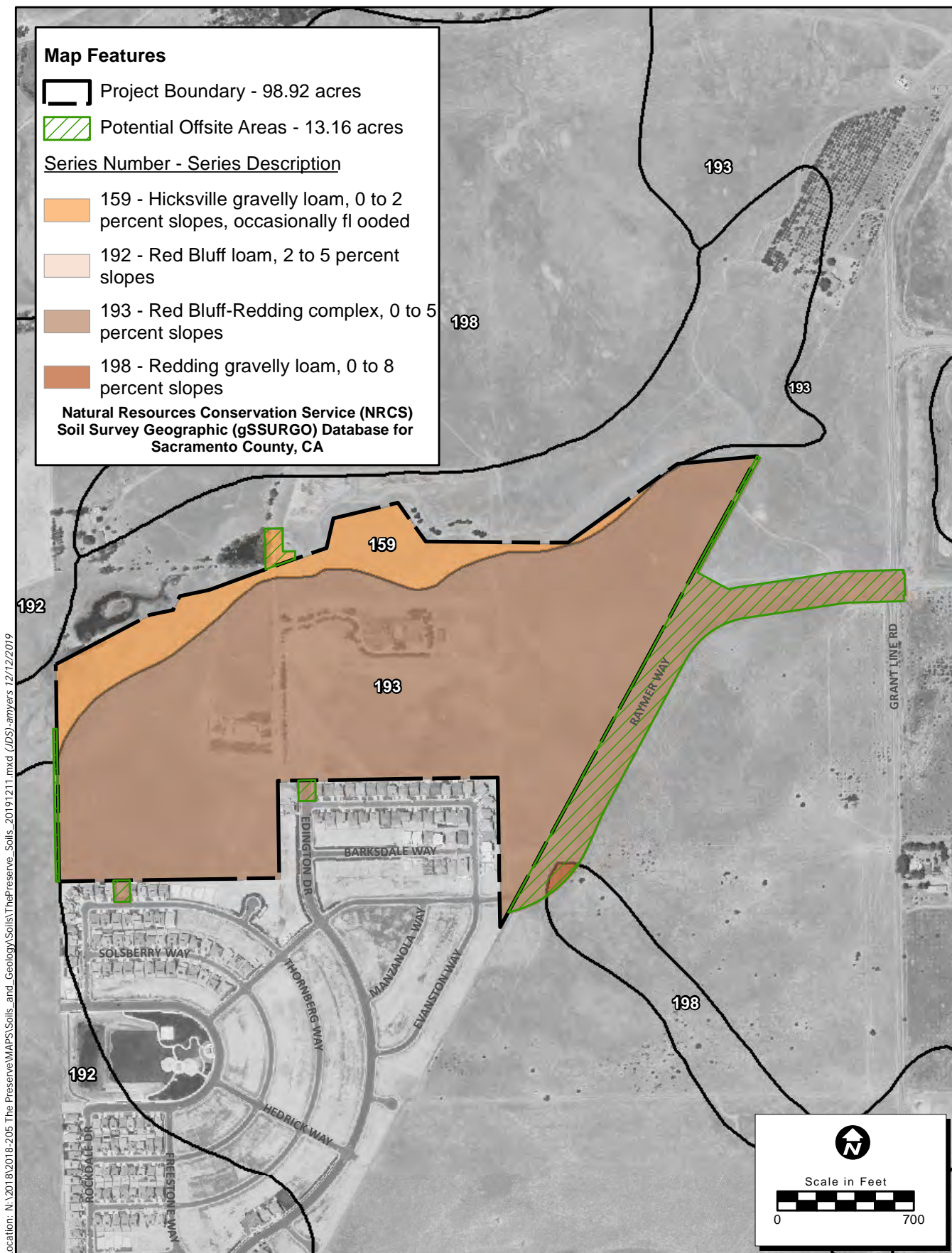
According to the *Web Soil Survey* (NRCS 2018), two soil units, or types, have been mapped within the Study Area (Figure 2. *Natural Resources Conservation Service Soil Types*):

- (159) Hicksville gravelly loam, 0 to 2 percent slopes, occasionally flooded;
- (192) Red Bluff loam, 2 to 5 percent slopes;
- (193) Red Bluff-Redding complex, 0 to 5 percent slopes; and
- (198) Redding gravelly loam, 0 to 8 percent slopes.

Hicksville and Red Bluff soils are formed in alluvium derived from mixed rock sources. Redding soils are formed in gravelly and cobbly alluvium derived from mixed rock sources (NRCS 2018). No soil units derived from serpentinite or other ultramafic parent materials have been reported to occur within the Study Area or its immediate vicinity (NRCS 2018). Furthermore, no apparent inclusions of ultramafic rocks or soils were observed during the June 2018 field survey.

### 4.3 Land Cover Types

SSHCP Land Cover data within the Study Area were reviewed; however, the type and extent of SSHCP Land Cover types was revised to reflect field conditions based on the onsite assessment. Baseline SSHCP



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**Figure 2. Natural Resources Conservation Service Soil Types**

Land Cover data is presented in *Figure 3. Original SSHCP Land Cover*, and a revised Land Cover map is provided as *Figure 4. Revised SSHCP Land Cover*.

### **4.3.1 Terrestrial Land Cover Types**

The SSHCP Land Cover data indicated that the Study Area primarily contains the Valley Grassland land cover type, and the reconnaissance vSisit revised the extent of this land cover type on Figure 4. The Study Area also contains Low Density Development and a small amount of Disturbed land cover.

#### **Valley Grassland**

The Valley Grassland land cover type is predominantly characterized by non-native (naturalized) annual grasses. Within the Study Area, the common plant species found in Valley Grassland are a mixture of nonnative annual grasses, including medusahead grass (*Elymus caput-medusae*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), and brome fescue (*Festuca bromoides*). Narrow tarplant (*Holocarpha virgata*), a native perennial forb, is also common in this land cover type within the Study Area.

#### **Low Density Development**

The Low Density Development land cover type consists of existing homesteads including buildings/structures and horticultural trees. Trees are described further in Section 4.8.

#### **Disturbed/Major Roads**

The Disturbed and Major Roads land cover types consists of disturbed areas, and sections of paved and gravel road within the Study Area.

#### **Major Roads**

Major Roads land cover type consists of Grant Line Road and Raymer Way within the Raymer Way Offsite.

### **4.3.2 Aquatic Land Cover Types**

An aquatic resources delineation was conducted for the Project in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008) and is provided as Attachment F-1. The USACE verified this delineation on May 9, 2019 (Attachment F-2). An Addendum to the delineation has been prepared for the Offsites (Attachment F-3), but has not yet been verified by the USACE as of the date of this assessment.



A total of 4.727 acres of aquatic resources have been mapped within the Study Area, consisting of 4.425 acres within the Project area and 0.302 acre within the Offsites. These include Vernal Pool, Swale, and Stream/Creek land cover types. The Morrison Creek and North Douglas Offsites were included in the aquatic resources delineation for the Project (ECORP 2018a). The Rio del Oro Offsite was delineated and verified by the USACE for the Rio del Oro Project (SPK-1999-00590) and per the verified delineation, no Waters of the U.S. lie within this area. The Raymer Way Offsite has not been formally delineated due to inability to access these areas as of the date of this report; however, roadside ditches were delineated












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### Figure 3. The Preserve Original SSHCP Landcover

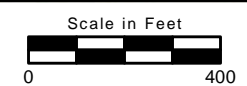
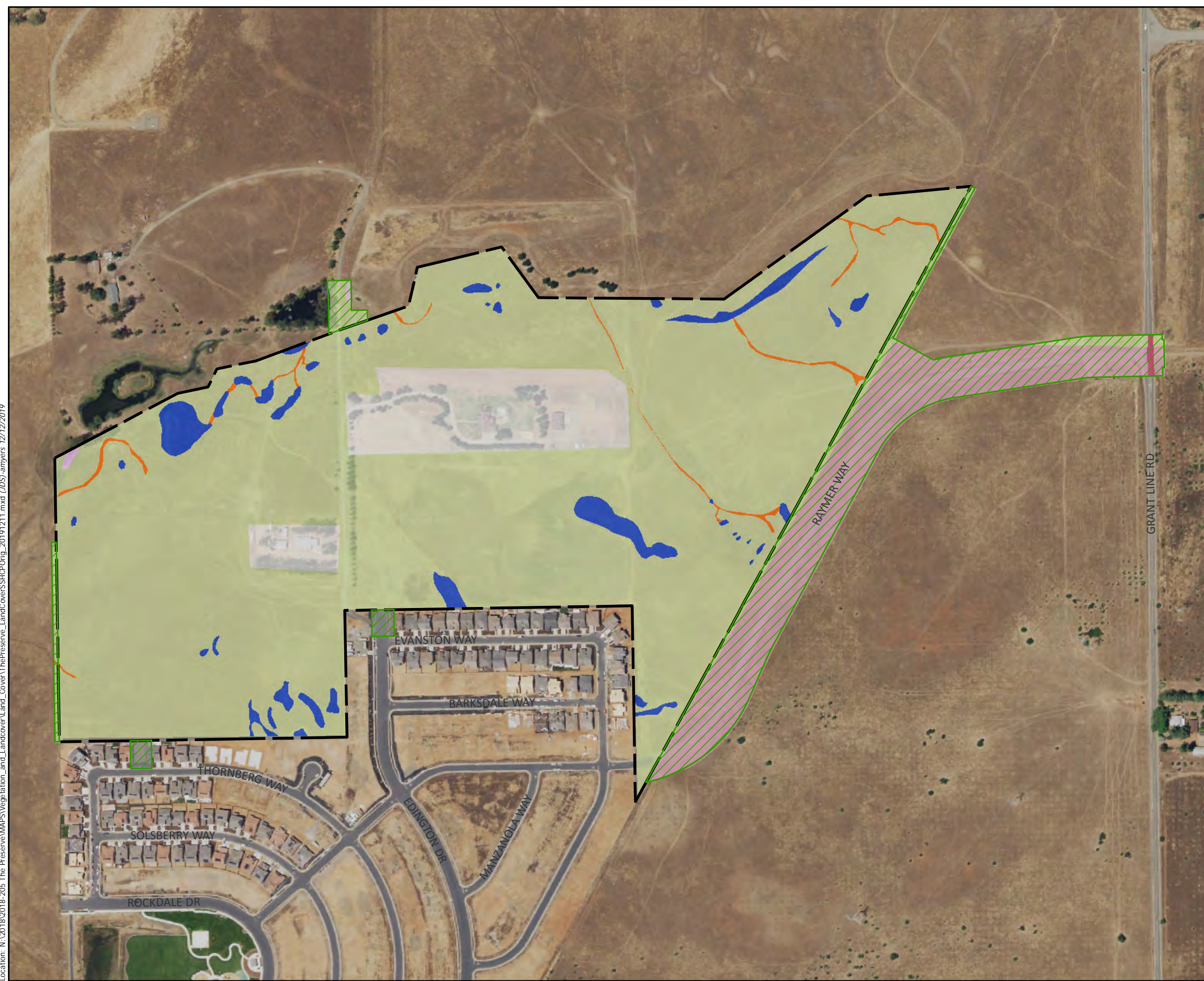
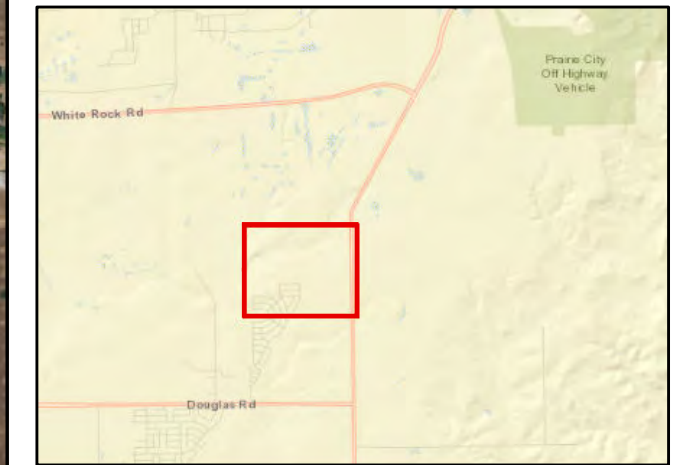
**Map Features**

-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 13.16 acres

**SSHCP Land Cover**

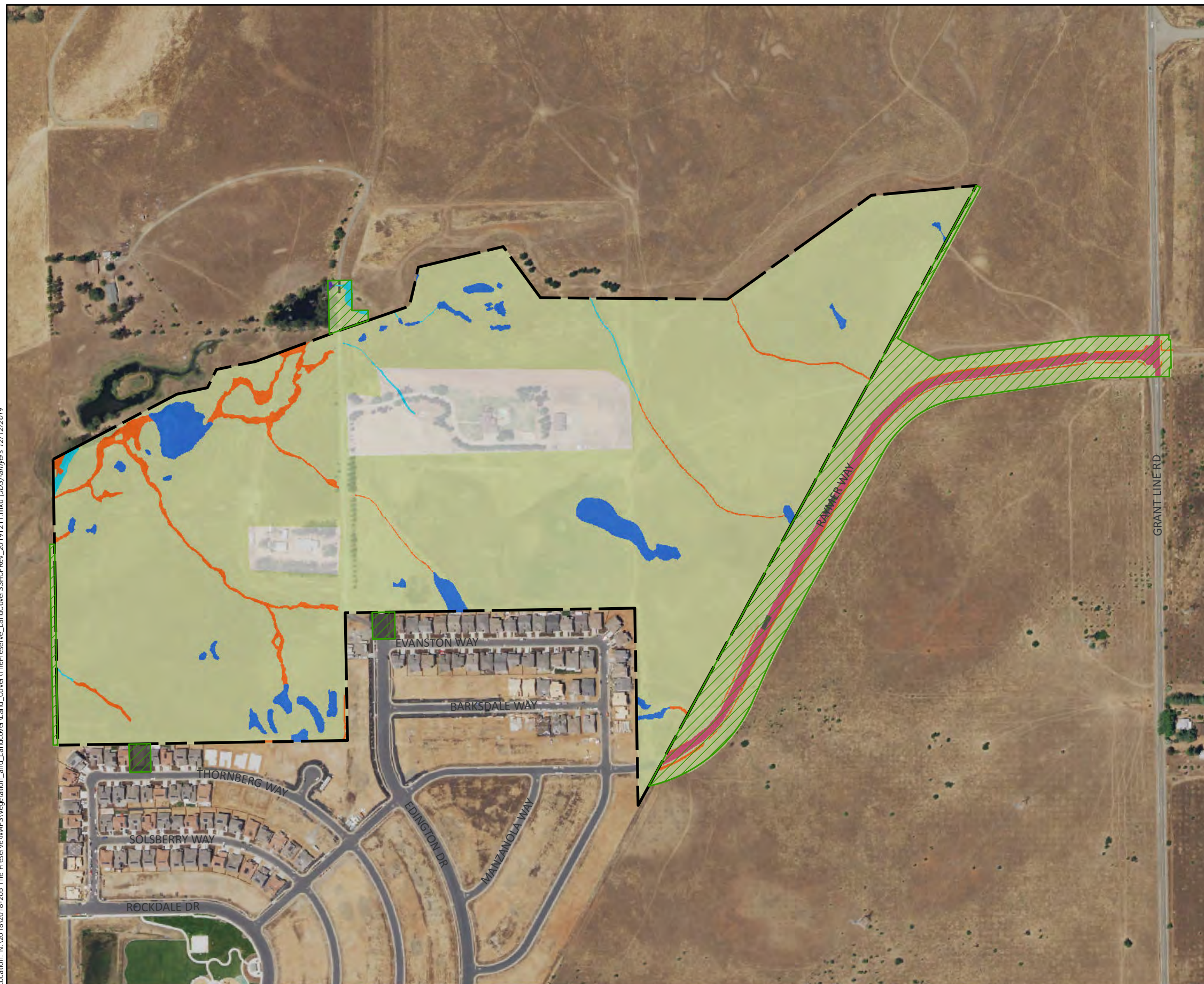
-  Disturbed
-  Low Density Development
-  Major Roads
-  Open Water
-  Orchards
-  Streams/Creeks (VPIH)
-  Swale
-  Valley Grassland
-  Vernal Pool

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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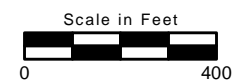
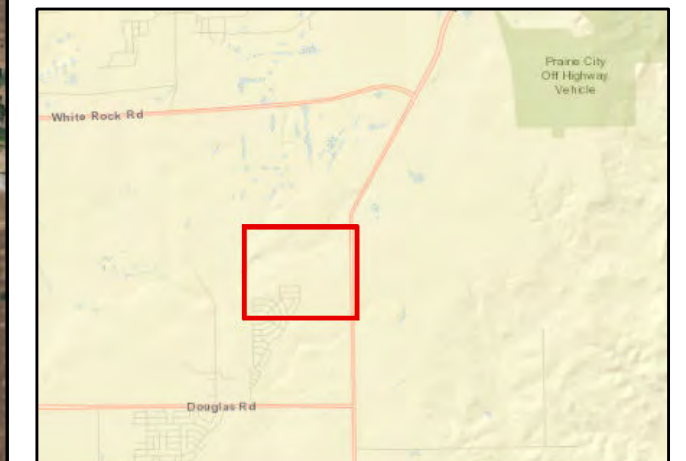


**Figure 4.**  
**The Preserve**  
**Revised SSHCP Land Cover**

**Map Features**

- Project Boundary - 98.92 acres
  - Potential Offsite Areas - 13.16 acres
- Modified SSHCP Land Cover**
- Major Roads
  - Open Water
  - Stream/Creek
  - Swale
  - Vernal Pool
  - Valley Grassland
  - Disturbed
  - Low Density Development

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





from the publicly accessible roads. A discussion of the aquatic resources found onsite is presented below, and an aquatic resources delineation map is presented in Figure 5. *Aquatic Resources Delineation*.

### **Vernal Pool**

Vernal pools are seasonal ephemeral wetlands that fill and dry each year, forming in shallow depressions within Valley Grassland that are underlain by an impermeable layer (e.g., a hardpan). Water collects in the depressions during the winter rainy season and recedes during the spring. Soils typically remain moist until late spring before becoming desiccated, and then remain dry throughout the summer. Vernal pools provide habitat for several special-status species, including invertebrates, plants, and amphibians.

Vernal pools occur throughout the Study Area. These features are variously dominated by Great Valley button-celery (*Eryngium castrense*), stalked popcorn flower (*Plagiobothrys stipitatus*), woolly marbles (*Psilocarphus brevissimus*), Mediterranean barley (*Hordeum marinum*), waxy mangrass (*Glyceria declinata*), hairy hawkbit (*Leontodon saxatilis*), and toad rush (*Juncus bufonius*).

### **Swale**

Swales are shallow ephemeral drainages found in flat to gently rolling Valley Grassland in association with vernal pool complexes, on soils with an impermeable layer. Swales convey runoff as shallow, gently sloping ephemeral wetlands during and shortly after winter rainstorms, but usually maintain soil saturation for longer periods during the growing season. They typically have hydric soils and support hydrophytic vegetation but lack an ordinary high-water mark (OHWM). Roadside ditches that may represent habitat for vernal pool invertebrates may also be classified as swales. Swales serve as habitat for many vernal pool species and provide hydrological connections between vernal pools that allows movement/dispersal of amphibian species, plant seeds, and vernal pool invertebrates (both adults and cysts).

Swales occur throughout the Study Area, and are dominated by Italian ryegrass (*Festuca perennis*), Fitch's spikeweed (*Centromadia fitchii*), and Mediterranean barley. Swale land cover within the Raymer Way Offsite represents roadside ditches.

### **Stream/Creek**







The Stream/Creek land cover type includes intermittent and perennial linear water features such as rivers, streams, creeks, drainages, and roadside and irrigation ditches. These features typically exhibit a bed and bank and an OHWM. Morrison Creek is primarily located outside and to the north of the Study Area, with the exception of one Offsite located around an existing crossing of Morrison Creek.

Several small headwater tributaries to the creek flow through the Study Area into Morrison Creek. These features do not represent habitat for vernal pool invertebrates, due to the fast-moving flow and ephemeral nature of the features. Stream/creek features occur throughout the Study Area, flowing northwest to Morrison Creek, and vary from steep, unvegetated features, to gently sloping features that are sparsely vegetated with creeping spikerush (*Eleocharis macrostachya*).



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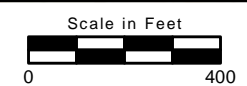
### Figure 5. Aquatic Resources Delineation

- Map Features**
-  Project Boundary - 98.92 acres
  -  Potential Offsite Areas - 13.16 acres
- Potential Aquatic Resources - 4.727 acres \*
-  Vernal Pool - 2.613 acres
  -  Swale - 1.866 acres
  -  Stream/Creek (Non VPIH) - 0.232 acres
  -  Open Water - 0.016 acres

\* The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.



Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





#### 4.4 Wildlife

Wildlife species observed within and around the Study Area during the 2018 site visits are listed in Attachment G.

#### 4.5 Evaluation of Special-Status Species

Based on SSHCP Modeled Species Habitat data, the Study Area contains habitat for 20 Covered Species. Of these, one species was considered Present based on field observations made during habitat surveys required by SSHCP AMMs and one species was considered Present based on CNDDDB data. SSHCP Modeled Species Habitat maps are provided in Attachment B. Eight SSHCP Covered Species were determined to be absent from the Study Area because no SSHCP Modeled Species Habitat existed within the Study Area.

The literature sources described in Section 3.1 were queried for any species other than the SSHCP Covered Species. These queries resulted in an additional seven species that were considered to have Potential to Occur or Low Potential to Occur.

Tabulated results of all species evaluated for the Study Area are presented in Attachment E. Each of the 27 species that were considered to be Present, Potential to Occur, or Low Potential to Occur (according to the definitions in Section 3.3) are listed in Table 2, and descriptions are provided in the following sections. Species that were considered to be Absent from the Study Area due to the lack of suitable habitat, or because the known distribution of the species does not include the Study Area vicinity, are not discussed further in this document.

| Table 2. Special-Status Species Evaluated for the Study Area |        |      |       |   |                  |  |
|--|--------|------|-------|---|------------------|--|
| Common Name<br>(Scientific Name)                             | Status |      |       | Habitat Description   | Survey<br>Period | Potential To<br>Occur On-Site  |
|  | ESA    | CESA | Other |   |                  |  |
| <b>Plants</b>  |        |      |       |   |                  |  |
| Stinkbells<br><i>(Fritillaria agrestis)</i>                  | -      | -    | 4.2   | Clay and sometimes serpentinite soils in chaparral, cismontane woodland, Pinyon and juniper woodland, and Valley and foothill grassland (33' - 5,102'). | March–June       | Absent within Project. Special-status plant surveys did not detect this species. Potential to Occur within Raymer Way Offsite; Valley grassland represents suitable habitat. |

| Common Name<br>(Scientific Name)                               | Status |      |                             | Habitat Description  | Survey Period | Potential To Occur On-Site  |
|--|--------|------|-----------------------------|--|---------------|---|
|  | ESA    | CESA | Other                       |  |               |   |
| Boggs Lake hedge-hyssop<br><i>(Gratiola heterosepala)</i>      | –      | CE   | 1B.2, SSHCP Covered Species | Marshes, swamps, lake margins, and vernal pools (33'–7,792').  | April–August  | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Ahart's dwarf rush<br><i>(Juncus leiospermus var. ahartii)</i> | –      | –    | 1B.2, SSHCP Covered Species | Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005a) (98'–751').   | March–May     | Absent within Project. Special-status plant surveys did not detect this species. Small amounts of SSHCP Modeled Species Habitat present within unsurveyed Raymer Way Offsites.              |
| Legenere<br><i>(Legenere limosa)</i>                           | –      | –    | 1B.1, SSHCP Covered Species | Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005b) (3'–2,887'). | April–June    | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Slender Orcutt grass<br><i>(Orcuttia tenuis)</i>               | FT     | CE   | 1B.1, SSHCP Covered Species | Vernal pools, often gravelly (115'–5,774').  | May–September | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |

| Common Name<br>(Scientific Name)                                    | Status |      |  | Habitat Description                                | Survey Period    | Potential To Occur On-Site  |
|---|--------|------|--|--|------------------|---|
|   | ESA    | CESA | Other                                  |  |                  |   |
| Sacramento Orcutt grass<br><i>(Orcuttia viscida)</i>                | FE     | CE   | 1B.1,<br>SSHCP<br>Covered<br>Species   | Vernal pools (98'-328').                           | April-July       | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Sanford's arrowhead<br><i>(Sagittaria sanfordii)</i>                | -      | -    | 1B.2,<br>SSHCP<br>Covered<br>Species   | Shallow marshes and freshwater swamps (0'-2,133'). | May-October      | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| <b>Invertebrates</b>  |        |      |  |  |                  |   |
| Conservancy fairy shrimp<br><i>(Branchinecta conservatio)</i>       | FE     | -    | -                                      | Vernal pools/wetlands.                             | November-April   | Potential to Occur within vernal pool habitat.  |
| Vernal pool fairy shrimp<br><i>(Branchinecta lynchi)</i>            | FT     | -    | SSHCP<br>Covered<br>Species            | Vernal pools/wetlands.                             | November-April   | Potential to Occur. SSHCP Modeled Species Habitat present.  |
| Midvalley fairy shrimp<br><i>(Branchinecta mesovallensis)</i>       | -      | -    | CNDDDB,<br>SSHCP<br>Covered<br>Species | Vernal pools/wetlands.                             | November - April | Potential to Occur. SSHCP Modeled Species Habitat present.  |
| Ricksecker's water scavenger beetle<br><i>Hydochara rickseckeri</i> | -      | -    | SSHCP<br>Covered<br>Species            | Vernal pools/wetlands.                             | November-April   | Potential to Occur. SSHCP Modeled Species Habitat present.  |
| Vernal pool tadpole shrimp<br><i>(Lepidurus packardii)</i>          | FE     | -    | SSHCP<br>Covered<br>Species            | Vernal pools/wetlands.                             | November-April   | Present. SSHCP Modeled Species Habitat present and CNDDDB occurrence overlaps the site.   |

| Common Name<br>(Scientific Name)                    | Status |      |  | Habitat Description   | Survey Period               | Potential To Occur On-Site   |
|---|--------|------|--|---|-----------------------------|--|
|   | ESA    | CESA | Other  |   |                             |  |
| <b>Amphibians</b>                                   |        |      |  |   |                             |  |
| Western spadefoot<br><i>(Spea hammondi)</i>         | -      | -    | SSC,<br>SSHCP<br>Covered<br>Species                | California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.   | March-May                   | Potential to Occur. SSHCP Modeled Species Habitat present.   |
| <b>Reptiles</b>                                     |        |      |  |   |                             |  |
| Western pond turtle<br><i>(Actinemys marmorata)</i> | -      | -    | SSC,<br>SSHCP<br>Covered<br>Species                | Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.   | April-September             | Potential to Occur. No SSHCP Modeled Species Habitat present; however, ponded areas in Morrison Creek represent potential habitat. |
| <b>Birds</b>  |        |      |  |   |                             |  |
| Burrowing owl<br><i>(Athene cunicularia)</i>        | -      | -    | BCC,<br>SSC,<br>SSHCP<br>Covered<br>Species        | Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g. prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. | February-August             | Present. SSHCP Modeled Species Habitat present, and burrowing owls were observed during survey conducted per SSHCP AMM WBO-1.      |
| Ferruginous hawk<br><i>(Buteo regalis)</i>          | -      | -    | BCC,<br>CDFW<br>WL,<br>SSHCP<br>Covered<br>Species | Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas.  | September-March (wintering) | Potential to Occur. SSHCP Modeled Species Habitat present.   |

| Common Name<br>(Scientific Name)                        | Status |      |   | Habitat Description  | Survey Period  | Potential To Occur On-Site                                 |
|---|--------|------|---|--|--|--|
|   | ESA    | CESA | Other                                       |  |  |  |
| Golden eagle<br>( <i>Aquila chrysaetos</i> )            | -      | -    | BCC,<br>CFP                                 | Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. | Nest (February–August); winter CV (October–February) | Potential to Occur. Winter foraging habitat present.       |
| Grasshopper sparrow<br>( <i>Ammodramus savannarum</i> ) | -      | -    | SSC   | In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental.  | May–August   | Potential to Occur. Nesting habitat present.               |
| Loggerhead shrike<br>( <i>Lanius ludovicianus</i> )     | -      | -    | BCC,<br>SSC,<br>SSHCP<br>Covered<br>Species | Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats.   | March–July   | Potential to Occur. SSHCP Modeled Species Habitat present. |

| Common Name<br>(Scientific Name)                   | Status |      |   | Habitat Description   | Survey Period   | Potential To Occur On-Site  |
|--|--------|------|---|---|---|---|
|  | ESA    | CESA | Other                                       |   |   |   |
| Merlin<br><i>(Falco columbarius)</i>               | -      | -    | CDFW<br>WL                                  | Breeds in Oregon, Washington north into Canada. Winters in southern Canada to South America, including California. Breeds near forest openings, fragmented woodlots, and riparian areas. Wintering habitat includes wide variety, open forests, grasslands, tidal flats, plains, and urban settings.  | September–April (wintering in the Central Valley); does not breed in California | Potential to Occur. Winter foraging habitat present.  |
| Northern harrier<br><i>(Circus hudsonius)</i>      | -      | -    | SSC,<br>SSHCP<br>Covered<br>Species         | Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.   | April–September   | Potential to Occur. SSHCP Modeled Species Habitat present.  |
| Swainson's hawk<br><i>(Buteo swainsoni)</i>        | -      | CT   | BCC,<br>SSHCP<br>Covered<br>Species         | Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures  | March–August  | Potential to Occur. SSHCP Modeled Species Habitat present.  |
| Tricolored blackbird<br><i>(Agelaius tricolor)</i> | -      | CT   | BCC,<br>SSC,<br>SSHCP<br>Covered<br>Species | Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Cos south to San Bernardino, Riverside and San Diego Counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen Counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields. | March–August  | Present. SSHCP Modeled Species Habitat present, evidence of past nesting observed during survey per SSHCP AMM TCB-1; however, species is nomadic and may not be present every year. |

| Common Name<br>(Scientific Name)                    | Status |      |                            | Habitat Description  | Survey Period   | Potential To Occur On-Site   |
|---|--------|------|----------------------------|--|-----------------|--|
|   | ESA    | CESA | Other                      |  |                 |  |
| White-tailed kite<br>( <i>Elanus leucurus</i> )     | -      | -    | CFP, SSHCP Covered Species | Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.   | March-August    | Potential to Occur. SSHCP Modeled Species Habitat present.   |
| Yellow-billed magpie<br>( <i>Pica nuttallii</i> )   | -      | -    | BCC                        | Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County.; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings.  | April-June      | Potential to Occur. Nesting habitat present.   |
| <b>Mammals</b>                                      |        |      |                            |  |                 |  |
| Pallid bat<br>( <i>Antrozous pallidus</i> )         | -      | -    | SSC                        | Crevice in rocky outcrops and cliffs, caves, mines, trees (e.g. basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (Western Bat Working Group [WBWG] 2018). | April-September | Potential to Occur. Structures onsite represent potential hibernacula.   |
| Western red bat<br>( <i>Lasiurus blossevillei</i> ) | -      | -    | SSC, SSHCP Covered Species | Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2017).   | April-September | Potential to Occur. SSHCP Modeled Species Habitat present; potential hibernacula habitat identified during survey per SSHCP AMM BAT-1. |
| American badger<br>( <i>Taxidea taxus</i> )         | -      | -    | SSC, SSHCP Covered Species | Drier open stages of most shrub, forest, and herbaceous habitats with friable soils.   | Any season      | Potential to Occur. SSHCP Modeled Species Habitat present.   |

Table 2. Special-Status Species Evaluated for the Study Area

| Common Name<br>(Scientific Name) | Status |      |       | Habitat Description | Survey<br>Period | Potential To<br>Occur On-Site |
|----------------------------------|--------|------|-------|---------------------|------------------|-------------------------------|
|                                  | ESA    | CESA | Other |                     |                  |                               |

Status Codes:

|         |   |
|---------|---|
| ESA     | Endangered Species Act  |
| CESA    | California Endangered Species Act   |
| FE      | ESA listed, Endangered.   |
| FT      | ESA listed, Threatened.   |
| BCC     | USFWS Bird of Conservation Concern  |
| CFP     | California Fish and Game Code Fully Protected Species   |
| CE      | CESA or NPPA listed, Endangered.  |
| CT      | CESA or NPPA listed, Threatened.  |
| CNDDDB  | California Natural Diversity Database   |
| CDFW WL | CDFW Watch List   |
| SSC     | CDFW Species of Special Concern   |
| SSHCP   | South Sacramento Habitat Conservation Plan-covered species  |
| 1B      | California Rare Plant Ranks (CRPRs)/Rare or Endangered in California and elsewhere.                                       |
| 4       | CRPR /Plants of Limited Distribution - A Watch List.  |
| 0.1     | Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat) |
| 0.2     | Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) |

#### 4.5.1 Special-Status Plants

Special-status plant surveys were conducted within the Study Area, and accessible areas of the Offsites, for all plant species listed in Table 2 during spring and summer 2019. Attachment D provides the results of the special-status plant surveys. No special-status plants were documented within the Project site. However, there is potential for two species to occur in areas of the Raymer Way Offsite that were inaccessible at the time surveys were conducted. Brief descriptions of these species are presented below.

##### Stinkbells

Stinkbells (*Fritillaria agrestis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is a perennial bulbiferous herb that occurs in clay, sometimes serpentine areas in chaparral, cismontane woodland, pinyon and juniper woodland, and Valley and foothill grassland (CNPS 2018a). Stinkbells bloom from March to June and is known to occur at elevations ranging from 33 to 5,102 feet above MSL (CNPS 2018a). The current range of this species in California includes Alameda, Contra Costa, Fresno, Kern, Mendocino, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Stanislaus, Tuolumne, Ventura, and Yuba counties, and is considered to be extirpated from Santa Cruz and San Mateo counties (CNPS 2018a).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, the grassland within the Study Area provides suitable habitat for this species according to SSHCP Modeled Species Habitat. Stinkbells has potential to occur within the Raymer Way Offsite.



## Ahart's Dwarf Rush

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in mesic areas in Valley and foothill grasslands (CNPS 2018a). This species also appears to have an affinity for slight disturbance since it has been found on farmed fields and gopher turnings (USFWS 2005a). Ahart's dwarf rush blooms from March through May and is known to occur at elevations ranging from 98 to 751 feet above MSL (CNPS 2018a, USFWS 2005a). Ahart's dwarf rush is endemic to California; the current range of this species includes Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties (CNPS 2018a).

There are two documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Ahart's dwarf rush is a SSHCP Covered Species, and the aquatic features and grassland within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Ahart's dwarf rush has Potential to Occur within the Raymer Way Offsite.

### 4.5.2 Invertebrates

Four Covered Species invertebrates were determined to have the potential to occur within the Study Area based on SSHCP Modeled Species Habitat, and one other species was identified as having the potential to occur within the Study Area based on the literature review (Attachment G). Brief descriptions of these species are presented below.

#### Conservancy Fairy Shrimp

The Conservancy fairy shrimp (*Branchinecta conservatio*) is listed as endangered pursuant to the federal ESA. Critical Habitat units were designated for this species in the following counties: Butte, Colusa, Mariposa, Merced, Solano, Stanislaus, Tehama, and Ventura (USFWS 2006). This species is usually associated with cool-water pools, which are low to moderate in dissolved solids (Eriksen and Belk 1999). The species appears to be most commonly associated with relatively large, turbid vernal pools (USFWS 1994, Eriksen and Belk 1999, USFWS 2007). Conservancy fairy shrimp have been netted from November to late April, at water temperatures ranging from as low as 41°F (5°C) early in the ponding cycle, to as high as 75°F (24°C) near the end of the season (Syrdahl 1993, *as cited in* Eriksen and Belk 1999). Hatching generally occurs in the week following inundation of the pool at temperatures around 50°F (10°C). Maturation takes at least 19 days; if pool temperatures slowly increase to at least 68°F (20°C); however, the average time to maturity is 49 days (Eriksen and Belk 1999). The distribution of Conservancy fairy shrimp is limited to the northern two-thirds of the Central Valley at an elevation range of approximately 16 – 475 feet (5 – 145 meters) above mean sea level (Eriksen and Belk 1999). Populations of this species have been documented at eight widely separated locations, which include Vina Plains, Butte and Tehama counties; Sacramento National Wildlife Refuge, Glenn County; Yolo Bypass Wildlife Area, Yolo County; Jepson Prairie, Solano County; Mapes Ranch, Stanislaus County; University of California Merced area, Merced County; Grasslands Ecological Area, Merced County; and Los Padres National Forest, Ventura County (CDFG 2003; USFWS 2007).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, the vernal pools within the Study Area provide suitable habitat for this species. Conservancy fairy shrimp has potential to occur within the Study Area.

### **Mid-Valley Fairy Shrimp**

The Midvalley fairy shrimp (*Branchinecta mesovallensis*) is not listed pursuant to either the California or federal Endangered Species Acts, but occurrences of this species are tracked by the CNDDDB. The Midvalley fairy shrimp was formally described as a species in 2000 (Belk and Fugate 2000). This species typically occurs in small, shallow vernal pools, swales, and various artificial ephemeral wetland types (e.g., roadside puddles, scrapes and ditches, and railroad toe-drain pools) (Belk and Fugate 2000; USFWS 2004). Midvalley fairy shrimp have been collected from late January to early April (Eriksen and Belk 1999). The cysts typically hatch in the first week of pool filling if water temperatures are near 10°C (50°F) (Eriksen and Belk 1999). This species has been documented in several California counties including: Sacramento, Solano, Contra Costa, San Joaquin, Madera, Merced, Fresno, and Yolo (Belk and Fugate 2000; USFWS 2004).

There are two documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Midvalley fairy shrimp is a SSHCP Covered Species, and the vernal pools and grassland within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Mid-valley fairy shrimp has potential to occur within the Study Area.

### **Ricksecker's Water Scavenger Beetle**

Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*) is not listed and protected under either CESA or FESA but is currently tracked by CDFW in the CNDDDB. Ricksecker's water scavenger beetles inhabit ponds in the Coast Range and Central Valley.

There is one documented CNDDDB occurrence of this species located within five miles of the Study Area (CDFW 2018a). Ricksecker's water scavenger beetle is a SSHCP Covered Species, and the vernal pools within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Ricksecker's water scavenger beetle has potential to occur within the Study Area.

### **Vernal Pool Fairy Shrimp**

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened in accordance with the federal Endangered Species Act. Vernal pool fairy shrimp may occur in seasonal ponds, vernal pools, and swales during the wet season, which generally occurs from December through May. This species can be found in a variety of pool sizes, ranging from less than 0.001 acre to over 24.5 acres (Eriksen and Belk 1999). The shrimp hatch from cysts when colder water (10°C [50°F] or less) fills the pool and mature in as few as 18 days, under optimal conditions (Eriksen and Belk 1999). At maturity, mating takes place and cysts are dropped. Vernal pool fairy shrimp occur in disjunct patches dispersed across California's Central Valley from Shasta County to Tulare County, the central and southern Coast Ranges from northern Solano County to Ventura County, and three areas in Riverside County (USFWS 2003).

There are 16 documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Vernal pool fairy shrimp is a SSHCP Covered Species, and the vernal pools and grassland within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Vernal pool fairy shrimp has potential to occur within the Study Area.

### **Vernal Pool Tadpole Shrimp**

The vernal pool tadpole shrimp (*Lepidurus packardii*) is listed as endangered pursuant to the federal ESA. This species inhabits vernal pools containing clear to highly turbid water, ranging in size from 0.001 to 89.0 acres (USFWS 1994). Vernal pool tadpole shrimp are distinguished from other vernal pool branchiopods discussed in this report by a large, shield like carapace that covers the anterior half of their body (USFWS 2003). Cysts hatch during the wet season and the shrimp reach maturity in a few weeks. This species matures slowly and is long lived, relative to other species. Vernal pool tadpole shrimp will continue to grow as long as the pools they occur in remain inundated, and in some instances can survive for six months or longer (USFWS 2003). The geographic range of vernal pool tadpole shrimp extends from Shasta County to northern Tulare County in California's Central Valley, and in the central coast range from Solano County to Alameda County (USFWS 2003).

There is one documented CNDDDB occurrence polygon for this species which overlaps the Study Area, and 32 other documented occurrences of this species located within five miles of the Study Area (CDFW 2018a). Vernal pool tadpole shrimp is a SSHCP Covered Species, and the vernal pools and grassland within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Vernal pool tadpole shrimp is considered Present within the Study Area.

### **4.5.3 Amphibians**

One Covered Species amphibian was determined to have the potential to occur within the Study Area based on SSHCP Modeled Species Habitat. A brief description of this species is presented below.

#### **Western Spadefoot**

The western spadefoot (*Spea hammondi*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a CDFW SSC. Necessary habitat components of the western spadefoot include loose, friable soils in which to burrow in upland habitats and breeding ponds. Breeding sites include temporary rain pools, such as vernal pools and seasonal wetlands, or pools within portions of intermittent drainages (Jennings and Hayes 1994). Spadefoots spend most of their adult life within underground burrows or other suitable refugia, such as rodent burrows. In California, western spadefoot toads are known to occur from the Redding area, Shasta County southward to northwestern Baja California, at elevations below 4,475 ft (Jennings and Hayes 1994).

There are three documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Western spadefoot is a SSHCP Covered Species, and the grassland and aquatic areas within the Study Area provide suitable foraging habitat for this species according to SSHCP Modeled Species Habitat. Western spadefoot has potential to occur within the Study Area.

#### 4.5.4 Reptiles

One reptile species were determined to have the potential to occur within the Study Area based on the literature review (Attachment G). A brief description of this species is presented below.

##### Western Pond Turtle

The western pond turtle (*Actinemys marmorata*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CDFW species of special concern (SSC). Western pond turtles occur in a variety of fresh and brackish water habitats including marshes, lakes, ponds, and slow-moving streams (Jennings and Hayes 1994). This species is primarily aquatic; however, they typically leave aquatic habitats in the fall to reproduce and to overwinter (Jennings and Hayes 1994). Deep, still water with abundant emergent woody debris, overhanging vegetation, and rock outcrops is optimal for basking and thermoregulation. Although adults are habitat generalists, hatchlings and juveniles and hatchlings require shallow edgewater with relatively dense submergent or short emergent vegetation in which to forage.

Western pond turtles are typically active between March and November. Mating generally occurs during late April and early May and eggs are deposited between late April and early August (Jennings and Hayes 1994). Eggs are deposited within excavated nests in upland areas, with substrates that typically have high clay or silt fractions (Jennings and Hayes 1994). The majority of nesting sites are located within 650 ft (200 m) of the aquatic sites; however, nests have been documented as far as 1,310 ft (400 m) from the aquatic habitat.

There are four documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Western pond turtle is a SSHCP Covered Species. While there was no SSHCP Modeled Species Habitat present within the site, the ponded areas along Morrison Creek may provide suitable aquatic habitat and the adjacent grasslands provide suitable upland habitat for this species. Western pond turtle is considered to have potential to occur within the Study Area.

#### 4.5.5 Birds

Seven Covered Species birds were determined to have the potential to occur within the Study Area based on SSHCP Modeled Species Habitat, and three other species were identified as having the potential to occur within the Study Area based on the literature review (Attachment G). Brief descriptions of these species are presented below.

##### Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a bird of conservation concern by the USFWS and a SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2011). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel

(*Spermophilus beecheyi*), but may also use man-made structures such as cement culverts or pipes; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium [CBOC] 1993; CDFG 2012).

There are seven documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Western burrowing owl is a SSHCP Covered Species, and the grassland within the Study Area provides suitable nesting and foraging habitat for this species, and the aquatic features provide suitable foraging habitat, according to SSHCP Modeled Species Habitat. Burrowing owls and occupied burrows were observed along the southeastern boundary of the site during a preliminary survey of potential habitat (Attachment C). Burrowing owl is considered Present within the Study Area.

### **Ferruginous Hawk**

Ferruginous hawks (*Buteo regalis*) are not listed pursuant to either the California or federal ESAs. However, they are a CDFW "watch list" species and USFWS bird of conservation concern. This species typically occurs in open environments and nests from Oregon to Canada, though nesting has recently been documented in Lassen County, California (Small 1994). For the remainder of the state, including the Central Valley, ferruginous hawk occurrences are restricted to the non-breeding season (approximately September through March) (Small 1994). Winter foraging habitat includes a variety of open communities including annual grasslands, agricultural areas, deserts, and savannahs. Ferruginous hawks do not nest in the region but may occasionally forage within grassland and other open vegetation communities on-site during winter or migration.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, ferruginous hawk is a SSHCP Covered Species, and the grassland and aquatic areas within the Study Area provide suitable foraging habitat for this species according to SSHCP Modeled Species Habitat. Ferruginous hawk has potential to occur within the Study Area.

### **Grasshopper Sparrow**

The grasshopper sparrow (*Ammodramus savannarum*) is not listed pursuant to either the California or federal ESAs, but it is designated as a SSC by the CDFW. The grasshopper sparrow is an uncommon and local, summer resident and breeder along the western edge of the Sierra Nevada and most coastal counties south to Baja California (Small 1994; Vickery 1996). This species generally inhabits moderately open grasslands and prairies with patchy bare ground and scattered shrubs (Vickery 1996). Grasshopper sparrows are more likely to occupy large tracts of habitat than small fragments (Samson 1980; Herkert 1994a; Vickery et al. 1994 as cited in Vickery 1996). Breeding generally occurs from early May through August.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, the grassland within the Study Area provide suitable nesting habitat for this species. Grasshopper sparrow has potential to occur within the Study Area.

### Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is not listed pursuant to either the California or federal ESAs; but is considered a bird of conservation concern by the USFWS and a SSC by the CDFW. Loggerhead shrikes nest throughout California except the northwestern corner, montane forests, and high deserts (Small 1994). Loggerhead shrikes nest in small trees and shrubs in open country with short vegetation such as pastures, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 1996). The nesting season extends from March through July.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Loggerhead shrike is a SSHCP Covered Species, and the grassland within the Study Area provides suitable nesting and foraging habitat for this species, and the aquatic features provide suitable foraging habitat, according to SSHCP Modeled Species Habitat. Loggerhead shrike has potential to occur within the Study Area.

### Merlin

The Merlin (*Falco columbarius*) is not listed pursuant to either the California or federal ESAs, but is a CDFW “watch list” species and currently tracked in the CNDDDB. This falcon breeds in Canada and Alaska and occurs in California as a migrant and during the non-breeding season (September through April). Foraging habitat in winter includes open forests, grasslands, and tidal flats (Warkentin et al. 2005). Merlin do not nest in the region but may occasionally forage within grassland and woodland communities on-site during winter or migration.

There is one documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). The grassland within the Study Area provides suitable wintering habitat for this species. Merlin has potential to occur within the Study Area.

### Northern Harrier

The northern harrier (*Circus cyaneus*) is not listed pursuant to either the California or federal ESAs; however, it is considered to be a SSC by the CDFW. This species is known to nest within the Central Valley, along the Pacific Coast, and in northeastern California. The northern harrier is a ground nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah communities usually in areas with dense vegetation (Smith et al. 2011). Foraging occurs within a variety of open environments such as marshes, agricultural fields, and grasslands. Nesting occurs during April through September.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Northern harrier is a SSHCP Covered Species, and the grassland within the Study Area provides suitable nesting and foraging habitat for this species, and the aquatic features provide suitable foraging habitat, according to SSHCP Modeled Species Habitat. Northern harrier has potential to occur within the Study Area.

## Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species pursuant to the California ESA. This species nests in North America (Canada, western United States, and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2010). In California, the nesting season for Swainson's hawk ranges from mid-March to late August. Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Spermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, disking, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are seven documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Swainson's hawk is a SSHCP Covered Species, and the grassland and aquatic areas within the Study Area provide suitable foraging habitat for this species according to SSHCP Modeled Species Habitat. In addition, a preliminary survey of potential habitat found several trees within the Survey Area and survey buffers that represent potential nesting habitat. Swainson's hawk has potential to occur within the Study Area.

## Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is listed as threatened pursuant to the California ESA. In addition, it is currently considered a USFWS bird of conservation concern and a CDFW SSC. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (Meese et al. 2014). Tricolored blackbird nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. Tricolored blackbird nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields, thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation (Meese et al. 2014). They feed mainly on grasshoppers during the breeding season, but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields (Meese et al. 2014). The nesting season is generally from March through August.

There are 10 documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). Tricolored blackbird is a SSHCP Covered Species, and the grassland within the Study Area provides suitable nesting and foraging habitat for this species, and the aquatic features provide suitable foraging habitat, according to SSHCP Modeled Species Habitat. In addition, a preliminary survey of potential habitat documented evidence of previous tricolored blackbird nesting within patches of bull

thistle (*Cirsium vulgare*) in the central portion of the site, and a small area of riparian habitat along Morrison Creek was also determined to represent potential nesting habitat (Attachment C). However, tricolored blackbirds were not observed nesting during a site visit on June 13, 2019. This species is nomadic and may or may not return to the site. Tricolored blackbirds are considered to be present within the Study Area.

#### **White-Tailed Kite**

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 1995). In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 1995).

There are five documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). White-tailed kite is a SSHCP Covered Species, and the grassland and aquatic areas within the Study Area provide suitable foraging habitat for this species according to SSHCP Modeled Species Habitat. White-tailed kite has potential to occur within the Study Area.

#### **Yellow-Billed Magpie**

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS bird of conservation concern. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late-January to mid-February, which may take up to 6-8 weeks to complete, with eggs laid during April-May, and fledging during May-June (Koenig and Reynolds 2009). The young leave the nest at about 30 days after hatching (Koenig and Reynolds 2009). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (Koenig and Reynolds 2009).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, the grassland and trees within the Study Area provide suitable nesting habitat for this species. Yellow-billed magpie has potential to occur within the Study Area.

#### **4.5.6 Mammals**

Two Covered Species mammals were determined to have potential to occur within the Study Area based on SSHCP Modeled Species Habitat, and one other species was identified as having the potential to occur within the Study Area based on the literature review (Attachment G). Brief descriptions of these species are presented below.



## American Badger

The American badger (*Taxidea taxus*) is not listed pursuant to either the federal or California ESAs; however, this species is considered a SSC by CDFW. American badger historically ranged throughout much of the state, except in humid coastal forests. American badgers were once numerous in the Central Valley; however, populations now occur in low numbers in the surrounding peripheral parts of the Central Valley and in the adjacent lowlands of eastern Monterey, San Benito, and San Luis Obispo counties (Williams 1986). American badgers occupy a variety of habitats, including grasslands and savannas. The principal requirements seem to be significant food supply, friable soils, and relatively open, uncultivated ground (Williams 1986).

There is one documented CNDDDB occurrence of this species located within five miles of the Study Area (CDFW 2018a). American badger is a SSHCP Covered Species, and the grassland and wetland areas within the Study Area provide suitable foraging habitat for this species according to SSHCP Modeled Species Habitat. American badger has potential to occur within the Study Area.

## Pallid Bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the California or federal ESAs; however, this species is considered a SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia, south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 ft) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forest (above 7,000 ft). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures such as bridges, and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species utilizes echolocation to locate prey, often they use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (WBWG 2017).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, some of the structures within the Study Area represent potential hibernacula (see Attachment C). Pallid bat has potential to occur within the Study Area.

## Western Red Bat

The western red bat (*Lasiurus blossevillii*) is not listed pursuant to either the California or federal Endangered Species Acts; however, this species is considered a SSC by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed, its range extending from southern British Columbia in Canada through Argentina and Chile in South America, and including much of the western United States. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows,

cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. They feed on a variety of insects, and generally begin to forage one to two hours after sunset. This species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different. Winter behavior of this species is poorly understood (WBWG 2017).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2018a). However, western red bat is a SSHCP Covered Species. The grassland and wetland areas within the Study Area provide suitable foraging habitat. The Raymer Way offsite contains roosting-foraging habitat for this species according to SSHCP Modeled Species Habitat; however, site assessment did not find evidence of potential roosting habitat within the Raymer Way Offsite (Attachment C). A preliminary survey of potential habitat identified some of the trees with cavities along Morrison Creek as potential hibernacula (Attachment C). Western red bat has potential to occur within the Study Area.

#### **4.6 Wildlife Movement/Corridors**

The Study Area is located in an undeveloped area within the limits of the City of Rancho Cordova, roughly four miles south of U.S. Highway 50. The Study Area does not fall within an Essential Habitat Connectivity area mapped by the CDFW (CDFW 2018a). The upper reach of Morrison Creek runs along the northern boundary of the Study Area. Though Morrison Creek is ephemeral, the permanently ponded open waters and the small patches of riparian habitat along the creek may represent a marginal wildlife movement corridor; however, this area lies outside of the Study Area with the exception of the Morrison Creek Offsite.

#### **4.7 Sensitive Natural Communities**

Five sensitive natural communities were initially identified as having the potential to occur within the Study Area based on the literature review (CDFW 2018a). These included Great Valley Valley Oak Riparian Forest, Lone Chaparral, Northern Hardpan Vernal Pool, Northern Volcanic Mudflow Vernal Pool, and Valley Needlegrass Grassland. Valley oaks are not present within the Study Area; therefore, Great Valley Oak Riparian Forest does not occur onsite. Vernal pool communities are present onsite, and are discussed separately in Section 4.3.2. No chaparral vegetation is present within the Study Area and there are no lone formation soils present; therefore, lone chaparral is not present. The "Valley Needlegrass Grassland" vegetation alliance name used by the CNDDDB is no longer in use, and instead "Needlegrass-Melic Grass Grassland" as well as other associations containing needlegrass (*Stipa* spp.) are now used by the California Vegetation Manual (CNPS 2018b) and the CDFW-maintained list of sensitive natural communities. No needlegrass species were found during special-status plant surveys (Attachment D). Therefore, vernal pool communities are the only sensitive natural community known to occur within the Study Area.

#### **4.8 Trees**

An arborist survey was conducted for the Study Area in October 2018 and June 2019 (Attachment H). A total of 247 trees greater than 6 inches dsh were mapped within the Study Area, and all tree species are nonnative to the region. There are 149 trees that have a dsh equal to or greater than 12 inches and therefore meet the definition of a Protected Tree as defined in the City of Rancho Cordova's Tree

Preservation Ordinance. The 149 Protected Trees include redwood (*Sequoia sempervirens*), eucalyptus (*Eucalyptus* spp.), callery pear (*Pyrus calleryana*), American sweetgum (*Liquidambar styraciflua*), Brazilian pepper-tree (*Schinus terabinthifolia*), deodar cedar (*Cedrus deodara*), white mulberry (*Morus alba*).

## 5.0 IMPACT ANALYSIS

### 5.1 Special-Status Species

The Project would require mass grading of the site. As such, the Project would have the potential to have a substantial adverse effect, either directly or through habitat modifications, on special-status species identified by CDFW, and/or USFWS. In addition, the Project is located within the USFWS Mather Core Area, an area prioritized for the conservation and recovery of federally threatened and endangered vernal pool species.

Of the 27 species identified as Present or Potential to Occur within the Study Area, 20 species are SSHCP Covered Species and are considered adequately conserved by the SSHCP. Project impacts on special-status species habitat are anticipated to be mitigated through the SSHCP In-Lieu Fee Program, and the Project proponents will comply with SSHCP AMMs as described in Section 6.0. The SSHCP also considers priorities for conservation and recovery of vernal pool species within the Mather Core Area.

The remaining seven species having Potential to Occur or Low Potential to Occur onsite that are not SSHCP Covered Species include one plant, one vernal pool invertebrate, one bat, and four birds. Though not Covered Species, the potential impacts to these species are also anticipated to be mitigated by SSHCP AMMs and by the restoration, enhancement and preservation of habitats accomplished by the SSHCP in-lieu fee program. Section 6.0 provides recommended mitigation measures. Measures BIO-5 through 14 are recommended to be implemented in order to minimize effects on special-status species.

### 5.2 Sensitive Natural Communities

The Study Area primarily consists of Valley Grassland that supports mostly nonnative grass and forb species, and aquatic features including vernal pool habitat. Project impacts to vernal pool communities are discussed in Section 5.3 and addressed by Mitigation Measures BIO-1 and BIO-5 (Section 6.0).

### 5.3 Federally Protected Wetlands and Waters of the U.S.

The Project is anticipated to impact (fill) up to roughly 4.727 acres of Waters of the U.S. The Project applicants are anticipated to apply for CWA Section 404 and 401 authorization under the SSHCP ARP, and to mitigate for Project impacts using the SSHCP In-Lieu Fee Program. Mitigation Measures BIO-1, BIO-2, and BIO-5 are recommended to address impacts to wetlands and other Waters of the U.S.

### 5.4 Wildlife Corridors and Nursery Sites

The Study Area does not fall within an Essential Habitat Connectivity area mapped by the CDFW (CDFW 2018a). In addition, the Project will have minimal impacts to Morrison Creek. Recommended Mitigation Measure BIO-3 requires a 100-foot setback from Morrison Creek for certain development activities that

are considered detrimental to stream/creek corridors. Morrison Creek is the only potential wildlife corridor near the site; therefore, no impacts on wildlife corridors are anticipated as a result of Project development.

## 5.5 Local Policies and Ordinances

The Project would remove ±142 of the 149 Protected Trees (as defined by the City of Rancho Cordova Tree Preservation Ordinance) from the Project area. The nine trees within the Morrison Creek Offsite will be avoided.

The Protected Trees onsite may provide nesting habitat for birds and roosting habitat for bats; however, none of the trees to be removed are native to the Central Valley, and several of the species are considered potentially invasive according to the California Invasive Plant Council Inventory (i.e., eucalyptus, callery pear, Brazilian pepper-tree).

Per the City of Rancho Cordova Tree Preservation Ordinance Section 19.12.070, the Public Works Director will consider the potential for the trees being removed to be a public nuisance and the overall impact on the environment (among other considerations). Removal of these trees is not anticipated to result in negative impacts on the environment aside from potential effects on nesting habitat, and the invasive tree species may become a public nuisance. For example, invasion by eucalyptus species can lead to increased fire hazard, increased soil erosion, and poor wildlife habitat quality (Rejmanek and Richardson 2011). Eucalyptus trees were planted along roadsides and around buildings within the Study Area, but appear to have invaded the adjacent riparian area along Morrison Creek. Replacement of trees with similar species is not recommended; however, incorporating locally native trees into the Project's landscaping design will maintain habitat for bird species and reduce invasion of nonnative species into adjacent habitats. Recommended Mitigation Measure BIO-14 addresses impacts to Protected Trees.

## 5.6 Habitat Conservation Plans

The Project is anticipated to apply for permits through the SSHCP and the ARP and the Project will comply with the SSHCP's requirements and AMMs as discussed in the recommended Mitigation Measures in Section 6.0 (full text of AMMs is provided as Attachment I). The Project impacts are anticipated to be mitigated through the SSHCP In-Lieu Fee Program as discussed in BIO-5.

## 6.0 RECOMMENDATIONS

The following Mitigation Measures are recommended prior to Project implementation in order to mitigate impacts on biological resources. Many of the Mitigation Measures reference SSHCP AMMs, the full text of which can be found in Attachment I.

### **BIO-1. Obtain Clean Water Act Section 404 Permit and Section 401 Permit and Implement All Permit Conditions:**

Before the approval of grading and improvement plans and before any groundbreaking activity associated with the project, the Project applicants shall ensure that authorization pursuant to CWA Section 404 from the USACE and CWA Section 401 from the Central Valley RWQCB is obtained. CWA

Section 404 authorization is anticipated to be obtained through a Letter of Permission issued by USACE under the SSHCP ARP, and CWA Section 401 authorization is anticipated to be obtained through an individual Water Quality Certification issued by the RWQCB under the SSHCP ARP.

The construction contractor shall adhere to all conditions outlined in the permits. The Project applicants shall ensure that the project replaces, restores, or enhances on a “no net loss” basis (in accordance with the USACE and the Central Valley RWQCB) the acreage of all wetlands and other Waters of the U.S. that would be removed, lost, and/or degraded due to project implementation, either through the SSHCP In-Lieu Fee Program or by other methods agreeable to the USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes.

**BIO-2. Obtain and Implement CDFW 1602 Streambed Alteration Agreement:**

Before the approval of grading and improvement plans and before any groundbreaking activity associated with the project, the Project applicants shall ensure that a CDFW 1602 Streambed Alteration Agreement has been obtained. The construction contractor shall adhere to all conditions outlined in the Streambed Alteration Agreement.

**BIO-3. Setback from Morrison Creek:**

The Project applicants shall comply with SSHCP AMM STREAM-2 and a 100-foot setback from Morrison Creek will be established and only allowed compatible uses described in the SSHCP will be sited within the setback.

**BIO-4. Best Management Practices:**

The Project applicants shall comply with SSHCP AMMs BMP-1 through BMP-11. Per BMP-7, an approved biologist will be onsite during the period of ground disturbance, and will train an individual to act as the onsite construction monitor for the remainder of construction once ground disturbance is complete. “Ground disturbance” shall be defined as the initial disturbance of native soil. Species-specific AMMs requiring certain monitoring practices shall take priority over BMP-7.

**BIO-5. Mitigate for Impacts to Aquatic Features and Habitat:**

Before the approval of grading and improvement plans and before any groundbreaking activity associated with the project, or timed as required by the applicable permits if the Project is constructed in phases, the Project applicants shall ensure that mitigation for impacts to aquatic features and other habitat for special-status species has been implemented through the SSHCP In-Lieu Fee Program or by other methods agreeable to the USACE, RWQCB, USFWS, CDFW, City, and South Sacramento Conservation Agency as appropriate, depending on agency jurisdiction.

**BIO-6. Special-Status Plant Surveys and Protection:**

Special-status plant surveys were conducted in spring and summer 2019 within the Study Area but excluding inaccessible portions of the Raymer Way Offsite (Attachment D). No special-status plants or

sensitive natural communities were detected. For the Raymer Way Offsite, Project applicants shall comply with SSHCP AMM PLANT 1 (Rare Plant Surveys) conduct special-status plant surveys prior to construction. Habitat for *Orcuttia* species was determined to be absent from the Raymer Way Offsite; therefore, ORCUTT-1 does not apply. Though stinkbells is not considered an SSHCP Covered Species, special-status plant surveys conducted per PLANT-1 shall identify whether this species is present onsite.

If any SSHCP-covered plants are determined to be present, PLANT-2 (Rare Plant Protection) will be implemented. If stinkbells is determined to be present, a mitigation plan shall be prepared for review and approval by the City of Rancho Cordova and mitigation may include harvesting and transplanting of impacted bulbs into a preserved area with suitable habitat. Avoided areas containing stinkbells shall be fenced with orange construction fencing.

**BIO-7. Western Spadefoot:**

The Project applicants shall comply with SSHCP AMMs WS-1 through WS-6.

**BIO-8. Western Pond Turtle:**

There is no SSHCP Modeled Habitat for western pond turtle within the Project; however, the ponded areas along Morrison Creek may provide potential habitat for western pond turtle. Therefore, pre-construction surveys will be conducted per SSHCP AMM WPT-1. If western pond turtles are detected, WPT-2 through WPT-9 will be implemented.

**BIO-9. Tricolored Blackbird:**

The Project applicants shall comply with SSHCP AMMs TCB-2 through TCB-5. If tricolored blackbirds are found within the survey area during the pre-construction survey conducted per TCB-2, then TCB-3 through TCB-5 will be implemented as required based on the results of surveys conducted per TCB-2.

**BIO-10. Swainson's Hawk:**

The Project applicants shall comply with SSHCP AMMs SWHA-2 through SWHA-4. If Swainson's hawk nesting is found within the survey area during the pre-construction survey conducted per SWHA-2, then SWHA-3 and SWHA-4 will be implemented as required based on the results of surveys conducted per SWHA-2.

**BIO-11. Western Burrowing Owl:**

The Project applicants shall comply with SSHCP AMMs WBO-2 through WBO-7. If western burrowing owl is found within the survey area, WBO-3 through 7 shall be implemented as required based on the results of surveys conducted per WBO-2.

**BIO-12. Other Raptors:**

The Project applicants shall comply with SSHCP AMMs RAPTOR-2 through RAPTOR-4. Raptor surveys conducted per RAPTOR-2 shall include surveying for golden eagle although it is not a SSHCP Covered Species. If raptor species (including golden eagles) are found nesting within the survey area, RAPTOR-3

and RAPTOR-4 shall be implemented as required based on the results of surveys conducted per RAPTOR-2.

**BIO-13. Other Nesting Birds:**

A qualified biologist shall conduct a preconstruction nesting bird survey of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction if construction occurs during the nesting season (February 1 through August 31). If active nests are found for any SSHCP Covered Species, the applicable SSHCP AMM(s) will be implemented (i.e. TCB-3 through -5, SWHA-3 through -4, WBO-3 through -6, and RAPTOR-3 through -4). If active nests are found for any other species, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist in consultation with the CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

**BIO-14. Bat Species:**

The Project applicants shall comply with SSHCP AMMs BAT-2 through BAT-5. Winter hibernaculum surveys conducted per BAT-2 shall also include surveying for pallid bat although it is not an SSHCP Covered Species. If winter hibernacula of western red bat or pallid bat are found within the survey area, then BAT-3 through BAT-5 will be implemented as required based on the results of surveys conducted per BAT-2.

**BIO-15. American Badger:**

A qualified biologist shall conduct a preconstruction survey for American badger within 14 days prior to commencement of construction and results of the survey will be provided to the City's Planning Department. If badgers or dens with signs of recent badger use are detected (i.e., fresh scat, claw marks), CDFW will be consulted and a non-disturbance buffer will be established around any active dens. The den(s) will be monitored daily by the qualified biologist during construction. No work will occur within the non-disturbance buffer until the qualified biologist determines that the badger(s) have left the work area, or as determined in consultation with CDFW.

**BIO-16. Protected Tree Removal and Incorporating Native Trees into Landscaping Design:**

A tree removal permit shall be procured from the City for removal of any Protected Trees. In addition, tree species that are native to the Central Valley and Sierra Nevada foothills such as interior live oak (*Quercus wislizeni*), valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), Fremont cottonwood (*Populus fremontii*), black walnut (*Juglans hindsii*), and western redbud (*Cercis occidentalis*) shall be incorporated into the planned landscaping design in public spaces such as open space, parks and parkways. Enough plantings of these native trees shall be incorporated into the landscaping such that the number of surviving native trees after five years is equal to or greater than the number of non-native trees removed. Landscaping plans detailing the tree species to be planted will be provided to the City for approval prior to tree planting.

**BIO-17. South Sacramento Habitat Conservation Plan**

The Project applicants shall comply with SSHCP requirements and all relevant AMMs set forth in the SSHCP Permit obtained for the Project.



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## **LIST OF ATTACHMENTS**

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Attachment A – Representative Site Photographs

Attachment B – SSHCP Modeled Species Habitat Maps

Attachment C – Results of SSHCP Habitat Surveys

Attachment D – Special-Status Plant Survey Report

Attachment E – Special-Status Species Evaluated for the Study Area

Attachment F – Aquatic Resources Delineation

Attachment G – Wildlife Observed Onsite

Attachment H – Arborist Report

Attachment I – SSHCP Avoidance and Minimization Measures

## **ATTACHMENT A**

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Representative Site Photographs



**Photo 1:** Gravel road north of Edington Drive in central portion of Project site. View south. Photo taken October 12, 2018.



**Photo 2:** Grasslands west of Edington Drive in southwestern portion of Project site. View northwest. Photo taken October 12, 2018.



**Photo 3:** Stream/Creek along western boundary of Project site. View north. Photo taken October 12, 2018.



**Photo 4:** Large vernal pool in northwestern portion of Project site. View northeast. Photo taken October 12, 2018.



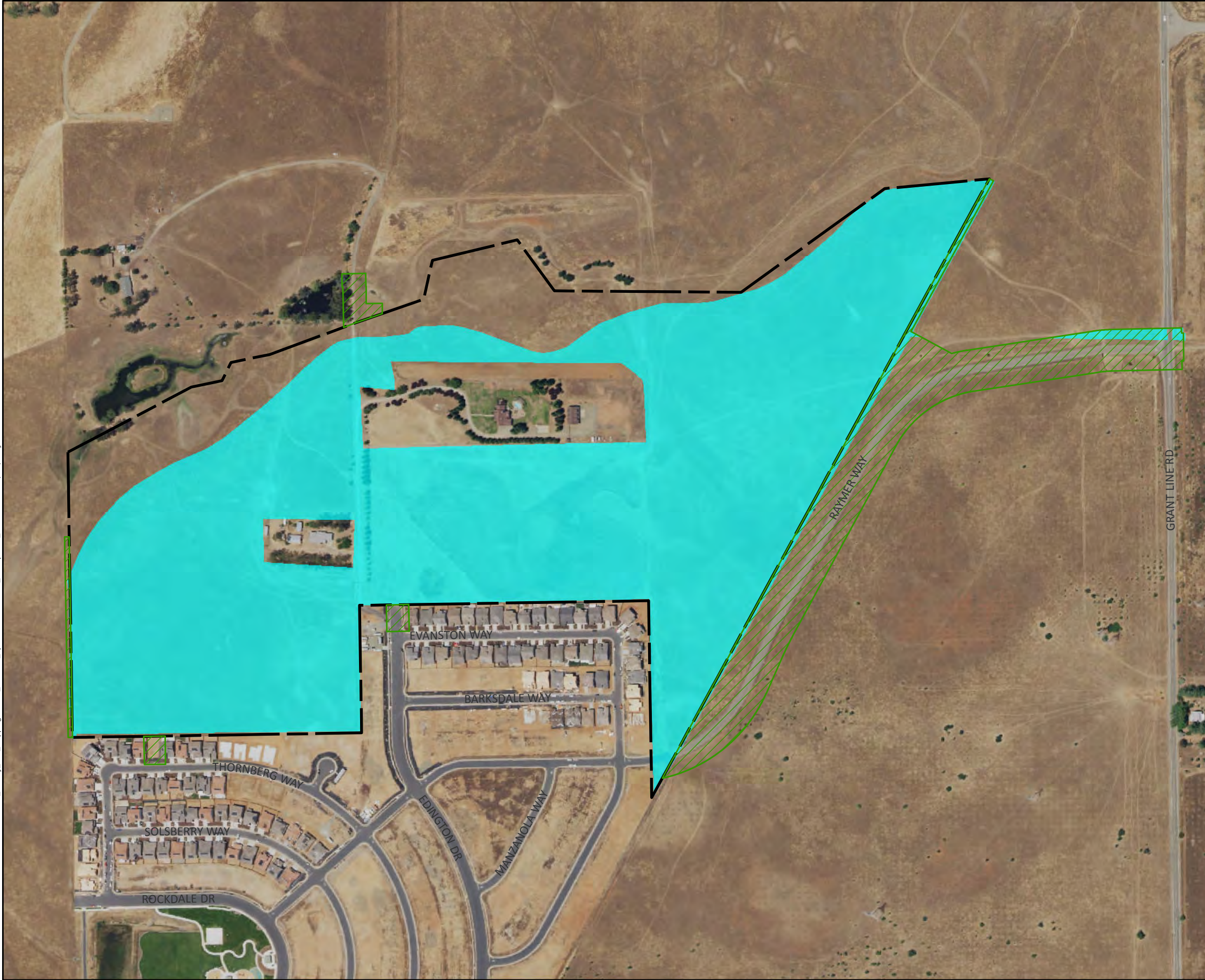
**ATTACHMENT B**

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SSHCP Modeled Species Habitat Maps



Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Modelled\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS)-armyers 12/12/2019



### The Preserve Modeled Species Habitat Ahart's Dwarf Rush

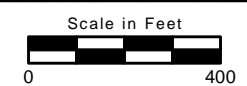
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

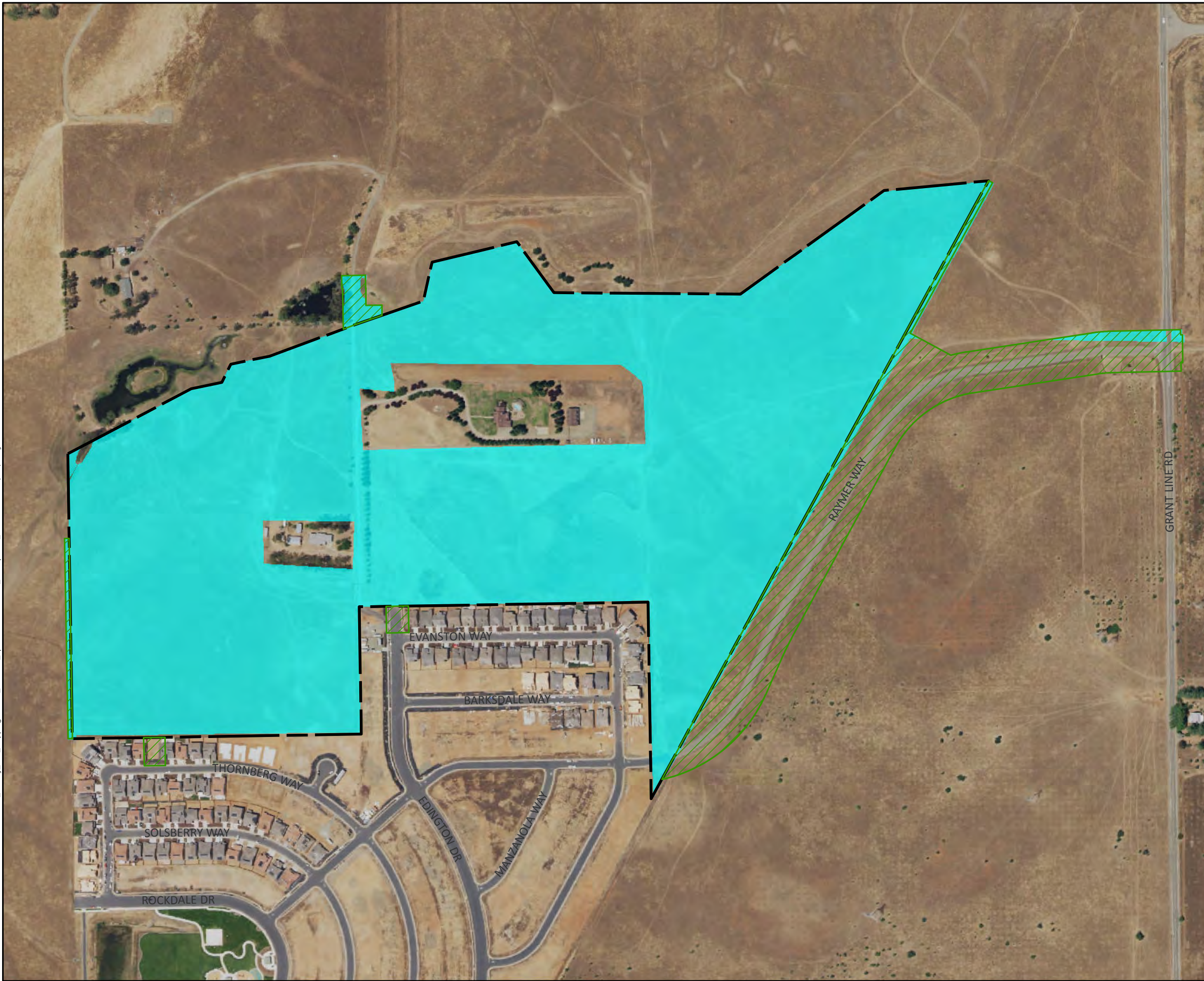
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Modelled\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS) armyers 12/12/2019



### The Preserve Modeled Species Habitat American Badger

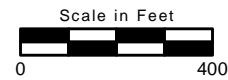
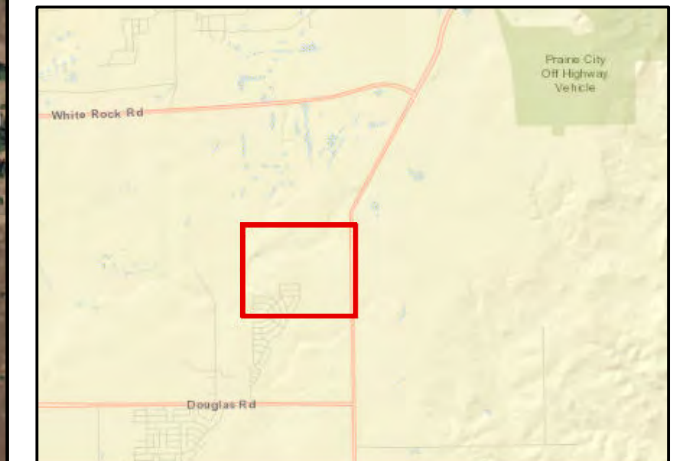
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

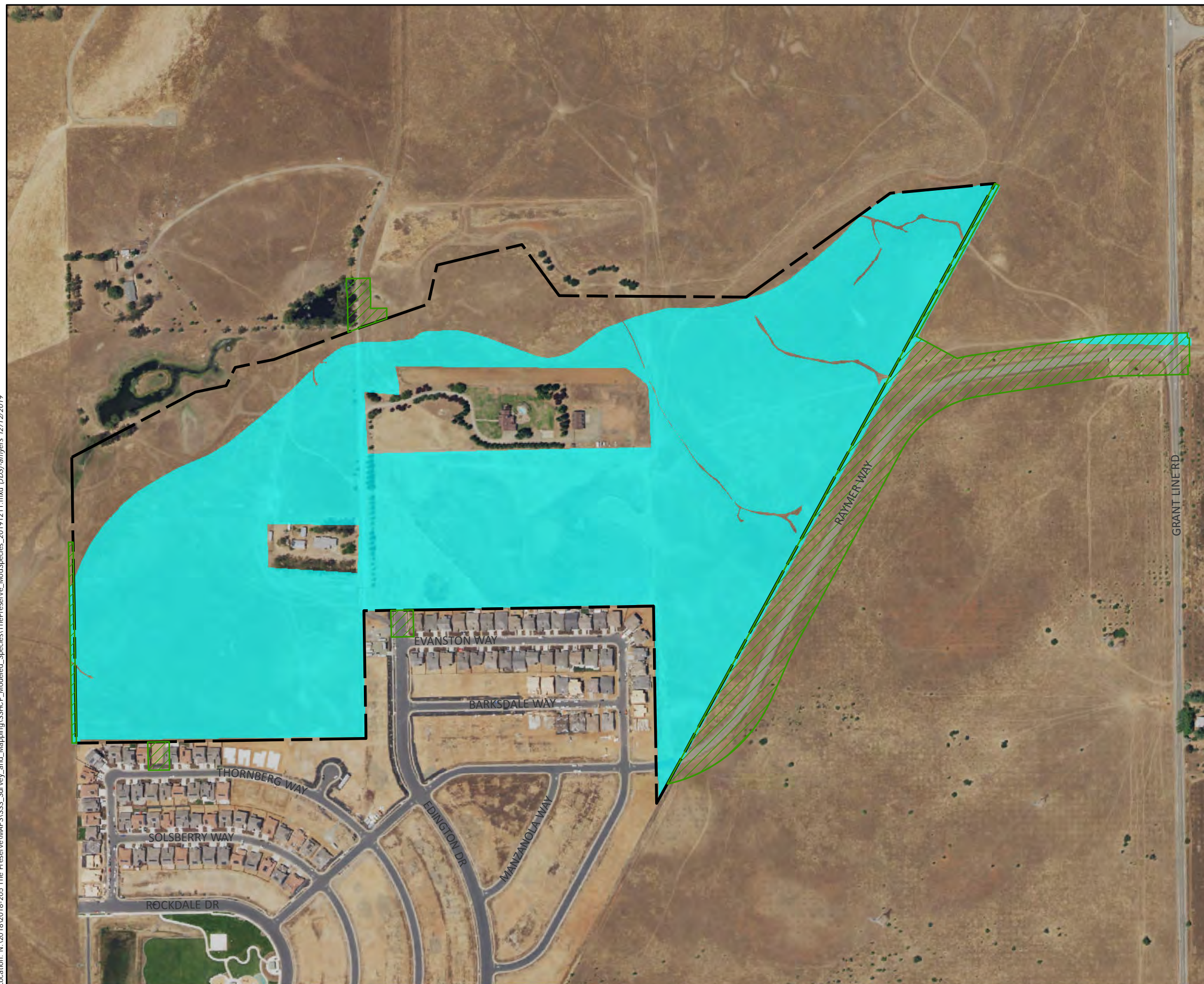
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Bogg's Lake Hedge-hyssop

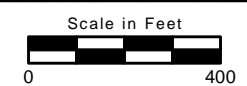
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

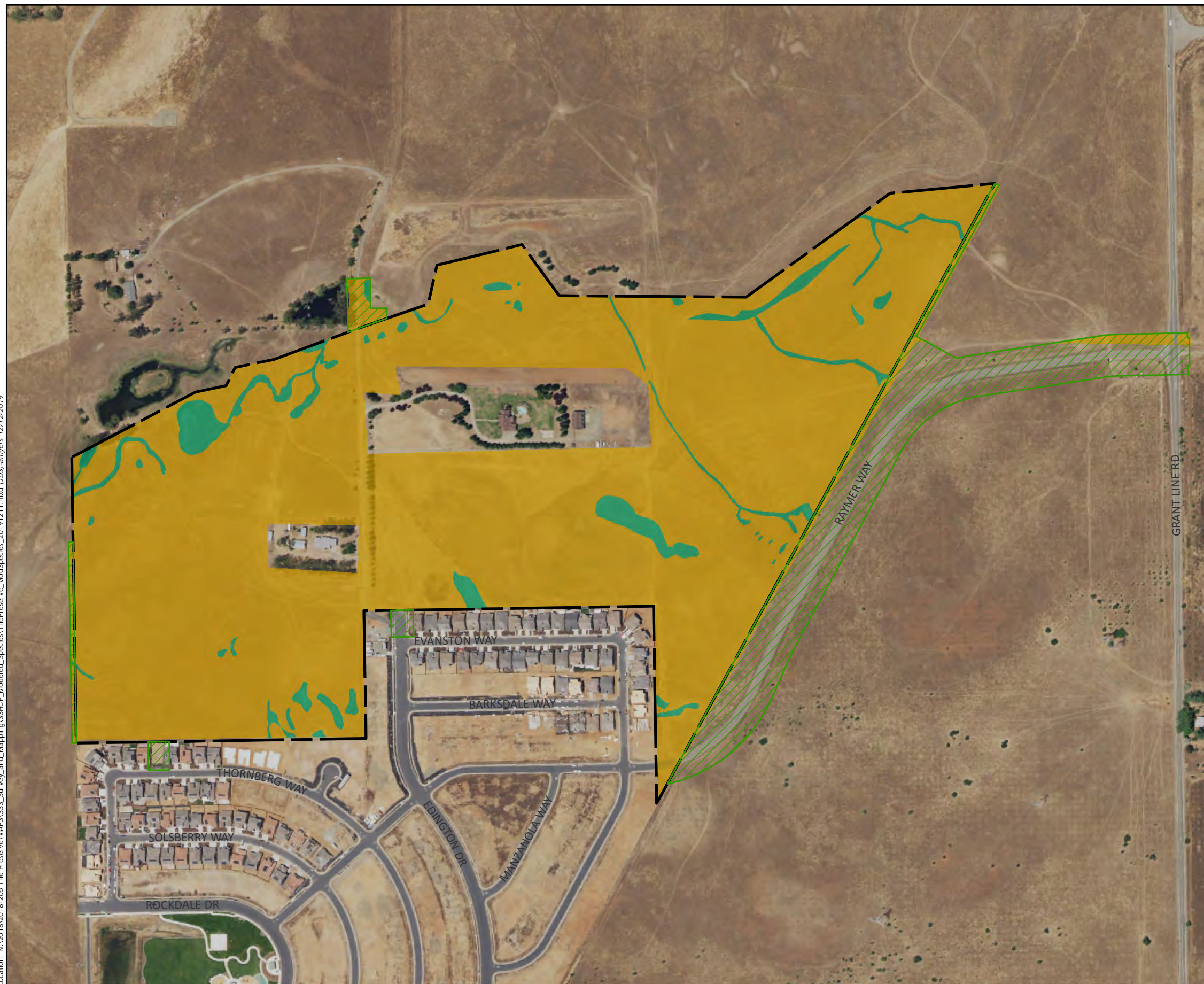
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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# The Preserve Modeled Species Habitat Burrowing Owl

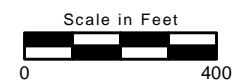
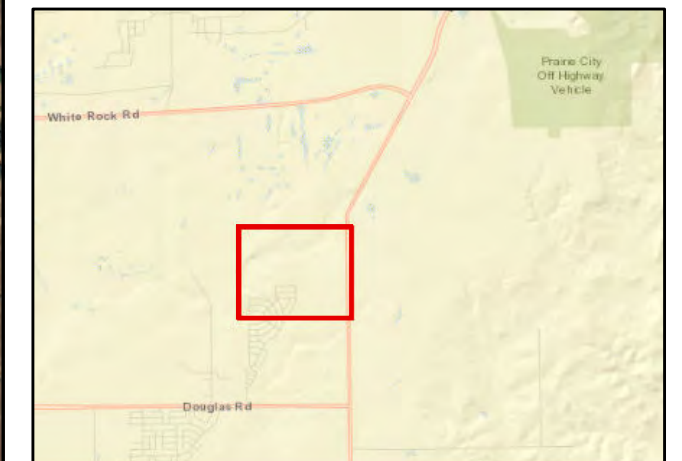
### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

### Modeled Habitat

- Nesting
- Wintering

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Ferruginous Hawk

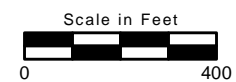
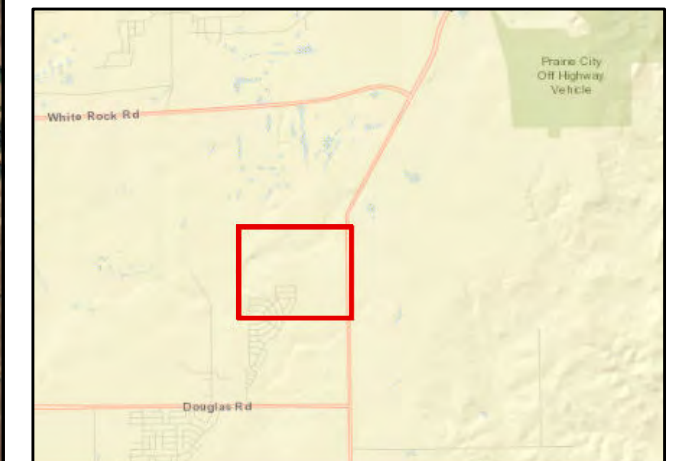
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

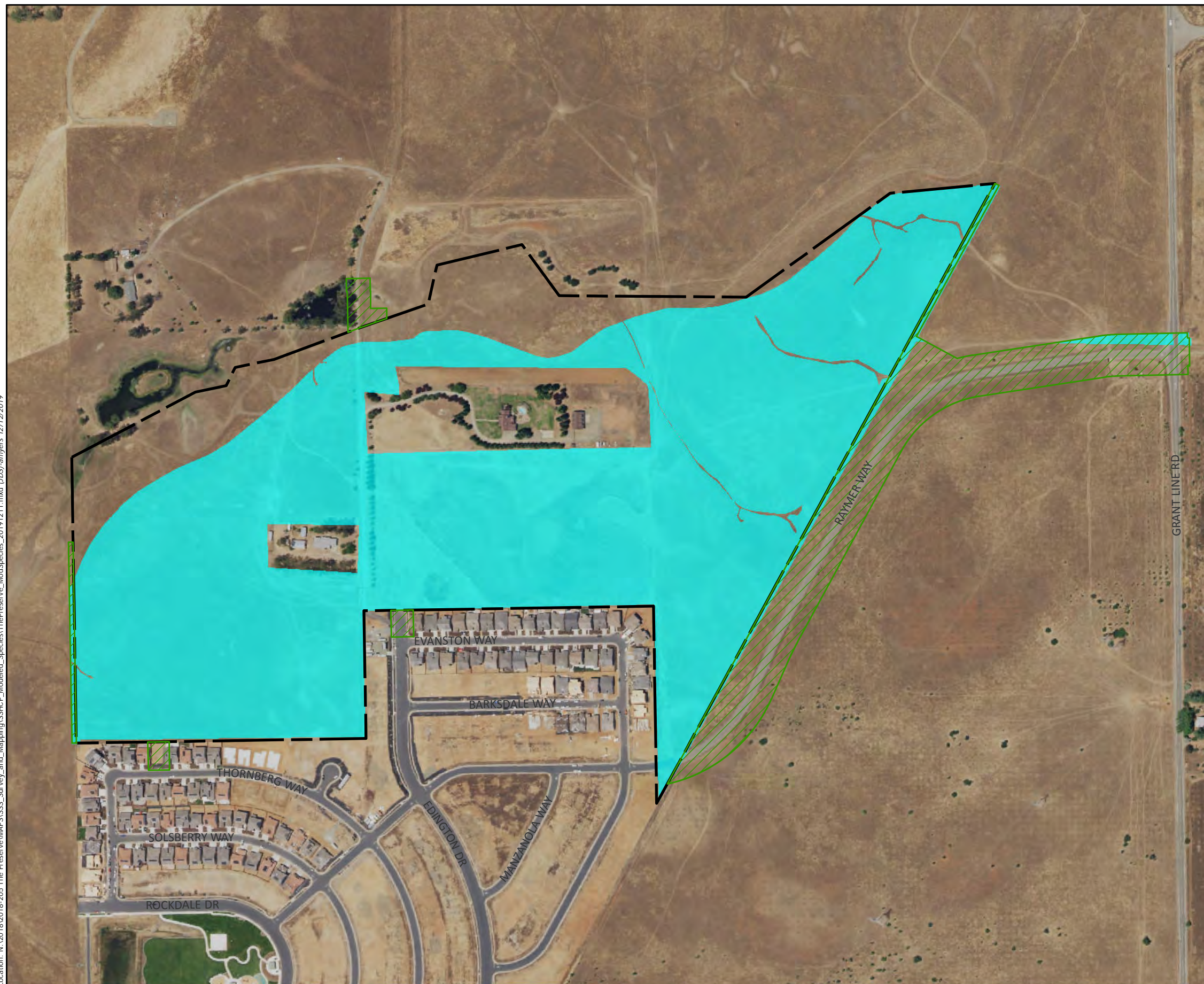
- Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Legenere

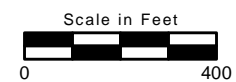
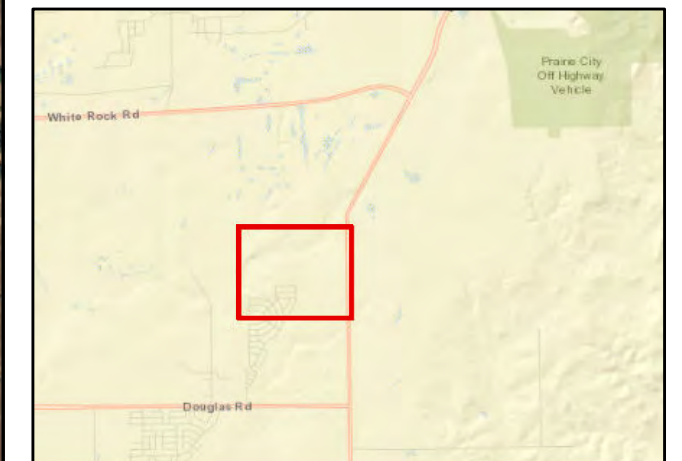
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community









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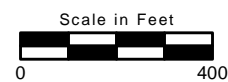
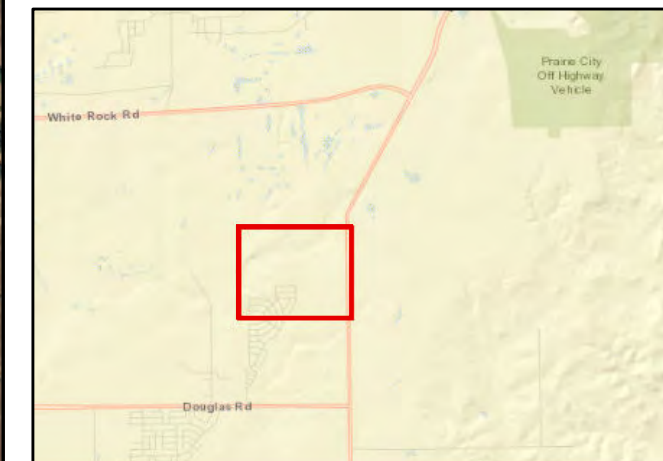


### The Preserve Modeled Species Habitat Loggerhead Shrike

#### Map Features

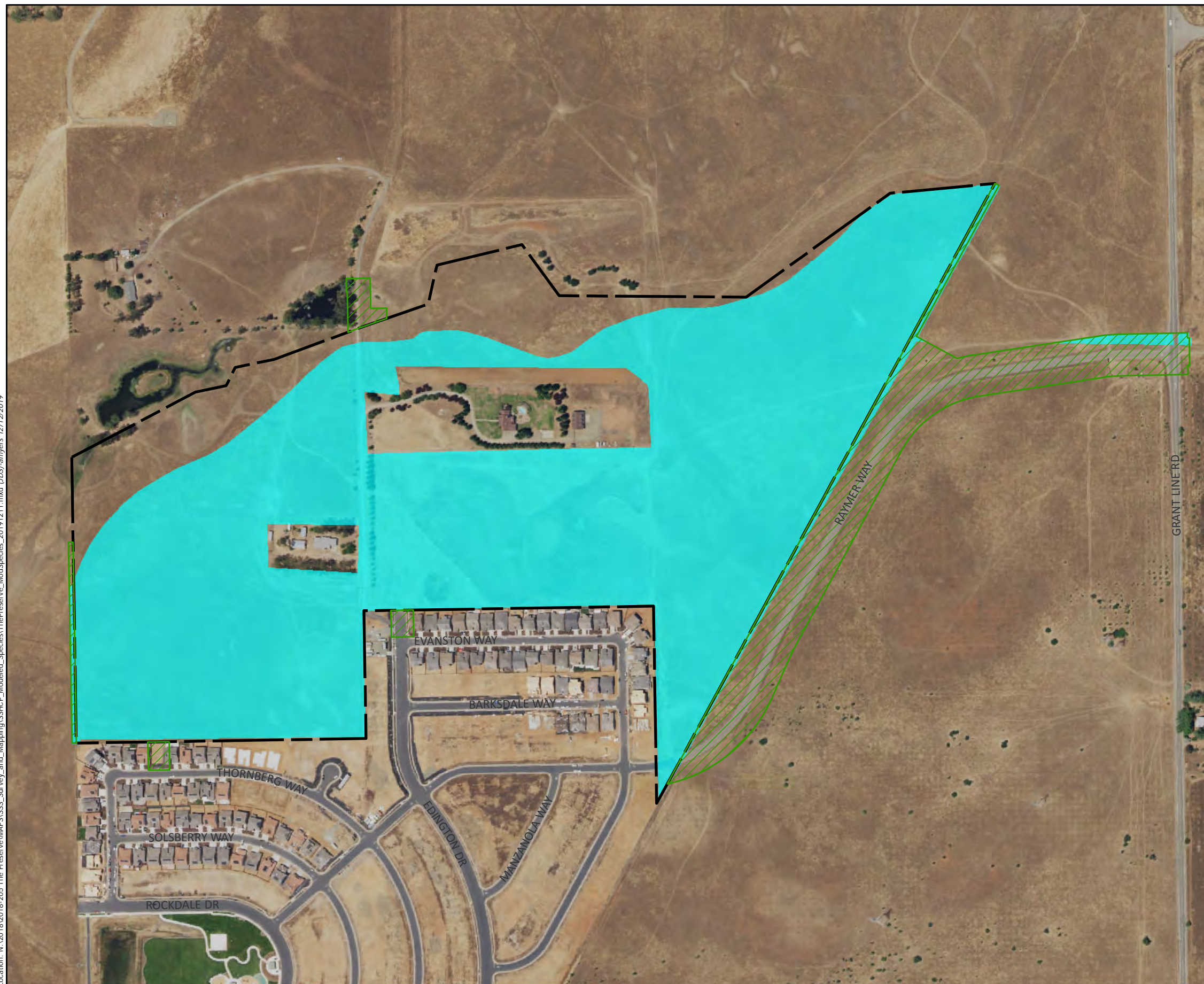
-  Project Boundary - 98.92 acres
  -  Potential Offsite Areas - 13.16 acres
- #### Modeled Habitat
-  Foraging
  -  Nesting-Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Mid-valley Fairy Shrimp

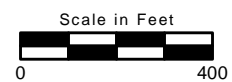
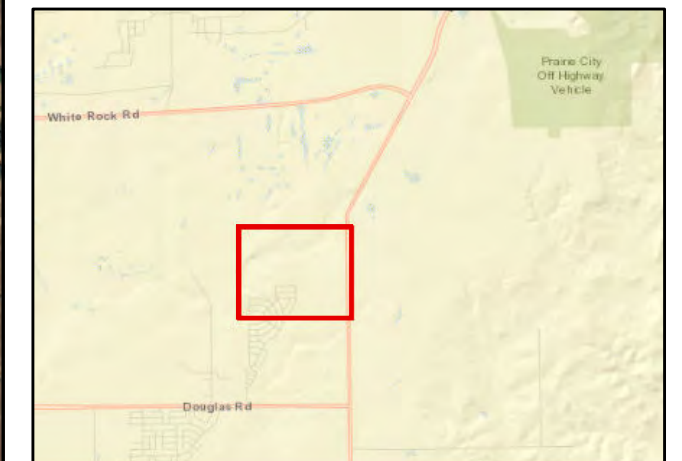
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Northern Harrier

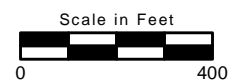
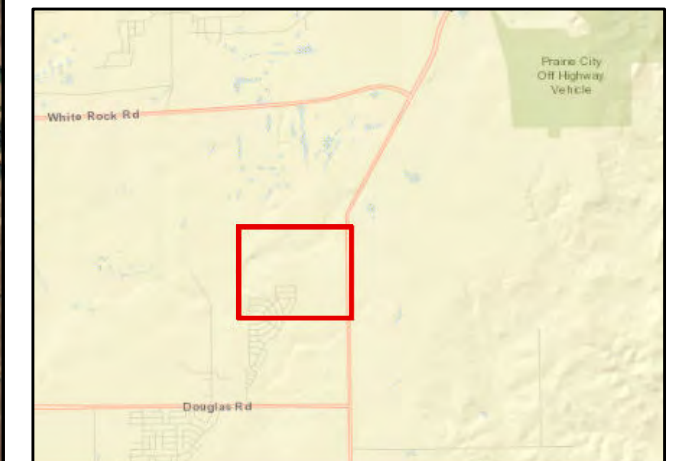
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

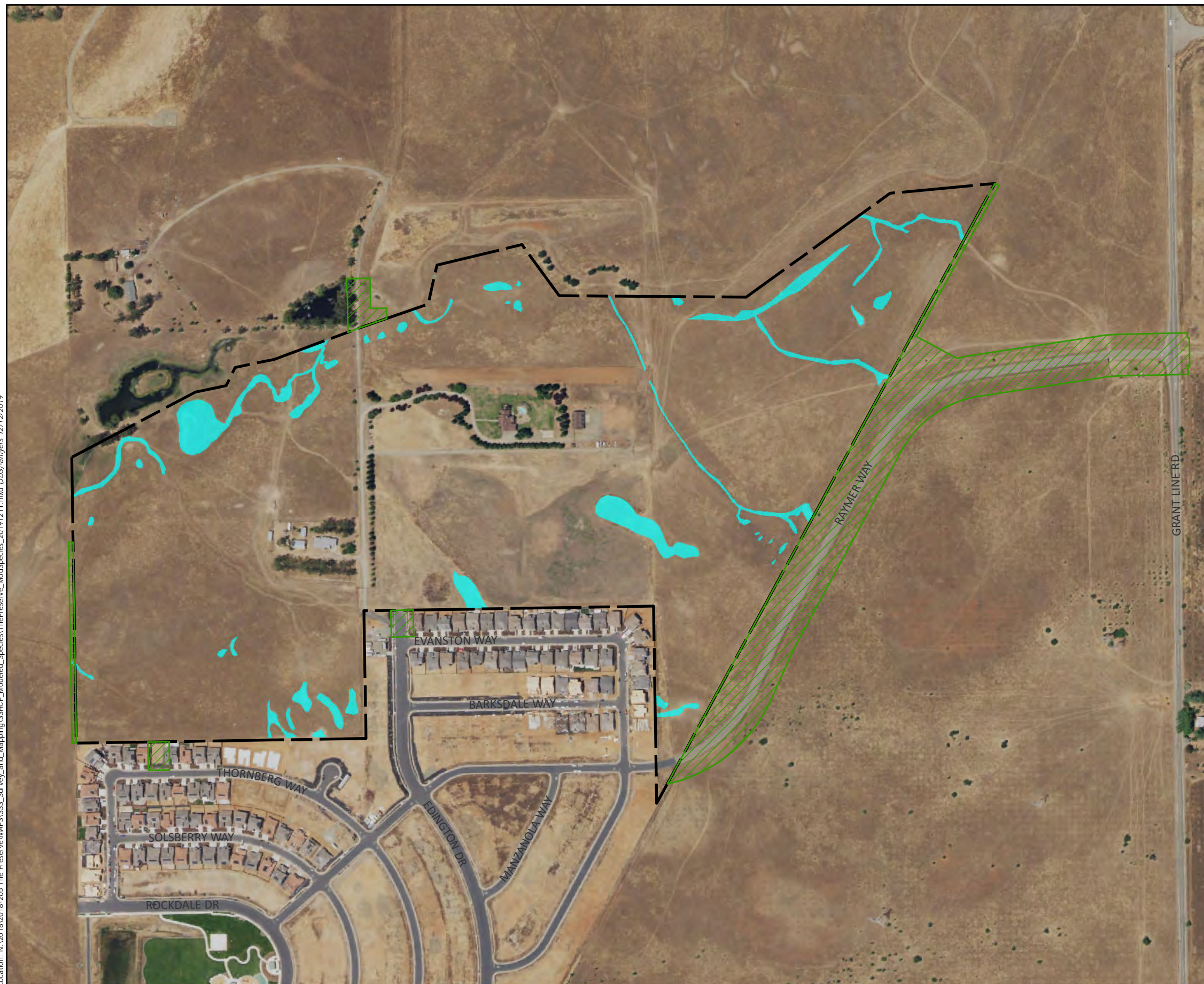
- Foraging
- Nesting-Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





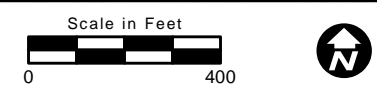
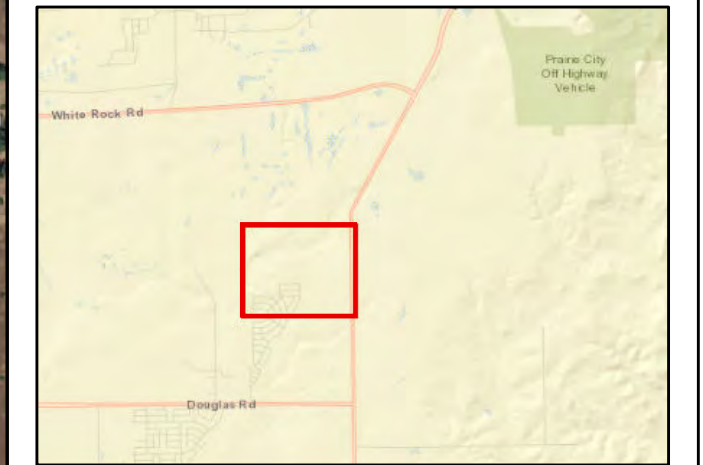
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# The Preserve Modeled Species Habitat Ricksecker's Water Scavenger Beetle

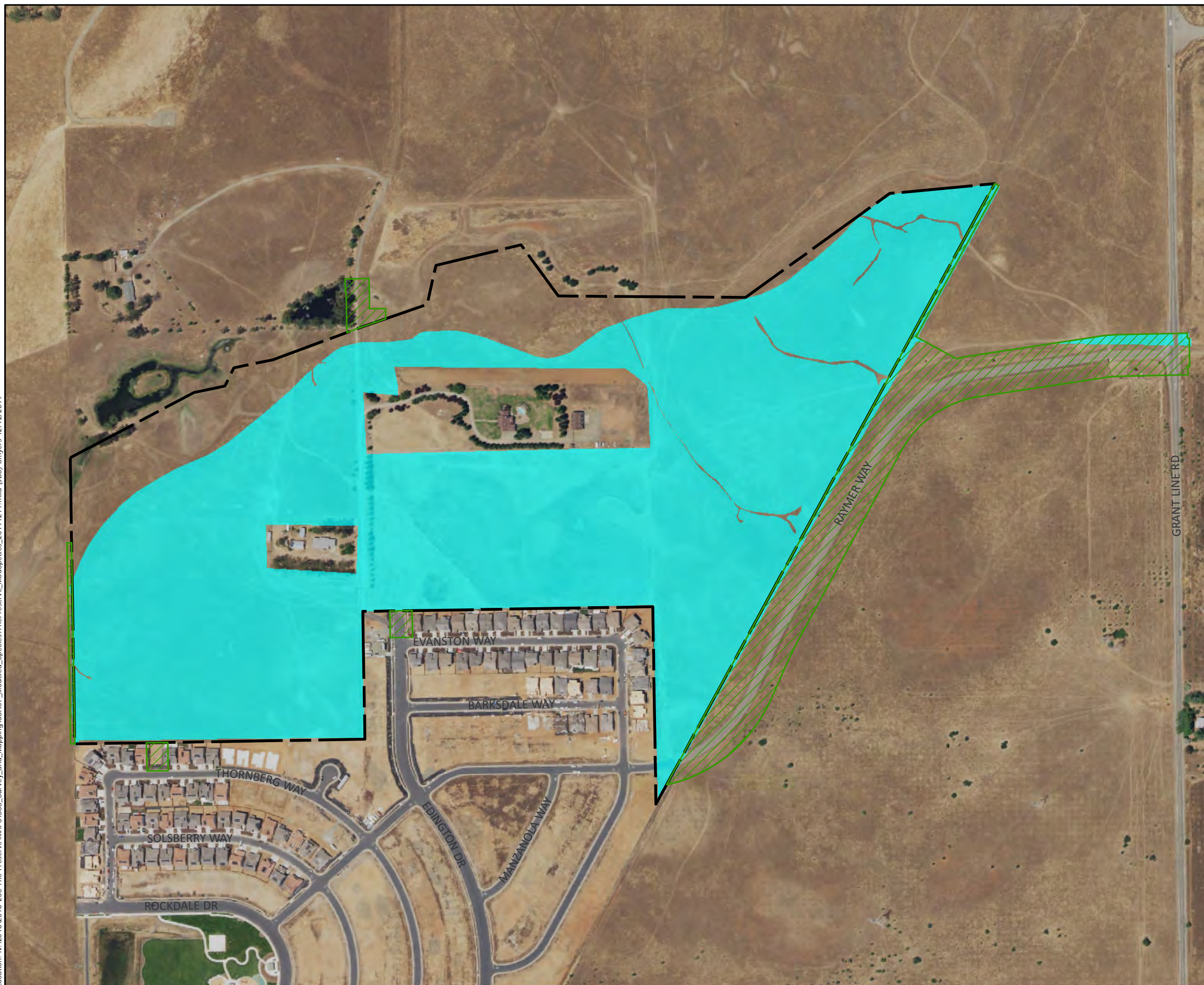
- Map Features**
- Project Boundary - 98.92 acres
  - Potential Offsite Areas - 13.16 acres
- Modeled Habitat**
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Modelled\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS)-armyers 12/12/2019



### The Preserve Modeled Species Habitat Sacramento Orcutt Grass

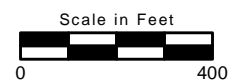
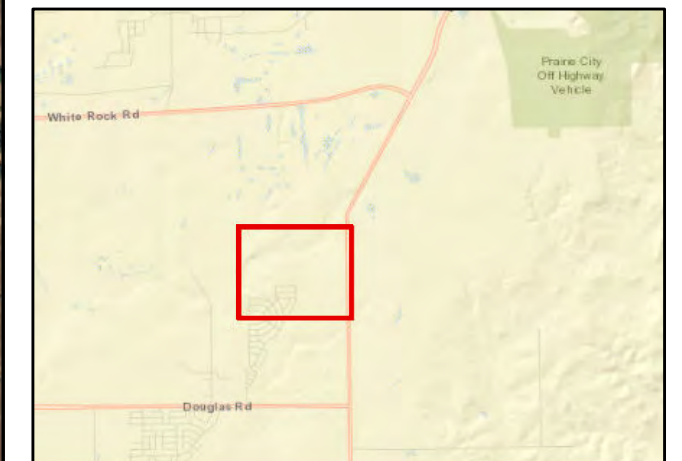
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

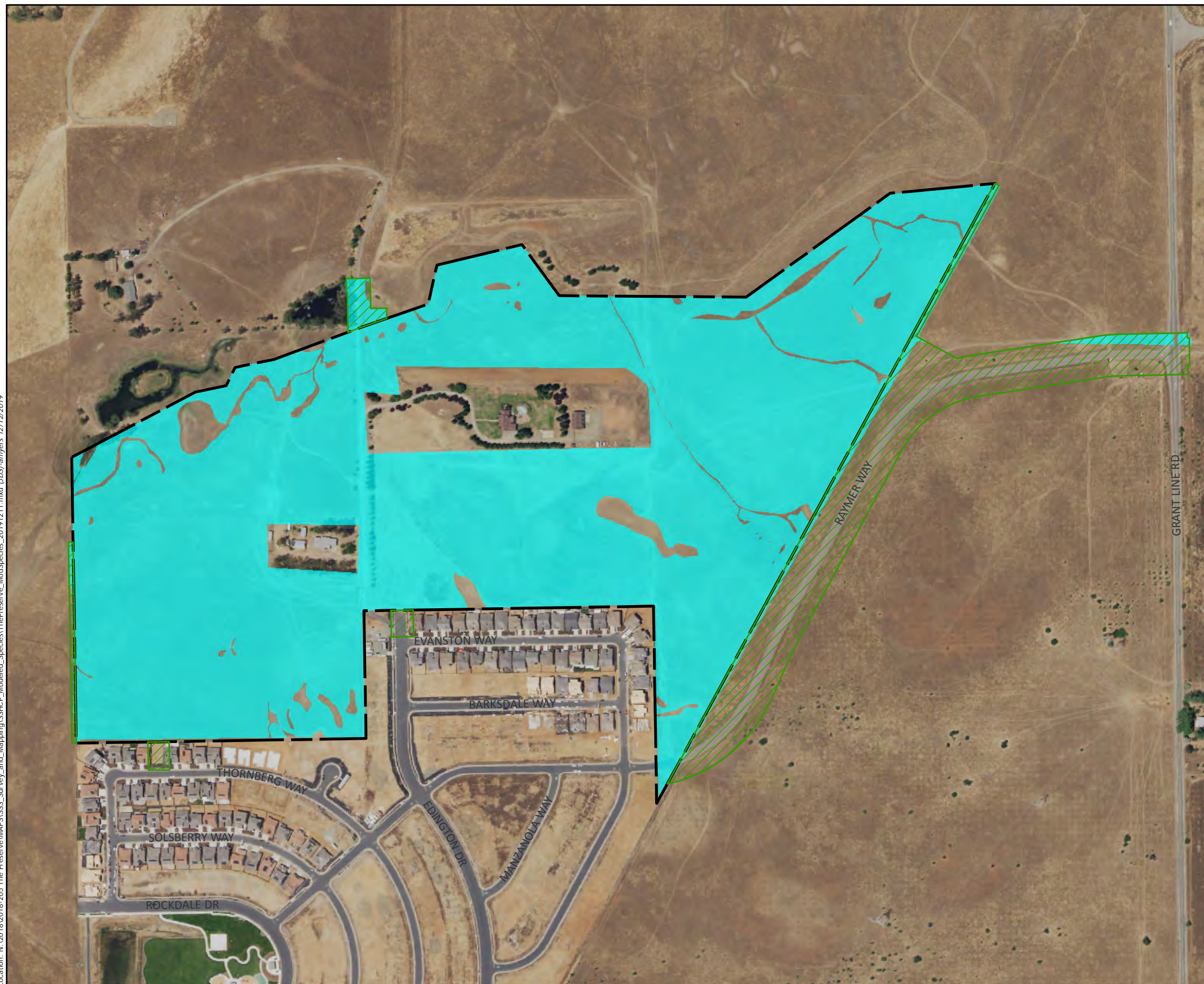
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Model\_Habitat\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS)-armyers 12/12/2019



### The Preserve Modeled Species Habitat Sanford's Arrowhead

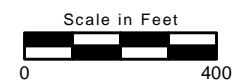
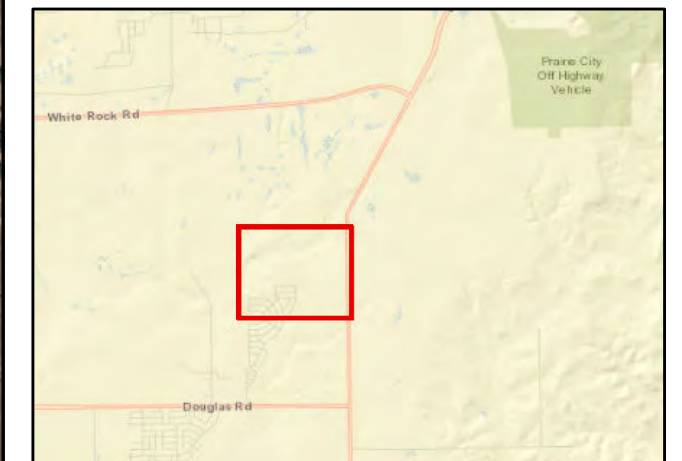
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

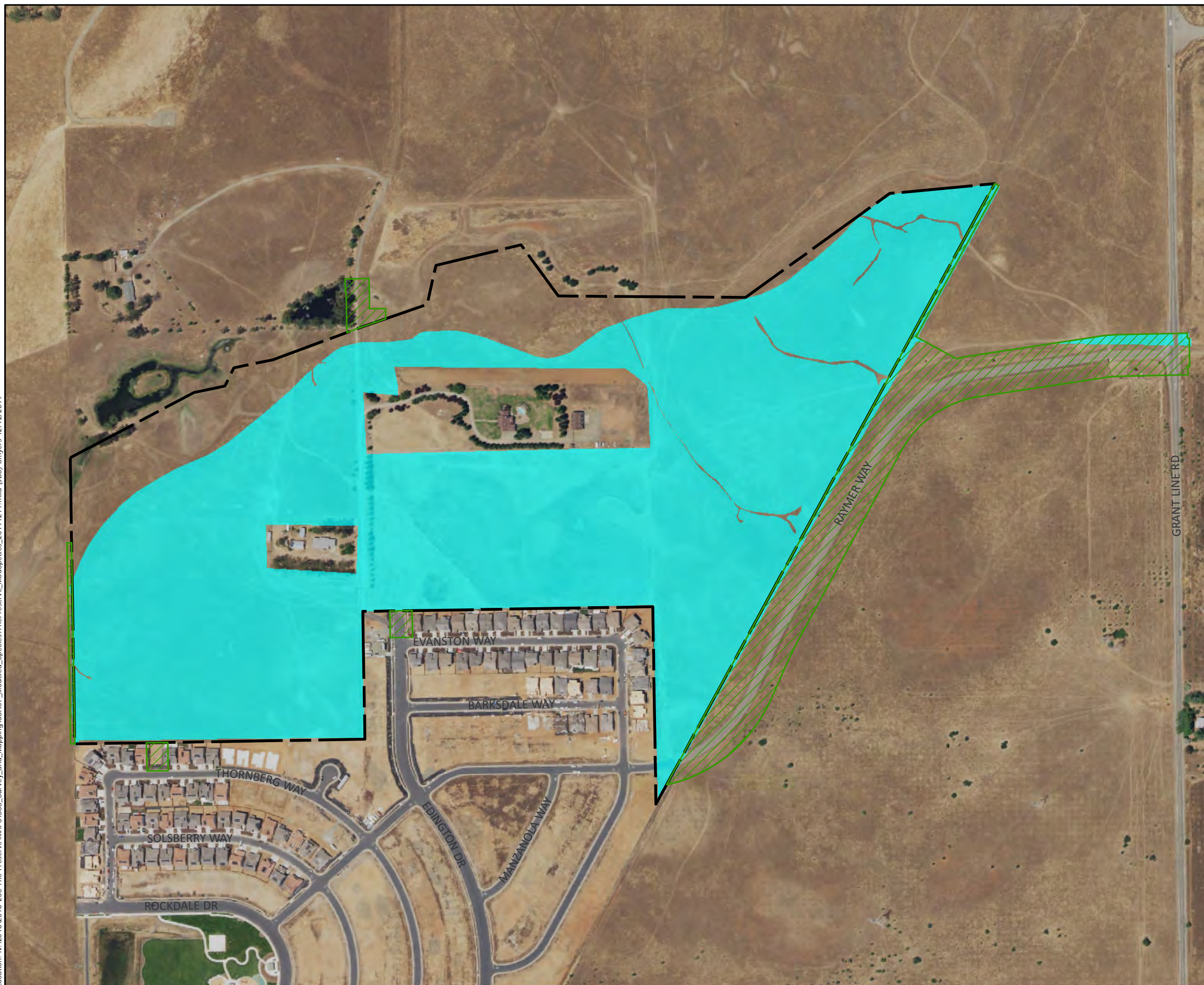
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Modelled\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS)-armyers 12/12/2019



### The Preserve Modeled Species Habitat Slender Orcutt Grass

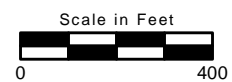
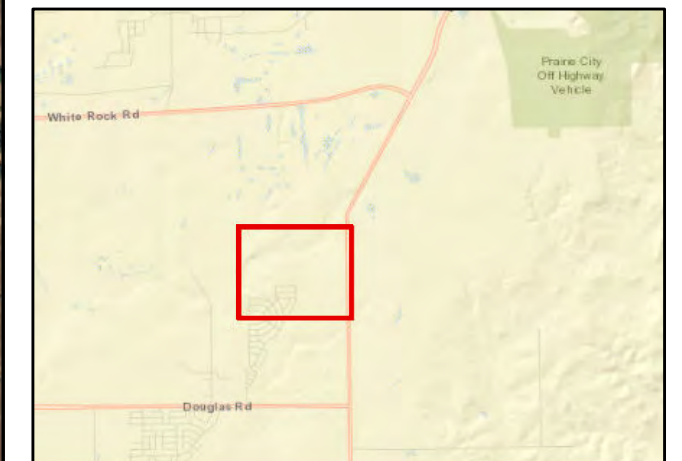
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Swainson's Hawk

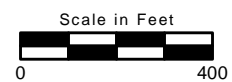
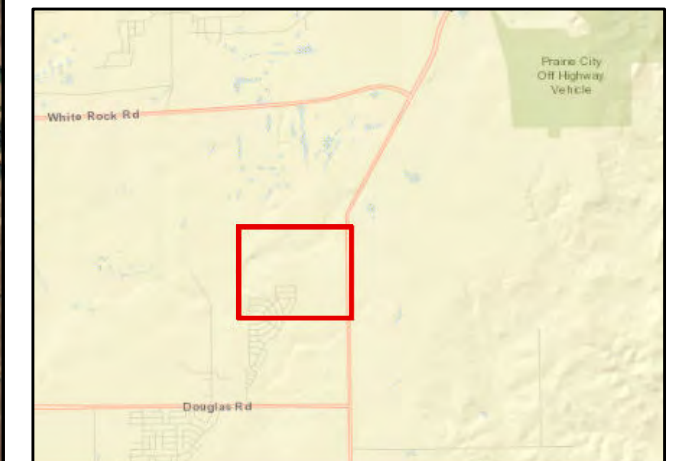
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

- Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Model\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS)-armyers 12/12/2019



### The Preserve Modeled Species Habitat Tricolored Blackbird

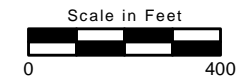
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

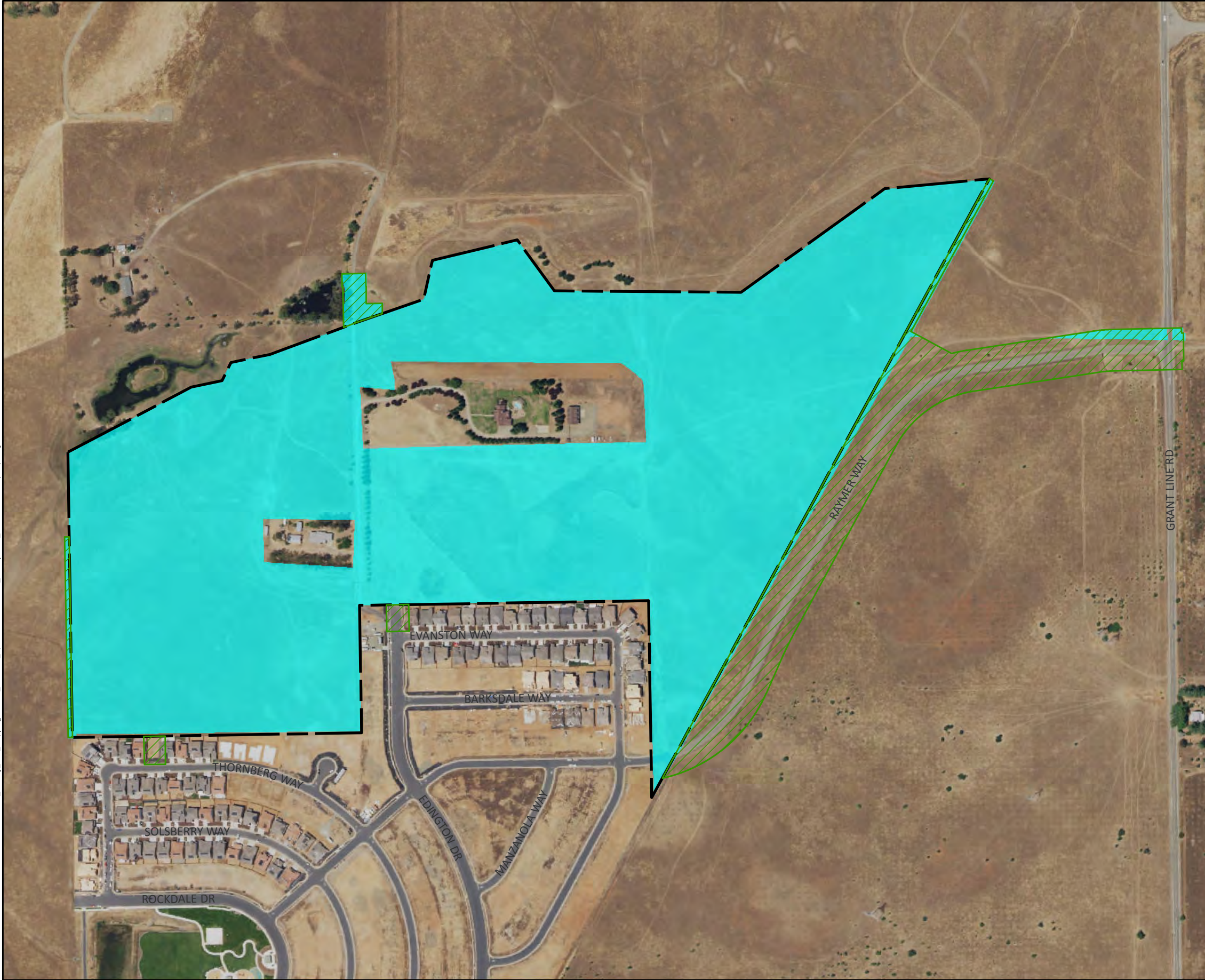
- Foraging
- Nesting-Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Modelled\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS) armyers 12/12/2019



### The Preserve Modeled Species Habitat Vernal Pool Fairy Shrimp

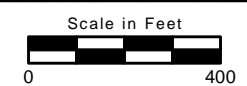
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

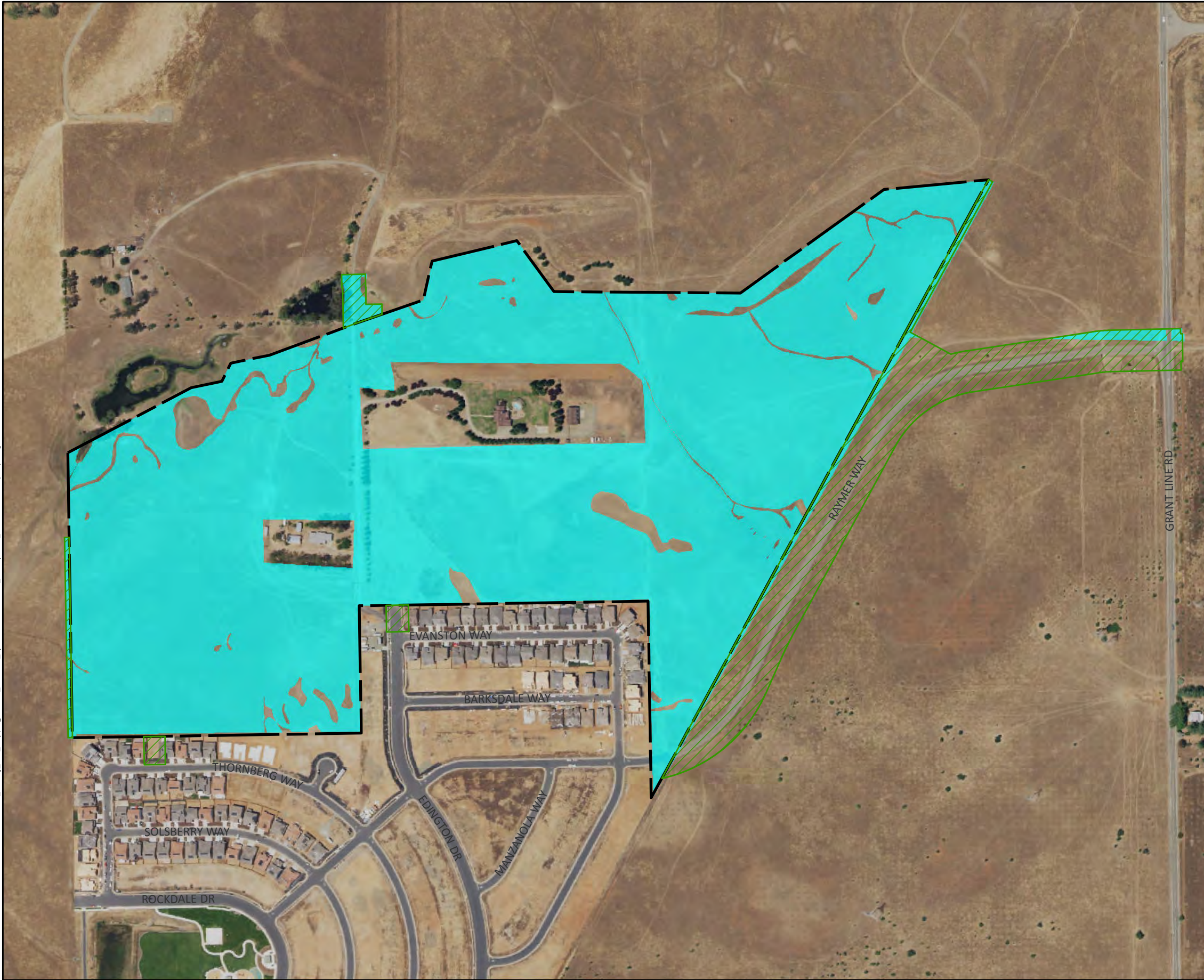
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Model\_Habitat\_Species\ThePreserve\_ModelSpecies\_20191211.mxd (JDS) armyers 12/12/2019



### The Preserve Modeled Species Habitat Vernal Pool Tadpole Shrimp

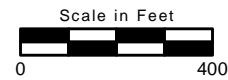
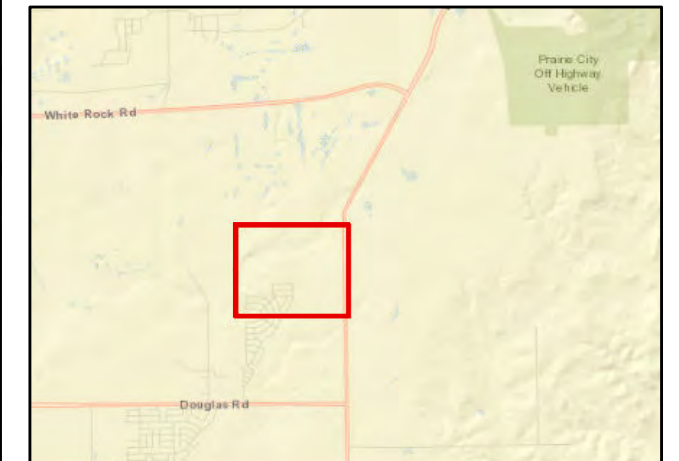
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

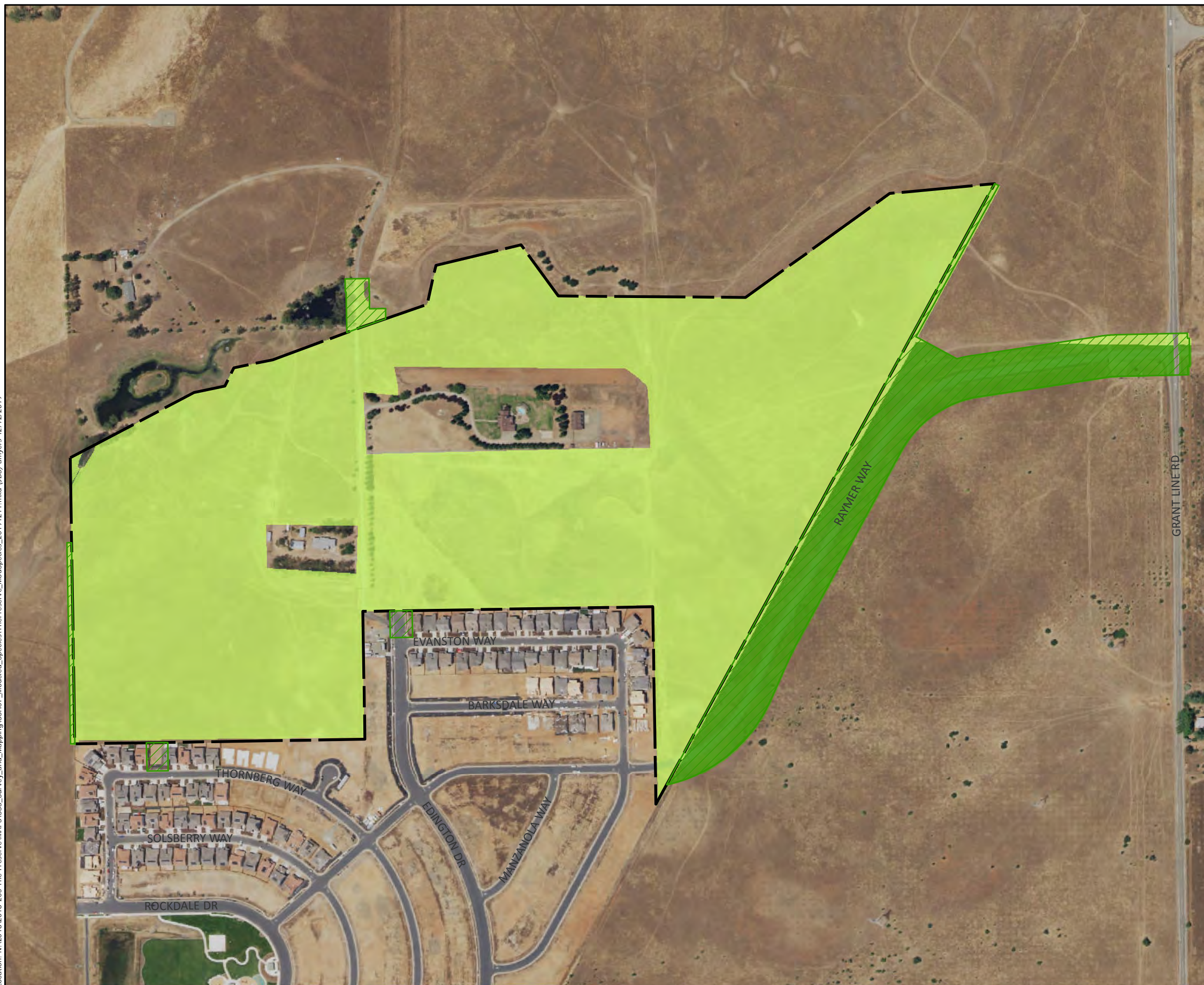
- Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Western Red Bat

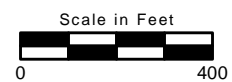
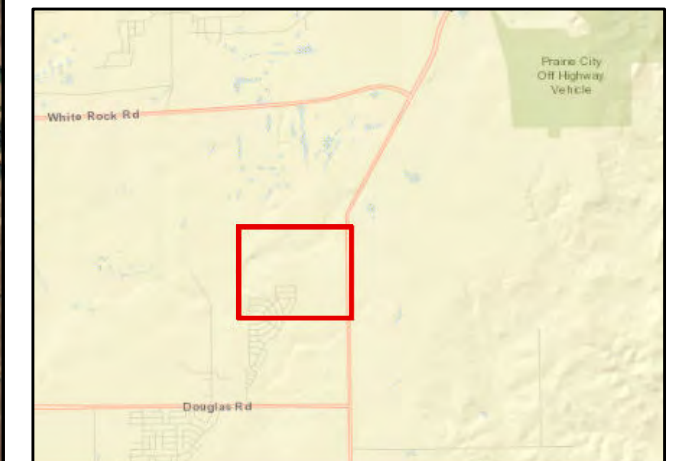
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

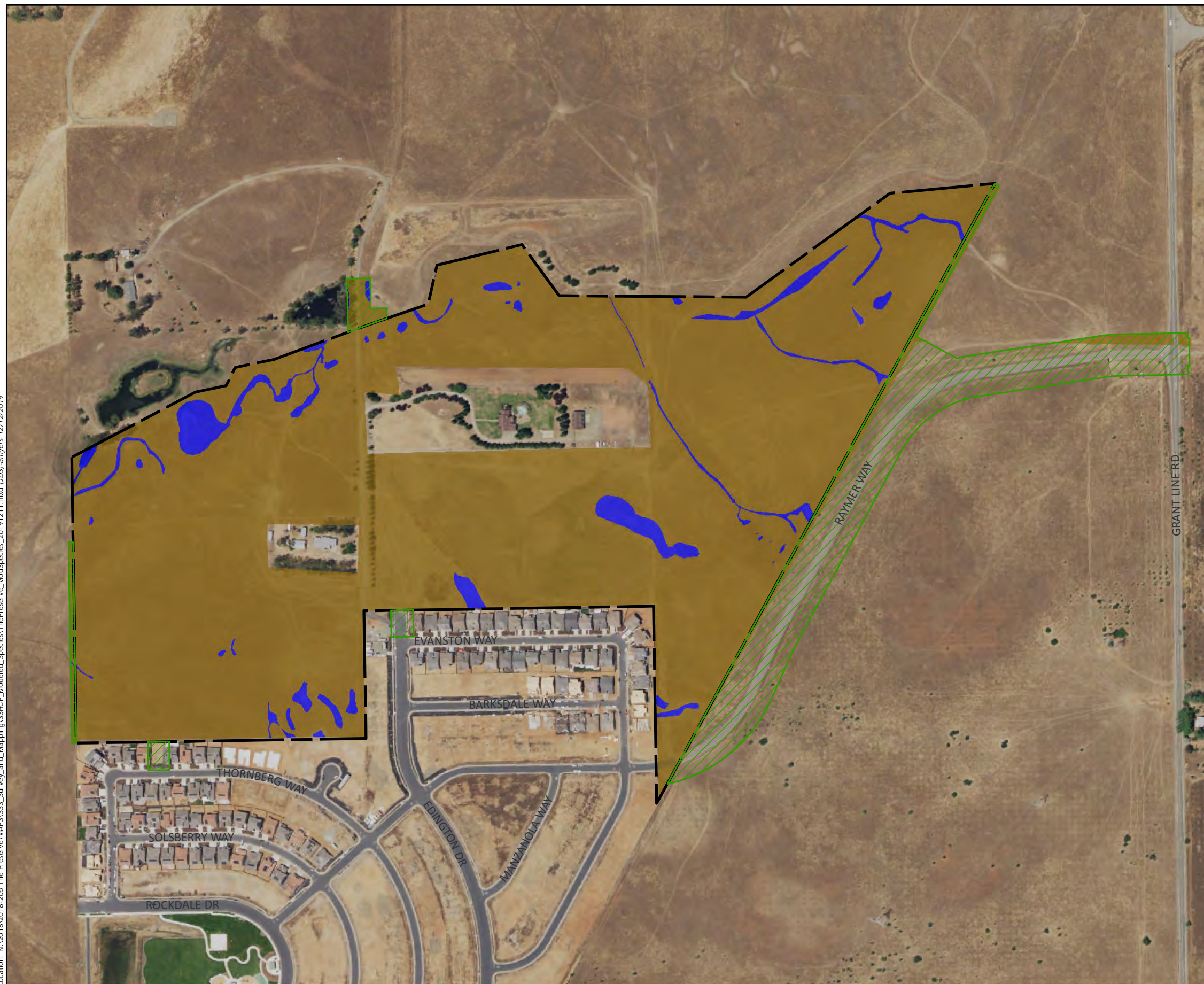
- Foraging
- Roosting-Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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### The Preserve Modeled Species Habitat Western Spadefoot

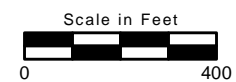
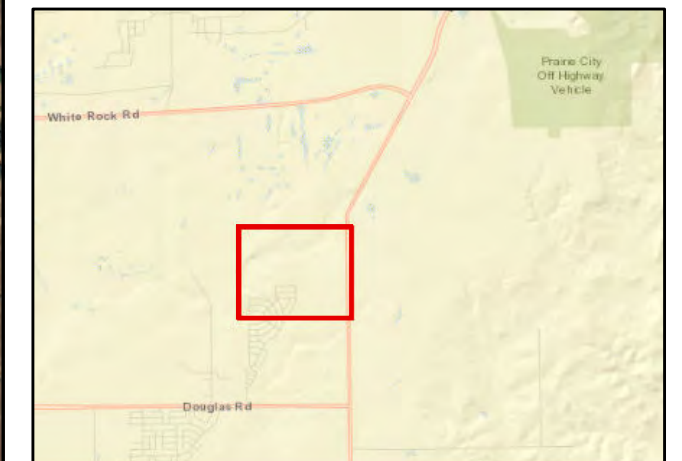
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

- Aquatic Habitat
- Upland Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SSHCP\_Modeled\_Species\ThePreserve\_ModSpecies\_20191211.mxd (JDS)-armyers 12/12/2019



### The Preserve Modeled Species Habitat White-tailed Kite

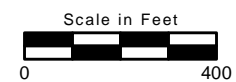
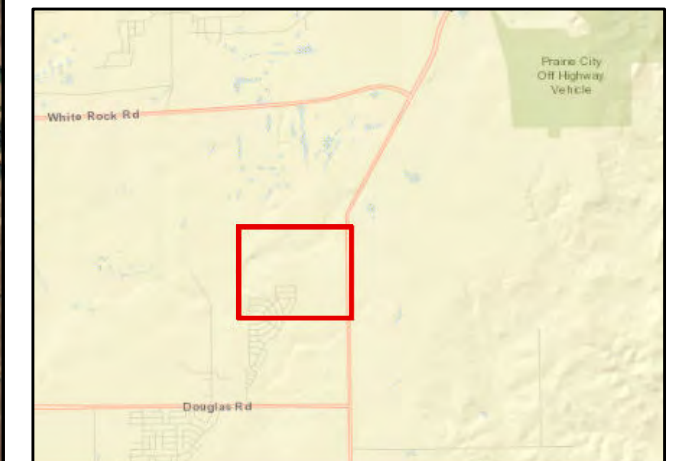
#### Map Features

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 13.16 acres

#### Modeled Habitat

- Foraging

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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## **ATTACHMENT C**

Results of SSHCP Habitat Surveys

June 21, 2019

Mr. George Carpenter  
Winn Communities  
3001 I Street, Suite 300  
Sacramento, CA 95816

**RE: *Bird and Bat Potential Habitat Assessment Surveys – The Preserve Development Project, Rancho Cordova, California***

Dear Mr. Carpenter:

At the request of Winn Communities, Inc., ECORP Consulting, Inc. has conducted surveys for bird and bat habitat within the ±98.92-acre The Preserve Development Project (Project) and the ±9.33-acre potential Offsite areas. The Project is located northwest of Raymer Way and Grant Line Road in the City of Rancho Cordova, Sacramento County, California (Figure 1. *Project Location and Vicinity*). This letter supercedes the letter sent on December 10, 2018.

As required by the South Sacramento Habitat Conservation Plan (SSHCP) Avoidance and Minimization Measures (AMMs), surveys for potential habitat were conducted for tricolored blackbird (TRBL; *Agelaius tricolor*), Swainson's hawk (SWHA; *Buteo swainsoni*) and other raptors, burrowing owls (BUOW; *Athene cunicularia*), and western red bats (LABL; *Lasiurus blossevillii*). In addition, potential habitat for pallid bat (ANPA; *Antrozous pallidus*) was also assessed. Each survey also included buffers around the Project and Offsite areas as required by the AMMs for each species, as described below in the *Survey Methods* section.

## REGULATORY CONTEXT

### South Sacramento Habitat Conservation Plan

The SSHCP is a regional effort that will provide development and infrastructure projects with streamlined federal and state permitting processes while creating a preserve system to protect habitat, open space, and agricultural lands (County of Sacramento et al. 2018). The SSHCP allows project proponents within the Plan Area to simplify and expedite the state and federal ESA permitting process. In addition to streamlining the ESA permitting processes, a parallel Aquatic Resources Program (ARP) has been developed to address permitting pursuant to the Clean Water Act Section 404 and 401 permitting process. In addition, a Master Streambed Alternation Agreement will be requested by the SSHCP Implementing Entities to address Section 1602 of the California Fish and Game Code. The SSHCP will allow Sacramento County, the City of Rancho Cordova, City of Galt, and the Southeast Connector Joint Powers Authority to receive Incidental Take Permits (ITP) for Covered Species from USFWS and CDFW for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) can extend incidental take coverage provided by the SSHCP ITPs to activities and

projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. See [www.southsachcp.com](http://www.southsachcp.com) for more information.

### *SSHCP Covered Species*

TRBL, SWHA, BUOW and LABL are SSHCP Covered Species. Habitat surveys for these species were determined to be required for the Project by the following SSHCP AMMs: TCB-1, SWHA-1, RAPTOR-1, WBO-1, and BAT-1.

### *Pallid Bat*

ANPA is not an SSHCP covered species although it is considered a species of special concern by CDFW. A California Natural Diversity Database search revealed a nearby occurrence of ANPA. Therefore, although not an SSHCP-covered species, ANPA was included in the bat habitat assessment for informational purposes.

## **SURVEY METHODS**

### **Bird Survey**

ECORP biologists Keith Kwan and Angela Haas conducted surveys for potential SSHCP-covered bird species habitat within the Project on November 27, 2018. ECORP biologist Matthew Spaulding conducted surveys for potential SSHCP-covered bird species habitat within the potential Offsite areas on June 13, 2019. Inaccessible Offsite areas and surrounding buffers were visually assessed from within the Project or from publicly accessible roads.

Before starting the surveys, the biologists scanned all visible areas of the Project area with binoculars (10X42 magnification). The entire Project Area was visually surveyed on foot, while the surrounding buffers were visually assessed from within the Project or from publicly accessible roads due to private property. During the surveys, all potential nesting habitat were identified and all wildlife species present recorded. The methods below were enacted during surveys as per the SSHCP AMMs.

### *TCB-1*

The biologists walked transects and visually scanned the entire Project area and the accessible portions of the Offsite areas, and visually scanned a 500-foot buffer. All potential TRBL nesting and foraging habitat was recorded and mapped.

### *SWHA-1 & RAPTOR-1*

The biologists walked transects and visually scanned the entire Project and the accessible portions of the Offsite areas. In the surrounding 0.25-mile buffer, accessible public roads were driven, and private property was visually scanned for the presence of SWHA and other raptor nesting habitat. All potential SWHA and raptor nesting trees were recorded and mapped.

WBO-1

The biologists walked transects and visually surveyed the Project area and the accessible portions of the Offsite areas for the presence of burrows and/or evidence of BUOW. Transects were spaced 50 feet apart due to good visibility and a lack of dense vegetation. A 250-foot buffer was also visually scanned but not walked due to inaccessible private property. All potential or occupied burrows were recorded and mapped.

## Bat Survey

ECORP biologist Matthew Spaulding conducted a survey for potential LABL and ANPA hibernacula on December 4, 2018 and on June 13, 2019. All potential winter hibernaculum habitat was visually scanned with binoculars (10X42 magnification) and assessed for suitability for these species. External physical features of the trees and structures located within the Project area and the Offsite area, including a 300-foot buffer, were examined for evidence of bat use (e.g., presence of guano, evidence of day roost use, culled insect parts, urine staining, odors associated with bats). Mr. Spaulding also listened for chatter indicative of roosting bats at each tree. Inaccessible Offsite areas and surrounding buffers were visually assessed from within the Project or from publicly accessible roads.

The following methods were enacted during the survey as per the SSHCP AMM BAT-1:

BAT-1

Mr. Spaulding walked and visually scanned the Project area and the accessible portions of the Offsite areas, and visually scanned a 300-foot buffer for the presence of LABL winter hibernaculum habitat. All potential LABL winter hibernaculum trees were recorded and mapped.

In addition, the same methods were used for ANPA, though not an SSHCP Covered Species.

## RESULTS

### Project Setting

The Project is situated at an elevation of approximately 220-240 feet above mean sea level. The Project site included a mix of rural residential and undeveloped rangeland. Two rural residences and associated outbuildings are present within the Project Area. Some horticultural tree stands occur around the residences, as well as eucalyptus (*Eucalyptus* sp.), cottonwood (*Populus* sp.) and oak (*Quercus* sp.). The remaining area is primarily annual grassland used for cattle grazing. A full list of the wildlife species observed on November 27, 2018 and June 13, 2019 are included as Attachments A and B, respectively.

### Bird Survey

Potential nesting habitat for TRBL, SWHA and other raptors, and BUOW occurred within the Project and buffer areas, but not within the Offsites. One BUOW was observed within the Project.

Potential nesting habitat for TRBL was found within the Project and within the associated buffer (Figure 2. *Potential Tricolored Blackbird Nesting Habitat*). The potential nesting habitat features mapped consisted of



patches of bull thistle (*Cirsium vulgare*). Evidence of TRBL nesting during the previous year's (2018) nesting season was present within these patches, and TRBL was observed onsite during the November 27, 2018 survey; however, no evidence of active nesting was observed during the June 13, 2019 survey. Potential foraging habitat for TRBL included the grassland and wetland habitats within the Project and Offsites.

Potential nesting habitat for SWHA and other raptors occurred within the Project and within the associated buffer (Figure 3. *Potential Swainson's Hawk and Raptor Nesting Habitat*). Potential SWHA nesting habitat included large trees, while potential nesting habitat for other raptors included large and medium-sized trees.

Potential nesting habitat for BUOW occurred within the Project. Numerous unoccupied burrows were mapped along the eastern boundary and the southeastern portion of the Project site (Figure 4. *Potential Western Burrowing Owl Burrow Habitat*). Of these, one burrow had an individual BUOW present at the time of the survey (noted as "Burrow, Occupied" on Figure 4) and evidence of BUOW presence (e.g. white wash, pellets) was observed at three other burrow locations (noted as "Burrow, with Evidence"). No potential or occupied burrows could be seen within the 250-foot buffer. However, due to access limitations, the surrounding buffer could not be adequately surveyed to rule out the potential presence of suitable burrows or BUOW presence.

## Bat Survey

Potential hibernaculum habitat for LABL occurred within the 300-foot buffer but not within the Project or Offsite areas. Potential hibernaculum occurred in the form of a large snag, two cottonwood trees, large eucalyptus trees all with suitable cavities and/or exfoliating bark (Figure 5. *Potential Western Red Bat and Pallid Bat Hibernacula*). There was no visible sign indicating bats were currently using the habitat.

Potential hibernaculum habitat for ANPA occurred within the Project site, but not within the buffer or Offsite areas. Potential hibernacula for ANPA were present in the form of structures with gaps or vents that could allow access to buildings (Figure 5. *Potential Western Red Bat and Pallid Bat Hibernacula*). There was no visible sign indicating bats were currently using the habitat.

## RECOMMENDATIONS

As per requirements of the SSHCP, subsequent AMMs may need to be implemented based on the results of these surveys. Please refer to Section 5.4.2 of the SSHCP for more information on required AMMs.

If you have any questions, please call me or Taraneh Emam at (916) 782-9100.

Sincerely,



Keith Kwan  
Senior Biologist

## **LIST OF FIGURES**

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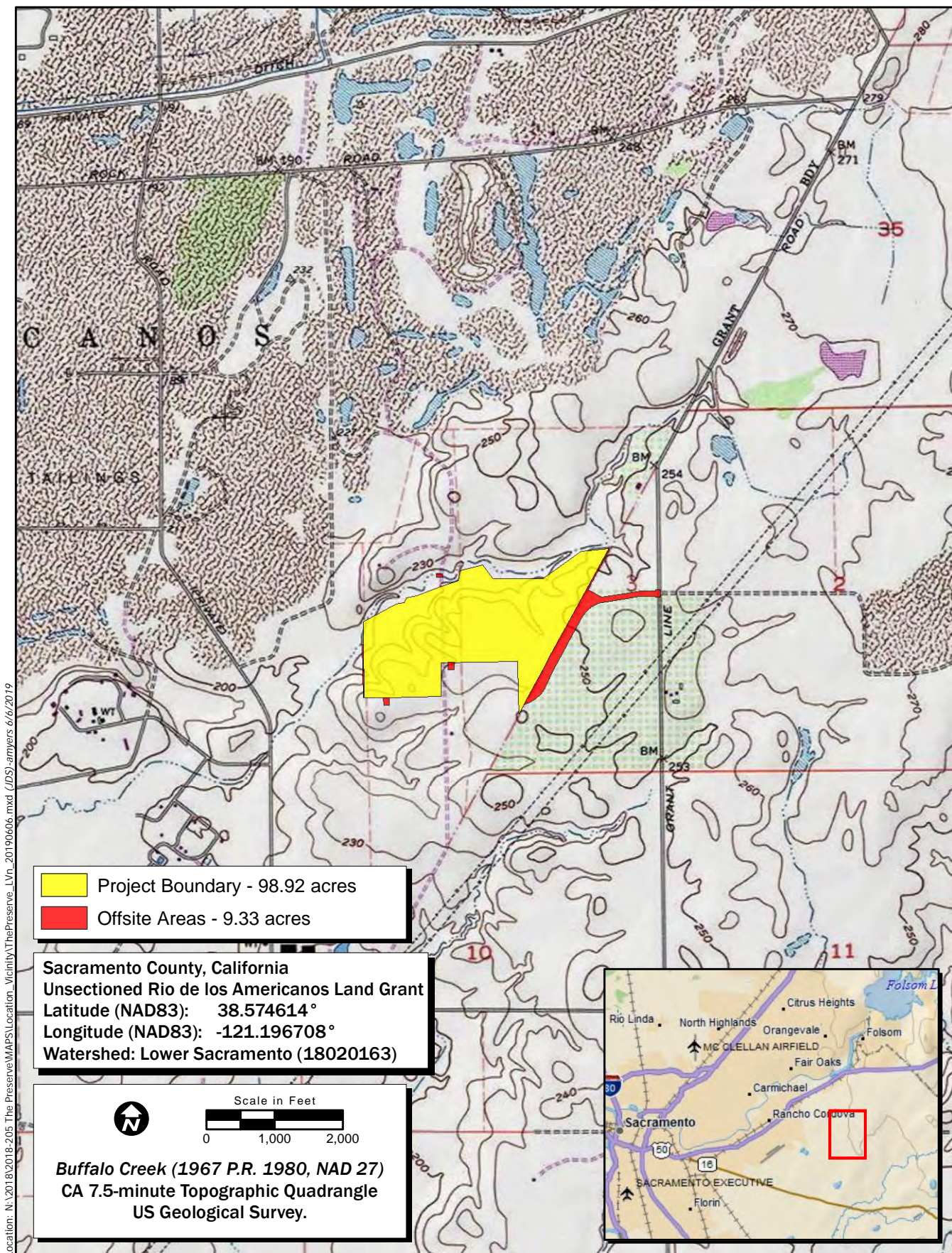
Figure 1. Project Location and Vicinity

Figure 2. Potential Tricolored Blackbird Nesting Habitat

Figure 3. Potential Swainson's Hawk and Raptor Nesting Habitat

Figure 4. Potential Western Burrowing Owl Burrow Habitat

Figure 5. Potential Western Red Bat and Pallid Bat Hibernacula



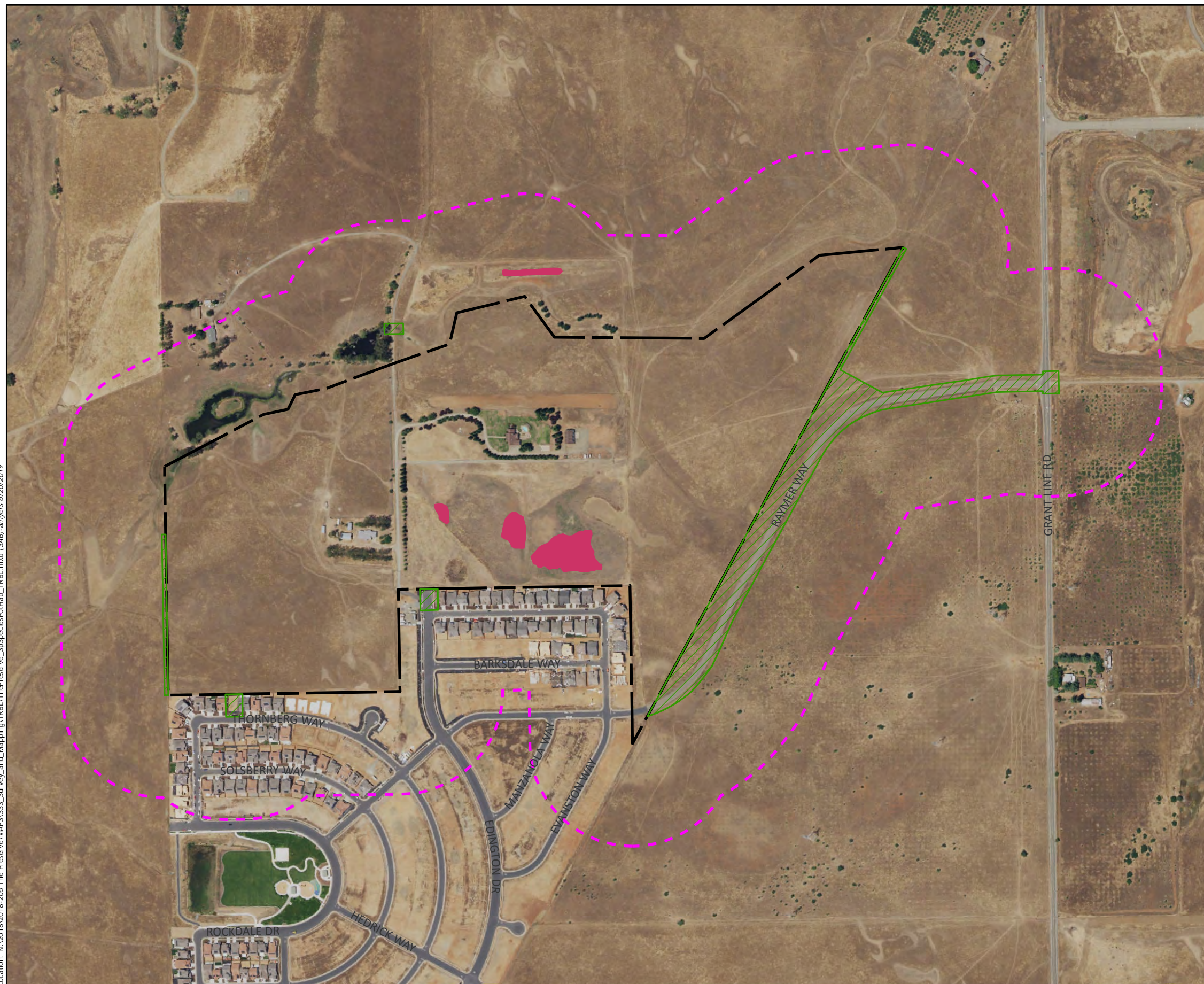
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Map Date: 6/6/2019  
 iService Layer Credits: Copyright© 2013 National Geographic Society, i-cubed  
 Copyright:(c) 2018 Garmin

**Figure 1. Project Location and Vicinity**







Location: N:\2018\2018-205 The Preserve\Map\SSS\_Survey\_and\_Mapping\TRBL\ThePreserve\_SpSpeciesPotHab\_TRBL.mxd (SAB) - amyers 6/20/2019

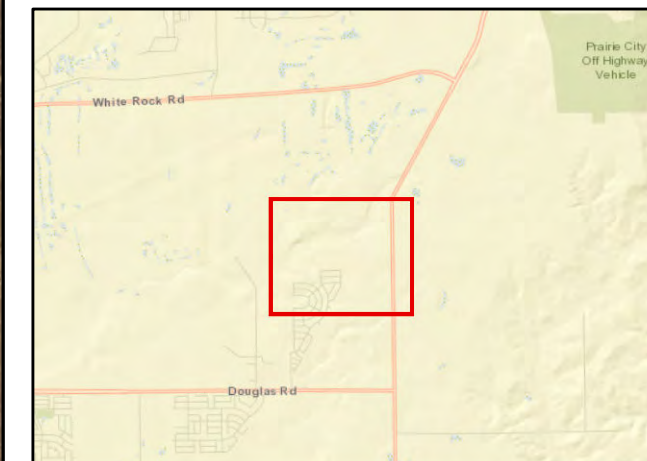


### Figure 2. Potential Tricolored Blackbird Nesting Habitat

#### Map Features

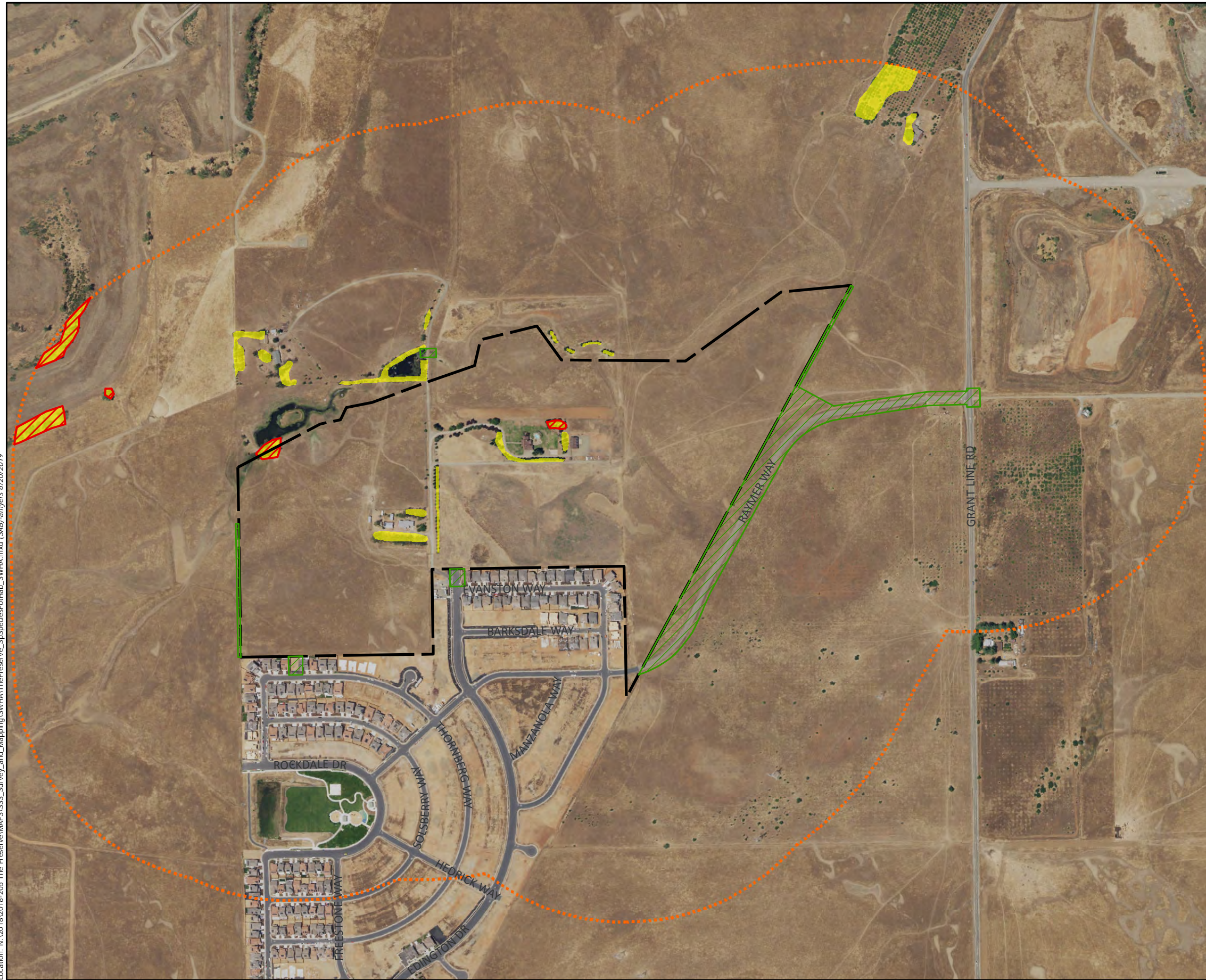
-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 9.33 acres
-  500-foot Buffer
-  Potential Tricolored Blackbird Nesting Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\SWHA\ThePreserve\_SpSpeciesPotHab\_SWHA.mxd (SAB) - amyers 6/20/2019

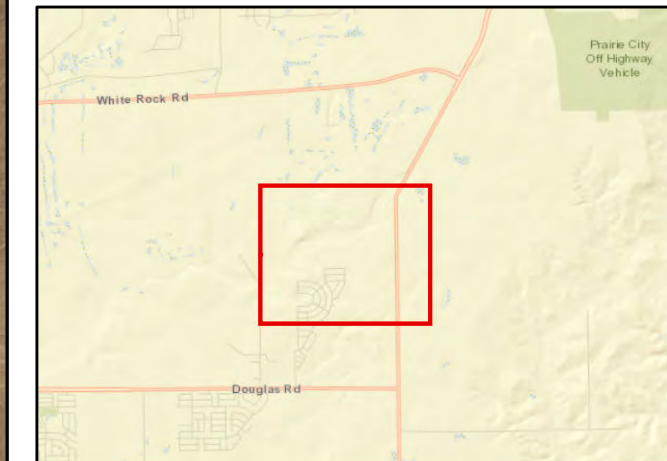


**Figure 3. Potential Swainson's Hawk and Raptor Nesting Habitat**

**Map Features**

-  Potential Offsite Areas - 9.33 acres
-  Project Boundary - 98.92 acres
-  1/4-mile Buffer
-  Potential Swainson's Hawk Nesting Habitat
-  Potential Raptor Species Nesting Habitat

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\Map\SSS\_Survey\_and\_Mapping\BUOW\ThePreserve\_SpSpeciesPotHab\_BUOW.mxd (SAB) -armyers 6/20/2019



**Figure 4. Potential Western Burrowing Owl Burrow Habitat**

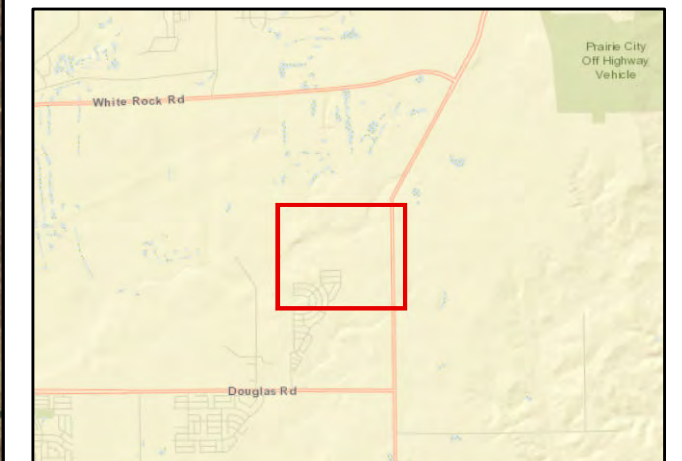
**Map Features**

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 9.33 acres
- 250-foot Buffer

**Burrowing Owl Habitat Features**

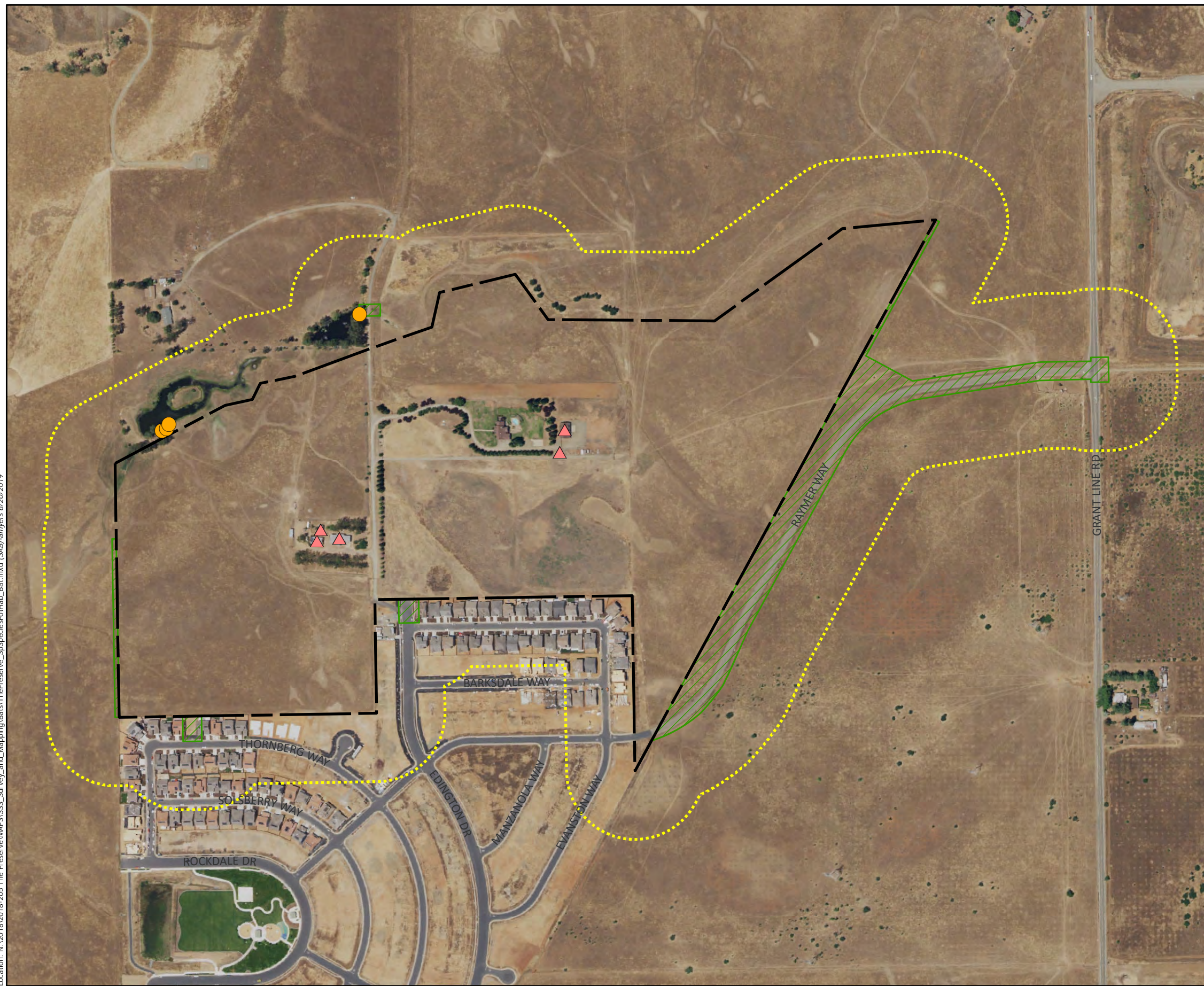
- Burrow, Occupied
- Potential Burrow with Evidence
- Potential Burrow, Not Occupied

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Location: N:\2018\2018-205 The Preserve\Map\SSS\_Survey\_and\_Mapping\Bats\ThePreserve\_SpSpeciesPotHabitat\_Bat.mxd (SAB) -armyers 6/20/2019



**Figure 5. Potential Western Red Bat and Pallid Bat Hibernacula**

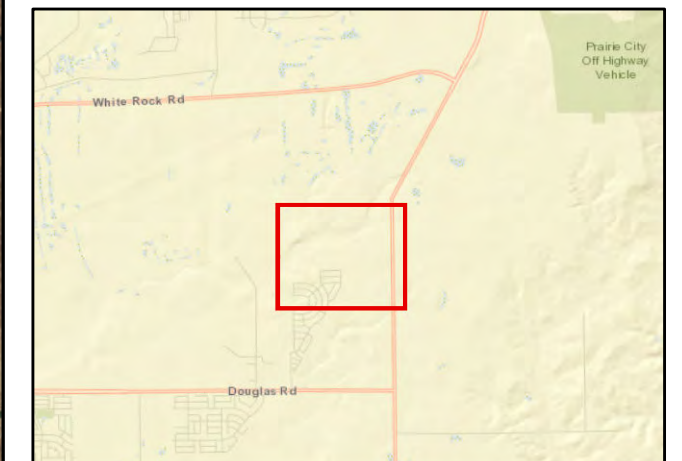
**Map Features**

- Project Boundary - 98.92 acres
- Potential Offsite Areas - 9.33 acres
- 300-foot Buffer

**Bat Roosting Features**

- Structure
- Tree

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





**ATTACHMENT A**

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Wildlife Species Observed Onsite (November 27, 2018)

# Attachment A

---

## Wildlife Species Observed Onsite (November 27, 2018)

|                | Common Name              | Scientific Name                  |
|----------------|--------------------------|----------------------------------|
| <b>Birds</b>   |                          |                                  |
|                | Canada Goose             | <i>Branta canadensis</i>         |
|                | Mourning Dove            | <i>Zenaidura macroura</i>        |
|                | Anna's Hummingbird       | <i>Calypte anna</i>              |
|                | Ring-billed Gull         | <i>Larus delawarensis</i>        |
|                | California Gull          | <i>Larus californicus</i>        |
|                | Double-crested Cormorant | <i>Phalacrocorax auritus</i>     |
|                | Great Egret              | <i>Ardea alba</i>                |
|                | Red-tailed Hawk          | <i>Buteo jamaicensis</i>         |
|                | Burrowing Owl            | <i>Athene cunicularia</i>        |
|                | Northern Flicker         | <i>Colaptes auratus</i>          |
|                | Black Phoebe             | <i>Sayornis nigricans</i>        |
|                | Say's Phoebe             | <i>Sayornis saya</i>             |
|                | Loggerhead shrike        | <i>Lanius ludovicianus</i>       |
|                | California Scrub-Jay     | <i>Aphelocoma californica</i>    |
|                | American Crow            | <i>Corvus brachyrhynchos</i>     |
|                | Horned Lark              | <i>Eremophila alpestris</i>      |
|                | Ruby-crowned Kinglet     | <i>Regulus calendula</i>         |
|                | Northern Mockingbird     | <i>Mimus polyglottos</i>         |
|                | American Pipit           | <i>Anthus rubescens</i>          |
|                | House Finch              | <i>Haemorhous mexicanus</i>      |
|                | American Goldfinch       | <i>Spinus tristis</i>            |
|                | Dark-eyed Junco          | <i>Junco hyemalis</i>            |
|                | White-crowned Sparrow    | <i>Zonotrichia leucophrys</i>    |
|                | Savannah Sparrow         | <i>Passerculus sandwichensis</i> |
|                | Western Meadowlark       | <i>Sturnella neglecta</i>        |
|                | Red-winged Blackbird     | <i>Agelaius phoeniceus</i>       |
|                | Tricolored Blackbird     | <i>Agelaius tricolor</i>         |
|                | Brewer's Blackbird       | <i>Euphagus cyanocephalus</i>    |
|                | Yellow-rumped Warbler    | <i>Setophaga coronata</i>        |
| <b>Mammals</b> |                          |                                  |
|                | Black-tailed Jackrabbit  | <i>Lepus californicus</i>        |

Wildlife Species Observed Onsite (June 13, 2019)

# Attachment B

---

## Wildlife Species Observed Onsite (June 13, 2019)

|                   | Common Name             | Scientific Name                  |
|-------------------|-------------------------|----------------------------------|
| <b>Birds</b>      |                         |                                  |
|                   | Mourning Dove           | <i>Zenaida macroura</i>          |
|                   | Anna's Hummingbird      | <i>Calypte anna</i>              |
|                   | Turkey Vulture          | <i>Catgartes aura</i>            |
|                   | House Finch             | <i>Haemorhous mexicanus</i>      |
|                   | Ash-throated flycatcher | <i>Myiarchus cinerascens</i>     |
|                   | Western Kingbird        | <i>Tyrannus verticalis</i>       |
|                   | Black Phoebe            | <i>Sayornis nigricans</i>        |
|                   | Savannah Sparrow        | <i>Passerculus sandwichensis</i> |
|                   | Western Meadowlark      | <i>Sturnella neglecta</i>        |
| <b>Mammals</b>    |                         |                                  |
|                   | Black-tailed Jackrabbit | <i>Lepus californicus</i>        |
| <b>Amphibians</b> |                         |                                  |
|                   | American Bullfrog       | <i>Lithobates catesbeianus</i>   |

---

**ATTACHMENT D**

Special-Status Plant Survey Report



# Special-Status Plant Survey Report

---

## The Preserve Development

Rancho Cordova, California

**Prepared for:**  
Winn Communities

June 27, 2019



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ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, and construction monitoring and reporting.

Citation: ECORP Consulting, Inc. 2019. Special-Status Plant Survey Report for The Preserve Development, Rancho Cordova, California. Prepared for Winn Communities. June 27, 2019.



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**LIST OF ACRONYMS AND ABBREVIATIONS**

|            |  |
|------------|--|
| CDFG       | California Department of Fish and Game                       |
| CDFW       | California Department of Fish and Wildlife                   |
| CEQA       | California Environmental Quality Act                         |
| CNDDDB     | California Natural Diversity Database                        |
| CNPS       | California Native Plant Society                              |
| County     | Sacramento County  |
| CRPR       | California Rare Plant Rank                                   |
| ESA        | Endangered Species Act                                       |
| NPPA       | Native Plant Protection Act                                  |
| NRCS       | Natural Resources Conservation Service                       |
| Offsites   | Five potential offsite areas outside of the Project boundary |
| Project    | The Preserve Development Project                             |
| SSHCP      | South Sacramento Habitat Conservation Plan                   |
| Study Area | The combined Project and Offsites                            |
| USFWS      | U.S. Fish and Wildlife Service                               |
| USGS       | U.S. Geological Survey                                       |



## 1.0 INTRODUCTION

ECORP Consulting, Inc. has conducted a special-status plant survey for the proposed The Preserve Development (Project) located in Rancho Cordova, California. The purpose of this survey was to identify and map the locations of special-status plant species observed within the Project.

### 1.1 Project Location

The Study Area includes the 98.92-acre Project area, as well as five potential Offsite areas totaling 9.33 acres. In this document the Offsite areas are referred to as the Rio del Oro Offsite (located to the west of the Project), the Raymer Way Offsite (located to the east of the Project), the Morrison Creek Offsite (located to the north of the Project around an existing crossing of Morrison Creek), and the North Douglas Offsites (two road stubs located to the south of the Project within the existing North Douglas development).

The Study Area is located to the west of Raymer Way and Grant Line Road in Rancho Cordova, California. The Study Area corresponds to an unsectioned portion of the Rio de los Americanos Land Grant within the "Buffalo Creek, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1980) (Figure 1. *Study Area Location and Vicinity*). The approximate center of the site is located at 38.574614° North and -121.196708° West within the Lower Sacramento Watershed (Hydrologic Unit Code #18020163, USGS 2016).

### 1.2 Definition of Special-Status Plant Species

For the purposes of this report, "special-status plants" are defined as plants which meet one or more of the following:

- Plants listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Plants listed, proposed for listing, or candidates for future listing as threatened or endangered under the California ESA;
- Plants that meet the definitions of endangered or rare under Section 15380 of the State California Environmental Quality Act (CEQA) Guidelines;
- Plants listed as rare under the California Native Plant Protection Act (California Department of Fish and Game [CDFG] Code of California, Section 1900 et seq.);
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" [California Rare Plant Rank (CRPR) 1B and 2] (see Section 1.3);
- Plants listed by CNPS as species about which more information is needed to determine their status (CRPR 3), and plants of limited distribution (CRPR 4); and
- Plants that are South Sacramento Habitat Conservation Plan (SSHCP) Covered Species (see Section 1.4).

### 1.3 California Rare Plant Ranks

CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2019), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six ranks (i.e., CRPR).

The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by the California Department of Fish and Wildlife (CDFW) and the CNPS. The ranks are currently recognized in the California Natural Diversity Database (CNDDDB). The following are definitions of the CNPS CRPRs:

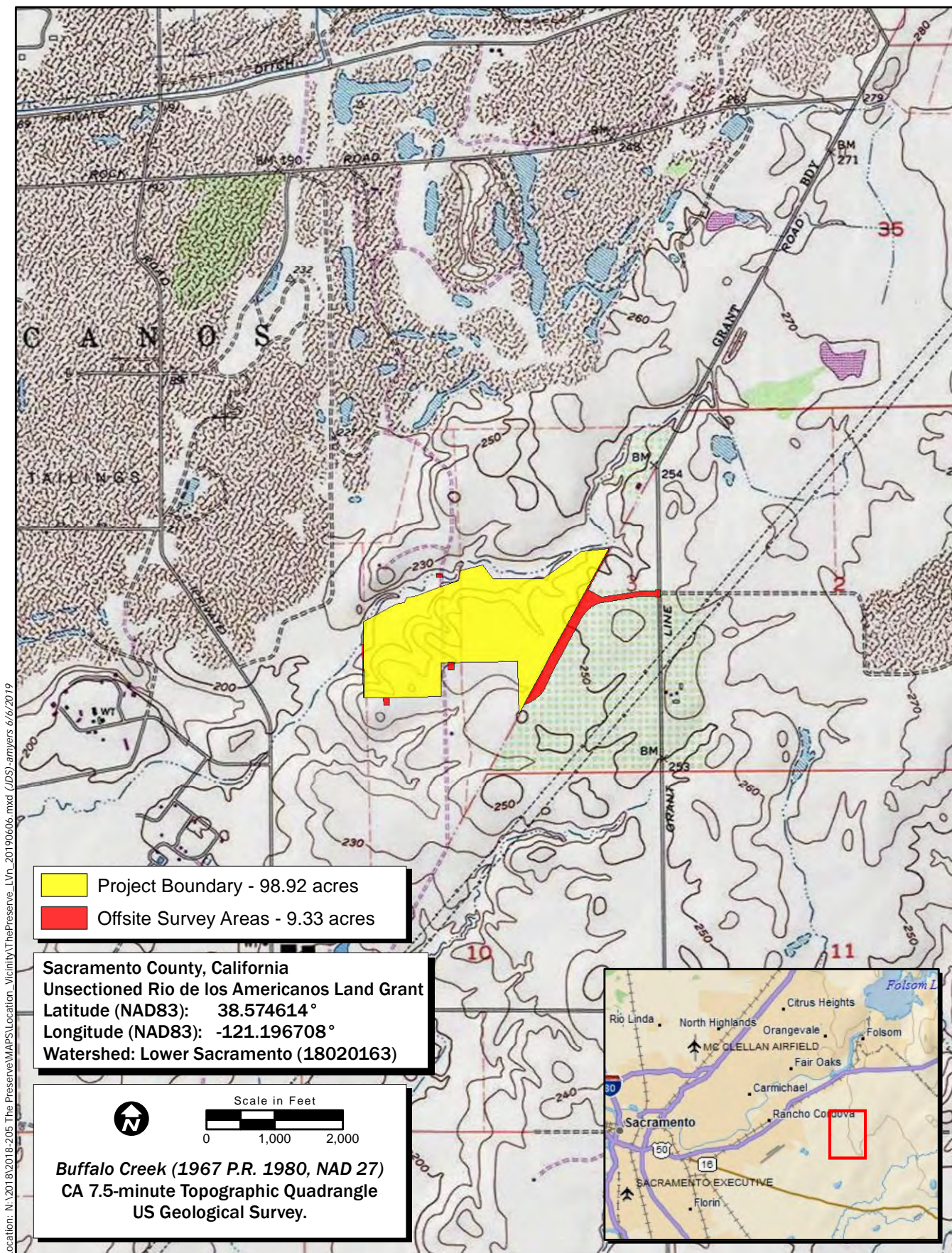
- CRPR 1A – presumed extirpated in California and either rare or extinct elsewhere;
- CRPR 1B – rare, threatened, or endangered in California and elsewhere;
- CRPR 2A – presumed extirpated in California, but more common elsewhere;
- CRPR 2B – rare, threatened, or endangered in California but more common elsewhere;
- CRPR 3 – a review list of plants about which more information is needed; and
- CRPR 4 – a watch list of plants of limited distribution.

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally assigned for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat);
- Threat Rank 0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat); and
- Threat Rank 0.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in assigning the Threat Rank, and differences in Threat Ranks do not constitute additional or different protection (CNPS 2019). Depending on the policy of the lead agency, substantial impacts to plants listed as CRPR 1A, 1B, 2, and 3 (regardless of threat rank) are typically considered significant under CEQA Guidelines Section 15380. For CRPR 4 species (regardless of threat rank), significance under CEQA is typically evaluated if the lead agency has determined those plants to be of local significance or regional importance. Such plants may be identified in local Habitat Conservation Plans (HCPs) or City or County General Plans.


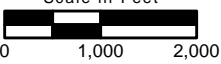




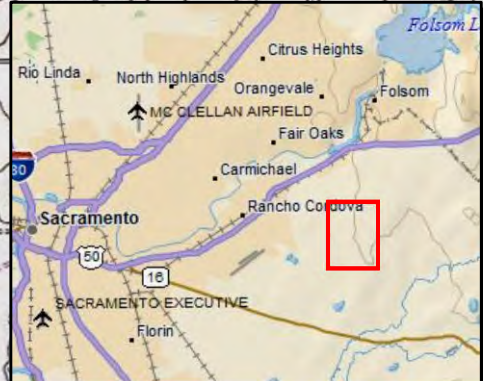
Location: N:\2018\2018-205 The Preserve\MAPS\Location\_Vicinity\ThePreserve\_VLn\_20190606.mxd (JDS)-amyers 6/6/2019

Project Boundary - 98.92 acres  
 Offsite Survey Areas - 9.33 acres

**Sacramento County, California**  
**Unsectioned Rio de los Americanos Land Grant**  
**Latitude (NAD83): 38.574614°**  
**Longitude (NAD83): -121.196708°**  
**Watershed: Lower Sacramento (18020163)**

**Buffalo Creek (1967 P.R. 1980, NAD 27)**  
**CA 7.5-minute Topographic Quadrangle**  
**US Geological Survey.**



Map Date: 6/6/2019  
 iService Layer Credits: Copyright© 2013 National Geographic Society, i-cubed  
 Copyright:(c) 2018 Garmin

**Figure 1. Project Location and Vicinity**



## 1.4 South Sacramento Habitat Conservation Plan

The SSHCP is a regional effort that will provide development and infrastructure projects with streamlined federal and state permitting processes while creating a preserve system to protect habitat, open space, and agricultural lands (County of Sacramento et al. 2018). The SSHCP allows project proponents within the Plan Area to simplify and expedite the state and federal ESA permitting process. The SSHCP will allow Sacramento County, the City of Rancho Cordova, City of Galt, and the Southeast Connector Joint Powers Authority to receive Incidental Take Permits (ITP) for 28 Covered Species from U.S. Fish and Wildlife Service and CDFW for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) can extend incidental take coverage provided by the SSHCP ITPs to activities and projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. The SSHCP provides Modeled Species Habitat data for each Covered Species to determine whether Covered Species have potential to occur within a project site. The SSHCP also sets forth Avoidance and Minimization Measures with which permittees must comply. See [www.southsachcp.com](http://www.southsachcp.com) for more information.

Table 1 provides a list of all plant species that are considered SSHCP Covered Species, adapted from Table 1-2 of the SSHCP (County of Sacramento et al. 2018).

| Scientific Name<br>Common Name                                      | Status  |       |      |
|---|---------|-------|------|
|   | Federal | State | CRPR |
| <i>Downingia pusilla</i><br>Dwarf downingia                         | —       | —     | 2.2  |
| <i>Gratiola heterosepala</i><br>Boggs Lake hedge-hyssop             | —       | E     | 1B.2 |
| <i>Juncus leiospermus</i> var. <i>ahartii</i><br>Ahart's dwarf rush | —       | —     | 1B.2 |
| <i>Legenere limosa</i><br>Legenere                                  | —       | —     | 1B.1 |
| <i>Navarretia myersii</i><br>Pincushion navarretia                  | —       | —     | 1B.1 |
| <i>Orcuttia tenuis</i><br>Slender Orcutt grass                      | T       | E     | 1B.1 |
| <i>Orcuttia viscida</i><br>Sacramento Orcutt grass                  | E       | E     | 1B.1 |
| <i>Sagittaria sanfordii</i><br>Sanford's arrowhead                  | —       | —     | 1B.2 |

**Status Definitions**

**Federal:**  
 E = Endangered under the federal ESA  
 T = Threatened under the federal ESA  
 — = No federal ESA listing

**State:**  
 E = Endangered under state ESA  
 T = Threatened under state ESA  
 — = No state status

**CRPR:**  
 1B = Rare, threatened, or endangered in California and elsewhere

2 = Rare, threatened, or endangered in California but more common elsewhere

**CRPR Threat Ranks**  
 0.1 = Seriously threatened in California (high degree/immediacy of threat)  
 0.2 = Fairly threatened in California (moderate degree/immediacy of threat)  
 0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)



## 2.0 METHODS

### 2.1 Literature Review

Prior to conducting field surveys, background information was collected on the potential presence of special-status plants within or near the survey area from a variety of sources. This included a review of resource agency species lists, literature review, on-line database query, voucher specimen review, and reference population review. The following resources were used as part of the literature review:

- CDFW California Natural Diversity Database (CNDDDB) data for the "Buffalo Creek, California" 7.5-minute quadrangle as well as the eight surrounding USGS quadrangles (CDFW 2019);
- USFWS Resource Report List Federal Endangered and Threatened Species that may be affected by the Project (USFWS 2019); and
- CNPS's electronic *Inventory of Rare and Endangered Plants of California* for the "Buffalo Creek, California" 7.5-minute quadrangle as well as the eight surrounding USGS quadrangles (CNPS 2019).
- SSHCP Modeled Species Habitat for the Study Area.

### 2.2 Special-Status Plants Considered for the Project

Based on species occurrence information from the CNDDDB, the literature review, and general site knowledge, a list of special-status plant species that are known to occur or have the potential to occur within the survey area was generated (Attachment A). Only special-status plants as defined in Section 1.2 were included in this analysis. Each of these species' potential to occur within the survey area was assessed based on the following criteria:

- **Present** - Species was previously observed during field surveys or is known to occur within the Study Area based on documented occurrences within the CNDDDB, SSHCP, or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Study Area based on site assessment, literature research, or SSHCP Modeled Species Habitat data.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Study Area based on CNDDDB records and other available documentation. This designation is only used for species that are not SSHCP Covered Species.
- **Absent** - No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the Study Area based on CNDDDB records and other documentation and SSHCP Modeled Species Habitat data does not indicate that habitat for the species occurs within the site.

### 2.3 Target Species

Based on the analysis of potentially occurring special-status plant species for the survey area, the plants listed in Table 2 were considered to be the Target List for this survey effort. Species determined to be Absent are not included in the target list.

| Common Name<br>(Scientific Name)  | Status |      |                             | Habitat Description  | Survey Period | Potential To Occur On-Site  |
|---|--------|------|-----------------------------|--|---------------|---|
|   | ESA    | CESA | Other                       |  |               |   |
| Stinkbells<br>( <i>Fritillaria agrestis</i> )                           | -      | -    | 4.2                         | Clay and sometimes serpentinite soils in chaparral, cismontane woodland, Pinyon and juniper woodland, and Valley and foothill grassland (33' - 5,102').                              | March-June    | Potential to Occur. Valley grassland represents suitable habitat. |
| Boggs Lake hedge-hyssop<br>( <i>Gratiola heterosepala</i> )             | -      | CE   | 1B.2, SSHCP Covered Species | Marshes, swamps, lake margins, and vernal pools (33'-7,792').  | April-August  | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Ahart's dwarf rush<br>( <i>Juncus leiospermus</i> var. <i>ahartii</i> ) | -      | -    | 1B.2, SSHCP Covered Species | Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005a) (98'-751').   | March-May     | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Legenere<br>( <i>Legenere limosa</i> )                                  | -      | -    | 1B.1, SSHCP Covered Species | Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005b) (3'-2,887'). | April-June    | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Slender Orcutt grass<br>( <i>Orcuttia tenuis</i> )                      | FT     | CE   | 1B.1, SSHCP Covered Species | Vernal pools, often gravelly (115'-5,774').  | May-September | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Sacramento Orcutt grass<br>( <i>Orcuttia viscida</i> )                  | FE     | CE   | 1B.1, SSHCP Covered Species | Vernal pools (98'-328').   | April-July    | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Sanford's arrowhead<br>( <i>Sagittaria sanfordii</i> )                  | -      | -    | 1B.2, SSHCP Covered Species | Shallow marshes and freshwater swamps (0'-2,133').   | May-October   | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |

Status Codes:

- ESA Endangered Species Act
- CESA California Endangered Species Act
- FE ESA listed, Endangered
- FT ESA listed, Threatened
- 1B California Rare Plant Ranks (CRPRs)/Rare or Endangered in California and elsewhere.
- 2B CRPR /Rare or Endangered in California, more common elsewhere.
- 0.1 Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2 Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)



## 2.4 Reference Site Visits

Reference populations, where available, for the seven target species were visited to assess bloom phenology and to observe species morphology. When reference populations were not available, photographs from Calflora (Calflora 2019) and *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012) were used as a reference. Attachment B identifies the reference source for each of the target species including the location of the population, dates of visits, and phenological stage of the species at the time of the field visits.

## 2.5 Field Surveys

Determinate-level field surveys were conducted in accordance with SSHCP Avoidance and Minimization Measures PLANT-1 and ORCUTT-1, as well as guidelines promulgated by USFWS (USFWS 2000), CDFW (CDFW 2018), and CNPS (CNPS 2001). The special-status plant surveys were conducted on April 29, 2019 and June 13, 2019 by ECORP biologist Casey Peters and Benjamin Waitman. A list of field personnel qualifications is included as Attachment C. The surveys coincided with the optimum identifiable periods for each of the target species.

Within the Project, Morrison Creek Offsite, and North Douglas Offsite, the biologists walked meandering transects to ensure complete coverage of all suitable habitat for all target species. The Rio del Oro Offsite and Raymer Way Offsite were assessed to the degree possible from accessible areas (i.e. within the Project and along roads), but transects across these offsites were not surveyed.

A complete plant list of all plants observed during the surveys was generated (Attachment D). All species were identified to the lowest possible taxonomic level required to assess rarity. Plant species identification, nomenclature, and taxonomy followed *The Jepson Manual* (Baldwin et al. 2012). Vegetation community classification was based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009).

## 3.0 EXISTING SITE CONDITIONS

The Study Area is situated at an elevation range between approximately 200 and 250 feet above mean sea level (MSL) in Rancho Cordova, California. The Study Area is located in the Great Valley region, Sacramento Valley subregion of the California Floristic Province (Baldwin et al. 2012). This region is characterized by agricultural areas, grasslands, wetlands, and valley oaks (Baldwin et al. 2012). The average annual precipitation for the region is 36.9 inches (with the wettest period during November-March), and average daily temperatures range from 47.7°F in winter to 73.8°F in summer (National Oceanic and Atmospheric Administration [NOAA] 2018).

The Study Area is characterized by flat to gently rolling terrain and consists primarily of grazed annual grasslands with two residences and other outbuildings. A private road, sometimes identified as Douglas Road, leads from south of the Study Area into the two residences. The Study Area is located within the USFWS Mather Core Area (USFWS 2005a). Core Areas are areas prioritized for the conservation and recovery of threatened and endangered vernal pool species.

### 3.1 Land Cover Types

SSHCP land cover data within the Study Area were reviewed and field-revised as needed. Revised land cover types are shown in Figure 2. More information on land cover types is provided in the Biological Resources Assessment for the Project (ECORP 2019).

#### 3.1.1 Terrestrial Land Cover Types

The Study Area primarily contains the Valley Grassland SSHCP land cover type. The Study Area also contains Low Density Development and a small amount of Disturbed and Major Roads land cover.

#### Valley Grassland

The Valley Grassland land cover type is predominantly characterized by non-native (naturalized) annual grasses. Within the Study Area, the common plant species found in Valley Grassland are a mixture of nonnative annual grasses, including medusahead grass (*Elymus caput-medusae*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), and brome fescue (*Festuca bromoides*). Narrow tarplant (*Holocarpha virgata*), a native perennial forb, is also common in this land cover type within the Study Area.

#### Low Density Development

The Low Density Development land cover type consists of existing homesteads including buildings/structures and horticultural trees.

#### Disturbed/Major Roads

The Disturbed and Major Roads land cover types consists of sections of paved road within the Study Area.

#### 3.1.2 Aquatic Land Cover Types

An aquatic resources delineation was conducted for the Study Area, in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

A discussion of the aquatic resources found onsite is presented below, and Figure 2 includes aquatic land cover types (field delineation was used to revise the SSHCP baseline land cover data for aquatic resources).

#### Vernal Pool

Vernal pools are seasonal ephemeral wetlands that fill and dry each year, forming in shallow depressions within Valley Grassland that are underlaid by an impermeable layer (e.g. a hardpan). Water collects in the depressions during the winter rainy season and recedes during the spring. Soils typically remain moist until late spring before becoming desiccated, and then remain dry throughout the summer. Vernal pools provide habitat for several special-status species, including invertebrates, plants, and amphibians.

Vernal pools occur throughout the Study Area. These features are variously dominated by Great Valley button-celery (*Eryngium castrense*), stalked popcorn flower (*Plagiobothrys stipitatus*), woolly marbles (*Psilocarphus brevissimus*), Mediterranean barley (*Hordeum marinum*), waxy mannagrass (*Glyceria declinata*), hairy hawkbit (*Leontodon saxatilis*), and toad rush (*Juncus bufonius*).



## Swale

Swales are shallow ephemeral drainages found in flat to gently rolling Valley Grassland in association with vernal pool complexes, on soils with an impermeable layer. Swales convey runoff as shallow, gently sloping ephemeral wetlands during and shortly after winter rainstorms, but usually maintain soil saturation for longer periods during the growing season. They typically have hydric soils and support hydrophytic vegetation but lack an ordinary high-water mark (OHWM). Swales serve as habitat for many vernal pool species and provide hydrological connections between vernal pools that allows movement/dispersal of amphibian species, plant seeds, and vernal pool invertebrates (both adults and cysts).

Swales occur throughout the Study Area, and are dominated by Italian ryegrass (*Festuca perennis*), Fitch's spikeweed (*Centromadia fitchii*), and Mediterranean barley.

## Stream/Creek

The Stream/Creek land cover type includes intermittent and perennial linear water features such as rivers, streams, creeks, drainages, and roadside and irrigation ditches. These features typically exhibit a bed and bank and an OHWM. Morrison Creek is located to the north of the Study Area, and several small headwater tributaries to the creek flow through the Study Area into Morrison Creek. Stream/creek features occur throughout the Study Area, flowing north to Morrison Creek, and vary from steep, unvegetated features, to gently sloping features that are sparsely vegetated with creeping spikerush (*Eleocharis macrostachya*).

## 3.2 Soils

According to the *Web Soil Survey* (NRCS 2018), two soil units, or types, have been mapped within the Study Area (Figure 2. *Natural Resources Conservation Service Soil Types*):

- (159) Hicksville gravelly loam, 0 to 2 percent slopes, occasionally flooded
- (193) Red Bluff-Redding complex, 0 to 5 percent slopes

Hicksville and Red Bluff soils are formed in alluvium derived from mixed rock sources. Redding soils are formed in gravelly and cobbly alluvium derived from mixed rock sources (NRCS 2018). No soil units derived from serpentinite or other ultramafic parent materials have been reported to occur within the Study Area or its immediate vicinity (NRCS 2018). Furthermore, no apparent inclusions of ultramafic rocks or soils were observed during the field survey.

## 4.0 SPECIES DESCRIPTIONS

As listed in Section 2.3, seven special-status plants were considered to be target species for this survey. A description of each target species is provided in the following sections.











### 4.1 Stinkbells

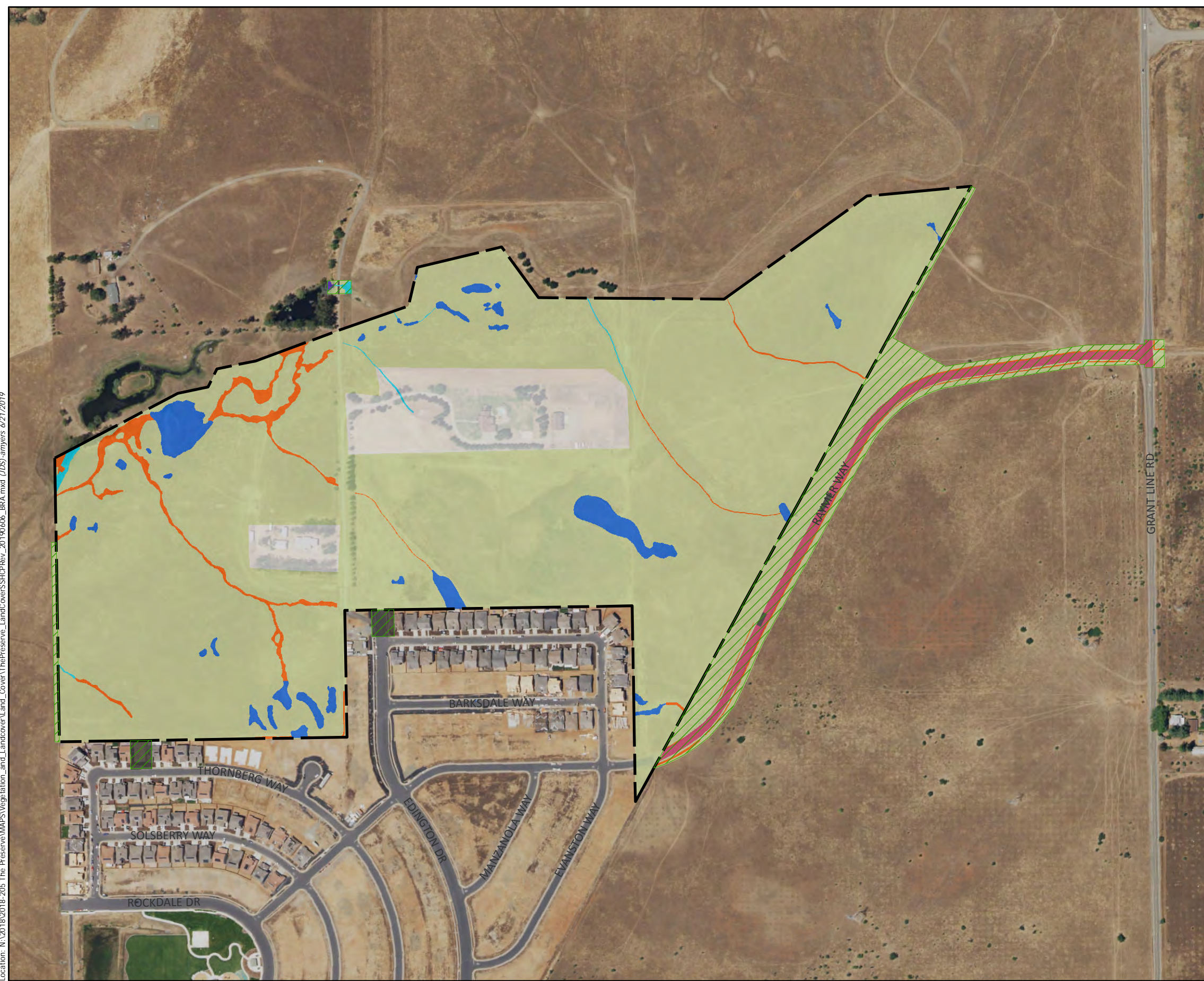
Stinkbells (*Fritillaria agrestis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is a perennial bulbiferous herb that occurs in clay, sometimes serpentine areas in chaparral, cismontane woodland, pinyon and juniper woodland, and



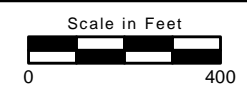
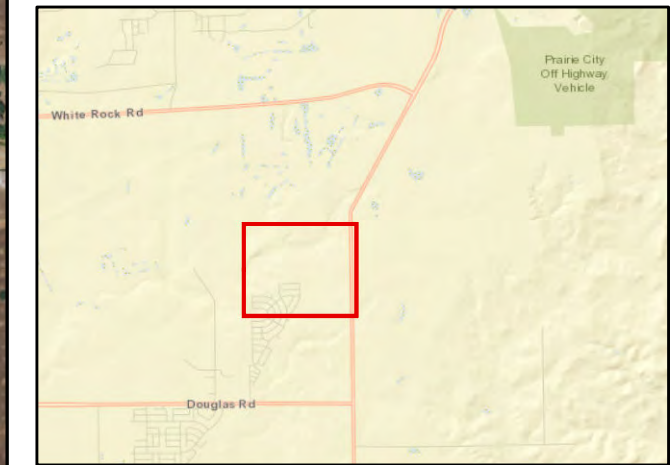
Location: N:\2018\2018-205 The Preserve\Map\Vegetation\_and\_Landcover\The Preserve\_LandCover\SSHCPRev\_20190606\_BRA.mxd (JDS)-amyers 6/21/2019

### Figure 2. The Preserve Revised SSHCP Land Cover

- Map Features**
-  Project Boundary - 98.92 acres
  -  Potential Offsite Areas - 9.33 acres
- Modified SSHCP Land Cover**
-  Major Roads
  -  Open Water
  -  Stream/Creek
  -  Swale
  -  Vernal Pool
  -  Valley Grassland
  -  Disturbed
  -  Low Density Development



Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Valley and foothill grassland (CNPS 2019). Stinkbells bloom from March to June and is known to occur at elevations ranging from 33 to 5,102 feet above MSL (CNPS 2019). The current range of this species in California includes Alameda, Contra Costa, Fresno, Kern, Mendocino, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Stanislaus, Tuolumne, Ventura, and Yuba counties, and is considered to be extirpated from Santa Cruz and San Mateo counties (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019). However, the grassland within the Study Area provides suitable habitat for this species. Stinkbells has potential to occur within the Study Area.

## **4.2 Ahart's Dwarf Rush**

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in mesic areas in Valley and foothill grasslands (CNPS 2019). This species also appears to have an affinity for slight disturbance since it has been found on farmed fields and gopher turnings (USFWS 2005a). Ahart's dwarf rush blooms from March through May and is known to occur at elevations ranging from 98 to 751 feet above MSL (CNPS 2019, USFWS 2005a). Ahart's dwarf rush is endemic to California; the current range of this species includes Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties (CNPS 2019).

There are two documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019). Ahart's dwarf rush is a SSHCP Covered Species, and the aquatic features and grassland within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Ahart's dwarf rush has Potential to Occur within the Study Area.



## **4.3 Boggs Lake Hedge-Hyssop**

Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is not listed pursuant to the federal ESA, but is listed as endangered pursuant to the California ESA, and a CRPR 1B.2 species. This species is an herbaceous annual that occurs in marshes, swamps, lake margins, and vernal pools (CNPS 2019). Boggs Lake hedge-hyssop blooms from April through August and is known to occur at elevations ranging from 33 to 7,792 feet above MSL (CNPS 2019). The current range of this species in California includes Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, Sonoma, and Tehama counties (CNPS 2019).

There are five documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019). Boggs's lake hedge-hyssop is a SSHCP Covered Species, and the grassland and





Location: N:\2018\2018-205 The Preserve\MAPS\Soils\_and\_Geology\Soils\ThePreserve\_Soils\_20190627\_BRA.mxd (IDS) amyers 6/27/2019

**Map Features**

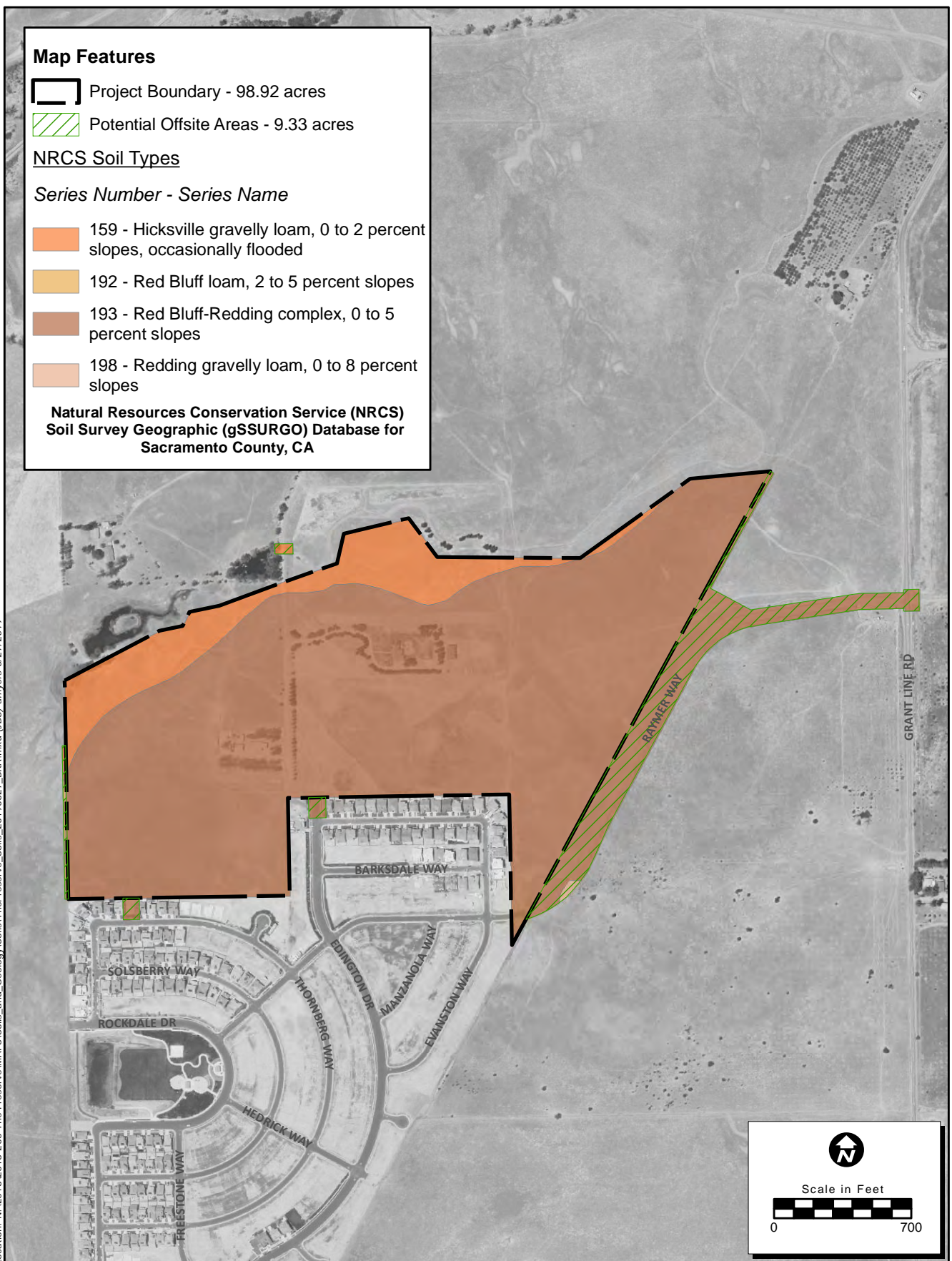
-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 9.33 acres

**NRCS Soil Types**

*Series Number - Series Name*

-  159 - Hicksville gravelly loam, 0 to 2 percent slopes, occasionally flooded
-  192 - Red Bluff loam, 2 to 5 percent slopes
-  193 - Red Bluff-Redding complex, 0 to 5 percent slopes
-  198 - Redding gravelly loam, 0 to 8 percent slopes

**Natural Resources Conservation Service (NRCS)  
Soil Survey Geographic (gSSURGO) Database for  
Sacramento County, CA**



Map Date: 6/27/2019  
Photo Source: 2016, NAIP

**Figure 3. Natural Resources Conservation Service Soil Types**



vernal pools within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Boggs lake hedge-hyssop has potential to occur within the Study Area.

#### 4.4 Legenere

Legenere (*Legenere limosa*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in a variety of seasonally inundated environments including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005b). Legenere blooms from April through June and is known to occur at elevations ranging from 3 feet to 2,887 feet above MSL (CNPS 2019). Legenere is endemic to California; the current range of this species includes Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, San Joaquin, Shasta, San Mateo, Solano, Sonoma, Stanislaus, Tehama and Yuba counties and is believed to be extirpated from Stanislaus County (CNPS 2019).

There are 10 documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019). Legenere is a SSHCP Covered Species, and the grassland and vernal pools within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Legenere has potential to occur within the Study Area.

#### 4.5 Sacramento Orcutt Grass

Sacramento Orcutt grass (*Orcuttia viscida*) is listed as endangered pursuant to both the federal and California ESAs, and is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in vernal pools (CNPS 2017). The median area of occupied pools discovered prior to 1988 was 0.69 acre and ranged from 0.25 to 2.03 acres (USFWS 2005a). Sacramento Orcutt grass blooms from April through September and is known to occur at elevations ranging from 98 to 328 feet above MSL (CNPS 2017). Sacramento Orcutt grass is endemic to California and to the southeastern Sacramento Valley (Keeler-Wolf et al. 1998, as cited in USFWS 2005a), with all known occurrences restricted to Sacramento County. Known occurrences of this species within the general region are limited to a small area east of Mather Field, Phoenix Field Ecological Reserve, Phoenix Park (introduced population), and an area near Rancho Seco Lake (USFWS 2005a).

There are six documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019). Sacramento Orcutt Grass is a SSHCP Covered Species, and the grassland and vernal pools within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Sacramento Orcutt grass has potential to occur within the Study Area.

#### 4.6 Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not listed pursuant to the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a rhizomatous, herbaceous perennial that occurs in shallow marshes and freshwater swamps (CNPS 2019). Sanford's arrowhead blooms from May through November and is known to occur at elevations ranging from sea level to 2,133 feet above MSL (CNPS 2019). Sanford's arrowhead is endemic to California; the current range of this species includes Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Marin, Napa, Orange, Placer, Sacramento, San Bernardino, San Joaquin,

Shasta, Solano, Tehama, Tulare, Ventura and Yuba counties; it is believed to be extirpated from both Orange and Ventura counties (CNPS 2019).

There is one documented CNDDDB occurrence of this species located within five miles of the Study Area (CDFW 2019). Sanford's arrowhead is a SSHCP Covered Species, and the grassland within the Study Area provides suitable habitat for this species according to SSHCP Modeled Species Habitat. Sanford's arrowhead has potential to occur within the Study Area.

#### 4.7 Slender Orcutt Grass

Slender Orcutt grass (*Orcuttia tenuis*) is listed as threatened and endangered pursuant to both the federal and California ESAs, respectively, and is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in vernal pools (CNPS 2019) primarily on substrates of volcanic origin (Crampton 1959, Corbin and Schoolcraft 1989; as cited in USFWS 2005a). This species is known to occur in the same type of vernal pool complexes as Sacramento Orcutt grass in Sacramento County; however, these species have not been observed co-existing in the same vernal pool (USFWS 2005a). The median area of pools occupied by populations studied by Stone et al. (1988, as cited in USFWS 2005a) was 1.6 acres and ranged from 0.2 to 111.0 acres (USFWS 2005a). Slender Orcutt grass blooms from May through October and is known to occur at elevations ranging from 115 to 5,774 feet above MSL (CNPS 2019). Slender Orcutt grass is endemic to California; the current range for this species includes Butte, Lake, Lassen, Modoc, Plumas, Sacramento, Shasta, Siskiyou, and Tehama counties (CNPS 2019).

There is one documented CNDDDB occurrence of this species located within five miles of the Study Area (CDFW 2019). Slender Orcutt grass is a SSHCP Covered Species, and the grassland and vernal pools within the Study Area provide suitable habitat for this species according to SSHCP Modeled Species Habitat. Slender Orcutt grass has potential to occur within the Study Area.

### 5.0 RESULTS

ECORP conducted special-status plant surveys on April 29, 2019 and June 13, 2019 within the Study Area. The Rio del Oro Offsite and Raymer Way Offsite were assessed to the degree possible from accessible areas, but transects across these offsites were not surveyed. No special-status plant species were observed during the special-status plant surveys. However, the Raymer Way Offsite was not accessible for a complete survey, and the grassland within this offsite may represent potential habitat for stinkbells and Ahart's dwarf rush.

White-headed navarretia (*Navarretia leucocephala*) was observed within the Project. White-headed navarretia is a common species with no special status, but is difficult to distinguish from pincushion navarretia (*Navarretia myersii*), which has a CRPR of 1B.1 and is an SSHCP Covered Species. While pincushion navarretia was not considered a target species for the surveys because no SSHCP Modeled Species Habitat was mapped within the Study Area, ECORP consulted with experts at the University of California, Davis Herbarium, and identification of the species as white-headed navarretia was confirmed based on the following characteristics:

- Stems greater than 2.5cm
- Sparseness of puberulent hairs on the calyx
- Flower tubes shorter than typical for pincushion navarretia



- Inflorescence is a tightly packed cyme, rather than a true head

## **6.0 CONCLUSION**

No special-status plant species were documented within the Project or publicly accessible portions of the Offsites. However, there is potential for stinkbells and Ahart's dwarf rush to occur in unsurveyed areas of the Raymer Way Offsite.

While the SSHCP Modeled Species Habitat was used to determine the target species list for this survey, the survey was comprehensive and included identification of each species encountered.

## 7.0 REFERENCES

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## **LIST OF ATTACHMENTS**

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Attachment A – Full Species Search Table

Attachment B – Target Species Reference Source

Attachment C – Statement of Qualifications

Attachment D – Plant Species Observed On-Site (April 29 and June 13, 2019)

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**ATTACHMENT A**

Full Species Search Table



| Attachment A. Special-Status Plant Species Evaluated for the Study Area |        |      |                             |   |                |  |
|---|--------|------|-----------------------------|---|----------------|--|
| Common Name<br>(Scientific Name)  | Status |      |                             | Habitat Description   | Survey Period  | Potential To Occur On-Site                       |
|   | ESA    | CESA | Other                       |   |                |  |
| <b>Plants</b>   |        |      |                             |   |                |  |
| Lone Manzanita<br><i>(Arctostaphylos myrtifolia)</i>                    | FT     | -    | 1B.2                        | Chaparral and cismontane woodlands associated with very acidic, nutrient-poor, coarse soils typical of the lone Formation (196'–1,903').  | November–March | Absent. Suitable habitat not present onsite.     |
| Brewer's calandrinia<br><i>(Calandrinia breweri)</i>                    | –      | –    | 4.2                         | Sandy or loamy soils, disturbed sites, and burns within chaparral and coastal scrub (33'–4,003').   | March–June     | Absent. Suitable habitat not present onsite.     |
| Pine Hill ceanothus<br><i>(Ceanothus roderickii)</i>                    | FE     | CR   | 1B.1                        | Rocky serpentinite or gabbroic soil in chaparral and cismontane woodland (804'–3,576').   | April–June     | Absent. Suitable habitat not present onsite.     |
| Red Hills soaproot<br><i>(Chlorogalum grandiflorum)</i>                 | –      | –    | 1B.2                        | Serpentinite or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest, occasionally on non-ultramafic soils (804'–5,545').  | May–June       | Absent. Suitable habitat not present onsite.     |
| Brandegee's clarkia<br><i>(Clarkia biloba ssp. brandegeae)</i>          | -      | -    | 4.2                         | Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (246' - 3,002').  | May–July       | Absent. Suitable habitat not present onsite.     |
| Bisbee Peak rush–rose<br><i>(Crocanthemum suffrutescens)</i>            | –      | –    | 3.2                         | Often gabbroic or lone soil or in burned or disturbed areas within chaparral (246'–2,198').   | April–August   | Absent. Suitable habitat not present onsite.     |
| Dwarf downingia<br><i>(Downingia pusilla)</i>                           | –      | –    | 2B.2, SSHCP Covered Species | Mesic areas in valley and foothill grassland, and vernal pools. Species appears to have an affinity for slight disturbance (i.e., scraped depressions, ditches, etc.) (Baldwin et al. 2012, CDFW 2018) (3'–1,460'). | March–May      | Absent. No SSHCP Modeled Species Habitat onsite. |
| Lone Buckwheat<br><i>(Eriogonum apicum var. apicum)</i>                 | FE     | CE   | 1B.1                        | Openings in chaparral communities found on lone soils (197'–476').  | July–October   | Absent. Suitable habitat not present onsite.     |
| Irish Hill Buckwheat<br><i>(Eriogonum apicum var. prostratum)</i>       | FE     | CE   | 1B.1                        | Openings in chaparral communities found on lone soils (295'–394').  | June–July      | Absent. Suitable habitat not present onsite.     |
| Jepson's woolly sunflower<br><i>(Eriophyllum jepsonii)</i>              | –      | –    | 4.3                         | Chaparral, cismontane woodland, and coastal scrub, sometimes on serpentinite (656'–3,363').   | April–June     | Absent. Suitable habitat not present onsite.     |

| Attachment A. Special-Status Plant Species Evaluated for the Study Area |        |      |                             |   |                 |   |
|---|--------|------|-----------------------------|---|-----------------|---|
| Common Name<br>(Scientific Name)  | Status |      |                             | Habitat Description   | Survey Period   | Potential To Occur On-Site  |
|   | ESA    | CESA | Other                       |   |                 |   |
| Tuolumne Button–celery<br><i>(Eryngium pinnatisectum)</i>               | –      | –    | 1B.2                        | Vernal pools and other mesic conditions in cismontane woodland and lower montane coniferous forests (230'–3,002').  | May–August      | Absent. Suitable habitat not present onsite.                      |
| Pine Hill flannelbush<br><i>(Fremontodendron decumbens)</i>             | FE     | CR   | 1B.2                        | Serpentine or gabbro rock outcrops in chaparral and cismontane woodland (1,394'–2,493').  | April–July      | Absent. Suitable habitat not present onsite.                      |
| Stinkbells<br><i>(Fritillaria agrestis)</i>                             | -      | -    | 4.2                         | Clay and sometimes serpentinite soils in chaparral, cismontane woodland, Pinyon and juniper woodland, and Valley and foothill grassland (33' - 5,102').                             | March–June      | Potential to Occur. Valley grassland represents suitable habitat. |
| El Dorado bedstraw<br><i>(Galium californicum ssp. sierrae)</i>         | FE     | CR   | 1B.2                        | Gabroic soil in chaparral, cismontane woodland and lower montane coniferous forest communities (328'–1,919').   | May–June        | Absent. Suitable habitat not present onsite.                      |
| Boggs Lake hedge–hyssop<br><i>(Gratiola heterosepala)</i>               | –      | CE   | 1B.2, SSHCP Covered Species | Marshes, swamps, lake margins, and vernal pools (33'–7,792').   | April–August    | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Parry's horkelia<br><i>(Horkelia parryi)</i>                            | –      | –    | 1B.2                        | lone and other soil formations in chaparral and cismontane woodlands (262'–3,510').   | April–September | Absent. Suitable habitat not present onsite.                      |
| Ahart's dwarf rush<br><i>(Juncus leiospermus var. ahartii)</i>          | –      | –    | 1B.2, SSHCP Covered Species | Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005) (98'–751').   | March–May       | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Legenere<br><i>(Legenere limosa)</i>                                    | –      | –    | 1B.1, SSHCP Covered Species | Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005) (3'–2,887'). | April–June      | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Hoary navarretia<br><i>(Navarretia eriocephala)</i>                     | -      | -    | 4.3                         | Vernally mesic areas in cismontane woodland and Valley and foothill grassland (345' - 1,312').  | May–June        | Absent. Suitable habitat not present onsite.                      |
| Pincushion navarretia<br><i>(Navarretia myersii ssp. myersii)</i>       | –      | –    | 1B.1, SSHCP Covered Species | Often acidic soils in vernal pools (66'–1,083').  | April–May       | Absent. No SSHCP Modeled Species Habitat onsite.                  |



| Attachment A. Special-Status Plant Species Evaluated for the Study Area |        |      |                                      |   |                   |  |
|---|--------|------|--------------------------------------|---|-------------------|--|
| Common Name<br>(Scientific Name)  | Status |      |                                      | Habitat Description   | Survey Period     | Potential To Occur On-Site   |
|   | ESA    | CESA | Other                                |   |                   |  |
| Slender Orcutt grass<br><i>(Orcuttia tenuis)</i>                        | FT     | CE   | 1B.1,<br>SSHCP<br>Covered<br>Species | Vernal pools, often gravelly<br>(115'–5,774').  | May–<br>September | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite. |
| Sacramento Orcutt grass<br><i>(Orcuttia viscida)</i>                    | FE     | CE   | 1B.1,<br>SSHCP<br>Covered<br>Species | Vernal pools (98'–328').  | April–July        | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite. |
| Layne's ragwort<br><i>(Packera layneae)</i>                             | FT     | CR   | 1B.2                                 | Rocky serpentinite or<br>gabbroic soil in chaparral<br>and cismontane woodland<br>communities<br>(656'–3,560').                         | April–August      | Absent. Suitable<br>habitat not present<br>onsite.                         |
| Sanford's arrowhead<br><i>(Sagittaria sanfordii)</i>                    | –      | –    | 1B.2,<br>SSHCP<br>Covered<br>Species | Shallow marshes and<br>freshwater swamps<br>(0'–2,133').  | May–October       | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite. |
| El Dorado County Mule<br>Ears<br><i>(Wyethia reticulata)</i>            | –      | –    | 1B.2                                 | Clay or gabbroic soils in<br>chaparral, cismontane<br>woodland, and lower<br>montane coniferous forest<br>communities<br>(607'–2,067'). | April–August      | Absent. Suitable<br>habitat not present<br>onsite.                         |

Status Codes:

|       |   |
|-------|---|
| AMM   | SSHCP Avoidance and Minimization Measure  |
| ESA   | Endangered Species Act  |
| CESA  | California Endangered Species Act   |
| FE    | ESA listed, Endangered.   |
| FT    | ESA listed, Threatened.   |
| CE    | CESA or NPPA listed, Endangered.  |
| CR    | CESA- or NPPA-listed, Rare.   |
| CT    | CESA or NPPA listed, Threatened.  |
| CC    | Candidate for CESA listing as Endangered or Threatened.   |
| SSHCP | South Sacramento Habitat Conservation Plan  |
| 1B    | California Rare Plant Ranks (CRPRs)/Rare or Endangered in California and elsewhere.   |
| 2B    | CRPR /Rare or Endangered in California, more common elsewhere.  |
| 2     | CRPR /Rare or Endangered in California, more common elsewhere.  |
| 4     | CRPR /Plants of Limited Distribution - A Watch List.  |
| 0.1   | Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)                       |
| 0.2   | Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)                       |
| 0.3   | Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known) |

**ATTACHMENT B**

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Target Species Reference Source

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Target Species Reference Source<sup>1</sup>

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| Name  | Location of Observation                   | Dates of Observation | Phenology   | Remarks                                  |
|---|---|----------------------|---|--|
| Stinkbells<br><i>Fritillaria agrestis</i>                           | Calflora Website                          | NA                   | Photographs from Calflora and the Jepson manual were used as a reference as reference populations were not available. | Reference population not available.      |
| Boggs Lake hedge-hyssop<br><i>Gratiola heterosepala</i>             | Calflora Website                          | NA                   | Photographs from Calflora and the Jepson manual were used as a reference as reference populations were not available. | Reference population not available.      |
| Ahart's dwarf rush<br><i>Juncus leiospermus</i> var. <i>ahartii</i> | Calflora Website                          | NA                   | Photographs from Calflora and the Jepson manual were used as a reference as reference populations were not available. | Reference population not available.      |
| Legenere<br><i>Legenere limosa</i>                                  | Calflora Website                          | NA                   | Photographs from Calflora and the Jepson manual were used as a reference as reference populations were not available. | Reference population not available.      |
| Slender Orcutt grass<br><i>Orcuttia tenuis</i>                      | Calflora Website                          | NA                   | Photographs from Calflora and the Jepson manual were used as a reference as reference populations were not available. | Reference population not available.      |
| Sacramento Orcutt grass<br><i>Orcuttia viscida</i>                  | Calflora Website                          | NA                   | Photographs from Calflora and the Jepson manual were used as a reference as reference populations were not available. | Reference population not available.      |
| Sanford's arrowhead<br><i>Sagittaria sanfordii</i>                  | Near Rancho Cordova,<br>Sacramento County | 30 May 2019          | Population vegetative, then observed in fruit   | Distinctive triangular stems were noted. |

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<sup>1</sup> Calflora and/or The Jepson Manual were used as reference for any species not listed in this table.



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**ATTACHMENT C**

Statement of Qualifications

# Attachment C

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## Statement of Qualifications

*Casey Peters, PhD*

**Associate Biologist, ECORP Consulting, Inc.**

Casey Peters is a botanist/biologist with experience in general floristic surveys, special-status plant surveys, and restoration planning, implementation, and monitoring. Dr. Peters holds a PhD in Ecology with an emphasis in plant communities and a certificate in conservation management. He has conducted scientific research in plant communities throughout California including annual grassland, oak savannah, mixed-conifer forest, sub-alpine forest, coastal dune, coastal prairie, annual forbland, and desert plant communities. He has also taught courses in California floristics and plant ecology.

*Benjamin Waitman, MS*

**Staff Biologist, ECORP Consulting, Inc.**

Ben Waitman is a botanist/biologist with a wide range of experience conducting research and designing and managing projects throughout California and Nevada. Mr. Waitman received an M.S. in Biology from the University of Nevada and is a PhD candidate in Ecology at the University of California, Davis. He has published and presented on a variety of species of plants, animals and fungi. Mr Waitman has over 10 years of experience conducting plant surveys in California, including surveys in valley grasslands, oak woodlands, riparian woodlands, alpine meadows, and Mojave desert ecosystems. Mr. Waitman is an ISA-certified arborist and has performed numerous tree surveys.

**ATTACHMENT D**

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Plant Species Observed On-Site (April 29 and June 13, 2018)



**The Preserve Development  
Plant Species Observed on April 29, 2019**

| Scientific Name                  | Common Name               |
|----------------------------------|---------------------------|
| ASTERACEAE                       | SUNFLOWER FAMILY          |
| <i>Agoseris heterophylla</i>     | Annual mountain dandelion |
| <i>Alopecurus saccatus</i>       | Goldfields                |
| <i>Carduus pycnocephalus</i> *   | Italian thistle           |
| <i>Cotula coronopifolia</i> *    | Brassbuttons              |
| <i>Hypochaeris glabra</i> *      | Smooth cat's-ear          |
| <i>Hypochaeris radicata</i> *    | Perennial cat's-ear       |
| <i>Lasthenia californica</i>     | California goldfields     |
| <i>Lasthenia fremontii</i>       | Fremont's goldfields      |
| <i>Lasthenia glaberrima</i>      | Smooth goldfields         |
| <i>Leontodon saxatilis</i> *     | Hairy hawkbit             |
| <i>Psilocarphus oregonus</i>     | Oregon woolly-heads       |
| <i>Psilocarphus tenellus</i>     | Slender woolly-heads      |
| <i>Silybum marianum</i> *        | Milk thistle              |
| BORAGINACEAE                     | BORAGE FAMILY             |
| <i>Plagiobothrys stipitatus</i>  | Slender popcorn-flower    |
| BRASSICACEAE                     | MUSTARD FAMILY            |
| <i>Capsella bursa-pastoris</i> * | Shepherd's purse          |
| <i>Cardamine oligosperma</i>     | Few-seed bitter-cress     |
| <i>Lepidium latipes</i>          | Dwarf pepper grass        |
| <i>Raphanus sativus</i> *        | Purple wild radish        |
| CAMPANULACEAE                    | BELLFLOWER FAMILY         |
| <i>Downingia bicornuta</i>       | Double-horn downingia     |
| CARYOPHYLLACEAE                  | PINK FAMILY               |
| <i>Spergularia rubra</i> *       | Purple sandspurry         |
| CYPERACEAE                       | SEDGE FAMILY              |
| <i>Eleocharis macrostachya</i>   | Creeping spikerush        |
| CUPRESSACEAE                     | CYPRESS FAMILY            |
| <i>Sequoia sempervirens</i>      | Coast Redwood             |
| FABACEAE                         | LEGUME FAMILY             |
| <i>Lupinus bicolor</i>           | Bicolored lupine          |
| <i>Medicago polymorpha</i> *     | Bur clover                |
| <i>Trifolium ciliolatum</i>      | Foothill clover           |
| <i>Trifolium dubium</i> *        | Shamrock clover           |
| <i>Trifolium hirtum</i> *        | Rose clover               |
| <i>Trifolium repens</i> *        | White clover              |
| <i>Trifolium subterraneum</i> *  | Subterranean clover       |
| <i>Trifolium variegatum</i>      | White-tip clover          |
| GENTIANACEAE                     | GENTIAN FAMILY            |
| <i>Cicendia quadrangularis</i>   | Oregon timwort            |
| GERANIACEAE                      | GERANIUM FAMILY           |
| <i>Erodium botrys</i> *          | Broad leaf filaree        |
| <i>Erodium cicutarium</i> *      | Cut leaf filaree          |
| <i>Geranium dissectum</i> *      | Cut-leaved geranium       |
| HAMAMELIDACEAE                   | WITCH-HAZEL FAMILY        |
| <i>Liquidambar styraciflua</i> * | Sweetgum                  |
| JUNCACEAE                        | RUSH FAMILY               |
| <i>Juncus bufonius</i>           | Toad rush                 |
| <i>Juncus effusus</i>            | Soft rush                 |

|  |                            |
|--|----------------------------|
| <i>Juncus xiphioides</i>                             | Iris-leaf rush             |
| LAMIACEAE  | MINT FAMILY                |
| <i>Marrubium vulgare</i> *                           | Common horehound           |
| LYTHRACEAE   | LOOSESTRIFE FAMILY         |
| <i>Lythrum hyssopifolia</i> *                        | Hyssop loosestrife         |
| MALVACEAE  | MALLOW FAMILY              |
| <i>Malva parviflora</i> *                            | Cheeseweed                 |
| OROBANCHACEAE  | BROOMRAPE FAMILY           |
| <i>Castilleja attenuata</i>                          | Valley tassels             |
| <i>Castilleja campestris</i> ssp. <i>campestris</i>  | Field owl's-clover         |
| PHRYMACEAE   | LOPSEED FAMILY             |
| <i>Mimulus guttatus</i>                              | Common large monkey-flower |
| PLANTAGINACEAE                                       | PLANTAIN FAMILY            |
| <i>Gratiola ebracteata</i>                           | Bractless hedgehyssop      |
| POACEAE  | GRASS FAMILY               |
| <i>Aira caryophyllea</i> *                           | Silver hairgrass           |
| <i>Alopecurus saccatus</i>                           | Pacific foxtail            |
| <i>Avena barbata</i> *                               | Slender wild oat           |
| <i>Briza minor</i> *                                 | Little quaking grass       |
| <i>Bromus diandrus</i> *                             | Ripgut brome               |
| <i>Bromus hordeaceus</i> *                           | Soft brome                 |
| <i>Deschampsia danthonioides</i>                     | Annual hairgrass           |
| <i>Festuca myuros</i> *                              | Rat-tail vulpia            |
| <i>Festuca perennis</i> *                            | Italian Ryegrass           |
| <i>Glyceria declinata</i> *                          | Mannagrass                 |
| <i>Hordeum marinum</i> ssp. <i>gussoneanum</i> *     | Mediterranean barley       |
| <i>Hordeum murinum</i> ssp. <i>glaucum</i> *         | Foxtail barley             |
| <i>Poa annua</i> *                                   | Annual bluegrass           |
| POLEMONIACEAE  | PHLOX FAMILY               |
| <i>Navarretia leucocephala</i>                       | White-head navarretia      |
| POLYGONACEAE   | BUCKWHEAT FAMILY           |
| <i>Rumex pulcher</i> *                               | Fiddle dock                |
| RANUNCULACEAE  | BUTTERCUP FAMILY           |
| <i>Ranunculus aquatilis</i>                          | White water buttercup      |
| <i>Ranunculus bonariensis</i> var. <i>trisepalus</i> | Carter's buttercup         |
| <i>Ranunculus muricatus</i> *                        | Spiny-fruit buttercup      |
| ROSACEAE   | ROSE FAMILY                |
| <i>Pyrus calleryana</i>                              | Callery pear               |
| RUBIACEAE  | MADDER FAMILY              |
| <i>Galium aparine</i>                                | Common bedstraw            |
| THEMIDACEAE  | BRODIAEA FAMILY            |
| <i>Brodiaea elegans</i>                              | Harvest brodiaea           |
| VITACEAE   | GRAPE FAMILY               |
| <i>Vitis vinifera</i>                                | Cultivated grape           |

*An asterisk (\*) indicates a non-native species.*

**The Preserve Development  
Plant Species Observed on June 13, 2019**

| Scientific Name                      | Common Name                  |
|--------------------------------------|------------------------------|
| ALISMATACEAE                         | WATER-PLANTAIN FAMILY        |
| <i>Alisma triviale</i>               | Broad-leaf water plantain    |
| ANACARDIACEAE                        | SUMAC FAMILY                 |
| <i>Schinus terebinthifolius</i> *    | Brazilian pepper-tree        |
| APIACEAE                             | CARROT FAMILY                |
| <i>Eryngium castrense</i>            | Button-celery                |
| <i>Torilis arvensis</i> *            | Torilis (hedge parsley)      |
| APOCYNACEAE                          | DOGBANE FAMILY               |
| <i>Asclepias fascicularis</i>        | Narrow-leaf milkweed         |
| ASTERACEAE                           | SUNFLOWER FAMILY             |
| <i>Carduus pycnocephalus</i> *       | Italian thistle              |
| <i>Centaurea solstitialis</i> *      | Yellow star-thistle          |
| <i>Centromadia fitchii</i>           | Fitch's spikeweed            |
| <i>Cotula coronopifolia</i> *        | Brassbuttons                 |
| <i>Heliotropium curassavicum</i>     | Seaside heliotrope           |
| <i>Holocarpha virgata</i>            | Sticky tarweed               |
| <i>Lactuca serriola</i> *            | Prickly lettuce              |
| <i>Leontodon saxatilis</i> *         | Hairy hawkbit                |
| <i>Pseudognaphalium californicum</i> | Everlasting                  |
| <i>Psilocarphus oregonus</i>         | Oregon woolly-heads          |
| <i>Senecio vulgaris</i> *            | Common groundsel             |
| <i>Stephanomeria virgata</i>         | Rod wirelettuce              |
| BRASSICACEAE                         | MUSTARD FAMILY               |
| <i>Capsella bursa-pastoris</i> *     | Shepherd's purse             |
| <i>Hirschfeldia incana</i> *         | Shortpod mustard             |
| <i>Raphanus sativus</i> *            | Purple wild radish           |
| CARYOPHYLLACEAE                      | PINK FAMILY                  |
| <i>Spergularia rubra</i> *           | Purple sandspurry            |
| CHENOPODIACEAE                       | GOOSEFOOT FAMILY             |
| <i>Chenopodium album</i> *           | White goosefoot              |
| CONVOLVULACEAE                       | MORNING-GLORY FAMILY         |
| <i>Convolvulus arvensis</i> *        | Field bindweed               |
| CUPRESSACEAE                         | CYPRESS FAMILY               |
| <i>Sequoia sempervirens</i>          | Redwood                      |
| CYPERACEAE                           | SEDGE FAMILY                 |
| <i>Cyperus eragrostis</i>            | Tall flatsedge               |
| <i>Eleocharis macrostachya</i>       | Creeping spikerush           |
| EUPHORBIACEAE                        | SPURGE FAMILY                |
| <i>Croton setigerus</i>              | Turkey mullein               |
| FABACEAE                             | LEGUME FAMILY                |
| <i>Acmispon americanus</i>           | American bird's foot trefoil |
| <i>Medicago polymorpha</i> *         | Bur clover                   |
| <i>Trifolium dubium</i> *            | Shamrock clover              |
| <i>Trifolium hirtum</i> *            | Rose clover                  |
| <i>Vicia sativa</i> *                | Common vetch                 |
| <i>Vicia villosa</i> *               | Winter vetch                 |
| GENTIANACEAE                         | GENTIAN FAMILY               |
| <i>Zeltnera muehlenbergii</i>        | Muhlenberg's centaury        |
| GERANIACEAE                          | GERANIUM FAMILY              |
| <i>Erodium cicutarium</i> *          | Cut leaf filaree             |



|  |                          |
|--|--------------------------|
| <i>Erodium moschatum</i> *                       | White stemmed filaree    |
| HAMAMELIDACEAE                                   | WITCH-HAZEL FAMILY       |
| <i>Liquidambar styraciflua</i> *                 | Liquidambar              |
| JUNCACEAE  | RUSH FAMILY              |
| <i>Juncus bufonius</i>                           | Toad rush                |
| <i>Juncus effusus</i>                            | Soft rush                |
| <i>Juncus xiphioides</i>                         | Iris-leaf rush           |
| LAMIACEAE  | MINT FAMILY              |
| <i>Trichostema lanceolatum</i>                   | Vinegar weed             |
| LYTHRACEAE                                       | LOOSESTRIFE FAMILY       |
| <i>Lythrum portula</i> *                         | Broad-leaved loosestrife |
| MALVACEAE  | MALLOW FAMILY            |
| <i>Malva parviflora</i> *                        | Cheeseweed               |
| MARSILEACEAE                                     | MARSILEA FAMILY          |
| <i>Marsilea vestita</i>                          | Hairy water fern         |
| MYRTACEAE  | MYRTLE FAMILY            |
| <i>Eucalyptus polyanthemos</i> *                 | Silver dollar gum        |
| ONAGRACEAE                                       | EVENING PRIMROSE FAMILY  |
| <i>Epilobium brachycarpum</i>                    | Panicled willow-herb     |
| <i>Epilobium campestre</i>                       | Smooth spike primrose    |
| OROBANCHACEAE                                    | BROOMRAPE FAMILY         |
| <i>Parentucellia viscosa</i> *                   | Yellow parentucellia     |
| PLANTAGINACEAE                                   | PLANTAIN FAMILY          |
| <i>Plantago coronopus</i> *                      | Cut-leaf plantain        |
| <i>Plantago lanceolata</i> *                     | English plantain         |
| POACEAE  | GRASS FAMILY             |
| <i>Aegilops triuncialis</i> *                    | Barbed goatgrass         |
| <i>Aira caryophyllea</i> *                       | Silver hairgrass         |
| <i>Alopecurus saccatus</i>                       | Pacific foxtail          |
| <i>Avena barbata</i> *                           | Slender wild oat         |
| <i>Briza minor</i> *                             | Little quaking grass     |
| <i>Bromus tectorum</i> *                         | Cheatgrass               |
| <i>Cynodon dactylon</i> *                        | Bermuda grass            |
| <i>Elymus caput-medusae</i> *                    | Medusahead grass         |
| <i>Festuca myuros</i> *                          | Rat-tail vulpia          |
| <i>Festuca perennis</i> *                        | Italian Ryegrass         |
| <i>Hordeum marinum</i> ssp. <i>gussoneanum</i> * | Mediterranean barley     |
| <i>Hordeum murinum</i> *                         | Foxtail barley           |
| <i>Polypogon monspeliensis</i> *                 | Annual rabbit-foot grass |
| <i>Triticum aestivum</i> *                       | Cultivated wheat         |
| POLYGONACEAE                                     | BUCKWHEAT FAMILY         |
| <i>Polygonum aviculare</i> ssp. <i>depressum</i> | Prostrate knotweed       |
| <i>Rumex crispus</i> *                           | Curly dock               |
| SALICACEAE                                       | WILLOW FAMILY            |
| <i>Salix exigua</i>                              | Sandbar willow           |
| SOLANACEAE                                       | NIGHTSHADE FAMILY        |
| <i>Datura wrightii</i>                           | Sacred thornapple        |
| <i>Nicotiana attenuata</i>                       | Coyote tobacco           |
| <i>Solanum americanum</i>                        | Nightshade               |
| <i>Solanum rostratum</i>                         | Buffalobur nightshade    |
| THEMIDACEAE                                      | BRODIAEA FAMILY          |
| <i>Brodiaea elegans</i>                          | Harvest brodiaea         |
| VITACEAE   | GRAPE FAMILY             |
| <i>Vitis vinifera</i>                            | Cultivated grape         |
| ZYGOPHYLLACEAE                                   | CALTROP FAMILY           |

*Tribulus terrestris*\*

Puncture vine

*An asterisk (\*) indicates a non-native species.*

**ATTACHMENT E**

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Special-Status Species Evaluated for the Study Area



| Special-Status Species Evaluated for the Study Area                |        |      |                             |   |                |  |
|--|--------|------|-----------------------------|---|----------------|--|
| Common Name<br>(Scientific Name)                                   | Status |      |                             | Habitat Description   | Survey Period  | Potential To Occur On-Site                       |
|  | ESA    | CESA | Other                       |   |                |  |
| <b>Plants</b>  |        |      |                             |   |                |  |
| lone Manzanita<br><i>(Arctostaphylos myrtifolia)</i>               | FT     | -    | 1B.2                        | Chaparral and cismontane woodlands associated with very acidic, nutrient-poor, coarse soils typical of the lone Formation (196'–1,903').  | November–March | Absent. Suitable habitat not present onsite.     |
| Brewer's calandrinia<br><i>(Calandrinia breweri)</i>               | –      | –    | 4.2                         | Sandy or loamy soils, disturbed sites, and burns within chaparral and coastal scrub (33'–4,003').   | March–June     | Absent. Suitable habitat not present onsite.     |
| Pine Hill ceanothus<br><i>(Ceanothus roderickii)</i>               | FE     | CR   | 1B.1                        | Rocky serpentinite or gabbroic soil in chaparral and cismontane woodland (804'–3,576').   | April–June     | Absent. Suitable habitat not present onsite.     |
| Red Hills soaproot<br><i>(Chlorogalum grandiflorum)</i>            | –      | –    | 1B.2                        | Serpentinite or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest, occasionally on non-ultramafic soils (804'–5,545').  | May–June       | Absent. Suitable habitat not present onsite.     |
| Brandegee's clarkia<br><i>(Clarkia biloba ssp. brandegeae)</i>     | -      | -    | 4.2                         | Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (246' - 3,002').  | May–July       | Absent. Suitable habitat not present onsite.     |
| Bisbee Peak rush–rose<br><i>(Crocanthemum suffrutescens)</i>       | –      | –    | 3.2                         | Often gabbroic or lone soil or in burned or disturbed areas within chaparral (246'–2,198').   | April–August   | Absent. Suitable habitat not present onsite.     |
| Dwarf downingia<br><i>(Downingia pusilla)</i>                      | –      | –    | 2B.2, SSHCP Covered Species | Mesic areas in valley and foothill grassland, and vernal pools. Species appears to have an affinity for slight disturbance (i.e., scraped depressions, ditches, etc.) (Baldwin et al. 2012, CDFW 2018) (3'–1,460'). | March–May      | Absent. No SSHCP Modeled Species Habitat onsite. |
| lone Buckwheat<br><i>(Eriogonum apricum var. apricum)</i>          | FE     | CE   | 1B.1                        | Openings in chaparral communities found on lone soils (197'–476').  | July–October   | Absent. Suitable habitat not present onsite.     |
| Irish Hill Buckwheat<br><i>(Eriogonum apricum var. prostratum)</i> | FE     | CE   | 1B.1                        | Openings in chaparral communities found on lone soils (295'–394').  | June–July      | Absent. Suitable habitat not present onsite.     |
| Jepson's woolly sunflower<br><i>(Eriophyllum jepsonii)</i>         | –      | –    | 4.3                         | Chaparral, cismontane woodland, and coastal scrub, sometimes on serpentinite (656'–3,363').   | April–June     | Absent. Suitable habitat not present onsite.     |

| Special-Status Species Evaluated for the Study Area             |        |      |                             |   |                 |   |
|---|--------|------|-----------------------------|---|-----------------|---|
| Common Name<br>(Scientific Name)                                | Status |      |                             | Habitat Description   | Survey Period   | Potential To Occur On-Site  |
|   | ESA    | CESA | Other                       |   |                 |   |
| Tuolumne Button–celery<br><i>(Eryngium pinnatisectum)</i>       | –      | –    | 1B.2                        | Vernal pools and other mesic conditions in cismontane woodland and lower montane coniferous forests (230'–3,002').                                      | May–August      | Absent. Suitable habitat not present onsite.  |
| Pine Hill flannelbush<br><i>(Fremontodendron decumbens)</i>     | FE     | CR   | 1B.2                        | Serpentine or gabbro rock outcrops in chaparral and cismontane woodland (1,394'–2,493').  | April–July      | Absent. Suitable habitat not present onsite.  |
| Stinkbells<br><i>(Fritillaria agrestis)</i>                     | -      | -    | 4.2                         | Clay and sometimes serpentinite soils in chaparral, cismontane woodland, Pinyon and juniper woodland, and Valley and foothill grassland (33' - 5,102'). | March–June      | Absent within Project. Special-status plant surveys did not detect this species. Potential to Occur within Raymer Way Offsite; Valley grassland represents suitable habitat.                |
| El Dorado bedstraw<br><i>(Galium californicum ssp. sierrae)</i> | FE     | CR   | 1B.2                        | Gabbroic soil in chaparral, cismontane woodland and lower montane coniferous forest communities (328'–1,919').  | May–June        | Absent. Suitable habitat not present onsite.  |
| Boggs Lake hedge–hyssop<br><i>(Gratiola heterosepala)</i>       | –      | CE   | 1B.2, SSHCP Covered Species | Marshes, swamps, lake margins, and vernal pools (33'–7,792').   | April–August    | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Parry's horkelia<br><i>(Horkelia parryi)</i>                    | –      | –    | 1B.2                        | lone and other soil formations in chaparral and cismontane woodlands (262'–3,510').   | April–September | Absent. Suitable habitat not present onsite.  |
| Ahart's dwarf rush<br><i>(Juncus leiospermus var. ahartii)</i>  | –      | –    | 1B.2, SSHCP Covered Species | Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005a) (98'–751').            | March–May       | Absent within Project. Special-status plant surveys did not detect this species. Small amounts of SSHCP Modeled Species Habitat present within unsurveyed Raymer Way Offsites.              |

| Special-Status Species Evaluated for the Study Area                      |        |      |                                      |  |               |   |
|--|--------|------|--------------------------------------|--|---------------|---|
| Common Name<br>(Scientific Name)   | Status |      |                                      | Habitat Description  | Survey Period | Potential To Occur On-Site  |
|  | ESA    | CESA | Other                                |  |               |   |
| Legenere<br><i>(Legenere limosa)</i>                                     | -      | -    | 1B.1,<br>SSHCP<br>Covered<br>Species | Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005b) (3'-2,887'). | April-June    | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Hoary navarretia<br><i>(Navarretia eriocephala)</i>                      | -      | -    | 4.3                                  | Vernally mesic areas in cismontane woodland and Valley and foothill grassland (345' - 1,312').   | May-June      | Absent. Suitable habitat not present onsite.  |
| Pincushion navarretia<br><i>(Navarretia myersii</i> ssp. <i>myersii)</i> | -      | -    | 1B.1,<br>SSHCP<br>Covered<br>Species | Often acidic soils in vernal pools (66'-1,083').   | April-May     | Absent. No SSHCP Modeled Species Habitat onsite.  |
| Slender Orcutt grass<br><i>(Orcuttia tenuis)</i>                         | FT     | CE   | 1B.1,<br>SSHCP<br>Covered<br>Species | Vernal pools, often gravelly (115'-5,774').  | May-September | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Sacramento Orcutt grass<br><i>(Orcuttia viscida)</i>                     | FE     | CE   | 1B.1,<br>SSHCP<br>Covered<br>Species | Vernal pools (98'-328').   | April-July    | Absent. Special-status plant surveys did not detect this species. Field surveys have determined that there is no habitat present for this species within the unsurveyed Raymer Way Offsite. |
| Layne's ragwort<br><i>(Packera layneae)</i>                              | FT     | CR   | 1B.2                                 | Rocky serpentinite or gabbroic soil in chaparral and cismontane woodland communities (656'-3,560').  | April-August  | Absent. Suitable habitat not present onsite.  |



| Special-Status Species Evaluated for the Study Area                                    |        |      |  |   |                     |   |
|--|--------|------|--|---|---------------------|---|
| Common Name<br>(Scientific Name)   | Status |      |  | Habitat Description   | Survey Period       | Potential To Occur On-Site  |
|  | ESA    | CESA | Other                                  |   |                     |   |
| Sanford's arrowhead<br><i>(Sagittaria sanfordii)</i>                                   | -      | -    | 1B.2,<br>SSHCP<br>Covered<br>Species   | Shallow marshes and<br>freshwater swamps<br>(0'-2,133').  | May-October         | Absent. Special-<br>status plant<br>surveys did not<br>detect this species.<br>Field surveys have<br>determined that<br>there is no habitat<br>present for this<br>species within the<br>unsurveyed<br>Raymer Way<br>Offsite. |
| El Dorado County Mule<br>Ears<br><i>(Wyethia reticulata)</i>                           | -      | -    | 1B.2                                   | Clay or gabbroic soils in<br>chaparral, cismontane<br>woodland, and lower<br>montane coniferous forest<br>communities<br>(607'-2,067'). | April-August        | Absent. Suitable<br>habitat not present<br>onsite.  |
| <b>Invertebrates</b>   |        |      |  |   |                     |   |
| Conservancy fairy shrimp<br><i>(Branchinecta conservatio)</i>                          | FE     | -    | -                                      | Vernal pools/wetlands.  | November-<br>April  | Potential to Occur<br>within vernal pool<br>habitat onsite.   |
| Vernal pool fairy shrimp<br><i>(Branchinecta lynchi)</i>                               | FT     | -    | SSHCP<br>Covered<br>Species            | Vernal pools/wetlands.  | November-<br>April  | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite.  |
| Midvalley fairy shrimp<br><i>(Branchinecta<br/>mesovallensis)</i>                      | -      | -    | CNDDDB,<br>SSHCP<br>Covered<br>Species | Vernal pools/wetlands.  | November -<br>April | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite.  |
| Valley elderberry longhorn<br>beetle<br><i>(Desmocerus californicus<br/>dimorphus)</i> | FT     | -    | SSHCP<br>Covered<br>Species            | Elderberry shrubs.  | Any season          | Absent. No SSHCP<br>Modeled Species<br>Habitat onsite.  |
| Ricksecker's water<br>scavenger beetle<br><i>Hydochara rickseckeri</i>                 | -      | -    | SSHCP<br>Covered<br>Species            | Vernal pools/wetlands.  |                     | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite.  |
| Vernal pool tadpole shrimp<br><i>(Lepidurus packardii)</i>                             | FE     | -    | SSHCP<br>Covered<br>Species            | Vernal pools/wetlands.  | November-<br>April  | Potential to Occur.<br>SSHCP Modeled<br>Species Habitat<br>present onsite.  |
| <b>Fish</b>  |        |      |  |   |                     |   |
| Delta smelt<br><i>(Hypomesus transpacificus)</i>                                       | FT     | CE   | -                                      | Sacramento-San Joaquin<br>delta   |                     | Absent. Suitable<br>habitat not present<br>onsite.  |

| Special-Status Species Evaluated for the Study Area  |        |      |                            |  |                 |  |
|--|--------|------|----------------------------|--|-----------------|--|
| Common Name<br>(Scientific Name)   | Status |      |                            | Habitat Description  | Survey Period   | Potential To Occur On-Site   |
|  | ESA    | CESA | Other                      |  |                 |  |
| Steelhead (CA Central Valley DPS)<br><br>( <i>Oncorhynchus mykiss irideus</i> )                | FT     | -    | -                          | Undammed rivers, streams, and creeks   |                 | Absent. Suitable habitat not present onsite.   |
| <b>Amphibians</b>  |        |      |                            |  |                 |  |
| California tiger salamander (Central California DPS)<br><br>( <i>Ambystoma californiense</i> ) | FT     | CT   | SSC, SSHCP Covered Species | Vernal pools, wetlands (breeding) and adjacent grassland or oak woodland; needs underground refuge (e.g., ground squirrel and/or gopher burrows). Largely terrestrial as adults.   | March-May       | Absent. No SSHCP Modeled Species Habitat onsite.   |
| California red-legged frog<br><br>( <i>Rana draytonii</i> )                                    | FT     | -    | SSC                        | Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.  |                 | Absent. Suitable habitat not present onsite.   |
| Foothill yellow-legged frog<br><br>( <i>Rana boylei</i> )                                      | -      | CC   | SSC                        | Foothill yellow-legged frogs can be active all year in warmer locations, but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed. | May–October     | Absent. Suitable habitat not present onsite.   |
| Western spadefoot<br><br>( <i>Spea hammondi</i> )  | -      | -    | SSC, SSHCP Covered Species | California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.  | March-May       | Potential to Occur. SSHCP Modeled Species Habitat present onsite.  |
| <b>Reptiles</b>  |        |      |                            |  |                 |  |
| Giant garter snake<br><br>( <i>Thamnophis gigas</i> )  | FT     | CT   | SSHCP Covered Species      | Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.  | April-October   | Absent. No SSHCP Modeled Species Habitat onsite.   |
| Western pond turtle<br><br>( <i>Actinemys marmorata</i> )                                      | -      | -    | SSC, SSHCP Covered Species | Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.  | April-September | Potential to Occur. No SSHCP Modeled Species Habitat present; however, ponded areas in Morrison Creek represent potential habitat. |
| <b>Birds</b>   |        |      |                            |  |                 |  |

| Special-Status Species Evaluated for the Study Area                   |          |      |   |   |  |  |
|---|----------|------|---|---|--|--|
| Common Name<br>(Scientific Name)                                      | Status   |      |   | Habitat Description   | Survey Period  | Potential To Occur On-Site   |
|   | ESA      | CESA | Other                                       |   |  |  |
| Bald eagle<br><i>(Haliaeetus leucocephalus)</i>                       | Delisted | CE   | CFP,<br>BCC                                 | Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g. rivers, lakes), wetlands, flooded agricultural fields, open grasslands  | February–September (nesting);<br>October–March (wintering) | Absent. Suitable habitat not present onsite.   |
| Bank swallow<br><i>(Riparia riparia)</i>                              | -        | CT   | -   | Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California.   | May–July   | Absent. Suitable habitat not present onsite.   |
| Burrowing owl<br><i>(Athene cucicularia)</i>                          | -        | -    | BCC,<br>SSC,<br>SSHCP<br>Covered<br>Species | Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g. prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. | February–August  | Present. SSHCP Modeled Species Habitat present onsite, and evidence of burrow use onsite observed during survey conducted per SSHCP AMM WBO-1. |
| California black rail<br><i>(Laterallus jamaicensis coturniculus)</i> | -        | CT   | BCC,<br>CFP                                 | Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer counties)   | March–September (breeding)                                 | Absent. Suitable habitat not present onsite.   |



| Special-Status Species Evaluated for the Study Area                    |        |      |  |  |                                   |  |
|--|--------|------|--|--|-----------------------------------|--|
| Common Name<br>(Scientific Name)                                       | Status |      |  | Habitat Description  | Survey<br>Period                  | Potential To<br>Occur On-Site                    |
|  | ESA    | CESA | Other                                      |  |                                   |  |
| California spotted owl<br><br><i>(Strix occidentalis occidentalis)</i> | -      | -    | BCC,<br>SSC                                | Found in the southern Cascade Range and northern Sierra Nevada from Pit River, Shasta Co. south to Tehachapi Mountains, Kern Co, in the coastal ranges from Monterey Co. to Santa Barbara Co., in Transverse and Peninsular Ranges south to northern Baja California. At lower elevations, they breed in hardwood forests and coniferous forests at higher elevations. They use forests with greater complexity and structure. | March–<br>September<br>(breeding) | Absent. Suitable habitat not present onsite.     |
| California thrasher<br><br><i>(Toxostoma redivivum)</i>                | -      | -    | SSC  | Resident and endemic to coastal and Sierra Nevada-Cascade foothill areas of California. Nests are usually well hidden in dense shrubs, including scrub oak, California lilac, and chamise.   | February–July                     | Absent. Suitable habitat not present onsite.     |
| Clark's grebe<br><br><i>(Aechmophorus clarkia)</i>                     | -      | -    | BCC  | The breeding range of Clark's grebe includes all of California with major breeding areas such as Eagle Lake (Lassen County), Clear Lake (Lake County), Lake Almanor (Plumas County), Bridgeport Reservoir (Butte County), and Goose Lake (Modoc County). Clark's grebe occurs seasonally in suitable wetland habitat with a preference for large lakes. Clarke's grebe is a diving bird that forages primarily under water.    | January–<br>December              | Absent. Suitable habitat not present onsite.     |
| Cooper's hawk<br><br><i>(Accipiter cooperii)</i>                       | -      | -    | CDFW<br>WL,<br>SSHCP<br>Covered<br>Species | Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes  | March-July                        | Absent. No SSHCP Modeled Species Habitat onsite. |

| Special-Status Species Evaluated for the Study Area        |        |      |  |  |  |   |
|--|--------|------|--|--|--|---|
| Common Name<br>(Scientific Name)                           | Status |      |  | Habitat Description  | Survey Period  | Potential To Occur On-Site  |
|  | ESA    | CESA | Other  |  |  |   |
| Double-crested cormorant<br><i>(Phalacrocorax auritus)</i> | -      | -    | CDFW<br>WL   | Nests near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines and typically forages in shallow water. Non-nesters are found in many coastal and inland waters.   | April–August   | Absent. Suitable habitat not present onsite.                      |
| Ferruginous hawk<br><i>(Buteo regalis)</i>                 | -      | -    | BCC,<br>CDFW<br>WL,<br>SSHCP<br>Covered<br>Species | Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas.   | September–<br>March<br>(wintering)                                 | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Golden eagle<br><i>(Aquila chrysaetos)</i>                 | -      | -    | BCC,<br>CFP  | Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. | Nest<br>(February–<br>August); winter<br>CV (October–<br>February) | Potential to Occur. Winter foraging habitat present.              |
| Grasshopper sparrow<br><i>(Ammodramus savannarum)</i>      | -      | -    | SSC  | In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental.  | May–August   | Potential to Occur. Nesting habitat present.                      |

| Special-Status Species Evaluated for the Study Area           |        |      |                            |  |  |  |
|---|--------|------|----------------------------|--|--|--|
| Common Name<br>(Scientific Name)                              | Status |      |                            | Habitat Description  | Survey Period  | Potential To Occur On-Site                       |
|   | ESA    | CESA | Other                      |  |  |  |
| Great blue heron<br><i>(Ardea herodias)</i>                   | -      | -    | CNDDDB                     | Colonial nester; prefers to nest in vegetation on islands or in swamps but may also be found in upland habitats in trees, bushes, on the ground and on artificial structures. Foraging habitat is widely diverse and includes swamps, coastlines, estuaries, beaches, pastures, cultivated fields, and riparian areas.                                       | February–July  | Absent. Suitable habitat not present onsite.     |
| Great egret<br><i>(Ardea alba)</i>                            | -      | -    | CNDDDB                     | Colonial nester; nests in woody vegetation, shrubs and trees usually near lakes, ponds, marshes estuaries, human-made impoundments, or natural and human-made islands.   | March–July   | Absent. Suitable habitat not present onsite.     |
| Greater sandhill crane<br><i>(Antigone canadensis tabida)</i> | -      | CT   | CFP, SSHCP Covered Species | Breeds in NE California, Nevada, Oregon, Washington, and BC, Canada; winters from CA to Florida. In winter, they forage in burned grasslands, pastures, and feed on waste grain in a variety of agricultural settings (corn, wheat, milo, rice, oats, and barley), tilled fields, recently planted fields, alfalfa fields, row crops and burned rice fields. | March-August (breeding); September-March (wintering) | Absent. No SSHCP Modeled Species Habitat onsite. |



| Special-Status Species Evaluated for the Study Area |        |      |                                 |  |   |   |
|---|--------|------|---------------------------------|--|---|---|
| Common Name<br>(Scientific Name)                    | Status |      |                                 | Habitat Description  | Survey Period   | Potential To Occur On-Site  |
|   | ESA    | CESA | Other                           |  |   |   |
| Lawrence's goldfinch<br><i>(Spinus lawrencei)</i>   | -      | -    | BCC                             | Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g. small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water. | March–September   | Absent. Suitable habitat not present onsite.                      |
| Lewis' woodpecker<br><i>(Melanerpes lewis)</i>      | -      | -    | BCC                             | In California, breeds in Siskiyou and Modoc Counties, Warner Mountains, inner coast ranges from Tehama to San Luis Obispo Counties, San Bernardino Mountains, and Big Pine Mountain (Inyo Co.); nesting habitat includes open ponderosa pine forest, open riparian woodland, logged/burned forest, and oak woodlands. Does not breed on the west side of Sierran crest (Beedy and Pandalfino 2013).  | April–September (breeding); September–March (winter in Central Valley). | Absent. Suitable habitat not present onsite.                      |
| Loggerhead shrike<br><i>(Lanius ludovicianus)</i>   | -      | -    | BCC, SSC, SSHCP Covered Species | Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats.   | March-July  | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |

| Special-Status Species Evaluated for the Study Area                  |        |      |                                     |  |   |   |
|--|--------|------|-------------------------------------|--|---|---|
| Common Name<br>(Scientific Name)                                     | Status |      |                                     | Habitat Description  | Survey Period   | Potential To Occur On-Site  |
|  | ESA    | CESA | Other                               |  |   |   |
| Merlin<br><i>(Falco columbarius)</i>                                 | -      | -    | CDFW<br>WL                          | Breeds in Oregon, Washington north into Canada. Winters in southern Canada to South America, including California. Breeds near forest openings, fragmented woodlots, and riparian areas. Wintering habitat includes wide variety, open forests, grasslands, tidal flats, plains, and urban settings.   | September–April (wintering in the Central Valley); does not breed in California | Potential to Occur. Winter foraging habitat present.              |
| Northern harrier<br><i>(Circus hudsonius)</i>                        | -      | -    | SSC,<br>SSHCP<br>Covered<br>Species | Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.  | April–September   | Potential to Occur. SSHCP Modeled Species Habitat present onsite. |
| Nuttall's woodpecker<br><i>(Picoides nuttallii)</i>                  | -      | -    | BCC                                 | Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.  | April–July  | Absent. Suitable habitat not present onsite.                      |
| Oak titmouse<br><i>(Baeolophus inornatus)</i>                        |        |      | BCC                                 | Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree)   | March–July  | Absent. Suitable habitat not present onsite.                      |
| Rufous hummingbird<br><i>(Selasphorus rufus)</i>                     | -      | -    | BCC,<br>SSHCP<br>Covered<br>Species | Breeds in extreme northwestern California north into British Columbia and Alaska. Winters in coastal Southern California south into Mexico. Common migrant during March-April in Sierra Nevada foothills and June-August in Lower Conifer to Alpine zone of Sierra Nevada. Nesting habitat includes secondary succession communities and openings, mature forests, parks and residential area. | April–July  | Absent. Suitable habitat not present onsite.                      |
| Saltmarsh common yellowthroat<br><i>(Geothlypis trichas sinuosa)</i> | -      | -    | BCC,<br>SSC                         | Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego Co.  | March–July  | Absent. Suitable habitat not present onsite.                      |

| Special-Status Species Evaluated for the Study Area            |        |      |   |   |               |   |
|--|--------|------|---|---|---------------|---|
| Common Name<br>(Scientific Name)                               | Status |      |   | Habitat Description   | Survey Period | Potential To Occur On-Site  |
|  | ESA    | CESA | Other                                       |   |               |   |
| Song sparrow "Modesto"<br><i>(Melospiza melodia heermanni)</i> | -      | -    | BCC,<br>SSC                                 | Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat   | April-June    | Absent. Suitable habitat not present onsite.  |
| Swainson's hawk<br><i>(Buteo swainsoni)</i>                    | -      | CT   | BCC,<br>SSHCP<br>Covered<br>Species         | Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures  | March-August  | Potential to Occur. SSHCP Modeled Species Habitat present onsite.   |
| Tricolored blackbird<br><i>(Agelaius tricolor)</i>             | -      | CT   | BCC,<br>SSC,<br>SSHCP<br>Covered<br>Species | Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Cos south to San Bernardino, Riverside and San Diego Counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen Counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields. | March-August  | Present. SSHCP Modeled Species Habitat present, evidence of past nesting observed during survey per SSHCP AMM TCB-1; however, species is nomadic and may not be present every year. |
| White-tailed kite<br><i>(Elanus leucurus)</i>                  | -      | -    | CFP,<br>SSHCP<br>Covered<br>Species         | Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.  | March-August  | Potential to Occur. SSHCP Modeled Species Habitat present onsite.   |



| Special-Status Species Evaluated for the Study Area |        |      |       |  |                 |  |
|---|--------|------|-------|--|-----------------|--|
| Common Name<br>(Scientific Name)                    | Status |      |       | Habitat Description  | Survey Period   | Potential To Occur On-Site   |
|   | ESA    | CESA | Other |  |                 |  |
| Wrentit<br><i>(Chamaea fasciata)</i>                | -      | -    | BCC   | Resident bird found along the California and Oregon coast and California Central Valley regions. Breeds in many habitats that generally have a relatively dense understory including riparian oak woodlands, Douglas fir and redwood forests, riparian willow scrub, and mixed conifer habitats. This species will also nest in and use manzanita, scrubby oaks, coastal sage scrub, California lilac, coyote bush and blackberry thickets. Wrentit prefer to stay elevated and rarely forage on the ground for sources of food, which are primarily made up of arthropods including insects and spiders as well as fruit and seeds. | March–August    | Absent. Suitable habitat not present onsite.                           |
| Yellow-billed magpie<br><i>(Pica nuttalli)</i>      | -      | -    | BCC   | Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County.; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings.  | April–June      | Potential to Occur. Nesting habitat present.                           |
| <b>Mammals</b>                                      |        |      |       |  |                 |  |
| Pallid bat<br><i>(Antrozous pallidus)</i>           | -      | -    | SSC   | Crevice in rocky outcrops and cliffs, caves, mines, trees (e.g. basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (Western Bat Working Group [WBWG] 2018).   | April–September | Potential to Occur. Structures onsite represent potential hibernacula. |

| Special-Status Species Evaluated for the Study Area |        |      |                                     |  |                 |  |
|---|--------|------|-------------------------------------|--|-----------------|--|
| Common Name<br>(Scientific Name)                    | Status |      |                                     | Habitat Description  | Survey Period   | Potential To Occur On-Site   |
|   | ESA    | CESA | Other                               |  |                 |  |
| Western red bat<br><i>(Lasiurus blossevillii)</i>   | -      | -    | SSC,<br>SSHCP<br>Covered<br>Species | Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2017). | April-September | Potential to Occur. SSHCP Modeled Species Habitat present; potential hibernacula habitat identified during survey per SSHCP AMM BAT-1. |
| American badger<br><i>(Taxidea taxus)</i>           | -      | -    | SSC,<br>SSHCP<br>Covered<br>Species | Drier open stages of most shrub, forest, and herbaceous habitats with friable soils.   | Any season      | Potential to Occur. SSHCP Modeled Species Habitat present onsite.  |

Status Codes:

|          |   |
|----------|---|
| AMM      | SSHCP Avoidance and Minimization Measure  |
| ESA      | Endangered Species Act  |
| CESA     | California Endangered Species Act   |
| FE       | ESA listed, Endangered.   |
| FT       | ESA listed, Threatened.   |
| FPD      | Listed under ESA, but formally proposed for delisting.  |
| FC       | Candidate for ESA listing as Threatened or Endangered.  |
| CFP      | California Fish and Game Code Fully Protected Species   |
| CE       | CESA or NPPA listed, Endangered.  |
| CR       | CESA- or NPPA-listed, Rare.   |
| CT       | CESA or NPPA listed, Threatened.  |
| CC       | Candidate for CESA listing as Endangered or Threatened.   |
| BCC      | USFWS Bird of Conservation Concern  |
| CDFW WL  | CDFW Watch List   |
| Delisted | Formally Delisted (delisted ESA species are monitored for 5 years).   |
| SSC      | CDFW Species of Special Concern   |
| SSHCP    | South Sacramento Habitat Conservation Plan  |
| 1B       | California Rare Plant Ranks (CRPRs)/Rare or Endangered in California and elsewhere.   |
| 2B       | CRPR /Rare or Endangered in California, more common elsewhere.  |
| 2        | CRPR /Rare or Endangered in California, more common elsewhere.  |
| 4        | CRPR /Plants of Limited Distribution - A Watch List.  |
| 0.1      | Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)                       |
| 0.2      | Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)                       |
| 0.3      | Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known) |

F-1. Aquatic Resources Delineation

F-2. USACE Verification

F-3. Addendum to Aquatic Resources Delineation



# Aquatic Resources Delineation

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## The Preserve Development

Rancho Cordova, California

**Prepared for:**

Winn Communities, Inc.

**November 26, 2018**



ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, and monitoring and compliance reporting.

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Prepared for Winn Communities, Inc., Rocklin, California. November.

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- Attachment B – Preliminary Jurisdictional Determination for Wong & Wagner Property
- Attachment C – Wetland Determination Data Forms - Arid West
- Attachment D – Plant Species Observed Onsite
- Attachment E – Representative Site Photographs
- Attachment F – USACE ORM Aquatic Resources Table
- Attachment G – Wetland Delineation Shape File (to be included with USACE submittal only)

**LIST OF ACRONYMS AND ABBREVIATIONS**

|         |  |
|---------|--|
| CARI    | California Aquatic Resource Inventory  |
| CFR     | Code of Federal Register   |
| CWA     | Clean Water Act  |
| CWR     | Clean Water Rule   |
| FAC     | Facultative  |
| FACW    | Facultative wetland  |
| FR      | Federal Register   |
| HQUSACE | Headquarters USACE   |
| NOAA    | National Oceanic and Atmospheric Administration                              |
| NRCS    | Natural Resources Conservation Service                                       |
| OBL     | Obligate   |
| OHWM    | Ordinary high-water mark”  |
| ORM     | USACE Operations and Maintenance Business Information Link Regulatory Module |
| PJD     | Preliminary Jurisdictional Determination                                     |
| Project | The Preserve Development   |
| SFEI    | San Francisco Estuary Institute  |
| SSHCP   | South Sacramento Habitat Conservation Plan                                   |
| TNW     | Traditional Navigable Waters   |
| USACE   | U.S. Army Corps of Engineers   |
| USEPA   | U.S. Environmental Protection Agency   |
| USGS    | U.S. Geological Survey   |

## 1.0 INTRODUCTION

On behalf of Winn Communities, Inc., ECORP Consulting, Inc. conducted an aquatic resources delineation for the ±113.8-acre Delineation Area encompassing The Preserve Development (Project) located in Rancho Cordova, Sacramento County, California. The Delineation Area is located to the northwest of Raymer Way and Grant Line Road. The Delineation Area corresponds to an unsectioned portion of the Rio de los Americanos Land Grant within the "Buffalo Creek, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1980) (Figure 1. *Project Location and Vicinity*). The approximate center of the Delineation Area is located at 38.574873° latitude and -121.196728° longitude within the Lower Sacramento Watershed (Hydrologic Unit Code #18020163, Natural Resources Conservation Service [NRCS], USGS, and U.S. Environmental Protection Agency [USEPA] 2016). Driving directions to the Delineation Area are included as Attachment A.

This report describes aquatic resources identified within the Delineation Area that may be regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA). The information presented in this report provides data required by the USACE Sacramento District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016a). A Preliminary Jurisdictional Determination (PJD) was issued in 2012 for a ±72.6-acre portion of the Delineation Area, verifying the location and extent of aquatic resources delineated therein (USACE 2012, Attachment B). The aquatic resource boundaries depicted in this report, including those located in the previously verified portion of the Delineation Area, represent a calculated estimation of the jurisdictional area within the Delineation Area, and are subject to modification following the USACE verification process.

The purpose of this report is to provide adequate information to USACE for the issuance of a PJD covering the entirety of the Delineation Area.

## 2.0 REGULATORY SETTING

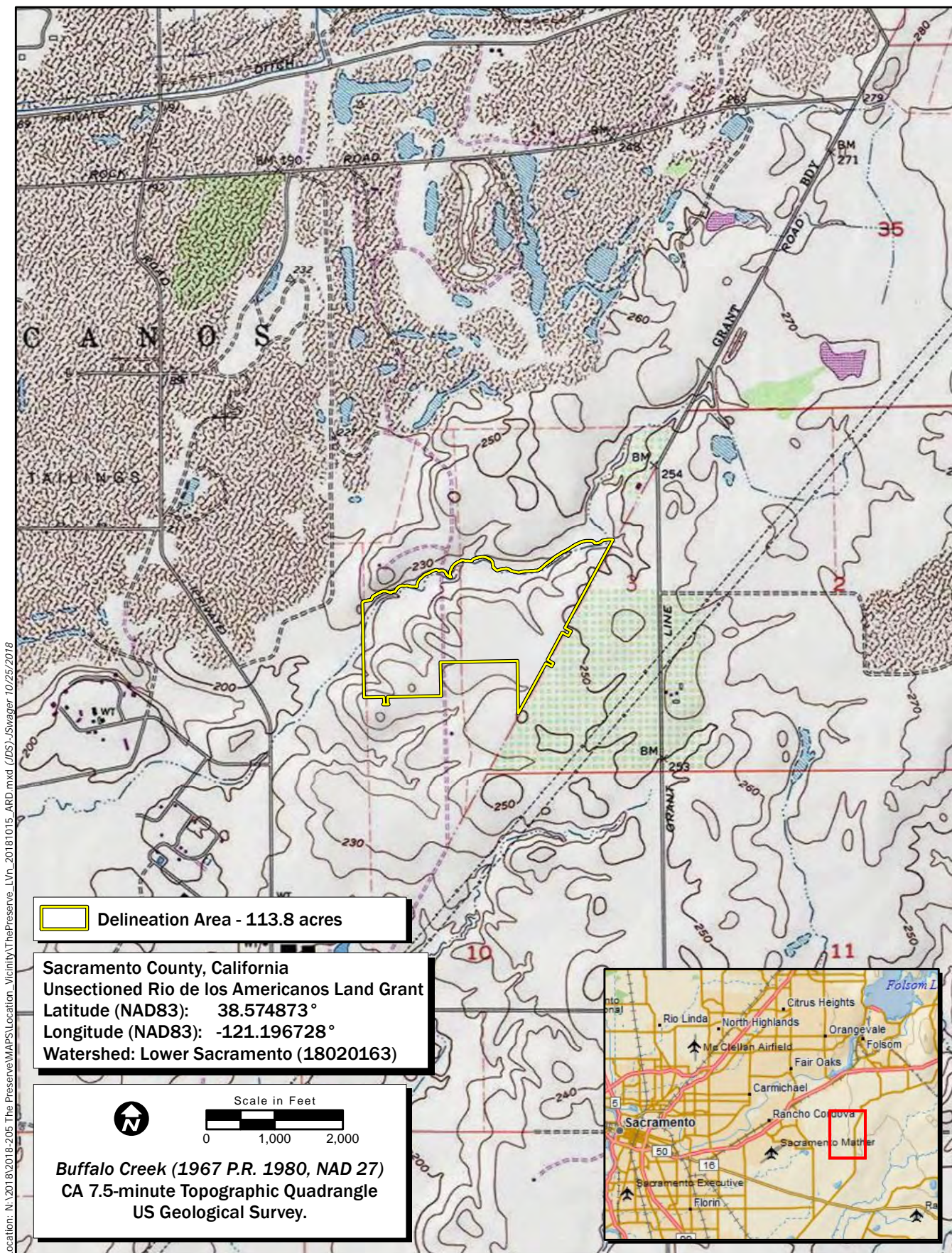
### 2.1 Waters of the United States

This report describes aquatic resources, including wetlands that may be regulated by USACE under Section 404 of the federal CWA. The following sections define these regulations.

#### 2.1.1 Wetlands

Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [51 Federal Register (FR) 41250, Nov. 13, 1986, as amended at 58 FR 45036, Aug. 25, 1993]. Wetlands can be perennial or intermittent.





Location: N:\2018\2018-205 The Preserve\MAPS\Location\_Vicinity\ThePreserve\_LVn\_20181015\_ABD.mxd (JDS)-Svager 10/25/2018

Map Date: 10/25/2018  
 iService Layer Credits: Copyright© 2018 Garmin  
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**Figure 1. Project Location and Vicinity**



### **2.1.2 Other Waters**

Other waters are nontidal, perennial, and intermittent watercourses and tributaries to such watercourses [51 FR 41250, Nov. 13, 1986, as amended at 58 FR 45036, August 25, 1993]. The limit of USACE jurisdiction for nontidal watercourses (without adjacent wetlands) is defined in 33 Code of Federal Register (CFR) 328.4(c)(1) as the "ordinary high-water mark" (OHWM). The OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" approximation of the lateral limit of USACE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

## **2.2 Clean Water Act**

The USACE regulates discharge of dredged or fill material into Waters of the U.S. under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into Waters of the U.S., including, but not limited to the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 CFR § 328.2(f)]. In addition, Section 401 of the CWA (33 U.S. Code 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Substantial impacts to wetlands, over 0.5 acre of impact, may require an individual permit. Projects that only minimally affect wetlands, less than 0.5 acre of impact, may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board.

## **2.3 Jurisdictional Assessment**

The Clean Water Rule (CWR) was published in June 2015, but implementation of the rule was stayed until September 2018. It is currently (2018) in effect for 22 states, including California, the District of Columbia, and the U.S. territories. The CWR establishes categories of waters that are jurisdictional, waters that are excluded, and waters that require a case-specific significant nexus evaluation to determine if they are Waters of the U.S. By rule, the CWR defines Waters of the U.S. to include Traditional Navigable Waters (TNW), interstate waters, and territorial seas, impoundments of jurisdictional waters, and tributaries and adjacent (i.e., bordering, contiguous, or neighboring) waters to TNW, interstate waters, or territorial seas (USACE and USEPA 2015).

According to the CWR, neighboring is defined as waters located: within 100 feet of the OHWM of a jurisdictional feature, within the 100-year floodplain of a jurisdictional feature and within 1,500 feet of the

feature, or within 1,500 feet of the high tide line of TNW, interstate water, or territorial sea. Western vernal pools in California and several other location-specific aquatic feature types are evaluated on a case-by-case basis to determine whether they have a significant nexus to TNW, interstate waters, or territorial seas (USACE and USEPA 2015).

Feature types that are categorically excluded from CWA jurisdiction include waste treatment systems, prior converted cropland, ditches with intermittent or ephemeral flow that are not relocated tributaries or excavated in a tributary, ditches that do not flow, directly or indirectly, into a jurisdictional water, artificially irrigated areas that would revert to dry land in the absence of irrigation, artificial, constructed lakes or ponds created by excavating and/or diking dry land, small ornamental waters, artificial reflecting or swimming pools created by excavating and/or diking dry land, water-filled depressions created in dry land incidental to mining or construction activities, erosional features such as gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways, and puddles (USACE and USEPA 2015).

### 3.0 METHODS

This aquatic resources delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (USACE 2008). The boundaries of aquatic resources were delineated through standard field methods (e.g., paired sample set analyses) and aerial photograph interpretation. Field data were recorded on Wetland Determination Data Forms - Arid West Region (Attachment C). A color aerial photograph (1"=200' scale, NAIP 2016) used to assist with mapping and ground-truthing. *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990) and the Web Soil Survey (NRCS 2018a) were used to aid in identifying hydric soils in the field. The Jepson Manual, 2nd Edition (Baldwin et al. 2012) was used for plant nomenclature and identification.

Field surveys were conducted on October 12, 2018 by ECORP biologist Clay DeLong. Mr. DeLong walked the entire ±41.2-acre unverified portion of the Delineation Area to determine the location and extent of aquatic resources. Paired locations were sampled to evaluate whether or not the vegetation, hydrology, and soils data supported an aquatic resource determination. At each paired location, one point was located such that it was within the estimated aquatic resource area, and the other point was situated outside the limits of the estimated aquatic resource area. Aquatic resources within the unverified portion of the Delineation Area were recorded in the field using a post-processing capable global positioning system unit with sub-meter accuracy (Trimble GeoXT). The previously verified portion of the Delineation Area was reviewed via aerial photograph interpretation and limited field reconnaissance.

#### 3.1 Routine Determinations for Wetlands

To be determined a wetland, the following three criteria must be met:

- A majority of dominant vegetation species are wetland-associated species;

- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season; and
- Hydric soils are present.

### 3.1.1 Vegetation

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (Environmental Laboratory 1987). The definition of wetlands includes the phrase "a prevalence of vegetation typically adapted for life in saturated soil conditions." Prevalent vegetation is characterized by the dominant plant species comprising the plant community (Environmental Laboratory 1987). The dominance test is the basic hydrophytic vegetation indicator and was applied at each sampling point location. The "50/20 rule" was used to select the dominant plant species from each stratum of the community. The rule states that for each stratum in the plant community, dominant species are the most abundant plant species (when ranked in descending order of coverage and cumulatively totaled) that immediately exceed 50 percent of the total coverage for the stratum, plus any additional species that individually comprise 20 percent or more of the total cover in the stratum (Headquarters USACE [HQUSACE] 1992, USACE 2008).

Dominant plant species observed at each sampling point were then classified according to their indicator status (probability of occurrence in wetlands, Table 1), *North American Digital Flora: National Wetland Plant List* (Lichvar et al. 2016). If the majority (more than 50 percent) of the dominant vegetation on a site are classified as obligate (OBL), facultative wetland (FACW), or facultative (FAC), the site was considered to be dominated by hydrophytic vegetation.

| Plant Species Classification                           | Abbreviation | Probability of Occurring in Wetland                      |
|--|--------------|--|
| Obligate   | OBL          | Almost always occur in wetlands                          |
| Facultative Wetland                                    | FACW         | Usually occur in wetlands, but may occur in non-wetlands |
| Facultative  | FAC          | Occur in wetlands and non-wetlands                       |
| Facultative Upland                                     | FACU         | Usually occur in non-wetlands, but may occur in wetlands |
| Upland   | UPL          | Almost never occur in wetlands                           |
| Plants That Are Not Listed<br>(assumed upland species) | N/L          | Does not occur in wetlands in any region.                |

<sup>1</sup>Source: Lichvar et al. 2016

In instances where indicators of hydric soil and wetland hydrology were present, but the plant community failed the dominance test, the vegetation was re-evaluated using the Prevalence Index. The Prevalence Index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and



weighting is by abundance (percent cover). If the plant community failed the Prevalence Index, the presence/absence of plant morphological adaptations to prolonged inundation or saturation in the root zone was evaluated.

### **3.1.2 Soils**

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS 2003). Indicators that a hydric soil is present include, but are not limited to, histosols, histic epipedon, hydrogen sulfide, depleted below dark surface, sandy redox, loamy gleyed matrix, depleted matrix, redox dark surface, redox depressions, and vernal pools.

At each sampling point a soil pit was excavated to the depth needed to document an indicator, to confirm the absence of indicators, or until refusal at each sampling point. The soil was then examined for hydric soil indicators. Soil colors were determined while the soil was moist using the *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990). Hydric soils are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. These processes and the features in the soil that develop can be identified by looking at the color and texture of the soils.

### **3.1.3 Hydrology**

Wetlands, by definition, are seasonally or perennially inundated or saturated at or near (within 12 inches of) the soil surface. Primary indicators of wetland hydrology include, but are not limited to: visual observation of saturated soils, visual observation of inundation, surface soil cracks, inundation visible on aerial imagery, water-stained leaves, oxidized rhizospheres along living roots, aquatic invertebrates, water marks (secondary indicator in riverine environments), drift lines (secondary indicator in riverine environments), and sediment deposits (secondary indicator in riverine environments). The occurrence of one primary indicator is sufficient to conclude that wetland hydrology is present. If no primary indicators are observed, two or more secondary indicators are required to conclude wetland hydrology is present. Secondary indicators include, but are not limited to: drainage patterns, crayfish burrows, FAC-neutral test, and shallow aquitard.

## **4.0 RESULTS**

### **4.1 Existing Site Conditions**

The Delineation Area is located within flat to rolling terrain situated at an elevational range of approximately 210 - 250 feet above mean sea level in the Sacramento Valley Subregion of the Great Central Valley floristic region of California (Baldwin et al. 2012). The average winter low temperature in the vicinity of the Delineation Area is 41.5°F and the average summer high temperature is 91.2°F. Average annual precipitation is approximately 20 inches, which falls as rain (National Oceanic and Atmospheric Administration [NOAA] 2018a).

The Delineation Area is composed of a mixture of developed and undeveloped land. Developed areas include two single-family homes and several gravel roads. Rows of redwood (*Sequoia sempervirens*) and blue gum (*Eucalyptus globulus*) are planted at several locations adjacent to the roads and homes. Surrounding land uses include suburban residential developments, aggregate mines, and undeveloped grasslands.

The majority of the Delineation Area is composed of annual grassland, a vegetation community dominated primarily by a mixture of nonnative annual grasses, including medusahead grass (*Elymus caput-medusae*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), and brome fescue (*Festuca bromoides*). Narrow tarplant (*Holocarpha virgata*), a native perennial forb, was also dominant in grasslands within the Delineation Area. See Section 4.2 for detailed descriptions of the vegetation associated with aquatic resources within the Delineation Area.

This aquatic resources delineation was conducted in late summer, outside the blooming season for most plant species. However, most plants were identifiable to species based upon vegetative or fruit morphology. Hydrologic conditions within the Delineation Area were typical for late summer (i.e., dry), and precipitation totals during the water year preceding the survey were only marginally below normal. During the 2017–2018 water year prior to the field survey (October 1, 2017 to October 1, 2018), approximately 17 inches of precipitation were recorded at the Sacramento 5 ESE reporting station (NOAA 2018b), located approximately 12 miles from the Study Area. The most recent significant precipitation event prior to the surveys occurred on May 25, 2018, resulting in 0.32 inches of rainfall (NOAA 2018b).

#### **4.1.1 California Aquatic Resource Inventory**

The California Aquatic Resource Inventory (CARI, San Francisco Estuary Institute [SFEI] 2017) is a statewide map of surface waters and related habitats combining multiple national and regional datasets, including the National Wetlands Inventory, and the National Hydrography Dataset. CARI includes aquatic resource features mapped using a variety of remote sensing and modeling techniques. As such, these aquatic features may or may not exist as represented. In addition, CARI data varies in detail, accuracy, and age, and is meant to be used as a tool to assist with an aquatic resource delineation but not as the only source of information (SFEI 2017).

According to CARI, there are several aquatic features mapped within the Delineation Area (Figure 2. *California Aquatic Resource Inventory Features*). These include stream features mapped as fluvial natural and fluvial unnatural, which roughly correspond to onsite streams and creeks. Figure 2 also shows CARI features mapped as individual vernal pools, depression seasonal, depression, and riverine, which roughly correspond to onsite vernal pools, open water features, swales, streams, and creeks.

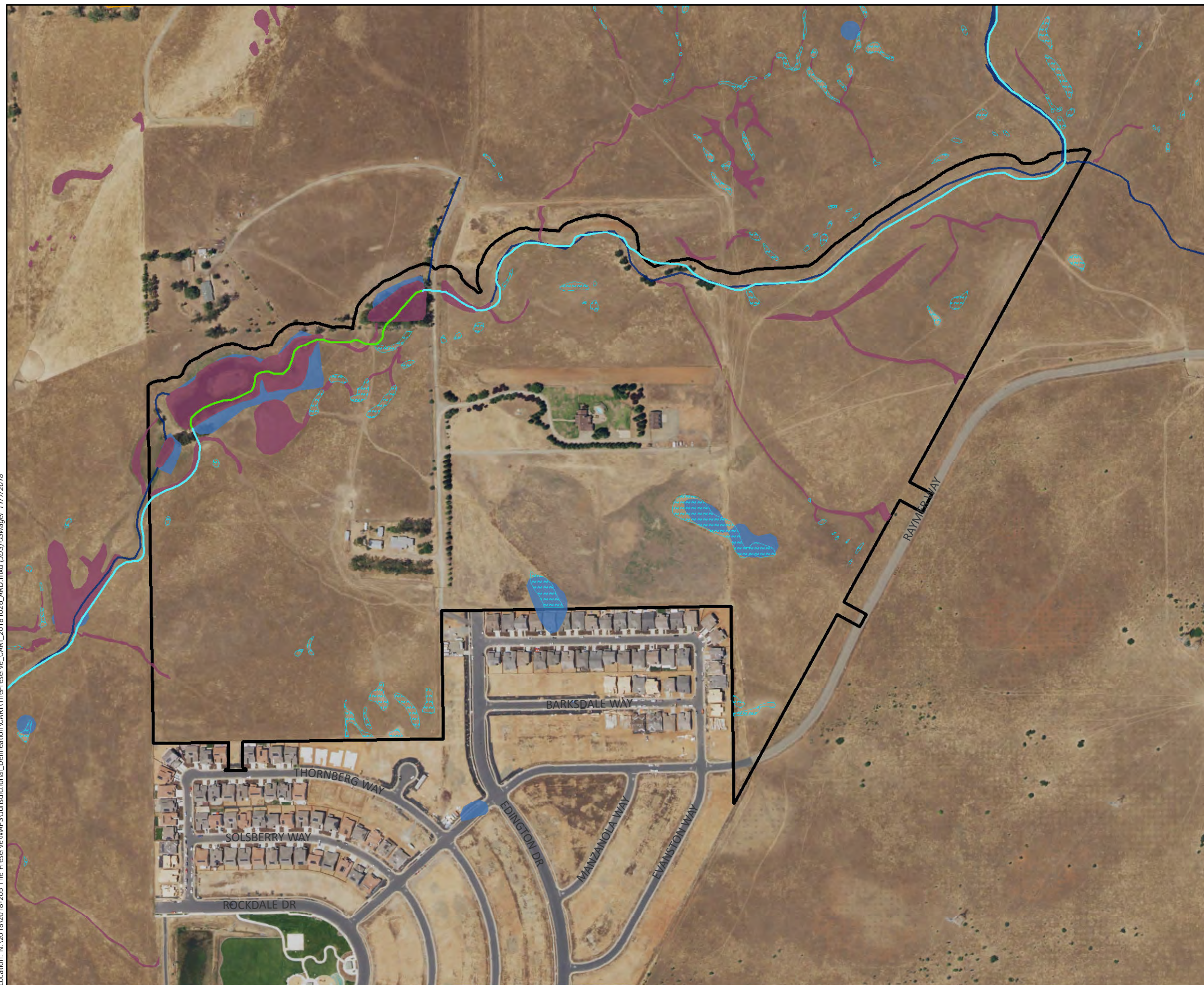
#### **4.1.2 Soils**

According to the Web Soil Survey (NRCS 2018a), three soil units, or types, have been mapped within the Delineation Area (Figure 3. *Natural Resources Conservation Service Soil Types*):

- 159 – Hicksville gravelly loam, 0 to 2 percent slopes, occasionally flooded;



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**Figure 2.**  
**California Aquatic Resources**  
**Inventory Features**

**Map Features**

Delineation Area - 113.8 acres

**CARI Data**

Fluvial Unnatural

Fluvial Natural

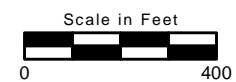
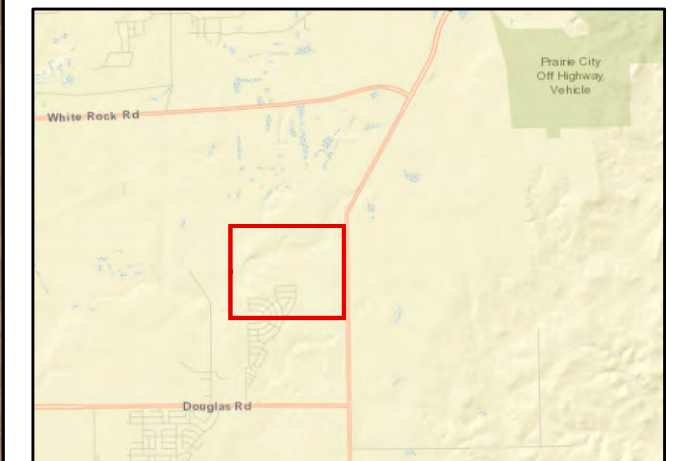
Individual Vernal Pool

Depressional Seasonal

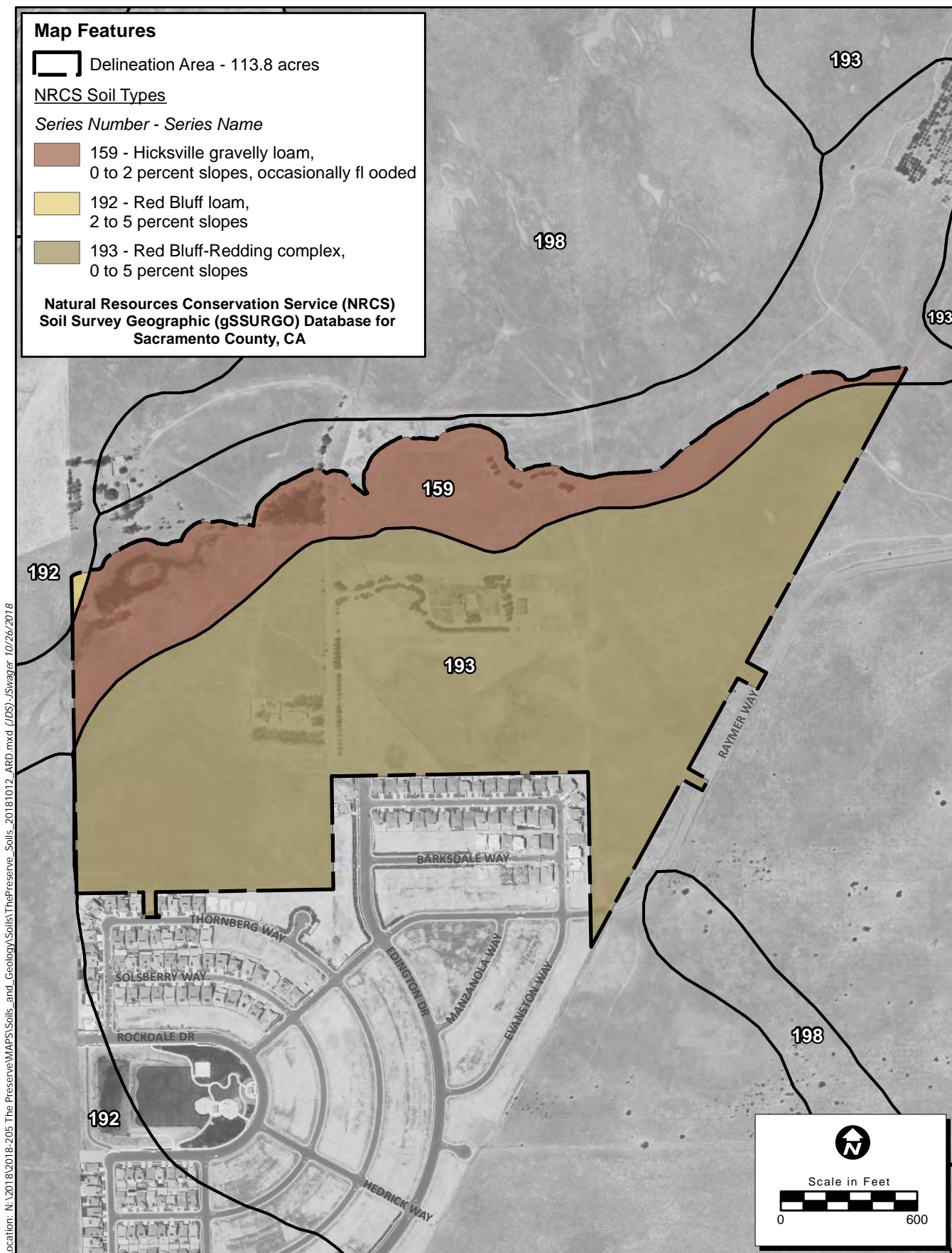
Depressional

Riverine

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community







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Map Date: 10/26/2018  
Photo Source: 2016, NAIP

**Figure 3. Natural Resources Conservation Service Soil Types**

- 192 – Red Bluff loam, 2 to 5 percent slopes; and
- 193 – Red Bluff-Redding complex, 0 to 5 percent slopes.

Hicksville gravelly loam, 0 to 2 percent slopes (159) is partially composed of the Columbia and Cosumnes components, which are considered hydric when occurring on floodplains. Red Bluff loam, 2 to 5 percent slopes (192) and Red Bluff-Redding complex, 0 to 5 percent slopes (193), are partially composed of unnamed components that are considered hydric when occurring in depressions (NRCS 2018b).

## 4.2 Aquatic Resources

A total of 7.861 acres of aquatic resources have been mapped within the Delineation Area, including 5.107 acres of unverified aquatic resources and 2.755 acres of previously verified aquatic resources (Table 2). The wetland determination data forms are included in Attachment C, and a list of plant species observed within the Delineation Area is included as Attachment D. A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented in Figure 4. *Aquatic Resources Delineation*.

Representative site photographs are included as Attachment E. The USACE Operations and Maintenance Business Information Link Regulatory Module (ORM) aquatic resources table of potential Waters of the U.S. is included in Attachment F.

| Table 2. Aquatic Resources      |                      |
|---------------------------------|----------------------|
| Type                            | Acreage <sup>1</sup> |
| <b>Unverified Area</b>          |                      |
| Wetlands                        |                      |
| Vernal Pool                     | 1.273                |
| Swale                           | 1.713                |
| Other Waters                    |                      |
| Stream/Creek                    | 0.307                |
| Open Water                      | 1.814                |
| <b>Previously Verified Area</b> |                      |
| Wetlands                        |                      |
| Vernal Pool                     | 1.373                |
| Swale                           | 0.128                |
| Other Waters                    |                      |
| Stream/Creek                    | 0.708                |
| Open Water                      | 0.546                |
| <b>Total:</b>                   | <b>7.861</b>         |

<sup>1</sup>Acreages represent a calculated estimation and are subject to modification following the USACE verification process.



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### Figure 4. Aquatic Resources Delineation Overview <sup>1</sup>

#### Map Features

- Delineation Area - 113.8 acres
- Previously Verified Area - 72.6 acres
- Unverified Area - 41.2 acres
- Reference Coordinate (NAD83)
- Culvert

#### Three Criteria Sample Points

- Waters Point
- Upland Point

#### Potential Aquatic Resources (Unverified) - 5.107 acres <sup>1\*</sup>

- Vernal Pool - 1.273 acres
- Swale - 1.713 acres
- Stream/Creek - 0.307 acres
- Open Water - 1.814 acres

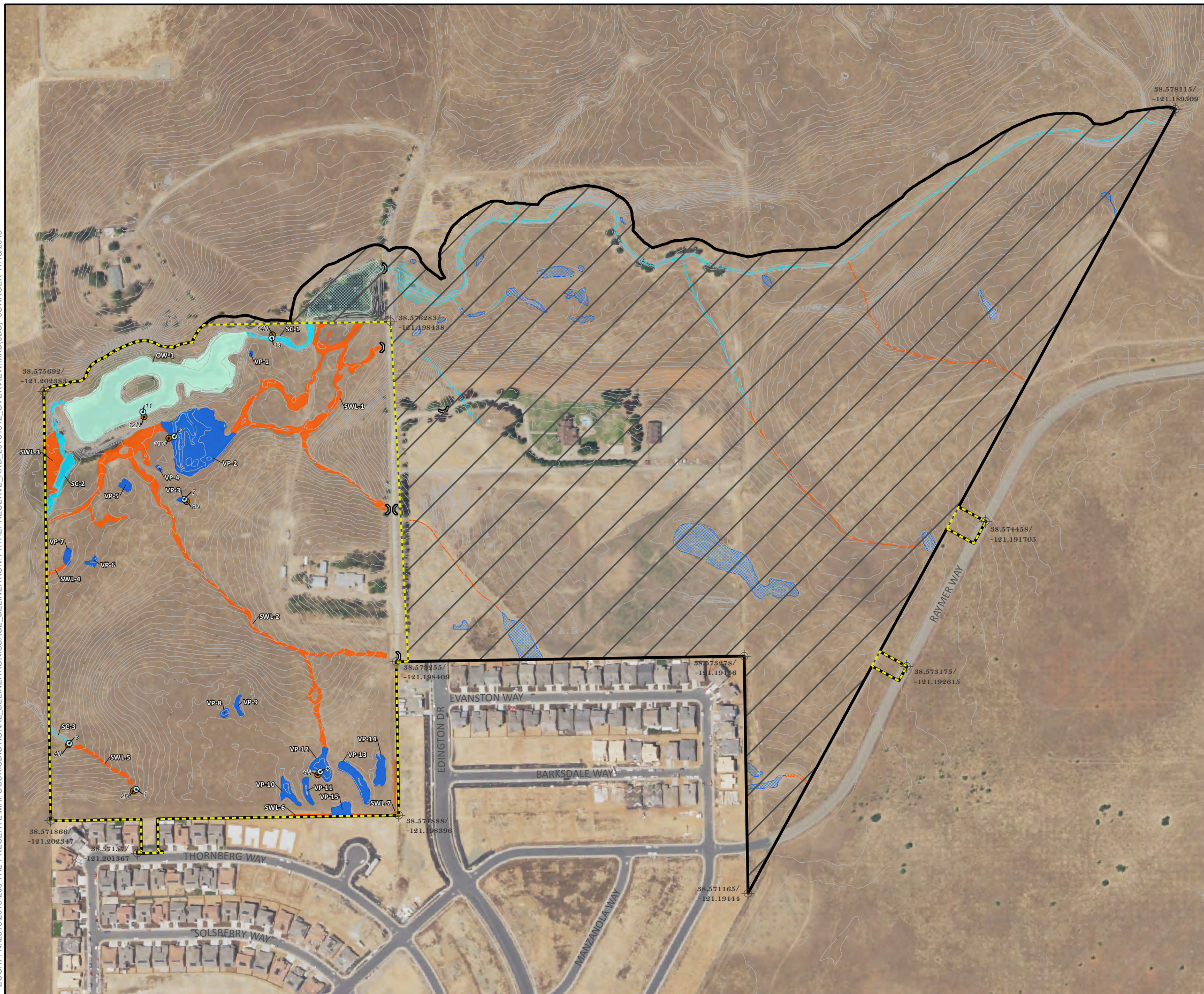
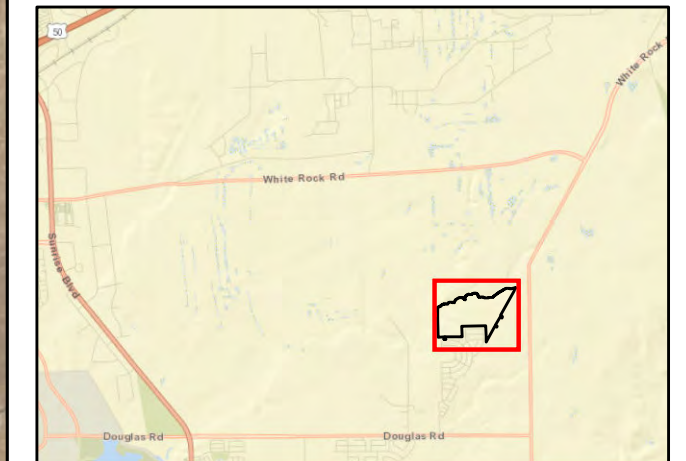
#### Verified Waters of the U.S. - 2.754 acres <sup>2\*</sup>

- Vernal Pool - 1.373 acres
- Swale - 0.128 acres
- Stream/Creek - 0.708 acres
- Open Water - 0.546 acres

<sup>1</sup> Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.

<sup>2</sup> PID for Wong-Wagner issued 11/20/2012, SPK-2004-00666  
<sup>\*</sup> The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

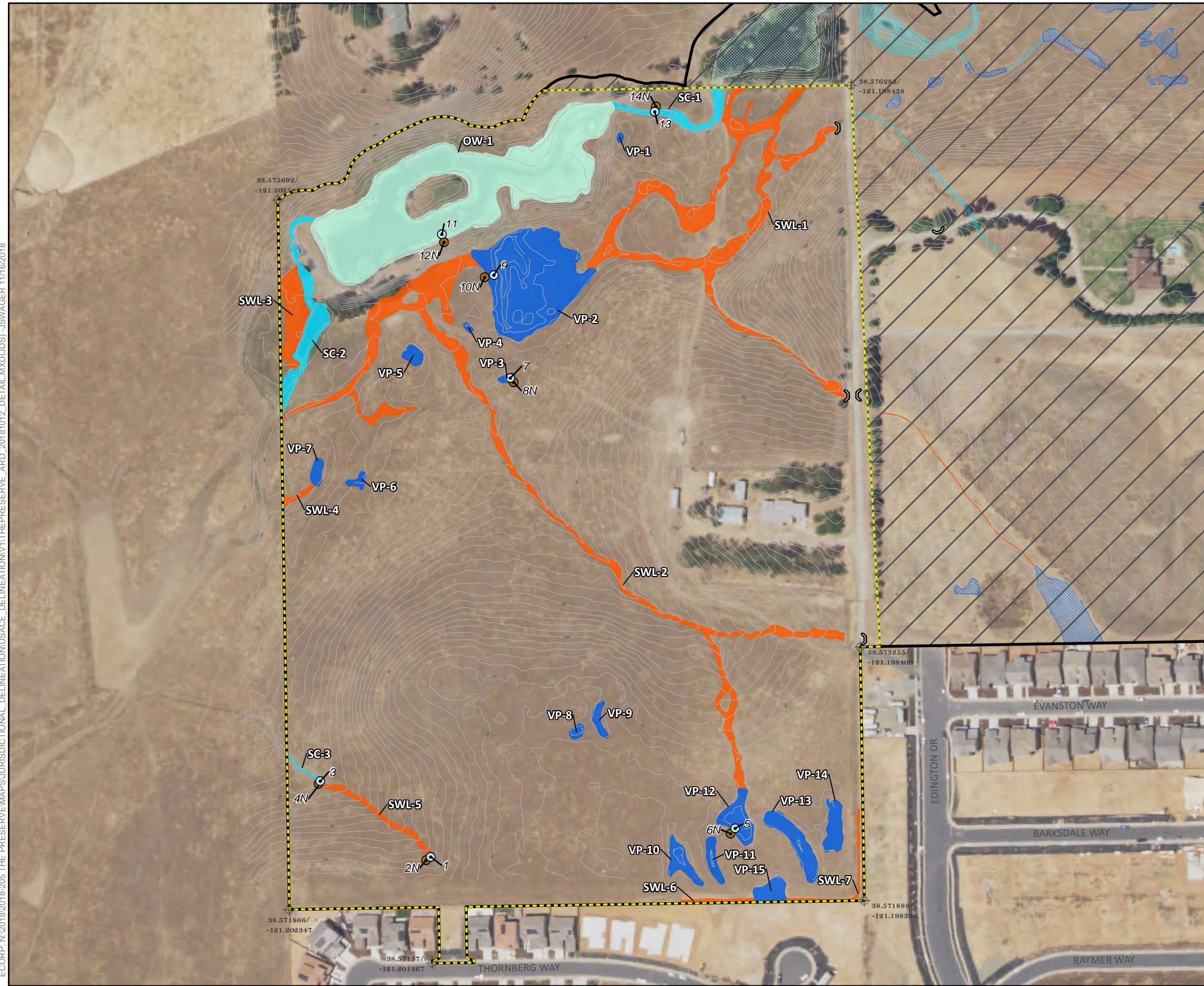
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community





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**Figure 4.**  
**Aquatic Resources Delineation**  
**Unverified Portion <sup>1</sup>**



**Map Features**

- Delineation Area - 113.8 acres
- Previously Verified Area - 72.6 acres
- Unverified Area - 41.2 acres
- Reference Coordinate (NAD83)
- Culvert

**Three Criteria Sample Points**

- Waters Point
- Upland Point

**Potential Aquatic Resources (Unverified) - 5.107 acres <sup>1\*</sup>**

- Vernal Pool - 1.273 acres
- Swale - 1.713 acres
- Stream/Creek - 0.307 acres
- Open Water - 1.814 acres

**Verified Waters of the U.S. <sup>2</sup>**

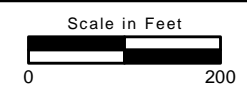
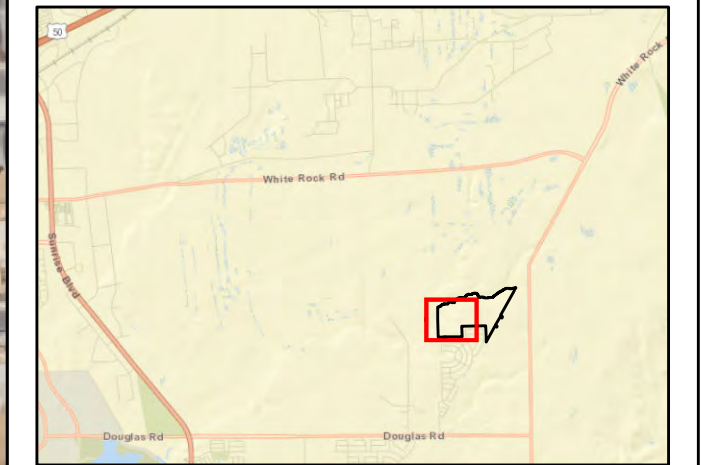
- Vernal Pool
- Swale
- Stream/Creek
- Open Water

<sup>1</sup> Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.

<sup>2</sup> PID for Wong-Wagner Issued 11/20/2012, SPA-2004-00666

\* The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

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The feature types described in Table 2 were classified according to definitions within the South Sacramento Habitat Conservation Plan (SSHCP, County of Sacramento et al. 2018). However, previously verified features were given different classifications in the original delineation and PJD. Table 3 provides the classifications used in the PJD and the corresponding SSHCP land cover type used in this report.

| Feature Types as defined in PJD | Corresponding SSHCP Feature Type |
|---------------------------------|----------------------------------|
| Wetlands                        |                                  |
| Vernal Pool                     | Vernal Pool                      |
| Seasonal Wetland                | Vernal Pool                      |
| Seasonal Wetland Swale          | Swale                            |
| Other Waters                    |                                  |
| Ephemeral Drainage              | Stream/Creek                     |
| Ephemeral Drainage – Culverted  | Stream/Creek                     |
| Pond                            | Open Water                       |

#### 4.2.1 Wetlands

##### Vernal Pool

Vernal pools are seasonal ephemeral wetlands that fill and dry each year, forming in shallow depressions within grasslands that are underlain by an impermeable layer (e.g., a hardpan). Water collects in the depressions during the winter rainy season and recedes during the spring. Soils typically remain moist until late spring before becoming desiccated, and then remain dry throughout the summer. Vernal pools occur throughout the Delineation Area. These features are variously dominated by Great Valley button-celery (*Eryngium castrense*), stalked popcorn flower (*Plagiobothrys stipitatus*), woolly marbles (*Psilocarphus brevisimus*), Mediterranean barley (*Hordeum marinum*), waxy mannagrass (*Glyceria declinata*), hairy hawkbit (*Leontodon saxatilis*), and toad rush (*Juncus bufonius*). Sampling points 5, 7, and 9 were collected within vernal pools.

Soil matrix colors within the vernal pools at sampling points 5, 7 and 9 ranged from 10YR4/1 to 7.5YR 4/2. Redox concentrations colored 5YR 4/6 were present at each of these sampling points. Soils at sampling points 5, 7, and 9 met the criteria for hydric soil indicators Depleted Matrix (F3) and Redox Depressions (F8). Wetland hydrology indicators observed within the vernal pools included Biotic Crust (B12). While hydric soils were observed at sampling points 6N and 10N, no other wetland parameters were observed at uplands adjacent to vernal pools.

##### Swale

Swales are generally linear wetland features that convey precipitation runoff and support a predominance of hydrophytic vegetation, but do not exhibit an OHWM. These are typically inundated for short periods during and immediately after rain events, but usually maintain soil saturation for longer periods during the wet season. Swales occur throughout the Delineation Area, and are dominated by Italian ryegrass

(*Festuca perennis*), Fitch's spikeweed (*Centromadia fitchii*), and Mediterranean barley. Sampling Point 1 was collected within a swale.

The soil matrix color within the swale at sampling point 1 was 10YR 4/2 with five percent redox concentrations colored 5YR 4/6. Soils at sampling point 1 were determined to be hydric based on the presence of hydric soil indicator Depleted Matrix (F3). Wetland hydrology indicators observed within on-site swales include Biotic Crust (B12). No wetland parameters were observed at Sampling Point 2N, located in an upland adjacent to Sampling Point 1.

#### 4.2.2 Other Waters

##### Stream/Creek

Aquatic resources identified as stream/creek within the Delineation Area include ephemeral drainages and a seasonal creek (Morrison Creek). These are linear features that exhibit a bed and bank and an OHWM. They convey runoff seasonally for short to moderate duration, and may or may not be influenced by groundwater sources. Stream/creek features occur throughout the Delineation Area, and vary from steep, unvegetated features, to gently sloping features that are sparsely vegetated with creeping spikerush (*Eleocharis macrostachya*). Sampling points 3 and 13 were collected within stream/creek features.

Sampling Point 3 was collected within a steep, narrow ephemeral drainage along the western boundary of the Delineation Area. The soil matrix color at sampling point 3 was 7.5YR 4/2 with 10 percent redox features colored 5YR 4/6. Soils at sampling point 3 met the criteria for hydric soil indicator Depleted Matrix (F3). Wetland hydrology indicator Water Marks (B1) was observed at Sampling Point 3. No wetland parameters were observed at Sampling Point 4N, located in an upland adjacent to Sampling Point 3.

Sampling Point 13 was collected within Morrison Creek, a broad, gently sloped seasonal creek. The soil matrix color at sampling point 13 was 7.5YR 4/2 with 20 percent redox features colored 5YR 4/6. Soils at sampling point 3 met the criteria for hydric soil indicator Depleted Matrix (F3). Wetland hydrology indicators Water Marks (B1) and Biotic Crust (B12) were observed at Sampling Point 13. Hydric soil indicator Depleted Matrix (F3) was observed at Sampling Point 14N, located in an upland adjacent to Sampling Point 13. However, hydrophytic vegetation and wetland hydrology were absent at Sampling Point 14N.

##### Open Water

Open water features identified within the Delineation Area include two perennial ponds, which occur in the northwestern portion of the Delineation Area. These features are manmade impoundments of Morrison Creek. These features exhibit an OHWM and support hydrophytic vegetation along their fringes, while deeper portions are unvegetated. The vegetated fringes of the open water features are dominated by creeping spikerush and smartweed (*Persicaria* sp.). Sampling Point 11 was collected within an open water feature.

The soil matrix color at sampling point 11 was 7.5YR 4/1 with 30 percent redox concentrations colored 5YR 4/6. Soils at sampling point 11 met the criteria for hydric soil indicator Depleted Matrix (F3). Wetland



hydrology indicators observed at Sampling Point 11 include Surface Water (A1), Water Marks (B1), Biotic Crust (B12), and Aquatic Invertebrates (B13). No wetland parameters were observed at Sampling Point 12N, located in an upland adjacent to Sampling Point 13.

## 5.0 JURISDICTIONAL ASSESSMENT

As per Regulatory Guidance Letter 16-01, an applicant may request a PJD "in order to move ahead expeditiously to obtain a Corps permit authorization where the requestor determines that it is in his or her best interest to do so ... even where initial indications are that the aquatic resources on a parcel may not be jurisdictional" (USACE 2016b). A significant nexus evaluation is not necessary to obtain a PJD. The following information on connectivity of wetlands and other waters in the Delineation Area to TNW is provided should an Approved Jurisdictional Determination be necessary.

The vernal pools, swales, and several stream/creek features within the Delineation Area flow directly or indirectly into Morrison Creek, or impoundments of Morrison Creek, along the northern boundary of the Delineation Area. Morrison Creek is a tributary to the Sacramento River. The USACE Sacramento District has identified the Sacramento River as TNW. Therefore, the aquatic resources within the Delineation Area likely have a significant nexus (affecting the chemical, physical, or biological integrity) with downstream TNW, and are likely subject to regulation under Section 404 of the CWA.

## 6.0 CONCLUSION

A total of 7.861 acres of aquatic resources have been mapped within the Delineation Area. This acreage represents a calculated estimation of the extent of aquatic resources within the Delineation Area, and is subject to modification following USACE review and/or the verification process. The placement of dredged or fill material into jurisdictional features would require a permit pursuant to Section 404 of the CWA and certification or waiver in compliance with Section 401 of the CWA.

## 7.0 REFERENCES

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## **LIST OF ATTACHMENTS**

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Attachment A – Driving Directions to Delineation Area

Attachment B – Preliminary Jurisdictional Determination for Wong & Wagner Property

Attachment C – Wetland Determination Data Forms - Arid West

Attachment D – Plant Species Observed Onsite

Attachment E – Representative Site Photographs

Attachment F – USACE ORM Aquatic Resources Table

Attachment G – Wetland Delineation Shape File (to be included with USACE submittal only)

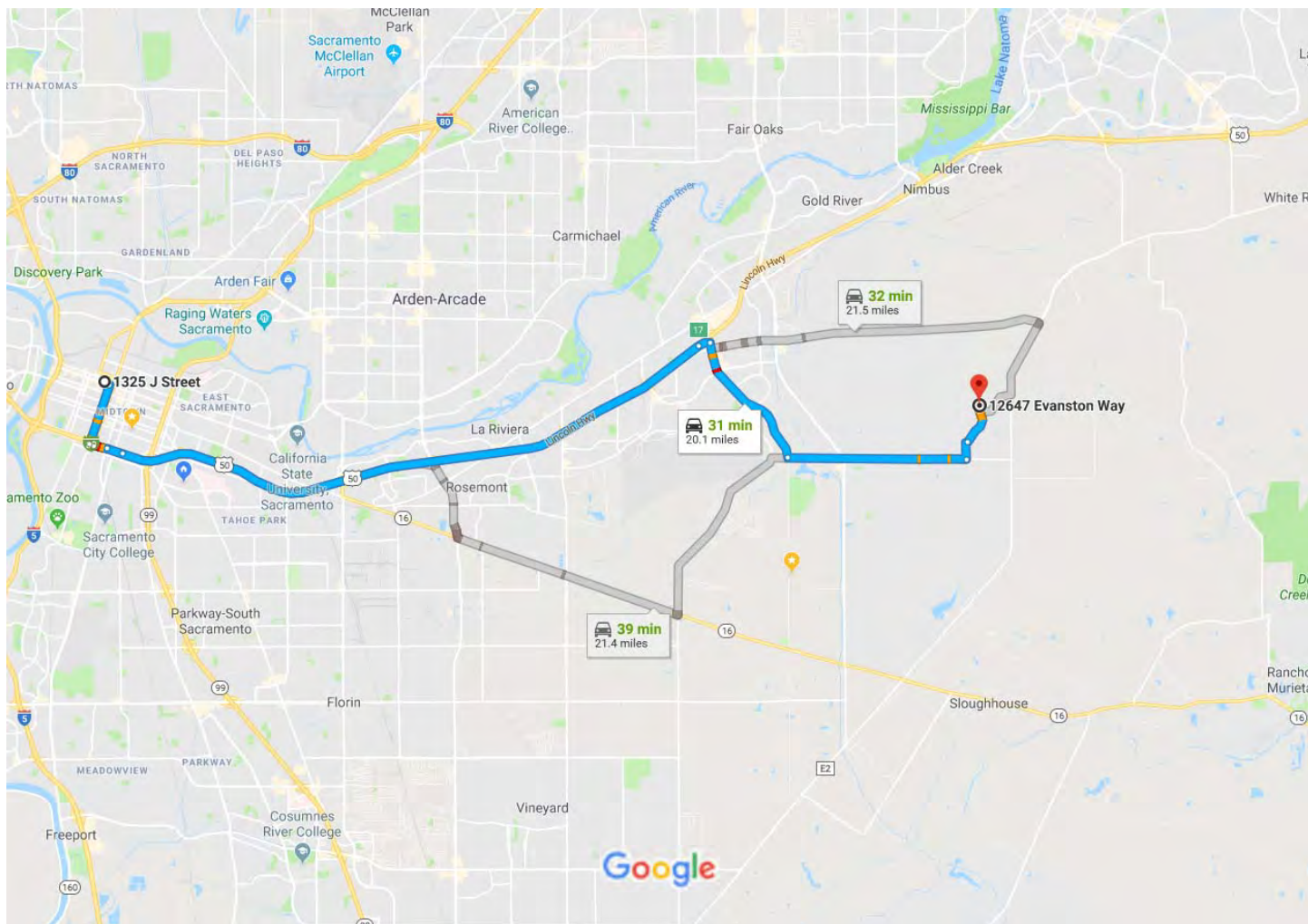
## **ATTACHMENT A**

---

Driving Directions to Delineation Area



1325 J Street, Sacramento, CA to 12647 Evanston Drive 20.1 miles, 31 min  
Way, Rancho Cordova, CA 95742



Map data ©2018 Google 2 mi

### 1325 J St

Sacramento, CA 95814

#### Get on I-80BL E from 15th St




- 6 min (1.6 mi)
- ↑ 1. Head east on J St toward 14th St
- 0.1 mi
- ➔ 2. Use the right 2 lanes to turn right onto 15th St
- 1.1 mi
- ↶ 3. Use the left 2 lanes to turn left onto X St
- 407 ft
- ⤴ 4. Use the middle 2 lanes to turn slightly left onto the I-80 E ramp
- 0.3 mi

Follow US-50 E to Zinfandel Dr in Rancho Cordova. Take exit







### 17 from US-50 E

11 min (11.7 mi)

-  5. Merge onto I-80BL E  
0.3 mi
-  6. Continue onto US-50 E  
11.1 mi
-  7. Use the right lane to take exit 17 for Zinfandel Dr  
0.2 mi

### Continue on Zinfandel Dr. Take Douglas Rd to Edington Dr

13 min (6.9 mi)

-  8. Use the right 2 lanes to turn right onto Zinfandel Dr  
2.6 mi
-  9. Use the left 2 lanes to turn left onto Douglas Rd  
3.2 mi
-  10. Turn left onto Americanos Blvd  
0.3 mi
-  11. Continue onto Edington Dr  
0.8 mi

## 12647 Evanston Way

Rancho Cordova, CA 95742

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Preliminary Jurisdictional Determination for Wong & Wagner Property



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS  
1325 J STREET  
SACRAMENTO CA 95814-2922



November 20, 2012

Regulatory Division SPK-2004-00666

Mr. George Carpenter  
Tom Winn Communities, Inc.  
1130 Iron Point Road  
Folsom, California 95630-8308

Dear Mr. Carpenter:

We are responding to your September 25, 2012, request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the Wong & Wagner or Heritage Falls site. The approximately 237-acre site is located on or near Morrison Creek, Section 2, Township 8 North, Range 7 East, MDBM, Latitude 38.578°, Longitude -121.195°, Rancho Cordova, Sacramento County, California.

Based on available information, we concur with the amount and location of wetlands and/or other water bodies on the site as depicted on the enclosed copy of the September 24, 2012, revised *Delineated Waters of the U.S. Wong & Wagner* drawing prepared by Foothill Associates. The approximately 6.85 acres of wetlands and/or other water bodies present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

A copy of our RGL 08-02 Preliminary Jurisdictional Determination Form for this site is enclosed. Please sign and return a copy of the completed form to this office. Once we receive the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination. This



determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2004-00666 in any correspondence concerning this project. If you have any questions, please contact me at Regulatory Division, 1325 J Street, Room 1350, Sacramento, California 95814-2922, email [Michael.C.Finan@usace.army.mil](mailto:Michael.C.Finan@usace.army.mil), or telephone 916-557-5324. For more information regarding our program, please visit our website at [www.spk.usace.army.mil/Missions/Regulatory.aspx](http://www.spk.usace.army.mil/Missions/Regulatory.aspx).

Sincerely,



Michael Finan  
Wetland Specialist  
Regulatory Division

Enclosures

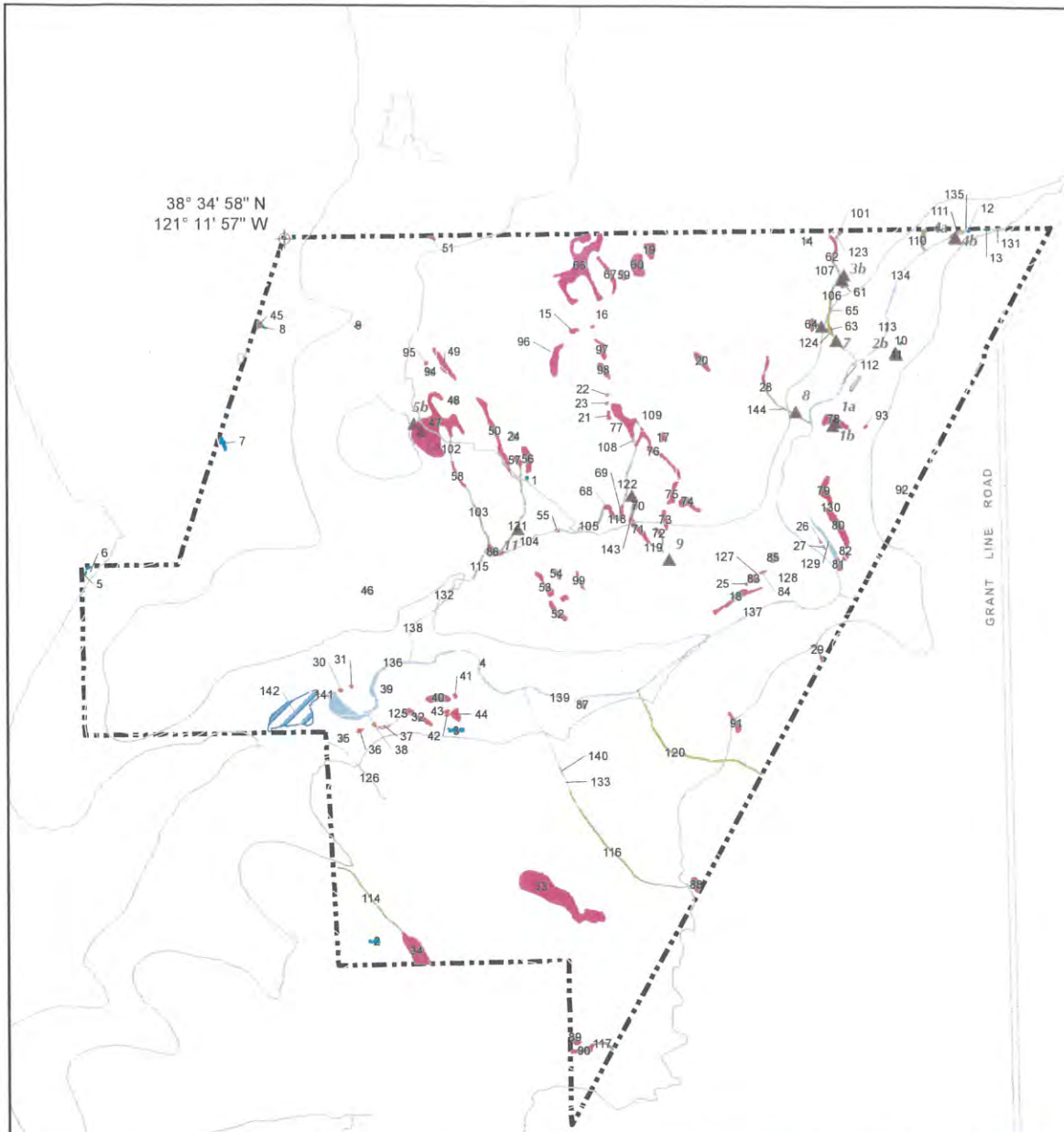
Copies Furnished without enclosures:

Mr. Ken Whitney, Foothill Associates, 590 Menlo Drive, Rocklin, California 95675-3724

Mr. Jason Brush, Chief, Wetlands Regulatory Office (WTR-8), U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, California 94105-3901

Mr. Ken Sanchez, U.S. Fish and Wildlife Service, Endangered Species Division 2800 Cottage Way, W-2605, Sacramento, California 95825-1888

Mr. Kent Smith, California Department of Fish and Game Region 2, 1701 Nimbus Drive, Rancho Cordova, California 95670-4599



| INDIVIDUAL FEATURE ACREAGE CHART |        |       |
|----------------------------------|--------|-------|
| DSW LABEL                        | ACRES* |       |
| 1                                | 0.005  |       |
| 2                                | 0.011  |       |
| 3                                | 0.017  |       |
| 4                                | 0.023  |       |
| 5                                | 0.029  |       |
| 6                                | 0.035  |       |
| 7                                | 0.041  |       |
| 8                                | 0.047  |       |
| 9                                | 0.053  |       |
| 10                               | 0.059  |       |
| 11                               | 0.065  |       |
| 12                               | 0.071  |       |
| 13                               | 0.077  |       |
| SUBTOTAL                         |        | 0.108 |
| VP LABEL                         | ACRES* |       |
| 14                               | 0.005  |       |
| 15                               | 0.015  |       |
| 16                               | 0.025  |       |
| 17                               | 0.035  |       |
| 18                               | 0.045  |       |
| 19                               | 0.055  |       |
| 20                               | 0.065  |       |
| 21                               | 0.075  |       |
| 22                               | 0.085  |       |
| 23                               | 0.095  |       |
| 24                               | 0.105  |       |
| 25                               | 0.115  |       |
| 26                               | 0.125  |       |
| 27                               | 0.135  |       |
| 28                               | 0.145  |       |
| 29                               | 0.155  |       |
| 30                               | 0.165  |       |
| 31                               | 0.175  |       |
| 32                               | 0.185  |       |
| 33                               | 0.195  |       |
| 34                               | 0.205  |       |
| 35                               | 0.215  |       |
| 36                               | 0.225  |       |
| 37                               | 0.235  |       |
| 38                               | 0.245  |       |
| 39                               | 0.255  |       |
| 40                               | 0.265  |       |
| 41                               | 0.275  |       |
| 42                               | 0.285  |       |
| 43                               | 0.295  |       |
| 44                               | 0.305  |       |
| 45                               | 0.315  |       |
| 46                               | 0.325  |       |
| 47                               | 0.335  |       |
| 48                               | 0.345  |       |
| 49                               | 0.355  |       |
| 50                               | 0.365  |       |
| 51                               | 0.375  |       |
| 52                               | 0.385  |       |
| 53                               | 0.395  |       |
| 54                               | 0.405  |       |
| 55                               | 0.415  |       |
| 56                               | 0.425  |       |
| 57                               | 0.435  |       |
| 58                               | 0.445  |       |
| 59                               | 0.455  |       |
| 60                               | 0.465  |       |
| 61                               | 0.475  |       |
| 62                               | 0.485  |       |
| 63                               | 0.495  |       |
| 64                               | 0.505  |       |
| 65                               | 0.515  |       |
| 66                               | 0.525  |       |
| 67                               | 0.535  |       |
| 68                               | 0.545  |       |
| 69                               | 0.555  |       |
| 70                               | 0.565  |       |
| 71                               | 0.575  |       |
| 72                               | 0.585  |       |
| 73                               | 0.595  |       |
| 74                               | 0.605  |       |
| 75                               | 0.615  |       |
| 76                               | 0.625  |       |
| 77                               | 0.635  |       |
| 78                               | 0.645  |       |
| 79                               | 0.655  |       |
| 80                               | 0.665  |       |
| 81                               | 0.675  |       |
| 82                               | 0.685  |       |
| 83                               | 0.695  |       |
| 84                               | 0.705  |       |
| 85                               | 0.715  |       |
| 86                               | 0.725  |       |
| 87                               | 0.735  |       |
| 88                               | 0.745  |       |
| 89                               | 0.755  |       |
| 90                               | 0.765  |       |
| 91                               | 0.775  |       |
| 92                               | 0.785  |       |
| 93                               | 0.795  |       |
| 94                               | 0.805  |       |
| 95                               | 0.815  |       |
| 96                               | 0.825  |       |
| 97                               | 0.835  |       |
| 98                               | 0.845  |       |
| 99                               | 0.855  |       |
| 100                              | 0.865  |       |
| 101                              | 0.875  |       |
| 102                              | 0.885  |       |
| 103                              | 0.895  |       |
| 104                              | 0.905  |       |
| 105                              | 0.915  |       |
| 106                              | 0.925  |       |
| 107                              | 0.935  |       |
| 108                              | 0.945  |       |
| 109                              | 0.955  |       |
| 110                              | 0.965  |       |
| 111                              | 0.975  |       |
| 112                              | 0.985  |       |
| 113                              | 0.995  |       |
| 114                              | 1.005  |       |
| 115                              | 1.015  |       |
| 116                              | 1.025  |       |
| 117                              | 1.035  |       |
| 118                              | 1.045  |       |
| 119                              | 1.055  |       |
| 120                              | 1.065  |       |
| 121                              | 1.075  |       |
| 122                              | 1.085  |       |
| 123                              | 1.095  |       |
| 124                              | 1.105  |       |
| 125                              | 1.115  |       |
| 126                              | 1.125  |       |
| 127                              | 1.135  |       |
| 128                              | 1.145  |       |
| 129                              | 1.155  |       |
| 130                              | 1.165  |       |
| 131                              | 1.175  |       |
| 132                              | 1.185  |       |
| 133                              | 1.195  |       |
| 134                              | 1.205  |       |
| 135                              | 1.215  |       |
| 136                              | 1.225  |       |
| 137                              | 1.235  |       |
| 138                              | 1.245  |       |
| 139                              | 1.255  |       |
| 140                              | 1.265  |       |
| 141                              | 1.275  |       |
| 142                              | 1.285  |       |
| 143                              | 1.295  |       |
| 144                              | 1.305  |       |
| SUBTOTAL                         |        | 4.775 |
| RSW LABEL                        | ACRES* |       |
| 101                              | 0.005  |       |
| 102                              | 0.015  |       |
| 103                              | 0.025  |       |
| 104                              | 0.035  |       |
| 105                              | 0.045  |       |
| 106                              | 0.055  |       |
| 107                              | 0.065  |       |
| 108                              | 0.075  |       |
| 109                              | 0.085  |       |
| 110                              | 0.095  |       |
| 111                              | 0.105  |       |
| 112                              | 0.115  |       |
| 113                              | 0.125  |       |
| 114                              | 0.135  |       |
| 115                              | 0.145  |       |
| 116                              | 0.155  |       |
| 117                              | 0.165  |       |
| 118                              | 0.175  |       |
| 119                              | 0.185  |       |
| 120                              | 0.195  |       |
| 121                              | 0.205  |       |
| 122                              | 0.215  |       |
| 123                              | 0.225  |       |
| 124                              | 0.235  |       |
| 125                              | 0.245  |       |
| 126                              | 0.255  |       |
| 127                              | 0.265  |       |
| 128                              | 0.275  |       |
| 129                              | 0.285  |       |
| 130                              | 0.295  |       |
| 131                              | 0.305  |       |
| 132                              | 0.315  |       |
| 133                              | 0.325  |       |
| 134                              | 0.335  |       |
| 135                              | 0.345  |       |
| 136                              | 0.355  |       |
| 137                              | 0.365  |       |
| 138                              | 0.375  |       |
| 139                              | 0.385  |       |
| 140                              | 0.395  |       |
| 141                              | 0.405  |       |
| 142                              | 0.415  |       |
| 143                              | 0.425  |       |
| 144                              | 0.435  |       |
| SUBTOTAL                         |        | 0.441 |
| ED LABEL                         | ACRES* |       |
| 125                              | 0.005  |       |
| 126                              | 0.015  |       |
| 127                              | 0.025  |       |
| 128                              | 0.035  |       |
| 129                              | 0.045  |       |
| 130                              | 0.055  |       |
| 131                              | 0.065  |       |
| 132                              | 0.075  |       |
| 133                              | 0.085  |       |
| 134                              | 0.095  |       |
| 135                              | 0.105  |       |
| 136                              | 0.115  |       |
| 137                              | 0.125  |       |
| 138                              | 0.135  |       |
| 139                              | 0.145  |       |
| 140                              | 0.155  |       |
| 141                              | 0.165  |       |
| 142                              | 0.175  |       |
| 143                              | 0.185  |       |
| 144                              | 0.195  |       |
| SUBTOTAL                         |        | 0.598 |
| ED-C LABEL                       | ACRES* |       |
| 130                              | 0.005  |       |
| 131                              | 0.005  |       |
| 132                              | 0.005  |       |
| 133                              | 0.005  |       |
| 134                              | 0.005  |       |
| 135                              | 0.005  |       |
| 136                              | 0.005  |       |
| 137                              | 0.005  |       |
| 138                              | 0.005  |       |
| 139                              | 0.005  |       |
| 140                              | 0.005  |       |
| 141                              | 0.005  |       |
| 142                              | 0.005  |       |
| 143                              | 0.005  |       |
| 144                              | 0.005  |       |
| SUBTOTAL                         |        | 0.068 |
| POND LABEL                       | ACRES* |       |
| 142                              | 0.548  |       |
| TOTAL**                          |        | 6.85  |

| WATERS OF THE U.S.                 |             |
|------------------------------------|-------------|
| CLASSIFICATION                     | ACREAGE     |
| <b>DEPRESSIONAL WETLANDS</b>       |             |
| Seasonal Wetland, DSW              | 0.11        |
| Vernal Pool, VP                    | 4.77        |
| <b>RIVERINE WETLANDS</b>           |             |
| Seasonal Wetland, RSW              | 0.44        |
| <b>OTHER WATERS OF THE U.S.</b>    |             |
| Ephemeral Drainage, ED             | 0.97        |
| Ephemeral Drainage Culverted, ED-C | 0.01        |
| Pond                               | 0.55        |
| <b>TOTAL</b>                       | <b>6.85</b> |



**OTHER FEATURES**

- Culvert
- Data Points
- Project Boundary
- Excavated Area

**NOTES**

- Delineated waters of the U.S. are subject to U.S. Army Corps of Engineers verification.
- Boundary derived from digital base data provided by Wood Rodgers, Inc.
- One meter topo data created from 7.5' digital elevation model for Buffalo Creek, 1978.
- The Hydrologic Unit Code for this site is 18020109.

REVERIFICATION

0 300 600  
SCALE IN FEET

FIGURE 3

FILE NAME: wetland\_delineation\_to\_ACOE\_rvsd\_7-16-07\_8x11.mxd  
 DATE: 03/18/04 DELINEATED BY: KDW (10/10/03 & 3/11/04),  
 REVISION: 01/18/07, 07/16/07 MJF (01/17/07)  
 REVISED: 09/24/12 DRAWN BY: MAB, MMJ, DSD

DELINEATED  
WATERS OF THE U.S.

WONG AND WAGNER

FOOTHILL ASSOCIATES

ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE  
© 2012

## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

|  |  |                         |
|--|--|-------------------------|
| Applicant: George Carpenter, Tom Winn<br>Communities, Inc. | File No.: SPK-2004-00666   | Date: November 20, 2012 |
| Attached is:   |  | See Section below       |
| <input type="checkbox"/>                                   | INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission) | A                       |
| <input type="checkbox"/>                                   | PROFFERED PERMIT (Standard Permit or Letter of permission)         | B                       |
| <input type="checkbox"/>                                   | PERMIT DENIAL  | C                       |
| <input type="checkbox"/>                                   | APPROVED JURISDICTIONAL DETERMINATION                              | D                       |
| <input checked="" type="checkbox"/>                        | PRELIMINARY JURISDICTIONAL DETERMINATION                           | E                       |

**SECTION I -** The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at [http://www.usace.army.mil/cecw/pages/reg\\_materials.aspx](http://www.usace.army.mil/cecw/pages/reg_materials.aspx) or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.



# PRELIMINARY JURISDICTIONAL DETERMINATION FORM

## Sacramento District

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Regulatory Branch: California Delta File/ORM #: SPK-2004-00666 PJD Date: November 20, 2012

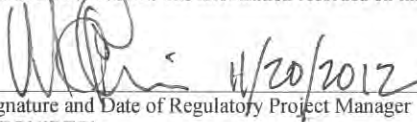
|  |  |
|--|--|
| State: CA City/County: Rancho Cordova, Sacramento County<br>Nearest Waterbody:<br>Location (Lat/Long): 38.5783765977327°, -121.194835033837°<br>Size of Review Area: 237 acres | Name/Address Of Property Owner/<br>Potential Applicant<br>George Carpenter<br>Tom Winn Communities, Inc.<br>1130 Iron Point Road<br>Folsom, California 95630-8 |
|--|--|

|   |  |
|---|--|
| <b>Identify (Estimate) Amount of Waters in the Review Area</b><br><b>Non-Wetland Waters:</b><br>linear feet ft wide 1.53 acre(s)<br>Stream Flow: Perennial and Seasonal<br><b>Wetlands:</b> 5.32 acre(s) Cowardin Palustrine, emergent Class: | Name of any Water Bodies Tidal:<br>on the site identified as<br>Section 10 Waters: Non-Tidal:<br><input checked="" type="checkbox"/> Office (Desk) Determination<br><input type="checkbox"/> Field Determination:<br>Date(s) of Site Visit(s): |
|---|--|

**SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
- Data sheets prepared by the Corps.
- Corps navigable waters' study.
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24K; CA-BUFFALO CREEK
- USDA Natural Resources Conservation Service Soil Survey.
- National wetlands inventory map(s).
- State/Local wetland inventory map(s).
- FEMA/FIRM maps.
- 100-year Floodplain Elevation (if known):
- Photographs:  Aerial  Other
- Previous determination(s). File no. and date of response letter: 200400666; July 25, 2007
- Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

  
Signature and Date of Regulatory Project Manager  
(REQUIRED)

\_\_\_\_\_  
Signature and Date of Person Requesting Preliminary JD  
(REQUIRED, unless obtaining the signature is impracticable)

### EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a permit or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

Wetland Determination Data Forms - Arid West Region

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 1  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 15  
 Subregion (LRR): C Lat: 38.572149 Long: -121.201385 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Seasonal wetland swale.   |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                | Absolute % Cover | Dominant Species?                 | Indicator Status |  |
|--|------------------|-----------------------------------|------------------|--|
| 1. _____   | _____            | _____                             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2. _____   | _____            | _____                             | _____            |  |
| 3. _____   | _____            | _____                             | _____            |  |
| 4. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> |                  |                                   |                  |  |
| 1. _____   | _____            | _____                             | _____            |  |
| 2. _____   | _____            | _____                             | _____            |  |
| 3. _____   | _____            | _____                             | _____            |  |
| 4. _____   | _____            | _____                             | _____            |  |
| 5. _____   | _____            | _____                             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| _____ = Total Cover                                  |                  |                                   |                  |  |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>        |                  |                                   |                  |  |
| 1. <u>Festuca perennis</u>                           | <u>20</u>        | <u>Y</u>                          | <u>FAC</u>       |  |
| 2. <u>Hordeum marinum</u>                            | <u>15</u>        | <u>Y</u>                          | <u>FAC</u>       |  |
| 3. <u>Holocarpha virgata</u>                         | <u>5</u>         | <u>N</u>                          | <u>N/L</u>       |  |
| 4. <u>Leontodon saxatilis</u>                        | <u>10</u>        | <u>N</u>                          | <u>FACU</u>      |  |
| 5. <u>Juncus bufonius</u>                            | <u>10</u>        | <u>N</u>                          | <u>FACW</u>      |  |
| 6. _____   | _____            | _____                             | _____            |  |
| 7. _____   | _____            | _____                             | _____            |  |
| 8. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  |  |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>    |                  |                                   |                  |  |
| 1. _____   | _____            | _____                             | _____            |  |
| 2. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  |  |
| % Bare Ground in Herb Stratum <u>40</u>              |                  | % Cover of Biotic Crust <u>10</u> |                  |  |

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 2N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 25  
 Subregion (LRR): C Lat: 38.572131 Long: -121.201417 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to seasonal wetland swale.  |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                | Absolute % Cover | Dominant Species?                | Indicator Status |   |
|--|------------------|----------------------------------|------------------|---|
| 1. _____   | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)  |
| 2. _____   | _____            | _____                            | _____            |   |
| 3. _____   | _____            | _____                            | _____            |   |
| 4. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> |                  |                                  |                  |   |
| 1. _____   | _____            | _____                            | _____            |   |
| 2. _____   | _____            | _____                            | _____            |   |
| 3. _____   | _____            | _____                            | _____            |   |
| 4. _____   | _____            | _____                            | _____            |   |
| 5. _____   | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| _____ = Total Cover                                  |                  |                                  |                  |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>        |                  |                                  |                  |   |
| 1. <u>Elymus caput-medusae</u>                       | <u>30</u>        | <u>Y</u>                         | <u>N/L</u>       |   |
| 2. <u>Hordeum marinum</u>                            | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |   |
| 3. <u>Holocarpha virgata</u>                         | <u>10</u>        | <u>N</u>                         | <u>N/L</u>       |   |
| 4. <u>Leontodon saxatilis</u>                        | <u>10</u>        | <u>N</u>                         | <u>FACU</u>      |   |
| 5. _____   | _____            | _____                            | _____            |   |
| 6. _____   | _____            | _____                            | _____            |   |
| 7. _____   | _____            | _____                            | _____            |   |
| 8. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>    |                  |                                  |                  |   |
| 1. _____   | _____            | _____                            | _____            |   |
| 2. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  |   |
| % Bare Ground in Herb Stratum <u>30</u>              |                  | % Cover of Biotic Crust <u>0</u> |                  |   |

Remarks:

**SOIL**

Sampling Point: 2N

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |         |           |
|---|---------------|----|----------------|----|-------------------|------------------|---------|-----------|
| Depth (inches)  | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks   |
|   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-6   | 7.5YR 3/3     | 90 | 5YR 4/4        | 10 | C                 | M                |         | Clay loam |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|  |   |
|--|---|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Refusal</u><br>Depth (inches): <u>6</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|--|---|

Remarks:

**HYDROLOGY**

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

|   |   |
|---|---|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---|---|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 3  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 20  
 Subregion (LRR): C Lat: 38.572561 Long: -121.202139 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: Depressional seasonal

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Ephemeral drainage.   |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                    | Absolute % Cover | Dominant Species? | Indicator Status |   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>0</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: <u>N/A</u> )                           | Absolute % Cover | Dominant Species? | Indicator Status |   |
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| Herb Stratum (Plot size: <u>3'x3'</u> )                                  | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Hordeum marinum</u>  | <u>2</u>         | <u>N</u>          | <u>FAC</u>       |   |
| 2. <u>Juncus bufonius</u>  | <u>1</u>         | <u>N</u>          | <u>FACW</u>      |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| 6. _____   | _____            | _____             | _____            |   |
| 7. _____   | _____            | _____             | _____            |   |
| 8. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: <u>N/A</u> )                              | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Present?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>97</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |

Remarks:  
 Feature is less than 5% vegetated. Hydrophytic vegetation absent.

**SOIL**

Sampling Point: 3

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |         |           |
|---|---------------|----|----------------|----|-------------------|------------------|---------|-----------|
| Depth<br>(inches)   | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks   |
|   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-6   | 7.5YR 4/2     | 90 | 5YR 4/6        | 10 | C                 | M                |         | Clay loam |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |
|   |               |    |                |    |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|  |   |
|--|---|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Refusal</u><br>Depth (inches): <u>6</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|

Remarks:

**HYDROLOGY**

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

|   |   |
|---|---|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 4N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 35  
 Subregion (LRR): C Lat: 38.572549 Long: -121.202151 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to ephemeral drainage.  |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                    | Absolute % Cover | Dominant Species? | Indicator Status |   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                     |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                            |                  |                   |                  |   |
| 1. <u>Elymus caput-medusae</u>   | <u>50</u>        | <u>Y</u>          | <u>N/L</u>       |   |
| 2. <u>Bromus hordeaceus</u>  | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |   |
| 3. <u>Leontodon saxatilis</u>  | <u>15</u>        | <u>N</u>          | <u>FACU</u>      |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| 6. _____   | _____            | _____             | _____            |   |
| 7. _____   | _____            | _____             | _____            |   |
| 8. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                        |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks:   |                  |                   |                  |   |





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 5  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.572288 Long: -121.199292 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: Ind. vernal pool

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

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

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br><br>Vernal pool.  |   |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>N/A</u> )                                     | Absolute % Cover | Dominant Species? | Indicator Status |  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                      |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                             |                  |                   |                  |  |
| 1. <u>Eryngium castrense</u>  | <u>10</u>        | <u></u>           | <u>OBL</u>       |  |
| 2. <u>Plagiobothrys stipitatus</u>  | <u>25</u>        | <u>Y</u>          | <u>FACW</u>      |  |
| 3. <u>Glyceria declinata</u>  | <u>20</u>        | <u>Y</u>          | <u>FACW</u>      |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                         |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>45</u> % Cover of Biotic Crust <u>40</u> |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 6N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15  
 Subregion (LRR): C Lat: 38.57226 Long: -121.199323 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: N/A

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

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

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to vernal pool.   |   |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>N/A</u> )                                    | Absolute % Cover | Dominant Species? | Indicator Status |   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)  |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                     |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                            |                  |                   |                  |   |
| 1. <u>Elymus caput-medusae</u>   | <u>30</u>        | <u>Y</u>          | <u>N/L</u>       |   |
| 2. <u>Hordeum marinum</u>  | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |   |
| 3. <u>Holocarpha virgata</u>   | <u>15</u>        |                   | <u>N/L</u>       |   |
| 4. <u>Leontodon saxatilis</u>  | <u>15</u>        |                   | <u>FACU</u>      |   |
| 5. <u>Bromus hordeaceus</u>  | <u>5</u>         |                   | <u>FACU</u>      |   |
| 6. _____   | _____            | _____             | _____            |   |
| 7. _____   | _____            | _____             | _____            |   |
| 8. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                        |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks:   |                  |                   |                  |   |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 7  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.574727 Long: -121.200809 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Seasonal wetland.   |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                | Absolute % Cover | Dominant Species?                 | Indicator Status |  |
|--|------------------|-----------------------------------|------------------|--|
| 1. _____   | _____            | _____                             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7</u> (A/B)   |
| 2. _____   | _____            | _____                             | _____            |  |
| 3. _____   | _____            | _____                             | _____            |  |
| 4. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> |                  |                                   |                  |  |
| 1. _____   | _____            | _____                             | _____            |  |
| 2. _____   | _____            | _____                             | _____            |  |
| 3. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  |  |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>        |                  |                                   |                  |  |
| 1. <u>Hordeum marinum</u>                            | <u>20</u>        | <u>Y</u>                          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Centromadia fitchii</u>                        | <u>10</u>        |                                   | <u>FACU</u>      |  |
| 3. <u>Leontodon saxatilis</u>                        | <u>15</u>        | <u>Y</u>                          | <u>FACU</u>      |  |
| 4. <u>Juncus bufonius</u>                            | <u>15</u>        | <u>Y</u>                          | <u>FACW</u>      |  |
| 5. <u>Lythrum hyssopifolia</u>                       | <u>10</u>        |                                   | <u>OBL</u>       |  |
| 6. _____   | _____            | _____                             | _____            |  |
| 7. _____   | _____            | _____                             | _____            |  |
| 8. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  |  |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>    |                  |                                   |                  |  |
| 1. _____   | _____            | _____                             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.   |
| 2. _____   | _____            | _____                             | _____            |  |
| _____ = Total Cover                                  |                  |                                   |                  |  |
| % Bare Ground in Herb Stratum <u>30</u>              |                  | % Cover of Biotic Crust <u>50</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| Remarks:   |                  |                                   |                  |  |



**SOIL**

Sampling Point: 7

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |           |
|---|---------------|----|----------------|---|-------------------|------------------|---------|-----------|
| Depth (inches)  | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks   |
|   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-5   | 7.5YR 4/2     | 95 | 5YR 4/6        | 5 | C                 | M, PL            |         | Clay loam |
|   |               |    |                |   |                   |                  |         |           |
|   |               |    |                |   |                   |                  |         |           |
|   |               |    |                |   |                   |                  |         |           |
|   |               |    |                |   |                   |                  |         |           |
|   |               |    |                |   |                   |                  |         |           |
|   |               |    |                |   |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|  |   |
|--|---|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Refusal</u><br>Depth (inches): <u>5</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|

Remarks:

**HYDROLOGY**

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

|  |   |
|--|---|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 8N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15  
 Subregion (LRR): C Lat: 38.574704 Long: -121.200786 Datum: NAD83  
 Soil Map Unit Name: Red Bluff-Redding complex, 0-5% slopes NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to seasonal wetland.  |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                   | Absolute % Cover | Dominant Species? | Indicator Status |   |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| _____ = Total Cover   |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                    |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                           |                  |                   |                  |   |
| 1. <u>Elymus caput-medusae</u>  | <u>80</u>        | <u>Y</u>          | <u>N/L</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Holocarpha virgata</u>  | <u>10</u>        | _____             | <u>N/L</u>       |   |
| 3. <u>Festuca bromoides</u>   | <u>15</u>        | _____             | <u>FACU</u>      |   |
| 4. _____  | _____            | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            |   |
| 6. _____  | _____            | _____             | _____            |   |
| 7. _____  | _____            | _____             | _____            |   |
| 8. _____  | _____            | _____             | _____            |   |
| <u>105</u> = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                       |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 2. _____  | _____            | _____             | _____            |   |
| _____ = Total Cover   |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 9  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): C Lat: 38.575282 Long: -121.200916 Datum: NAD83  
 Soil Map Unit Name: Hicksville gravelly loam, 0-2% slopes, occasionally flooded NWI classification: Depressional seasonal  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Large, deep vernal pool.  |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                     | Absolute % Cover | Dominant Species? | Indicator Status |  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                      |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                             |                  |                   |                  |  |
| 1. <u>Plagiobothrys stipitatus</u>  | <u>20</u>        | <u>Y</u>          | <u>FACW</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Eryngium castrense</u>  | <u>5</u>         |                   | <u>OBL</u>       |  |
| 3. <u>Crypsis schoenoides</u>   | <u>15</u>        | <u>Y</u>          | <u>FACW</u>      |  |
| 4. <u>Trichostema lanceolatum</u>   | <u>2</u>         |                   | <u>FACU</u>      |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                         |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 2. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>58</u> % Cover of Biotic Crust <u>20</u> |                  |                   |                  |  |

Remarks:

**SOIL**

Sampling Point: 9

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

| Depth (inches) | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks   |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|-----------|
|                | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-6            | 7.5YR 4/2     | 85 | 5YR 4/6        | 15 | C                 | M                |         | Clay loam |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

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

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Refusal  
 Depth (inches): 6

**Hydric Soil Present? Yes  No**

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present? Yes  No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 10N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 10  
 Subregion (LRR): C Lat: 38.575272 Long: -121.200979 Datum: NAD83  
 Soil Map Unit Name: Hicksville gravelly loam, 0-2% slopes, occasionally flooded NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to vernal pool.   |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                    | Absolute % Cover | Dominant Species? | Indicator Status |   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                     |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                            |                  |                   |                  |   |
| 1. <u>Festuca bromoides</u>  | <u>30</u>        | <u>Y</u>          | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Holocarpha virgata</u>   | <u>10</u>        |                   | <u>N/L</u>       |   |
| 3. <u>Centromadia fitchii</u>  | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |   |
| 4. <u>Leontodon saxatilis</u>  | <u>15</u>        |                   | <u>FACU</u>      |   |
| 5. <u>Hordeum marinum</u>  | <u>10</u>        |                   | <u>FAC</u>       |   |
| 6. _____   | _____            | _____             | _____            |   |
| 7. _____   | _____            | _____             | _____            |   |
| 8. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                        |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 2. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks:   |                  |                   |                  |   |



**SOIL**

Sampling Point: 10N

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

| Depth<br>(inches) | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks   |
|-------------------|---------------|----|----------------|---|-------------------|------------------|---------|-----------|
|                   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-5               | 7.5YR 4/2     | 98 | 5YR 4/6        | 2 | C                 | M                |         | Clay loam |
|                   |               |    |                |   |                   |                  |         |           |
|                   |               |    |                |   |                   |                  |         |           |
|                   |               |    |                |   |                   |                  |         |           |
|                   |               |    |                |   |                   |                  |         |           |
|                   |               |    |                |   |                   |                  |         |           |
|                   |               |    |                |   |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: Refusal  
 Depth (inches): 5

**Hydric Soil Present? Yes  No**

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

|   |   |
|---|---|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____                          | <b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b> |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____                            |   |
| Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ |   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 11  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Convex Slope (%): 50  
 Subregion (LRR): C Lat: 38.575505 Long: -121.201271 Datum: NAD83  
 Soil Map Unit Name: Hicksville gravelly loam, 0-2% slopes, occasionally flooded NWI classification: Depressional

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Perennial pond. Impoundment of intermittent drainage.   |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                    | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| _____ = Total Cover  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: <u>N/A</u> )                           | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| _____ = Total Cover  |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5'x5'</u> )                                  | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Eleocharis macrostachya</u>  | <u>90</u>        | <u>Y</u>          | <u>OBL</u>       |  |
| 2. <u>Persicaria sp.</u>   | <u>15</u>        | _____             | <u>OBL</u>       |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            |  |
| 8. _____   | _____            | _____             | _____            |  |
| _____ = Total Cover  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: <u>N/A</u> )                              | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| _____ = Total Cover  |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>10</u> |                  |                   |                  |  |

Remarks:

**SOIL**

Sampling Point: 11

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

| Depth (inches) | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks   |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|-----------|
|                | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-12           | 7.5YR 4/1     | 70 | 5YR 4/6        | 30 | C                 | M                |         | Clay loam |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |
|                |               |    |                |    |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

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

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

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

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): 48  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 12N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 70  
 Subregion (LRR): C Lat: 38.575462 Long: -121.201258 Datum: NAD83  
 Soil Map Unit Name: Hicksville gravelly loam, 0-2% slopes, occasionally flooded NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to perennial pond.  |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                | Absolute % Cover | Dominant Species?                | Indicator Status |   |
|--|------------------|----------------------------------|------------------|---|
| 1. _____   | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
| 2. _____   | _____            | _____                            | _____            |   |
| 3. _____   | _____            | _____                            | _____            |   |
| 4. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> |                  |                                  |                  |   |
| 1. _____   | _____            | _____                            | _____            |   |
| 2. _____   | _____            | _____                            | _____            |   |
| 3. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>        |                  |                                  |                  |   |
| 1. <u>Bromus hordeaceus</u>                          | <u>70</u>        | <u>Y</u>                         | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Holocarpha virgata</u>                         | <u>10</u>        |                                  | <u>N/L</u>       |   |
| 3. <u>Acmispon americanus</u>                        | <u>10</u>        |                                  | <u>UPL</u>       |   |
| 4. _____   | _____            | _____                            | _____            |   |
| 5. _____   | _____            | _____                            | _____            |   |
| 6. _____   | _____            | _____                            | _____            |   |
| 7. _____   | _____            | _____                            | _____            |   |
| 8. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>    |                  |                                  |                  |   |
| 1. _____   | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  |
| 2. _____   | _____            | _____                            | _____            |   |
| _____ = Total Cover                                  |                  |                                  |                  |   |
| % Bare Ground in Herb Stratum <u>10</u>              |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |
| Remarks:   |                  |                                  |                  |   |

**SOIL**

Sampling Point: 12N

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

| Depth (inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks   |
|----------------|---------------|-----|----------------|---|-------------------|------------------|---------|-----------|
|                | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-7            | 7.5YR 3/3     | 100 |                |   |                   |                  |         | Clay loam |
|                |               |     |                |   |                   |                  |         |           |
|                |               |     |                |   |                   |                  |         |           |
|                |               |     |                |   |                   |                  |         |           |
|                |               |     |                |   |                   |                  |         |           |
|                |               |     |                |   |                   |                  |         |           |
|                |               |     |                |   |                   |                  |         |           |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|  |   |
|--|---|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Refusal</u><br>Depth (inches): <u>7</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|--|---|

Remarks:

**HYDROLOGY**

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

|   |   |
|---|---|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---|---|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 13  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 10  
 Subregion (LRR): C Lat: 38.576156 Long: -121.199801 Datum: NAD83  
 Soil Map Unit Name: Hicksville gravelly loam, 0-2% slopes, occasionally flooded NWI classification: Fluvial unnatural

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

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

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Intermittent drainage.  |   |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>N/A</u> )                                     | Absolute % Cover | Dominant Species? | Indicator Status |  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                      |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                             |                  |                   |                  |  |
| 1. <u>Eleocharis macrostachya</u>   | 50               | Y                 | OBL              |  |
| 2. <u>Cyperus eragrostis</u>  | 5                |                   | FACW             |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                         |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>45</u> % Cover of Biotic Crust <u>20</u> |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |



**SOIL**

Sampling Point: 13

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |         |           |
|---|---------------|----|----------------|----|-------------------|------------------|---------|-----------|
| Depth (inches)  | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks   |
|   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-6   | 7.5YR 4/2     | 80 | 5YR 4/6        | 20 | C                 | M                |         | Clay loam |
|   |               |    |                |    |                   |                  |         |           |
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|  |   |
|--|---|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Refusal</u><br>Depth (inches): <u>6</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|

Remarks:

**HYDROLOGY**

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

|   |   |
|---|---|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: The Preserve Development City/County: Rancho Cordova Sampling Date: 10/12/2018  
 Applicant/Owner: Winn Communities, Inc. State: CA Sampling Point: 14N  
 Investigator(s): Clay DeLong Section, Township, Range: Rio de los Americanos Land Grant  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 15  
 Subregion (LRR): C Lat: 38.576184 Long: -121.199792 Datum: NAD83  
 Soil Map Unit Name: Hicksville gravelly loam, 0-2% slopes, occasionally flooded NWI classification: N/A

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

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|   |   |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland adjacent to intermittent drainage.   |   |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: <u>N/A</u> )                                    | Absolute % Cover | Dominant Species? | Indicator Status |   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)  |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b>                     |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| 5. _____   | _____            | _____             | _____            |   |
| <b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>                            |                  |                   |                  |   |
| 1. <u>Leontodon saxatilis</u>  | <u>30</u>        | <u>Y</u>          | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Acmispon americanus</u>  | <u>5</u>         |                   | <u>UPL</u>       |   |
| 3. <u>Centromadia fitchii</u>  | <u>5</u>         |                   | <u>FACU</u>      |   |
| 4. <u>Lythrum hyssopifolia</u>   | <u>5</u>         |                   | <u>OBL</u>       |   |
| 5. <u>Dittrichia graveolens</u>  | <u>5</u>         |                   | <u>N/L</u>       |   |
| 6. <u>Centaureum tenuiflorum</u>   | <u>5</u>         |                   | <u>FACW</u>      |   |
| 7. <u>Festuca perennis</u>   | <u>10</u>        | <u>Y</u>          | <u>FAC</u>       |   |
| 8. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b>                        |                  |                   |                  |   |
| 1. _____   | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  |
| 2. _____   | _____            | _____             | _____            |   |
| _____ = Total Cover  |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>35</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks:   |                  |                   |                  |   |

**SOIL**

Sampling Point: 14N

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |         |           |
|--|---------------|----|----------------|----|-------------------|------------------|---------|-----------|
| Depth<br>(inches)  | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks   |
|  | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |           |
| 0-5  | 7.5YR 4/2     | 90 | 5YR 4/6        | 10 | C                 | M                |         | Clay loam |
|  |               |    |                |    |                   |                  |         |           |
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**ATTACHMENT D**

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Plant Species Observed On-Site

**The Preserve Development:**  
Plant Species Observed On-Site (October 12, 2018)

| SCIENTIFIC NAME                 | COMMON NAME                  | Indicator |
|---------------------------------|------------------------------|-----------|
| <b>APIACEAE</b>                 | <b>CARROT FAMILY</b>         |           |
| <i>Eryngium castrense</i>       | Button-celery                | OBL       |
| <b>ASTERACEAE</b>               | <b>SUNFLOWER FAMILY</b>      |           |
| <i>Centaurea solstitialis*</i>  | Yellow star-thistle          | N/L       |
| <i>Centromadia fitchii</i>      | Fitch's spikeweed            | FACU      |
| <i>Dittrichia graveolens*</i>   | Stinkwort                    | N/L       |
| <i>Holocarpha virgata</i>       | Sticky tarweed               | N/L       |
| <i>Leontodon saxatilis*</i>     | Hairy hawkbit                | FACU      |
| <i>Psilocarphus brevissimus</i> | Woolly marbles               | FACW      |
| <b>BORAGINACEAE</b>             | <b>BORAGE FAMILY</b>         |           |
| <i>Plagiobothrys stipitatus</i> | Slender popcorn-flower       | FACW      |
| <b>CUPRESSACEAE</b>             | <b>CYPRESS FAMILY</b>        |           |
| <i>Sequoia sempervirens</i>     | Redwood                      | N/L       |
| <b>CYPERACEAE</b>               | <b>SEDGE FAMILY</b>          |           |
| <i>Cyperus eragrostis</i>       | Tall flatsedge               | FACW      |
| <i>Eleocharis macrostachya</i>  | Creeping spikerush           | OBL       |
| <b>EUPHORBIACEAE</b>            | <b>SPURGE FAMILY</b>         |           |
| <i>Croton setigerus</i>         | Turkey mullein               | N/L       |
| <b>FABACEAE</b>                 | <b>LEGUME FAMILY</b>         |           |
| <i>Acmispon americanus</i>      | American bird's foot trefoil | UPL       |
| <b>GENTIANACEAE</b>             | <b>GENTIAN FAMILY</b>        |           |
| <i>Centaurium tenuiflorum*</i>  | Slender centaury             | FACW      |
| <b>JUNCACEAE</b>                | <b>RUSH FAMILY</b>           |           |
| <i>Juncus bufonius</i>          | Toad rush                    | FACW      |
| <b>LAMIACEAE</b>                | <b>MINT FAMILY</b>           |           |
| <i>Trichostema lanceolatum</i>  | Vinegar weed                 | FACU      |
| <b>LYTHRACEAE</b>               | <b>LOOSESTRIFE FAMILY</b>    |           |
| <i>Lythrum hyssopifolia*</i>    | Hyssop loosestrife           | OBL       |
| <b>MYRTACEAE</b>                | <b>MYRTLE FAMILY</b>         |           |
| <i>Eucalyptus globulus*</i>     | Blue gum                     | N/L       |
| <b>POACEAE</b>                  | <b>GRASS FAMILY</b>          |           |
| <i>Avena fatua*</i>             | Wild oat                     | N/L       |

**The Preserve Development:**  
Plant Species Observed On-Site (October 12, 2018)

| <b>SCIENTIFIC NAME</b>                    | <b>COMMON NAME</b>      | <b>Indicator</b> |
|---|-------------------------|------------------|
| <b>POACEAE</b>                            | <b>GRASS FAMILY</b>     |                  |
| <i>Bromus diandrus</i> *                  | Ripgut brome            | N/L              |
| <i>Bromus hordeaceus</i> *                | Soft brome              | FACU             |
| <i>Crypsis schoenoides</i> *              | Swamp grass             | FACW             |
| <i>Elymus caput-medusae</i> *             | Medusahead grass        | N/L              |
| <i>Festuca bromoides</i> *                | Brome fescue            | FACU             |
| <i>Festuca perennis</i> *                 | Italian Ryegrass        | FAC              |
| <i>Glyceria declinata</i> *               | Mannagrass              | FACW             |
| <i>Hordeum marinum ssp. gussoneanum</i> * | Mediterranean barley    | FAC              |
| <i>Hordeum murinum ssp. glaucum</i> *     | Foxtail barley          | FACU             |
| <b>POLYGONACEAE</b>                       | <b>BUCKWHEAT FAMILY</b> |                  |
| <i>Persicaria sp.</i>                     | Smartweed               | OBL              |
| <b>SALICACEAE</b>                         | <b>WILLOW FAMILY</b>    |                  |
| <i>Populus fremontii</i>                  | Fremont's cottonwood    | FAC              |
| <i>Salix exigua</i>                       | Sandbar willow          | FACW             |
| <i>Salix gooddingii</i>                   | Goodding's black willow | FACW             |



**ATTACHMENT E**

---

Representative Site Photographs



Photo 1. Gravel road north of Edington Drive in central portion of Delineation Area. View south. Photo taken October 12, 2018.



Photo 2. Grasslands west of Edington Drive in southwestern portion of Delineation Area. View northwest. Photo taken October 12, 2018.



Photo 3. Vernal pool in southwestern portion of Delineation Area. View south. Photo taken October 12, 2018.



Photo 4. Large vernal pool in northwestern portion of Delineation Area. View northeast. Photo taken October 12, 2018.





Photo 5. Open water feature in northwestern portion of Delineation Area. View northeast. Photo taken October 12, 2018.



Photo 6. Stream/creek in northwestern portion of Delineation Area. View southwest. Photo taken October 12, 2018.



Photo 3. Stream/creek in central portion of Delineation Area. View southwest. Photo taken October 12, 2018.



Photo 4. Swale in northwestern portion of Delineation Area. View east. Photo taken October 12, 2018.



**ATTACHMENT F**

---

USACE ORM Aquatic Resources Table

| Waters_Name | State      | Cowardin_Code | HGM_Code | Meas_Type | Amount     | Units | Waters_Type | Latitude    | Longitude    | Local_Waterway |                                 |
|-------------|------------|---------------|----------|-----------|------------|-------|-------------|-------------|--------------|----------------|---------------------------------|
| OW-1        | CALIFORNIA | POW           |          | Area      | 1.81393515 | ACRE  | DELINPJD    | 38.57572037 | -121.2011449 |                | Similarity_Situated             |
| SC-1        | CALIFORNIA | R4            |          | Area      | 0.09565673 | ACRE  | DELINPJD    | 38.57614458 | -121.1995959 |                | Sim_Situated_Aggregated_SPOE    |
| SC-2        | CALIFORNIA | R4            |          | Area      | 0.20350649 | ACRE  | DELINPJD    | 38.57503792 | -121.2022099 |                | Adjacent_Waters_Slipr_33USC1344 |
| SC-3        | CALIFORNIA | R6            |          | Area      | 0.00808377 | ACRE  | DELINPJD    | 38.57261952 | -121.202234  |                | OHWM_Chg_In_Plant_Community     |
| SWL-1       | CALIFORNIA | PEM           |          | Area      | 0.68594234 | ACRE  | DELINPJD    | 38.57561682 | -121.199356  |                | OHWM_Bed_Arb_Banks              |
| SWL-2       | CALIFORNIA | PEM           |          | Area      | 0.74594614 | ACRE  | DELINPJD    | 38.57437114 | -121.2007471 |                | OHWM_Break_In_Slope             |
| SWL-3       | CALIFORNIA | PEM           |          | Area      | 0.15958671 | ACRE  | DELINPJD    | 38.57507329 | -121.2022859 |                | OHWM_Chg_In_Veg_In_Sediment     |
| SWL-4       | CALIFORNIA | PEM           |          | Area      | 0.01706369 | ACRE  | DELINPJD    | 38.57409691 | -121.2022748 |                | OHWM_Chg_In_Veg_Density_Maturn  |
| SWL-5       | CALIFORNIA | PEM           |          | Area      | 0.05769086 | ACRE  | DELINPJD    | 38.57236595 | -121.2017111 |                | OHWM_Line_Impressed_On_Bank     |
| SWL-6       | CALIFORNIA | PEM           |          | Area      | 0.02266507 | ACRE  | DELINPJD    | 38.5718949  | -121.1993982 |                | OHWM_Destr_Of_Terrestrial_Veg   |
| SWL-7       | CALIFORNIA | PEM           |          | Area      | 0.02407002 | ACRE  | DELINPJD    | 38.57202812 | -121.1985756 |                | OHWM_Leaf_Litter_Disturbed      |
| VP-1        | CALIFORNIA | PEM           |          | Area      | 0.00434661 | ACRE  | DELINPJD    | 38.57601498 | -121.20003   |                | OHWM_Multiple_Flow_Events       |
| VP-10       | CALIFORNIA | PEM           |          | Area      | 0.0580631  | ACRE  | DELINPJD    | 38.57210442 | -121.1996532 |                | OHWM_Scour                      |
| VP-11       | CALIFORNIA | PEM           |          | Area      | 0.03692233 | ACRE  | DELINPJD    | 38.57211532 | -121.1994322 |                | OHWM_Sediment_Deposition        |
| VP-12       | CALIFORNIA | PEM           |          | Area      | 0.0907379  | ACRE  | DELINPJD    | 38.57233482 | -121.19926   |                | OHWM_Sediment_Sorting           |
| VP-13       | CALIFORNIA | PEM           |          | Area      | 0.11069019 | ACRE  | DELINPJD    | 38.57220356 | -121.198872  |                | OHWM_Shelving                   |
| VP-14       | CALIFORNIA | PEM           |          | Area      | 0.06648923 | ACRE  | DELINPJD    | 38.57228403 | -121.1986023 |                | OHWM_Litter_and_Debris_Present  |
| VP-15       | CALIFORNIA | PEM           |          | Area      | 0.051276   | ACRE  | DELINPJD    | 38.57194554 | -121.1990378 |                | OHWM_Wrack_Line_Present         |
| VP-2        | CALIFORNIA | PEM           |          | Area      | 0.73462272 | ACRE  | DELINPJD    | 38.57525093 | -121.2006518 |                | OHWM_Veg_Matted_Bert_Or_Absen   |
| VP-3        | CALIFORNIA | PEM           |          | Area      | 0.01049221 | ACRE  | DELINPJD    | 38.5747219  | -121.2008208 |                | OHWM_Water_Staining             |
| VP-4        | CALIFORNIA | PEM           |          | Area      | 0.00545335 | ACRE  | DELINPJD    | 38.57500032 | -121.2010844 |                | OHWM_Other                      |
| VP-5        | CALIFORNIA | PEM           |          | Area      | 0.02653871 | ACRE  | DELINPJD    | 38.57484909 | -121.2014638 |                | OHWM_Other_Text                 |
| VP-6        | CALIFORNIA | PEM           |          | Area      | 0.01577674 | ACRE  | DELINPJD    | 38.57417363 | -121.2018499 |                | Func_I_Sediment_Trapping        |
| VP-7        | CALIFORNIA | PEM           |          | Area      | 0.02369595 | ACRE  | DELINPJD    | 38.57422298 | -121.2021317 |                | Func_II_Nutrient_Trapping       |
| VP-8        | CALIFORNIA | PEM           |          | Area      | 0.01376218 | ACRE  | DELINPJD    | 38.57281178 | -121.2003619 |                | Func_III_Pollutant_Recycling    |
| VP-9        | CALIFORNIA | PEM           |          | Area      | 0.02380634 | ACRE  | DELINPJD    | 38.57287288 | -121.2002068 |                | Func_IV_Reinn_Atenu_Prd_Wtrs    |

**ATTACHMENT G**

---

Wetland Delineation Shape File (to be included with USACE submittal only)





**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT  
1325 J STREET  
SACRAMENTO CA 95814-2922

May 9, 2019

Regulatory Division (SPK-2019-00197)

Winn Communities  
Attn: Mr. George Carpenter  
3001 I Street, Suite 300  
Sacramento, California 95816  
[georgemcarpenter@comcast.net](mailto:georgemcarpenter@comcast.net)

Dear Mr. Carpenter:

We are responding to your consultant's March 20, 2019, request for verification of an Aquatic Resource delineation for the Preserve Development site. The approximately 113.8-acre project site is located northwest of Raymer Way and west of Grant Line Road, Latitude 38.57489°, Longitude -121.19673°, City of Rancho Cordova, Sacramento County, California.

Based on available information, we concur with your consultant's aquatic resources delineation for the site, which consists of approximately 7.861 acres of aquatic resources (consisting of 2.646 acres of vernal pool, 1.841 acres of seasonal wetland swale, 1.015 acres of stream/creek [Morrison Creek, a perennial water, and several ephemeral drainages], and 2.360 acres of open water (pond), as depicted on the enclosed April 24, 2019, *Figure 4a-b Aquatic Resources Delineation* drawings prepared by ECORP Consulting, Inc. (Enclosure 1).

This verification letter does not constitute a determination of jurisdiction (JD). A JD is not required to process an application for a Department of the Army permit. If you do not require a JD for the site, your permit application may be processed sooner.

You may request a JD for this site at any time prior to starting work in aquatic resources, including after a permit decision is made. To request a JD for this site, complete the attached *Request for Jurisdictional Determination Form* (Enclosure 2) and return it to this office at the address listed below.

Please refer to identification number SPK-2019-00197 in any correspondence concerning this project. If you have any questions, please contact me at U.S. Army Corps of Engineers Regulatory Division, California Delta Section, 1325 J Street, Room 1350, Sacramento, CA 95814-2922, by email at [Mary.R.Pakenham-Walsh@usace.army.mil](mailto:Mary.R.Pakenham-Walsh@usace.army.mil), or telephone at (916) 557-7718. For program information or to complete our Customer Survey, visit our website at [www.spk.usace.army.mil/Missions/Regulatory.aspx](http://www.spk.usace.army.mil/Missions/Regulatory.aspx).

Sincerely,

Mary R. Pakenham-Walsh  
Senior Project Manager  
California Delta Section

Enclosures

cc: (w/o encls)

Mr. Joseph Morgan, U.S. Environmental Protection Agency, Region 9,

[morgan.joseph@epamail.epa.gov](mailto:morgan.joseph@epamail.epa.gov)

Ms. Stephanie Tadlock, California Regional Water Quality Control Board, Central Valley Region,

[Stephanie.Tadlock@waterboards.ca.gov](mailto:Stephanie.Tadlock@waterboards.ca.gov)

Mr. Bjorn Gregersen, ECORP Consulting, [BGregers@ecorpconsulting.com](mailto:BGregers@ecorpconsulting.com)



June 27, 2019

Mr. George Carpenter  
Winn Communities  
3001 I Street, Suite 300  
Sacramento, CA 95816

**RE: *Addendum to Aquatic Resources Delineation for The Preserve Development***

Dear Mr. Carpenter:

An Aquatic Resources Delineation was prepared by ECORP Consulting, Inc. for The Preserve Development (Project) on November 26, 2018. The delineation was verified by the U.S. Army Corps of Engineers (USACE) on May 5, 2019 (SPK-2019-00197). This letter provides information on an additional  $\pm 8.8$ -acre area to be included as a potential Offsite work area for the Project, and serves as an addendum to the Aquatic Resources Delineation dated November 26, 2018.

**Offsite Assessment**

An assessment of potential Waters of the U.S. within the Offsite along Raymer Way was conducted on June 13, 2019 by ECORP biologist Matt Spaulding. Access to the property was not authorized; therefore, Mr. Spaulding walked along Raymer Way and assessed potential aquatic features from the publicly accessible roadway. In addition, historic aerial photos were reviewed. Several roadside ditches were mapped and classified as swales according to land cover definitions within the South Sacramento Habitat Conservation Plan.

**Summary**

The unverified Offsite was determined to contain 0.215 acre of swale based on the assessment-level survey. Figure 1 provides a revised delineation map for the overall Project area, and Figure 2 provides a detailed view of the unverified Offsite area. If you have any questions, please call me at (916) 782-9100 or email at [temam@ecorpconsulting.com](mailto:temam@ecorpconsulting.com).

Sincerely,

Taraneh Emam  
Senior Biologist/Project Manager

**Figure 1**

---

Aquatic Resources Delineation Overview



ECORP: N:\2018\2018-205 THE PRESERVE\MAPS\JURISDICTIONAL\_DELINEATION\THE PRESERVE\_ARID\_20190620\_OVERVIEW\MXD\JDS -JSWAGER 6/20/2019

### Figure 1. Aquatic Resources Delineation Overview

#### Map Features

- Overall ARD Study Area - 122.6 acres
- Reference Coordinate (NAD83)

#### Three Criteria Sample Points

- Waters Point
- Upland Point

#### Potential Aquatic Resources (Unverified) - 0.215 acres <sup>1\*</sup>

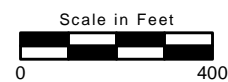
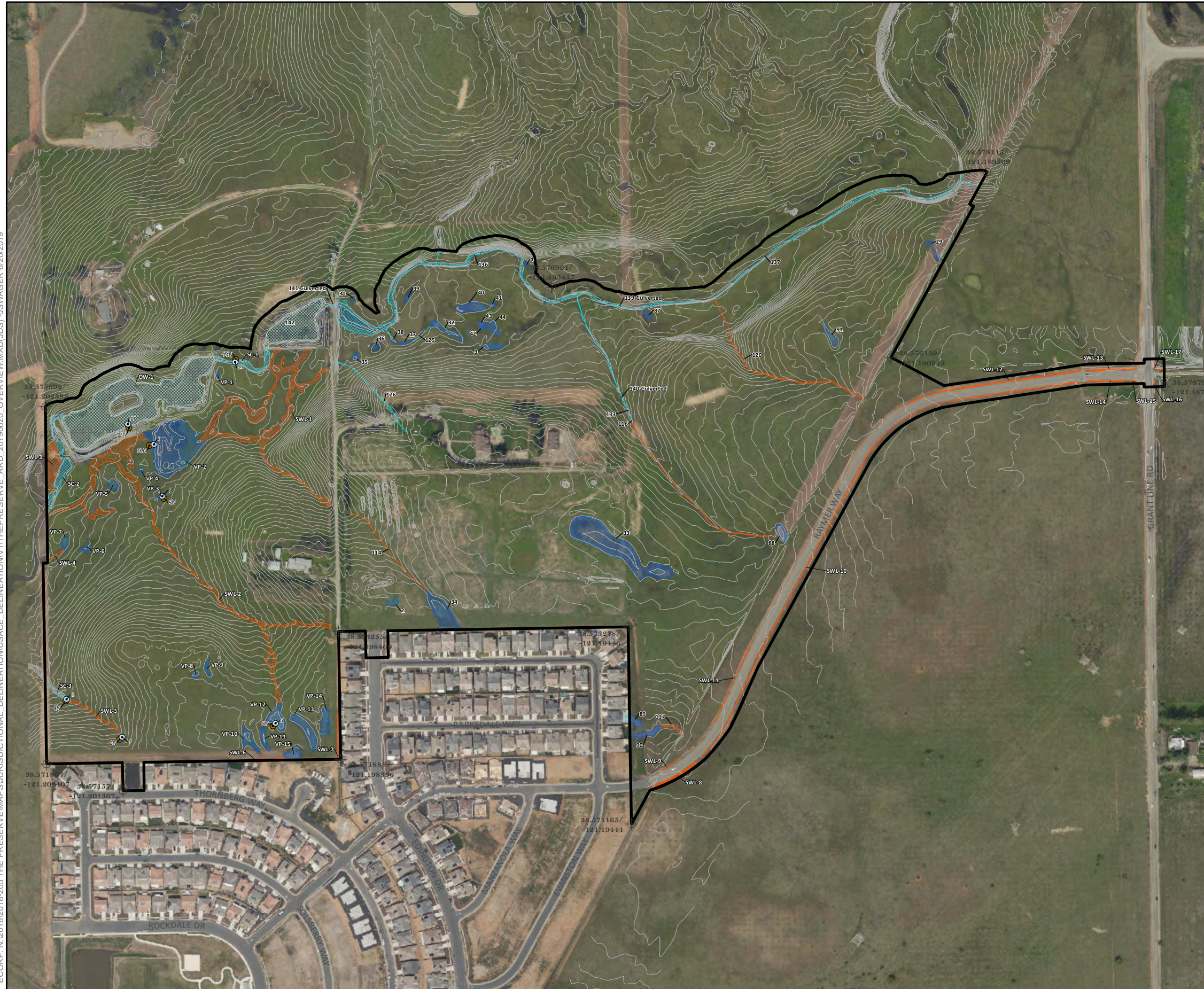
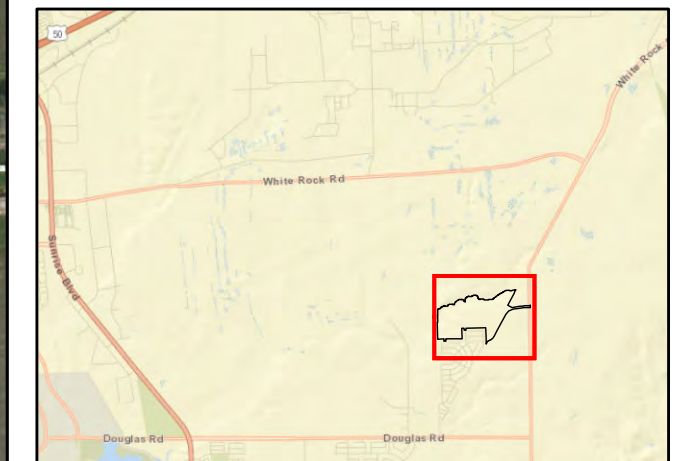
- Swale - 0.215 acres

#### Verified Waters of the U.S. - 7.861 acres <sup>2\*</sup>

- Vernal Pool - 2.645 acres
- Swale - 1.841 acres
- Stream/Creek - 1.015 acres
- Open Water - 2.360 acres

<sup>1</sup> Features are assessment level. The assessment was not conducted in accordance with the Corps of Engineers Wetland Delineation Manual and Sacramento District Minimum Standards. The project boundaries, wetland boundaries, and acreage values are approximate.  
<sup>2</sup> PAD for Wong-Wagner Issued 11/20/2012, SPA-2004-00866.  
<sup>3</sup> PAD for The Preserve Issued 05/09/2019, SPA-2019-00197.  
<sup>4</sup> The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





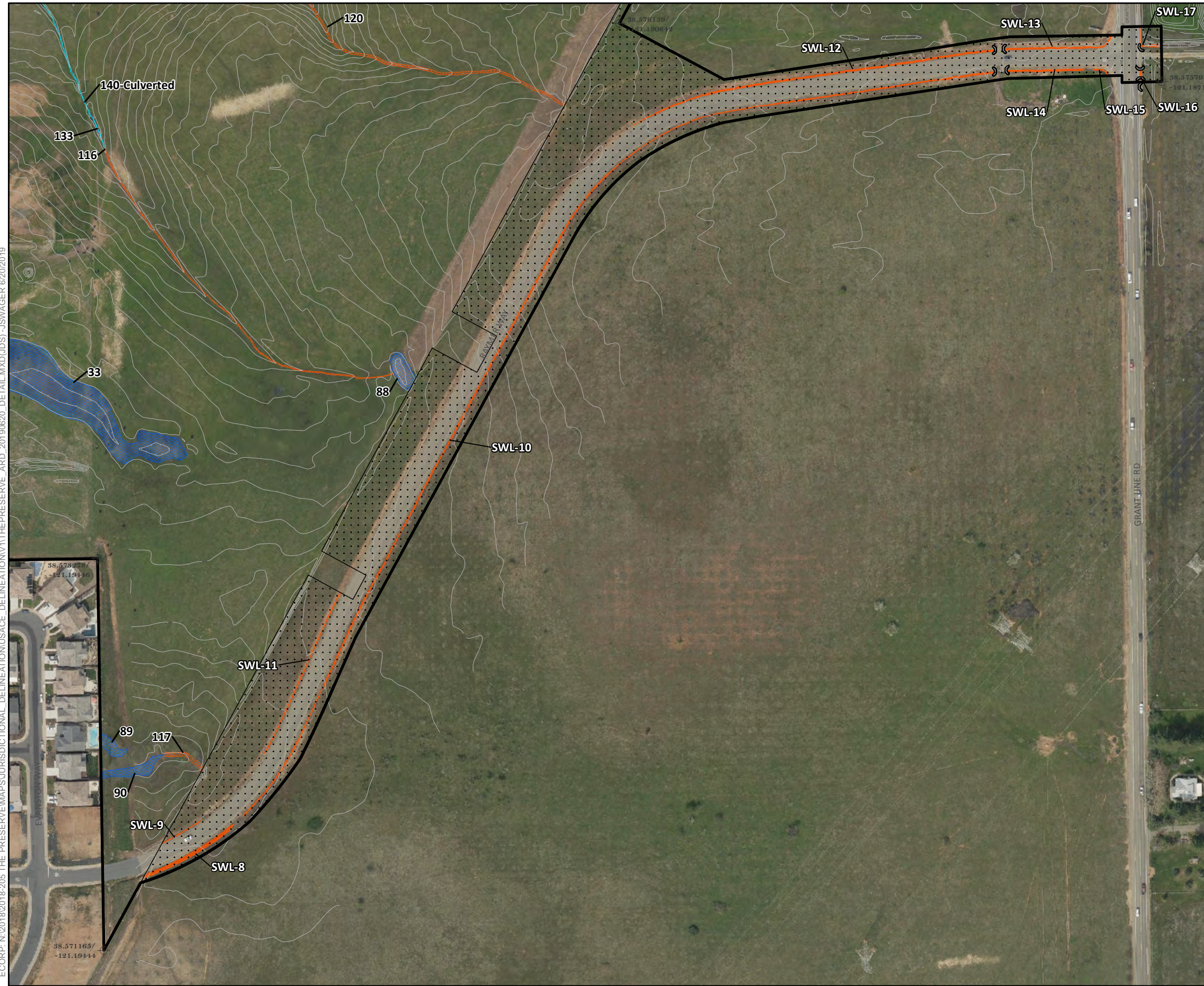
**Figure 2**

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Aquatic Resources Delineation Unverified Offsite Detail



ECORP: N:\2018\2018-205 THE PRESERVE\MAPS\JURISDICTIONAL\_DELINEATION\USACE\_DELINEATION\THEPRESERVE\_AR\_20190620\_DETAIL.MXD(JDS) -JSWAGER 6/20/2019



**Figure 2.**  
**Aquatic Resources Delineation**  
**Unverified Offsite Detail**

**Map Features**

- Overall ARD Study Area - 122.6 acres
- Unverified Area
- Reference Coordinate (NAD83)
- Culvert

**Potential Aquatic Resources (Unverified) - 0.215 acres<sup>1\*</sup>**

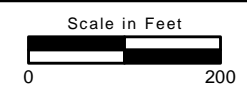
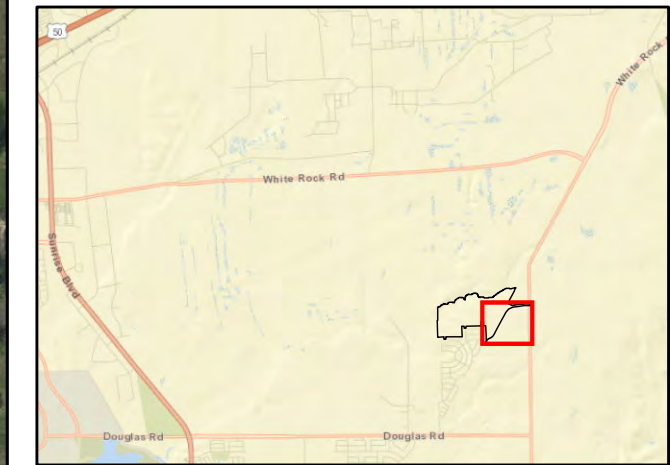
- Swale - 0.215 acres

**Verified Waters of the U.S. - 7.861 acres<sup>2</sup>**

- Vernal Pool
- Swale
- Stream/Creek

<sup>1</sup> Features are assessment level. The assessment was not conducted in accordance with the Corps of Engineers Wetland Delineation Manual and Sacramento District Minimum Standards. The project boundaries, wetland boundaries, and acreage values are approximate.  
<sup>2</sup> PAD for Wang-Wagner Issued 11/20/2012, SPA-2004-00866.  
<sup>3</sup> PAD for The Preserve Issued 05/09/2019, SPA-2019-00197.  
<sup>\*</sup> The acreage values for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





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**ATTACHMENT G**

Wildlife Observed Onsite



## Wildlife Species Observed Onsite

| Common Name             | Scientific Name                  |
|-------------------------|----------------------------------|
| <b>Amphibians</b>       |                                  |
| American bullfrog       | <i>Lithobates catesbeianus</i>   |
| <b>Reptiles</b>         |                                  |
| red-eared slider        | <i>Trachemys scripta elegans</i> |
| <b>Birds</b>            |                                  |
| American crow           | <i>Corvus brachyrhynchos</i>     |
| black phoebe            | <i>Sayornis nigricans</i>        |
| European starling       | <i>Sturnus vulgaris</i>          |
| great blue heron        | <i>Ardea herodias</i>            |
| great egret             | <i>Ardea alba</i>                |
| house finch             | <i>Haemorhous mexicanus</i>      |
| killdeer                | <i>Charadrius vociferous</i>     |
| mourning dove           | <i>Zenaida macroura</i>          |
| northern flicker        | <i>Colaptes auratus</i>          |
| Say's phoebe            | <i>Sayornis saya</i>             |
| western blue bird       | <i>Sialia mexicana</i>           |
| western meadowlark      | <i>Sturnella neglecta</i>        |
| white-crowned sparrow   | <i>Zonotrichia leucophrys</i>    |
| yellow-rumped warbler   | <i>Setophaga coronata</i>        |
| <b>Mammals</b>          |                                  |
| Black-tailed Jackrabbit | <i>Lepus californicus</i>        |

## Wildlife Species Observed Onsite (November 27, 2018)

|                | Common Name               | Scientific Name                  |
|----------------|---------------------------|----------------------------------|
| <b>Birds</b>   |                           |                                  |
|                | Canada Goose              | <i>Branta canadensis</i>         |
|                | Mourning Dove             | <i>Zenaida macroura</i>          |
|                | Anna's Hummingbird        | <i>Calypte anna</i>              |
|                | Ring-billed Gull          | <i>Larus delawarensis</i>        |
|                | California Gull           | <i>Larus californicus</i>        |
|                | Double-crested Cormorant  | <i>Phalacrocorax auritus</i>     |
|                | Great Egret               | <i>Ardea alba</i>                |
|                | Red-tailed Hawk           | <i>Buteo jamaicensis</i>         |
|                | Burrowing Owl             | <i>Athene cunicularia</i>        |
|                | Northern Flicker          | <i>Colaptes auratus</i>          |
|                | Black Phoebe              | <i>Sayornis nigricans</i>        |
|                | <b>Say's Phoebe</b>       | <i>Sayornis saya</i>             |
|                | Loggerhead shrike         | <i>Lanius ludovicianus</i>       |
|                | California Scrub-Jay      | <i>Aphelocoma californica</i>    |
|                | American Crow             | <i>Corvus brachyrhynchos</i>     |
|                | Horned Lark               | <i>Eremophila alpestris</i>      |
|                | Ruby-crowned Kinglet      | <i>Regulus calendula</i>         |
|                | Northern Mockingbird      | <i>Mimus polyglottos</i>         |
|                | American Pipit            | <i>Anthus rubescens</i>          |
|                | House Finch               | <i>Haemorhous mexicanus</i>      |
|                | American Goldfinch        | <i>Spinus tristis</i>            |
|                | Dark-eyed Junco           | <i>Junco hyemalis</i>            |
|                | White-crowned Sparrow     | <i>Zonotrichia leucophrys</i>    |
|                | Savannah Sparrow          | <i>Passerculus sandwichensis</i> |
|                | Western Meadowlark        | <i>Sturnella neglecta</i>        |
|                | Red-winged Blackbird      | <i>Agelaius phoeniceus</i>       |
|                | Tricolored Blackbird      | <i>Agelaius tricolor</i>         |
|                | <b>Brewer's Blackbird</b> | <i>Euphagus cyanocephalus</i>    |
|                | Yellow-rumped Warbler     | <i>Setophaga coronata</i>        |
| <b>Mammals</b> |                           |                                  |
|                | Black-tailed Jackrabbit   | <i>Lepus californicus</i>        |

## **ATTACHMENT H**

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Arborist Report

# Arborist Survey Report

---

## The Preserve

Rancho Cordova, California

### Prepared For:

Winn Communities, Inc.

December 13, 2019



**ECORP Consulting, Inc.**  
ENVIRONMENTAL CONSULTANTS



**CONTENTS**

1.0 INTRODUCTION .....1  
2.0 SITE DESCRIPTION .....2  
3.0 METHODS .....2  
4.0 RESULTS .....4  
5.0 CONCLUSIONS .....5  
6.0 REFERENCES .....6

**LIST OF FIGURES**

Figure 1. Study Area Location and Vicinity .....3

**LIST OF ATTACHMENTS**

- Attachment A – Tree Inventory Map for The Preserve
- Attachment B – Tree Survey Data
- Attachment C – Representative Site Photographs

## 1.0 INTRODUCTION

On behalf of Winn Communities, Inc., ECORP Consulting, Inc. (ECORP) conducted an arborist survey for The Preserve Project, a planned development within the City of Rancho Cordova, Sacramento County, California. The purpose of this survey was to identify, map, and assess the general condition of trees within according to the Rancho Cordova Ordinance for the Preservation and Protection of Private Trees (Tree Ordinance, Ranch Cordova Municipal Code - Chapter 19.12).

The following are definitions from the Tree Ordinance that guide the methodology and data collection for this survey effort:

■ **Protected Tree:**

1. Native oak – *Quercus lobata*, valley oak; *Quercus wislizenii*, interior live oak; *Quercus douglasii*, blue oak; or *Quercus x. morehus*, oracle oak – having a trunk diameter of at least six inches or greater; or
2. Any tree species other than a native oak having a trunk diameter of at least 12 inches or greater on nonresidential property; or
3. Any tree species other than a native oak having a trunk diameter of at least 24 inches or greater on residential property; or
4. Any tree planted as a requirement tree for site development, tree permit condition, landscape plan removal replacement, or other designated condition by the public works director or planning director.

■ **Diameter at Standard Height:** The City Ordinance defines the methods by which trunk diameter is determined as:

1. "Diameter at standard height" or "dsh" means the diameter of a tree measured at four and one-half feet above natural grade, except as specified below. The diameter shall be calculated by using the following formula: diameter equals circumference/3.14.
2. For a tree that branches at or below four and one-half feet, dsh means the diameter at the narrowest point between the grade and the branching point.
3. For a tree with a common root system that branches at the ground, DSH means the sum of the diameter of the largest trunk and one-half the cumulative diameter of the remaining trunks at four and one-half feet above natural grade.

Trees designated with protected status under the City Ordinance may carry additional reporting and planning requirements. The City ordinances requires a report, to be prepared by a certified arborist,

detailing the preservation, removal, replacement, or relocation of any protected trees prior to the preliminary approval of any parcel map.

## 2.0 SITE DESCRIPTION

The arborist survey was conducted within a 112.08-acre Study Area including the 98.92-acre Project area, as well as potential Offsite areas totaling 13.16 acres. In this document the Offsite areas are referred to as the Rio del Oro Offsite (located to the west of the Project), the Raymer Way Offsite (located to the east of the Project), the Morrison Creek Offsite (located to the north of the Project around an existing crossing of Morrison Creek), and the North Douglas Offsites (road stubs located to the south of the Project).

The Study Area corresponds to a portion of an unsectioned portion of the Rio de los Americanos Land Grant within the "Buffalo Creek, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1980) (Figure 1. *Study Area Location and Vicinity*). The approximate center of the site is located at 38.574614° North and -121.196708° West within the Lower Sacramento Watershed (Hydrologic Unit Code #18020163, USGS 2016).

The current land use within the Study Area is rural residential and agricultural. The Study Area is situated at an elevational range of approximately 220 - 240 feet above mean sea level in the Sacramento Valley Subregion of the Great Central Valley floristic region of California (Baldwin et al. 2012). Two residences and associated outbuildings are present within the Study Area, and the remaining area is used for cattle grazing. The vegetation community present in the Study Area is grazed annual grassland and mainly consists of nonnative annual grasses and horticultural tree plantings around the residences. The land uses to the north, west, and east of the Study Area are primarily agricultural and residential, to the south of the Study Area lies the North Douglas residential development.

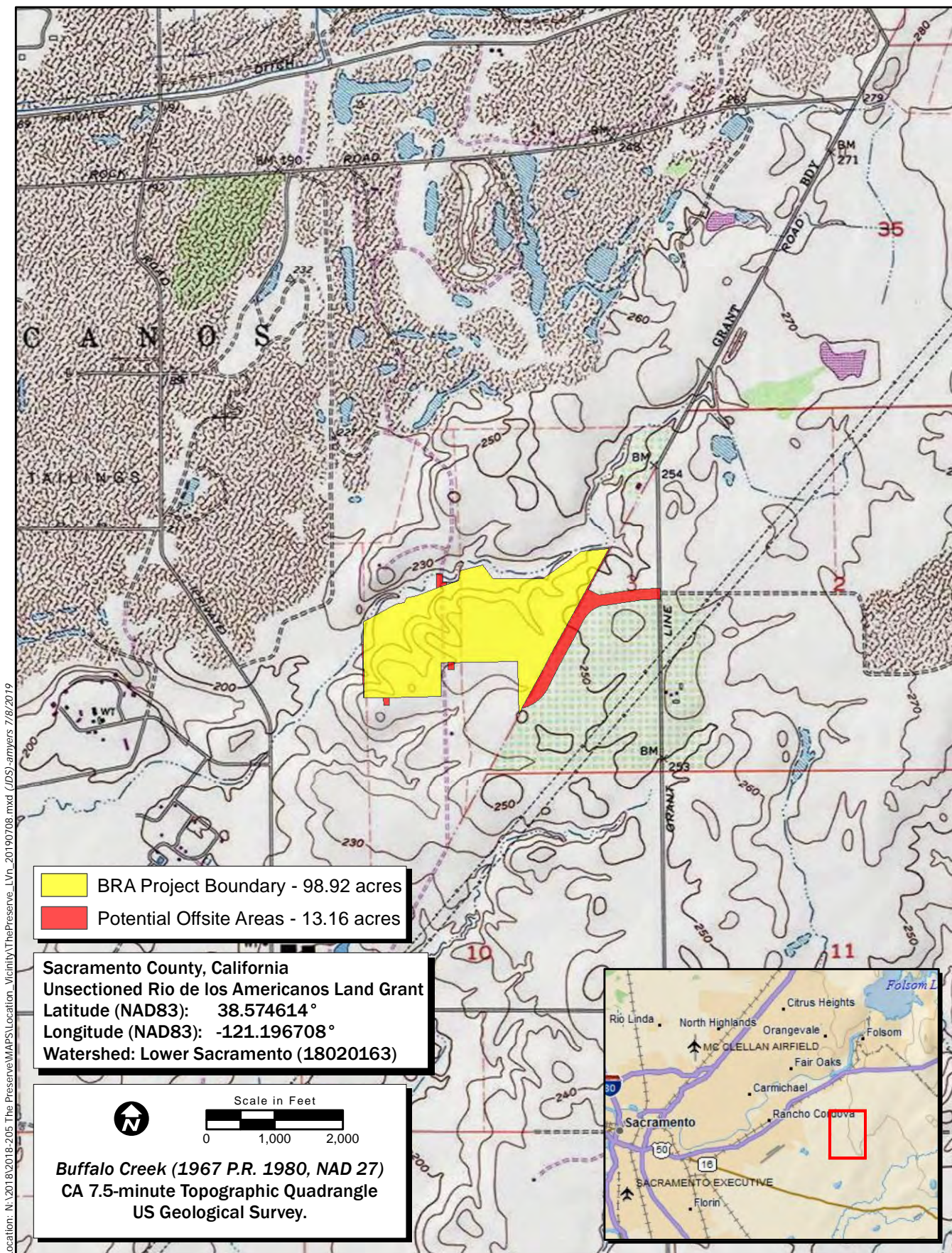
## 3.0 METHODS

ECORP arborist Ben Waitman (ISA Certification #WE-12108), assisted by ECORP biologist Daniel Wong, conducted the field survey of the Study Area on October 9, 2018, June 13, 2019, and July 15, 2019. During the field survey dates, the entire Study Area was walked or viewed across level ground, and data were recorded using an iPad paired with a Global Positioning System unit accurate to less than one meter.

The survey data collection included species, dsh, dripline radius, tree structure, and tree condition. Each surveyed tree was tagged with a permanent numbered aluminum tag at roughly breast height (~4.5 feet). The survey results are intended for general Project planning purposes only and should not be considered a detailed tree analysis (i.e., results do not include hazard assessment, tree health diagnosis, preservation/removal recommendations, or pruning advisement). The following terms define the collected data:

**Diameter at standard height (dsh):** Trunk diameter as defined by the Tree Ordinance.





Location: N:\2018\2018-2015 The Preserve\MAPS\Location\_Vicinity\ThePreserve\_VLn\_20190708.mxd (JDS)-amyers 7/8/2019

Map Date: 7/8/2019  
 iService Layer Credits: Copyright© 2013 National Geographic Society, i-cubed  
 Copyright:(c) 2018 Garmin

**Figure 1. Study Area Location and Vicinity**



**Dripline Radius:** The maximum distance from trunk to the edge of the canopy.

**Condition:** An estimate of the tree's overall health. This includes evaluation of foliage, evidence of wound healing, evidence of fungal infection, and the amount and condition of attached deadwood. Tree condition was rated on a five-point scale (poor, fair to poor, fair, fair to good, and good).

**Structure:** An estimate of the tree's structural soundness, based on obvious external evidence. This evaluates the obvious potential for structural failure of one or more major branches or trunks, the environment and condition of the root crown, symmetry of the canopy, and any noticeable effects of crowding caused by adjacent trees. Tree structure was rated on a five-point scale (poor, fair to poor, fair, fair to good, and good).

## 4.0 RESULTS

A total of 247 living trees greater than six inches in dsh were found during the survey, and three dead trees. A map depicting the locations of the inventoried trees is included as Attachment A. Detailed tree survey data for each tree are included as Attachment B. Representative site photographs are included as Attachment C.

Eleven different species of living trees were recorded during the survey. Of the trees present, one species (coast redwood [*Sequoia sempervirens*]) is considered native to California. However, coast redwood does not naturally occur in the Central Valley and is generally planted as horticultural plantings. Sixty-eight coast redwoods were recorded within the study area (including one dead tree).

The remaining trees are not native to California and include 108 gum trees (*Eucalyptus* spp.; including one dead tree), 19 purple leaf plum (*Prunus cerasifera*), 18 Callery pear (*Pyrus calleryana*), 17 American sweetgum (*Liquidambar styraciflua*), six Brazilian pepper-tree (*Schinus terebinthifolius*), five deodar cedar (*Cedrus deodara*), three white mulberry (*Morus alba*), two crepe myrtle (*Lagerstroemia* sp.), two Japanese Maple (*Acer palmatum*), one Chinese tallow (*Triadica sebifera*), and one dead silver birch (*Betula pendula*).

None of the above are protected native species. However, the Tree Ordinance specifically protects trees of any species present on residential property with a dsh greater than 24 inches, or with a dsh of 12 inches or greater on non-residential properties. Because the entire site is proposed for development, it may be considered a non-residential property. By this definition, 149 living trees having a dsh equal to or greater than 12 inches may be considered protected trees by the City of Rancho Cordova (see Attachment B for tree dsh data). Each of these trees was grown in landscaped rows of trees, likely planted for protection from wind or to enhance the view scape. Even though these trees are not native to the survey area, these 149 trees may require a permit from the City of Rancho Cordova if pruning or removal of these trees is necessary.

## 5.0 CONCLUSIONS

The Study Area contains 247 total trees greater than 6 inches dsh and three dead trees, and all trees are nonnative to the Study Area. There are 149 living trees that have a dsh equal to or greater than 12 inches and therefore meet the definition of a Protected Tree as defined in the City of Rancho Cordova's Tree Preservation Ordinance. Should removal be required, a tree removal permit should be procured from the City and mitigation may be required at the discretion of the City. In addition, the City may require an additional report that details a proposal to avoid, relocate, or replace any protected trees present within the Study Area.

## 6.0 REFERENCES

Baldwin, B.G; D.H. Goldman; D.J. Keil; R. Patterson; and T.J. Rosatti, editors. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley.

ECORP. 2019. Biological Resources Assessment for The Preserve Development. Prepared for Winn Communities. June.

USGS. 2016. Watershed Boundary Dataset for Sacramento County, California. Available at <http://datagateway.nrcs.usda.gov>. Accessed August 28, 2017.

\_\_\_\_\_. 1967, photorevised 1980. "Buffalo Creek, California" 7.5-minute Topographic Quadrangle. Geological Survey. Denver, Colorado.



## **LIST OF ATTACHMENTS**

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Attachment A – Tree Inventory Map for The Preserve

Attachment B – Tree Survey Data

Attachment C – Representative Site Photographs

**ATTACHMENT A**

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Tree Inventory Map for The Preserve




Location: N:\2018\2018-205 The Preserve\WAPS\SSS\_Survey\_and\_Mapping\Arborist\_Tree\_Locations\ThePreserve\_Trees\_20181009\_Overview.mxd (JDS)-armyers 7/17/2019

# Attachment A Tree Locations Overview

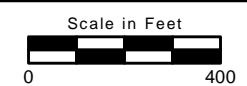
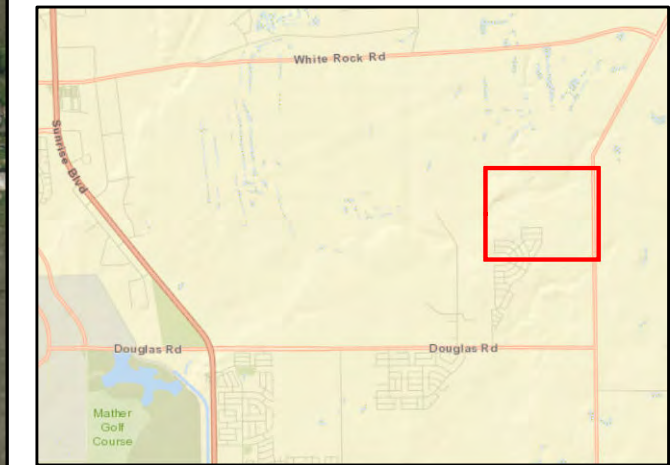
## Map Features

-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 13.16 acres
-  Protected Tree (dsh >=12")

## Tree Species

-  Brazilian Pepper-tree
-  Callery Pear
-  Chinese Tallow
-  Coast Redwood
-  Crepe Myrtle
-  Deodar Cedar
-  Eucalyptus spp.
-  Japanese Maple
-  Purple Leaf Plum
-  Silver Birch
-  Sweetgum
-  White Mulberry




Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





# Attachment A. Tree Locations (Sheet 1 of 3)

## Map Features

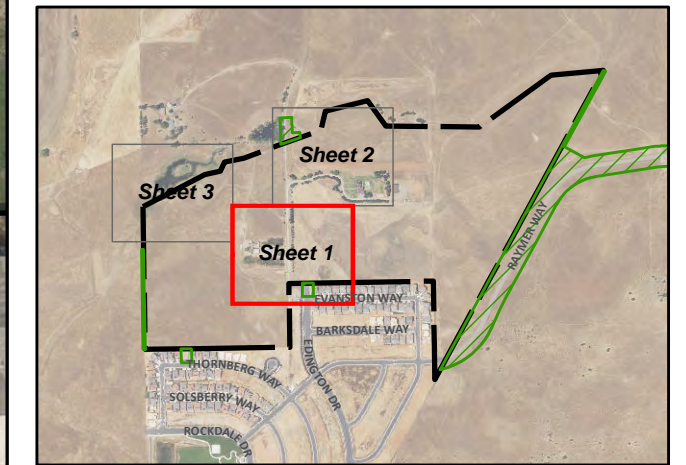
-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 13.16 acres
-  Protected Tree (dsh >=12")

## Tree Species

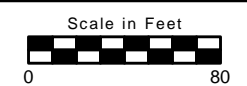
-  Brazilian Pepper-tree
-  Callery Pear
-  Chinese Tallow
-  Coast Redwood
-  Eucalyptus spp.
-  Sweetgum
-  White Mulberry



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community  
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community






Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\Arborist\_Tree\_Locations\ThePreserve\_Trees\_20181009\_MapBook.mxd (JDS) amjers 7/17/2019















# Attachment A. Tree Locations (Sheet 2 of 3)

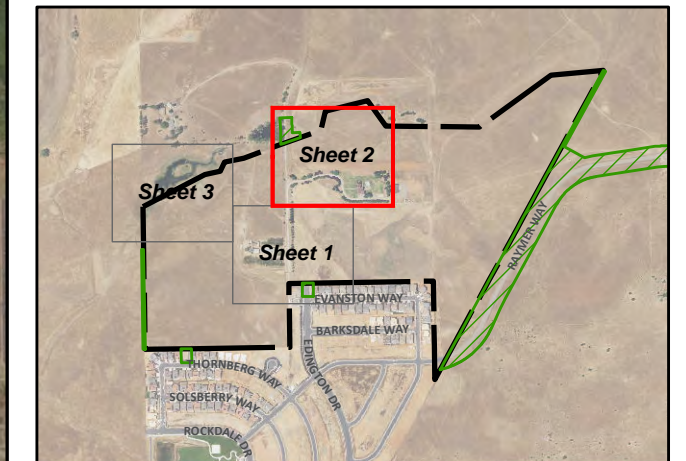
## Map Features

-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 13.16 acres
-  Protected Tree (dsh >=12")

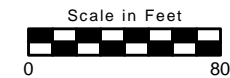
## Tree Species

-  Brazilian Pepper-tree
-  Callery Pear
-  Coast Redwood
-  Crepe Myrtle
-  Deodar Cedar
-  Eucalyptus spp.
-  Japanese Maple
-  Purple Leaf Plum
-  Silver Birch
-  Sweetgum

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community  
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Location: N:\2018\2018-205 The Preserve\MapPS\SSS\_Survey\_and\_Mapping\Arborist\_Tree\_Locations\ThePreserve\_Trees\_20181009\_MapBook.mxd (JDS) - jmyers 7/17/2019








Location: N:\2018\2018-205 The Preserve\MAPS\SSS\_Survey\_and\_Mapping\Arborist\_Tree\_Locations\ThePreserve\_Trees\_20181009\_MapBook.mxd (JDS) -armyers 7/17/2019



# Attachment A. Tree Locations (Sheet 3 of 3)

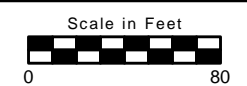
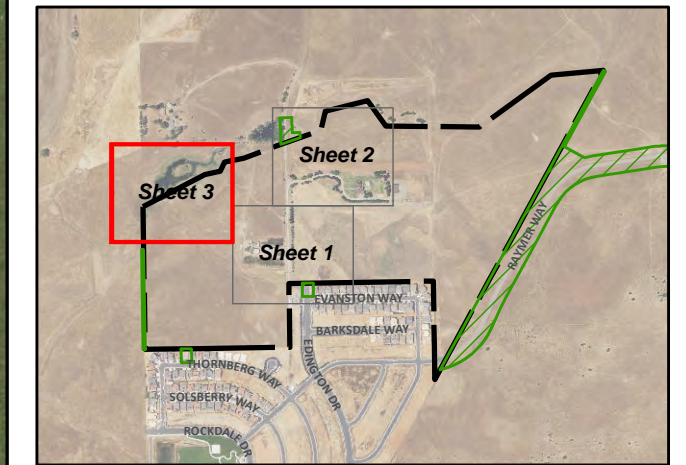
### Map Features

-  Project Boundary - 98.92 acres
-  Potential Offsite Areas - 13.16 acres
-  Protected Tree (dsh >=12")

### Tree Species

-  Eucalyptus spp.

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Tree Survey Data (October 9, 2018 and June 13, 2019)

The Preserve  
Arborist Survey Data

| Tree # | Native/Non-native             | Common Name           | Species Name                   | DSH (in) | Dripline (ft) | Structure    | Health       |
|--------|-------------------------------|-----------------------|--------------------------------|----------|---------------|--------------|--------------|
| 3654   | Non-Native                    | Brazilian Pepper-tree | <i>Schinus terabinthifolia</i> | 10       | 10            | Fair to Good | Fair to Poor |
| 3784   | Non-Native                    | Brazilian Pepper-tree | <i>Schinus terabinthifolia</i> | 10       | 10            | Good         | Good         |
| 3785   | Non-Native                    | Brazilian Pepper-tree | <i>Schinus terabinthifolia</i> | 11       | 12            | Good         | Good         |
| 3787   | Non-Native                    | Brazilian Pepper-tree | <i>Schinus terabinthifolia</i> | 14       | 8             | Good         | Good         |
| 3788   | Non-Native                    | Brazilian Pepper-tree | <i>Schinus terabinthifolia</i> | 6        | 7             | Good         | Good         |
| 3789   | Non-Native                    | Brazilian Pepper-tree | <i>Schinus terabinthifolia</i> | 12       | 10            | Good         | Good         |
| 36     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 11.5     | 20            | Good         | Good         |
| 37     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 10       | 17            | Good         | Good         |
| 38     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 9        | 15            | Good         | Good         |
| 39     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 8        | 15            | Good         | Good         |
| 40     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 6.5      | 10            | Good         | Good         |
| 41     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 10       | 15            | Good         | Good         |
| 42     | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 10.5     | 15            | Good         | Good         |
| 3390   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 10       | 10            | Good         | Good         |
| 3743   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 6        | 12            | Fair         | Good         |
| 3754   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 16.5     | 20            | Good         | Good         |
| 3755   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 12       | 15            | Good         | Good         |
| 3756   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 6.5      | 8             | Good         | Good         |
| 3757   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 9        | 10            | Good         | Good         |
| 3763   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 13       | 15            | Good         | Good         |
| 3764   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 12       | 15            | Good         | Good         |
| 3765   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 10.5     | 10            | Good         | Good         |
| 3766   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 10.5     | 15            | Good         | Good         |
| 3786   | Non-Native                    | Callery Pear          | <i>Pyrus calleryana</i>        | 8        | 8             | Fair         | Good         |
| 3359   | Non-Native                    | Chinese Tallow        | <i>Triadica sebifera</i>       | 8        | 10            | Fair to Good | Fair to Good |
| 6      | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 14.5     | 10            | Good         | Fair to Poor |
| 7      | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 19       | 12            | Good         | Fair to Good |
| 8      | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 19.5     | 10            | Good         | Good         |
| 9      | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 14       | 10            | Good         | Good         |
| 10     | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 16       | 6             | Fair to Poor | Fair to Poor |
| 17     | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 25       | 15            | Good         | Good         |
| 18     | Native (Out of Natural Range) | Coast Redwood         | <i>Sequoia sempervirens</i>    | 26.5     | 15            | Good         | Good         |

The Preserve  
Arborist Survey Data

| Tree # | Native/Non-native             | Common Name   | Species Name                | DSH (in) | Dripline (ft) | Structure | Health |
|--------|-------------------------------|---------------|-----------------------------|----------|---------------|-----------|--------|
| 19     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 25.5     | 15            | Good      | Good   |
| 20     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 23.5     | 17            | Good      | Good   |
| 21     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 22       | 15            | Good      | Good   |
| 22     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 21       | 13            | Good      | Good   |
| 23     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 21       | 15            | Good      | Good   |
| 26     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 20.5     | 15            | Fair      | Good   |
| 27     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 12            | Good      | Good   |
| 28     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 16            | Good      | Fair   |
| 29     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 10       | 10            | Good      | Good   |
| 30     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 10            | Good      | Good   |
| 48     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 15            | Good      | Good   |
| 49     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 15.5     | 16            | Good      | Good   |
| 50     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 14.5     | 15            | Good      | Good   |
| 51     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 15            | Good      | Good   |
| 52     | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 15            | Good      | Good   |
| 3125   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18.5     | 20            | Good      | Good   |
| 3364   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17.5     | 10            | Good      | Good   |
| 3365   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 15.5     | 15            | Good      | Good   |
| 3366   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 19.5     | 16            | Good      | Good   |
| 3367   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 13            | Good      | Good   |
| 3370   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 11       | 9             | Good      | Good   |
| 3372   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 16.5     | 14            | Good      | Good   |
| 3373   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18.5     | 14            | Good      | Good   |
| 3379   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 16.5     | 13            | Good      | Good   |
| 3380   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 15.5     | 15            | Good      | Good   |
| 3381   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 12            | Good      | Good   |
| 3382   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 10            | Good      | Good   |
| 3383   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 21       | 10            | Good      | Good   |
| 3391   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 16       | 12            | Good      | Good   |
| 3394   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 19       | 15            | Good      | Good   |
| 3395   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 12            | Good      | Good   |
| 3399   | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 15            | Good      | Good   |



The Preserve  
Arborist Survey Data

| Tree #     | Native/Non-native             | Common Name   | Species Name                | DSH (in) | Dripline (ft) | Structure | Health |
|------------|-------------------------------|---------------|-----------------------------|----------|---------------|-----------|--------|
| 3713       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 14.5     | 12            | Good      | Good   |
| 3714       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 12            | Good      | Good   |
| 3715       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 15.5     | 13            | Good      | Good   |
| 3716       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 14       | 15            | Good      | Good   |
| 3717       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 16       | 16            | Good      | Good   |
| 3718       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 16            | Good      | Good   |
| 3719       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18.5     | 15            | Good      | Good   |
| 3720       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18.5     | 14            | Good      | Good   |
| 3721       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 18       | 12            | Good      | Good   |
| 3722       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 12            | Good      | Good   |
| 3723       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 16.5     | 12            | Good      | Good   |
| 3724       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 14            | Good      | Good   |
| 3726       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 23.5     | 25            | Good      | Good   |
| 3727       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 23       | 18            | Good      | Good   |
| 3730       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 15            | Good      | Good   |
| 3732       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 19.5     | 16            | Good      | Good   |
| 3734       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 20       | 15            | Good      | Good   |
| 3735       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 22       | 16            | Good      | Good   |
| 3736       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 22.5     | 18            | Good      | Good   |
| 3740       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 15.5     | 12            | Good      | Good   |
| 3742       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 26.5     | 22            | Good      | Good   |
| 3747       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 25.5     | 18            | Good      | Good   |
| 3748       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 28       | 20            | Good      | Good   |
| 3767       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17.5     | 13            | Good      | Good   |
| 3768       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 16.5     | 10            | Good      | Good   |
| 3769       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 17       | 12            | Good      | Poor   |
| 3770       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 19       | 15            | Good      | Good   |
| 3771       | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 20.5     | 12            | Good      | Good   |
| Not Tagged | Native (Out of Natural Range) | Coast Redwood | <i>Sequoia sempervirens</i> | 13       | 0             | Good      | DEAD   |
| 3752       | Non-Native                    | Crapemyrtle   | <i>Lagerstoeimia indica</i> | 9        | 8             | Good      | Good   |
| 3753       | Non-Native                    | Crapemyrtle   | <i>Lagerstoeimia indica</i> | 9.5      | 8             | Good      | Good   |
| 3728       | Non-Native                    | Deodar Cedar  | <i>Cedrus deodara</i>       | 16       | 20            | Good      | Good   |

The Preserve  
Arborist Survey Data

| Tree # | Native/Non-native | Common Name  | Species Name          | DSH (in) | Dripline (ft) | Structure    | Health       |
|--------|-------------------|--------------|-----------------------|----------|---------------|--------------|--------------|
| 3729   | Non-Native        | Deodar Cedar | <i>Cedrus deodara</i> | 15       | 15            | Fair to Good | Poor         |
| 3737   | Non-Native        | Deodar Cedar | <i>Cedrus deodara</i> | 23       | 20            | Good         | Good         |
| 3744   | Non-Native        | Deodar Cedar | <i>Cedrus deodara</i> | 19.5     | 15            | Fair         | Fair to Good |
| 3746   | Non-Native        | Deodar Cedar | <i>Cedrus deodara</i> | 12.5     | 14            | Good         | Good         |
| 898    | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 99       | 35            | Fair to Good | Fair to Good |
| 901    | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 12       | 20            | Fair to Poor | Poor         |
| 967    | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 39       | 15            | Fair         | Fair         |
| 968    | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 33       | 15            | Good         | Good         |
| 3103   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 10.5     | 20            | Fair         | Fair         |
| 3104   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 8.5      | 15            | Fair         | Fair         |
| 3129   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 10       | 12            | Fair         | Fair         |
| 3130   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 8        | 10            | Fair         | Fair         |
| 3132   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 8.5      | 12            | Fair         | Fair         |
| 3133   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 13       | 20            | Fair         | Fair         |
| 3135   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 8.5      | 15            | Fair to Poor | Fair         |
| 3137   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 11.5     | 15            | Fair         | Fair         |
| 3138   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 10       | 10            | Fair to Poor | Fair         |
| 3146   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 18.5     | 15            | Fair         | Fair         |
| 3154   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 24       | 25            | Fair         | Fair to Good |
| 3155   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 8        | 10            | Fair         | Fair         |
| 3156   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 15       | 25            | Fair         | Fair to Good |
| 3162   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 9        | 5             | Poor         | Fair to Poor |
| 3169   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 13       | 25            | Fair         | Fair to Good |
| 3170   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 13       | 20            | Fair         | Fair         |
| 3173   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 12.5     | 15            | Fair to Poor | Fair         |
| 3176   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 6        | 10            | Fair         | Fair to Good |
| 3180   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 20       | 12            | Fair to Poor | Fair to Poor |
| 3181   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 14       | 15            | Fair         | Fair         |
| 3183   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 12.5     | 15            | Fair         | Fair         |
| 3184   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 11.5     | 15            | Fair         | Good         |
| 3185   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 10.5     | 15            | Fair         | Fair to Good |
| 3192   | Non-Native        | Gum Tree     | <i>Eucalyptus sp.</i> | 16       | 15            | Fair         | Fair         |

The Preserve  
Arborist Survey Data

| Tree # | Native/Non-native | Common Name | Species Name          | DSH (in) | Dripline (ft) | Structure    | Health       |
|--------|-------------------|-------------|-----------------------|----------|---------------|--------------|--------------|
| 3193   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15       | 15            | Fair         | Fair         |
| 3194   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 24       | 10            | Fair to Poor | Fair to Poor |
| 3195   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15       | 10            | Fair to Poor | Fair to Poor |
| 3196   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 14.5     | 20            | Fair         | Fair to Good |
| 3200   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 13       | 15            | Fair         | Fair         |
| 3206   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 7        | 15            | Fair         | Fair         |
| 3208   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 11       | 15            | Fair         | Fair         |
| 3209   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 12       | 12            | Fair         | Fair         |
| 3210   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 20       | 10            | Fair         | Fair to Poor |
| 3220   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 13       | 15            | Good         | Good         |
| 3221   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15       | 15            | Good         | Good         |
| 3222   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 14.5     | 25            | Fair         | Good         |
| 3223   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 12.5     | 15            | Fair         | Good         |
| 3228   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 11       | 15            | Fair         | Fair to Poor |
| 3229   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 8        | 8             | Fair         | Fair         |
| 3232   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 23       | 15            | Fair         | Fair to Good |
| 3240   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 16       | 12            | Fair         | Fair         |
| 3242   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15       | 15            | Fair         | Fair to Good |
| 3244   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 11.5     | 14            | Fair         | Fair to Poor |
| 3246   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 6        | 10            | Fair to Poor | Fair         |
| 3248   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 23       | 20            | Fair         | Fair         |
| 3249   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15       | 15            | Fair         | Good         |
| 3250   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 18       | 20            | Fair         | Fair to Good |
| 3252   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 10       | 10            | Fair         | Fair to Good |
| 3253   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 24       | 20            | Fair         | Fair         |
| 3312   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 26       | 20            | Fair         | Poor         |
| 3315   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 16.5     | 20            | Fair         | Fair         |
| 3316   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 12.5     | 15            | Fair         | Fair to Good |
| 3322   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 18       | 20            | Fair         | Fair         |
| 3325   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 6        | 10            | Fair         | Fair         |
| 3326   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 9        | 5             | Poor         | Poor         |
| 3327   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 14       | 10            | Fair         | Fair         |



The Preserve  
Arborist Survey Data

| Tree # | Native/Non-native | Common Name | Species Name          | DSH (in) | Dripline (ft) | Structure    | Health       |
|--------|-------------------|-------------|-----------------------|----------|---------------|--------------|--------------|
| 3329   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 14       | 20            | Fair         | Fair to Good |
| 3333   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 17       | 20            | Fair         | Fair to Good |
| 3334   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 10       | 20            | Fair         | Fair         |
| 3337   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 7        | 8             | Fair         | Fair to Poor |
| 3347   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 13       | 15            | Fair         | Fair         |
| 3360   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 9        | 10            | Poor         | Poor         |
| 3470   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 17       | 25            | Fair to Good | Fair to Good |
| 3631   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 12.5     | 15            | Fair         | Fair to Good |
| 3632   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 7        | 8             | Fair         | Fair         |
| 3633   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 13       | 20            | Fair         | Fair to Good |
| 3636   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 13       | 15            | Fair         | Fair         |
| 3637   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15.5     | 15            | Fair         | Fair to Good |
| 3640   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 21       | 20            | Fair to Poor | Fair to Good |
| 3641   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 16.5     | 25            | Fair to Good | Fair to Good |
| 3643   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 11       | 15            | Good         | Good         |
| 3647   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 14       | 10            | Fair to Poor | Fair         |
| 3648   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 8.5      | 15            | Fair         | Fair         |
| 3650   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 8        | 8             | Fair         | Fair         |
| 3652   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 26       | 25            | Fair to Good | Fair to Good |
| 3653   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 20       | 25            | Fair to Good | Fair to Good |
| 3655   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 12.5     | 15            | Fair         | Fair         |
| 3656   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 10       | 7             | Fair         | Fair         |
| 3657   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 20.5     | 25            | Fair to Good | Fair to Good |
| 3659   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 13.5     | 15            | Good         | Fair to Good |
| 3662   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 18       | 15            | Fair         | Fair to Good |
| 3663   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 14       | 10            | Poor         | Poor         |
| 3665   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 11.5     | 20            | Fair         | Fair         |
| 3671   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 7        | 10            | Fair to Poor | Fair         |
| 3773   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 15       | 20            | Good         | Good         |
| 3775   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 27       | 25            | Good         | Good         |
| 3776   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 6        | 8             | Fair         | Fair         |
| 3776   | Non-Native        | Gum Tree    | <i>Eucalyptus sp.</i> | 22       | 20            | Good         | Good         |

The Preserve  
Arborist Survey Data

| Tree #     | Native/Non-native | Common Name      | Species Name             | DSH (in) | Dripline (ft) | Structure    | Health       |
|------------|-------------------|------------------|--------------------------|----------|---------------|--------------|--------------|
| 3777       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 28       | 25            | Fair         | Good         |
| 3778       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 23       | 25            | Good         | Good         |
| 3781       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 20.5     | 15            | Good         | Good         |
| 3782       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 29       | 20            | Fair         | Good         |
| 3783       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 10.5     | 25            | Good         | Good         |
| 3790       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 24       | 10            | Fair         | Fair to Good |
| 3791       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 7        | 10            | Fair to Good | Fair to Good |
| 3792       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 16       | 12            | Fair to Good | Fair to Good |
| 3793       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 22       | 20            | Fair         | Fair         |
| 3794       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 20       | 20            | Fair to Good | Fair to Good |
| 3795       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 6        | 5             | Fair to Poor | Fair to Good |
| 3796       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 22       | 10            | Fair to Poor | Fair to Poor |
| 3797       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 16.5     | 15            | Good         | Good         |
| 3798       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 9        | 10            | Fair to Poor | Fair to Poor |
| 3799       | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 20       | 10            | Poor         | Fair         |
| Not Tagged | Non-Native        | Gum Tree         | <i>Eucalyptus sp.</i>    | 0        | 0             | Poor         | Dead         |
| 3750       | Non-Native        | Japanese Maple   | <i>Acer palmatum</i>     | 8.5      | 10            | Good         | Good         |
| 3751       | Non-Native        | Japanese Maple   | <i>Acer palmatum</i>     | 8.5      | 10            | Good         | Good         |
| 31         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 8        | 7             | Good         | Good         |
| 32         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 9.5      | 9             | Good         | Good         |
| 33         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 10       | 15            | Good         | Good         |
| 34         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 6        | 12            | Good         | Good         |
| 35         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 6.5      | 10            | Good         | Good         |
| 43         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 9        | 10            | Good         | Good         |
| 44         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 9        | 10            | Good         | Good         |
| 45         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 10.5     | 15            | Good         | Good         |
| 46         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 8        | 10            | Good         | Good         |
| 47         | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 9        | 12            | Good         | Fair to Poor |
| 3733       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 9        | 10            | Good         | Good         |
| 3738       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 10       | 15            | Good         | Poor         |
| 3739       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 11       | 15            | Good         | Good         |
| 3740       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i> | 10       | 15            | Good         | Good         |

The Preserve  
Arborist Survey Data

| Tree #     | Native/Non-native | Common Name      | Species Name                   | DSH (in) | Dripline (ft) | Structure    | Health       |
|------------|-------------------|------------------|--------------------------------|----------|---------------|--------------|--------------|
| 3758       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i>       | 8        | 8             | Good         | Good         |
| 3759       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i>       | 6        | 8             | Good         | Good         |
| 3760       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i>       | 7.5      | 10            | Good         | Good         |
| 3761       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i>       | 7.5      | 10            | Good         | Good         |
| 3762       | Non-Native        | Purple Leaf Plum | <i>Prunus cerasifera</i>       | 8.5      | 10            | Good         | Fair         |
| Not Tagged | Non-Native        | Silver Birch     | <i>Betula pendula</i>          | 0        | 0             | Poor         | Dead         |
| 1          | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7        | 8             | Good         | Good         |
| 2          | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7        | 9             | Good         | Good         |
| 3          | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7        | 8             | Good         | Good         |
| 4          | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 6.5      | 7             | Good         | Fair to Good |
| 5          | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 6.5      | 7             | Good         | Good         |
| 11         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7.5      | 8             | Good         | Good         |
| 12         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 8        | 10            | Good         | Good         |
| 13         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 9.5      | 12            | Good         | Fair to Good |
| 14         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 8.5      | 10            | Good         | Fair         |
| 15         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 9        | 12            | Good         | Good         |
| 16         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 9        | 15            | Good         | Good         |
| 24         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7        | 8             | Good         | Good         |
| 25         | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7.5      | 8             | Good         | Good         |
| 3344       | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 8        | 7             | Fair         | Poor         |
| 3731       | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 7        | 12            | Good         | Good         |
| 3745       | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 12       | 15            | Good         | Good         |
| 3749       | Non-Native        | Sweetgum         | <i>Liquidambar styraciflua</i> | 8.5      | 13            | Good         | Good         |
| 3148       | Non-Native        | White Mulberry   | <i>Morus alba</i>              | 15       | 20            | Good         | Fair to Good |
| 3335       | Non-Native        | White Mulberry   | <i>Morus alba</i>              | 6.5      | 10            | Fair to Good | Fair         |
| 3800       | Non-Native        | White Mulberry   | <i>Morus alba</i>              | 10       | 15            | Good         | Good         |



The Preserve  
Arborist Survey Data

| Tree # | Native/Non-native | Common Name | Species Name | DSH (in) | Dripline (ft) | Structure | Health |
|--------|-------------------|-------------|--------------|----------|---------------|-----------|--------|
|--------|-------------------|-------------|--------------|----------|---------------|-----------|--------|

**SUMMARY**

| Tree Species          | Number $\geq 12''$ DSH |
|-----------------------|------------------------|
| Brazilian Pepper-Tree | 2                      |
| Callery Pear          | 4                      |
| Chinese Tallow        | 0                      |
| Coast Redwood         | 66                     |
| Deodar Cedar          | 5                      |
| Eucalyptus spp.       | 70                     |
| Japanese Maple        | 0                      |
| Purple Leaf Plum      | 0                      |
| Sweetgum              | 1                      |
| White Mulberry        | 1                      |
| <b>TOTAL</b>          | <b>149</b>             |

**ATTACHMENT C**

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Representative Site Photographs



Horticultural plantings of sweetgum and coast redwood trees along a driveway.  
Photo taken facing south on 10.12.18.



One of two gum tree windrows planted near a residence within the study area.  
Photo taken facing north on 10.12.18



## **ATTACHMENT I**

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SSHCP Avoidance and Minimization Measures

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welfare of the public. Although access to the Preserves will be allowed by the Implementing Entity and Wildlife Agencies, these emergency repairs are not covered by SSHCP permits.

The Permitting Agencies will not obstruct any emergency response decisions regarding Preserves made by the Implementing Entity. However, existing ESA consultation regulations will apply to all emergency activities (50 Code of Federal Regulations 402.05).

### 5.4 Conditions on Covered Activities

As required by the ESA (Section 10(a)(2)(A)(ii)) and Fish and Game Code Section 2081, this Plan includes measures to avoid and minimize take of Covered Species. This section describes the Avoidance and Minimization Measures that will be implemented as part of each SSHCP Covered Activity to avoid or minimize direct and indirect impacts to Covered Species and their habitats to the maximum extent, including species habitats that are also waters of the state and waters of the United States. AMMs are presented in this chapter as conditions on Covered Activities. Each condition contains several AMMs that are intended to eliminate or reduce direct or indirect effects to species that could result from implementation of a Covered Activity.

Third-Party Project Proponents are responsible for incorporating all SSHCP requirements (including appropriate AMMs) into their project design. The Land Use Authority Permittee with authority over a Covered Activity is responsible for reviewing and ensuring that all applicable AMMs are appropriately incorporated into project design, and is responsible for ensuring that the required AMMs are correctly applied by the Third-Party Project Proponent during implementation of the Covered Activity.

The CEQA process for individual Covered Activities may result in additional conditions for third-party projects that are not related to the ESA, CESA, or Clean Water Act. The SSHCP AMMs described in this chapter do not supersede requirements by other agencies and are not intended to provide a basis for non-compliance with other applicable design guidelines and avoidance measures required by federal, state, and local agencies. Compliance with the SSHCP does constitute full CEQA compliance with regard to mitigation of impacts to Covered Species. Ultimately, the Plan Permittees are responsible for ensuring that implementation of each SSHCP Covered Activity fully complies with the SSHCP, but it remains the Third-Party Project Proponent's responsibility to ensure project compliance with all applicable laws and regulations.

Before construction begins, the Third-Party Project Proponent must demonstrate to the Land Use Authority Permittee that all necessary AMMs will be fulfilled. This is accomplished by having pre-construction AMMs in place prior to construction and by having a plan that shows how all applicable post-construction AMMs will be addressed. During construction, it is the responsibility of the Land Use Authority Permittee to ensure that the AMMs are being

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implemented. The Land Use Authority Permittee can compel a Third-Party Project Proponent to stop working if a project is not in compliance with all SSHCP AMMs.<sup>16</sup> Upon construction completion, the Land Use Authority Permittee will monitor and confirm that post-construction conditions are acceptable and consistent with the requirements of the SSHCP permits (e.g., revegetation, soil treatments).<sup>17</sup> Once the constructed project has received final clearance from the Land Use Authority, it is the responsibility of the Land Use Authority to monitor continued operation of installed AMMs (e.g., swales, retention basins) and to monitor compliance with AMMs required for future operations and maintenance of the Covered Activity. The Implementing Entity may also assist with and in some instances may assume responsibility for monitoring continued operation of installed AMMs when those AMMs are part of the Preserve System, Preserve Setbacks, or Stream Setbacks.

On occasion, a local Land Use Authority Permittee may not have authority over a Covered Activity proposed by a Third-Party Project Proponent. In that event, the SSHCP Implementing Entity may develop a Participating Special Entity agreement with the Third-Party Project Proponent (see Chapter 9). As a Participating Special Entity, the Third-Party Project Proponent will incorporate and implement all applicable design and construction AMMs. The Implementing Entity will ensure that AMMs specific to that SSHCP Covered Activity are included in the project's Participating Special Entity agreement and ensure that AMMs are being implemented during construction.

As the SSHCP will be implemented over a 50-year Permit Term, the results of construction monitoring may indicate that certain AMMs are ineffective. Should the Plan Permittees wish to modify or replace an SSHCP AMM, they will follow the modification process outlined in the Adaptive Management Program (see Chapter 8).

### 5.4.1 General Avoidance and Minimization Measures

General AMMs are designed to avoid or minimize effects of Covered Activities on SSHCP land cover types and Covered Species.

#### **Condition 1. Avoid and Minimize Urban Development Impacts to Watershed Hydrology and Water Quality**

National Pollution Discharge Elimination System permits are issued by the Regional Water Quality Control Board to jurisdictions in the region, including the jurisdictions that are also SSHCP Land Use Authority Permittees (i.e., County of Sacramento, and Cities of Rancho

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<sup>16</sup> In a situation like this, the Local Land Use Authority Permittee will suspend one or more local permits (e.g., grading permit, building permit) until compliance with terms of all SSHCP requirements is demonstrated.

<sup>17</sup> Post-construction monitoring by the Land Use Authority Permittee could continue for several years.



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Cordova and Galt). The National Pollution Discharge Elimination System permit is issued to each of the Land Use Authority Permittees every 5 years, and is referred to as the Municipal Separate Storm Sewer System (MS4) permit. MS4 permits contain specific design measures required for all projects constructed within the region. The Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Stormwater Manual) outlines planning tools and requirements to reduce urban runoff from new development and redevelopment projects within the region (Sacramento Stormwater Quality Partnership 2007). The Stormwater Manual is used as a general guidance document to aid with the selection, siting, design, operation, and long-term maintenance of stormwater quality control measures. The Stormwater Manual contains control measures intended to meet the standard of “reducing pollutants in urban runoff to the maximum extent practicable” set forth in the local agencies’ MS4 permits issued by the Central Valley Regional Water Quality Control Board. AMM LID-1 (see below) is designed to ensure compliance with MS4 requirements by requiring Third-Party Project Proponents to minimize increases of peak discharge of stormwater and to eliminate or reduce runoff of pollutants.

Development Covered Activities may adversely alter watershed hydrology and degrade water quality, which, in turn, could diminish or eliminate the conservation benefits provided by the SSHCP Preserve System. Condition 1 is designed to conserve and/or rehabilitate on-site natural creeks and streams. This condition will require the provision of BMPs and low-impact development (LID) drainage control measures to ensure that runoff from developed lands will closely mimic the pre-development hydrograph and retain most pre-development hydrologic functions. Condition 1 will accomplish the hydrograph and hydrologic objectives through application of the listed AMMs to all UDA Covered Activities that occur at the parcel, subdivision, or master plan scale.

**LID-1 (Stormwater Quality):** When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).

**LID-2 (Groundwater Recharge):** When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity will prioritize locations that are suitable for groundwater recharge.

**LID-3 (Natural Site Features):** Incorporate preservation of a site’s natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.

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### Condition 2. Avoid and Minimize Urban Development Direct and Indirect Impacts to Existing Preserves and SSHCP Preserves

Development Covered Activities adjacent to Preserves may adversely impact species that use the Preserve, and erode or eliminate the conservation benefits provided by the Preserve. Condition 2 seeks to avoid or minimize the following Covered Activity environmental stressors that may result in direct and indirect impacts to the SSHCP Preserve System:

- Alterations to landscape hydrology from new impervious surfaces may adversely affect natural communities in the lower watershed, the ecology of a Preserve, and/or downstream aquatic resources.
- Water runoff from development or from roadways directed into Preserves may introduce harmful substances into Preserves. Unseasonal and/or additional water entering a Preserve may eliminate vernal pools and other seasonal wetlands native to the region by converting them to low-functioning perennial wetlands.
- Development adjacent to Preserves may partially to fully remove the soil's "perched aquifer" (see Chapter 3) and reduce or eliminate the micro-watersheds that support the hydrology of vernal pools within the Preserve boundary. These changes may adversely affect the existing hydrologic regime of vernal pools by changing the timing, depth, and/or duration of vernal pool saturation and/or ponding, causing long-term changes to a suite of vernal pool functions. For example, changes to water chemistry could adversely affect species habitat. Although the vernal pools remain, the environmental conditions of the pools may no longer provide habitat for vernal pool Covered Species, or provide the benefit of other wetland functions (e.g., stormwater attenuation) compared to pre-project conditions.
- Introduction or proliferation of non-native or invasive plant and wildlife species may displace native species.
- Landscaping in the interface of a development and a Vernal Pool–Grassland Preserve often includes native or non-native trees and other plant species that are not found in California grasslands and, therefore, cannot survive on the Vernal Pool–Grassland Preserve border without intensive irrigation and cultivation. In addition to adverse effects from irrigation and landscape maintenance, adult trees may become landscape barriers that inhibit species movement and may act to isolate individual Preserves from the larger SSHCP Preserve System.
- Recreational use of Preserves near developed areas may compact soils, eliminate vegetation, impair hydrologic functions, introduce weeds or invasive plant species, and disturb plants and wildlife.

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- Introduction of light, noise, or vibrations may disrupt normal nocturnal and diurnal cycles of native species.

AMMs associated with Condition 2 must be applied to all UDA Covered Activities that border an existing Preserve or planned SSHCP Preserve.

**EDGE-1 (Compatible Land Uses):** To the maximum extent practicable, development project Covered Activities will locate compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries.

**EDGE-2 (Single-Loaded Streets):** To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.

**EDGE-3 (Preserve Setbacks):** Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.

However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.



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**EDGE-3a (Setback Recreational Trails):** Trails are best suited outside of the setback; however, certain types of recreational trails or facilities (e.g., benches, trash receptacles, shade structures, fencing) that can be constructed with minimum ground disturbance and in compliance with EDGE-7 may be allowed within a Preserve Setback, as specified in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA. Preserve Setback design must locate trails on the side nearest development, away from the Preserve boundary. Trails may be permeable or semi-permeable hiking trails or paved community trails. The maximum trail width will be 16 feet total, including 2-foot-wide shoulders. Post and cable fencing, split rail, or other open fencing will be installed adjacent to recreation trails to keep pedestrians on the trail.

**EDGE-3b (Setback Firebreaks):** If approved by the local authorities, the Preserve Setback trail may also be used as a firebreak. In instances where a trail cannot act as a firebreak, the firebreak will be located between the trail and the Preserve boundary (see Section 5.2.7). Firebreaks allowed inside the setbacks must be created by methods that will not disturb the soil's restrictive layer, such as mowing, minor scraping of surface vegetation, or shallow tilling, to comply with EDGE-7. Firebreak width within Preserve Setbacks is the minimum width needed to comply with applicable local codes.

**EDGE-3c (Setback Shade Trees and Landscaping):** To prevent potential impacts from irrigation water or from accumulation of leaf litter onto the grasslands or vernal pools of a Preserve, planting of shade trees or landscaping vegetation will be limited to the area of the Preserve Setback located between the recreation trail and the adjacent urban development (i.e., away from Preserves).

- Only drought-tolerant plant species will be planted. The planting pallet used for Preserve Setback landscaping will not include invasive plant species listed in the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory Database or listed in the Cal-IPC California Invasive Plant Watch List (see <http://www.cal-ipc.org/paf/>). Any shade trees planted along Preserve Setback trails will be native species that are found in California grasslands and that can survive in the Vernal Pool–Grassland border without long-term irrigation or fertilization (e.g., valley oak, black oak, blue oak, oracle oak). In general, no more than 30% of any 1,000-foot-long segment of a Preserve Setback trail will have canopy cover from tree plantings (to be consistent with maximum tree densities naturally found within native California grasslands and savanna).

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- Drip irrigation will be allowed for a maximum of 5 years to establish shade trees or landscape vegetation between the recreation trail and adjacent urban development. The Implementing Entity has the discretion to allow irrigation to continue past 5 years if extenuating circumstances necessitate it (e.g., during a drought) and the continuance of irrigation will not affect the Preserve. Any irrigation systems located within Preserve Setbacks will be inspected quarterly to determine if such systems are affecting soils or vegetation not part of the intended plantings. Irrigation system repairs will be completed immediately if it is determined that the irrigation system is affecting vegetation or soil moisture not part of the intended tree planting.
- If, during annual monitoring of the adjacent Preserve (see Chapter 8), adverse indirect effects (e.g., leaf litter accumulation, irrigation runoff, plant encroachment) of the Preserve Setback's planted vegetation are detected, then the SSHCP Implementing Entity, the Preserve Manager, and the entity responsible for the Preserve Setback will identify appropriate adaptive management of the Preserve Setback tree or landscape plantings in accordance with the Preserve Setback Easement (see Section 5.2.5 and Chapter 9).

**EDGE-4 (Locate Stormwater Control Outside Preserves):** Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks)<sup>18</sup> (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).

**EDGE-5 (Stormwater Control in Preserve Setbacks):** If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.

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<sup>18</sup> Detention basins are allowed in some Linkage Preserves consistent with the requirements of EDGE-6. At the time of SSHCP preparation, seven Linkage Preserves with drainages are planned SSHCP Preserves: L1, L2, L4, L7, L8, L9, and L10 (see Section 5.2.7 and Section 7.5). Also see project-specific measures in Section 5.5.1.

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**EDGE-6 (Detention Basins in Linkage Preserves):** Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.

**EDGE-7 (Hardpan/Duripan Protection):** To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures<sup>19</sup> or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.

**EDGE-8 (Outdoor Lighting):** All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea*

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<sup>19</sup> Punctures may include small holes that penetrate the soil hardpan or duripan such as might occur when digging or drilling holes for the installation of fence posts, sign posts, or trees.



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*hammondii*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)).

**EDGE-9 (Livestock Access to Preserves):** Urban Development Covered Activity projects that include on-site Preserves will include in their design an adequate number of access points and facilities for delivery and pick up of grazing animals (livestock), such that these activities will not significantly alter the Preserve's habitat and are consistent with the protection of livestock and protection of adjacent public property, and include adequate public safety measures.

**EDGE-10 (Prevent Invasive Species Spread):** Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:

- To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.
- Mowing rotation will start in un-infested areas and move to infested areas.
- Invasive plant prevention techniques will be incorporated into maintenance plans.
- The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.

### Condition 3. Implement Construction Best Management Practices

AMMs associated with Condition 3 must be applied to all UDA Covered Activities.

**BMP-1 (Construction Fencing):** Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.

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**BMP-2 (Erosion Control):** Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.

Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (*Thamnophis gigas*), western pond turtle (*Actinemys marmorata*), California tiger salamander (*California tiger salamander*), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

**BMP-3 (Equipment Storage and Fueling):** Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.

However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.

**BMP-4 (Erodible Materials):** Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

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**BMP-5 (Dust Control):** Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.

**BMP-6 (Construction Lighting):** Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.

**BMP-7 (Biological Monitor):** If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies will be notified within one working day by email. The approved biologist and/or on-site monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors.

**BMP-8 (Training of Construction Staff):** A mandatory Worker Environmental Awareness Program will be conducted by an approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training will include how to identify Covered Species that might enter the construction site, relevant life history information and habitats, SSHCP and



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statutory requirements and the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-2), and appropriate protocols if a Covered Species is encountered. Supporting materials containing training information will be prepared and distributed by the approved biologist. When necessary, training and supporting materials will also be provided in Spanish. Upon completion of training, construction personnel will sign a form stating that they attended the training and understand all of the Avoidance and Minimization Measures. Written documentation of the training must be submitted to the Implementing Entity within 30 days of completion of the training, and the Implementing Entity will provide this information to the Wildlife Agencies.

**BMP-9 (Soil Compaction):** After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.

**BMP-10 (Revegetation):** Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will revegetate any cut-and-fill slopes with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions and in compliance with EDGE-2 and EDGE-8, if applicable.

**BMP-11 (Speed Limit):** Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

### **Condition 4. Avoid and Minimize Impacts that May Result from Implementation of Covered Transportation Projects**

Urban Development transportation project and Rural Transportation Project Covered Activities, including bridge projects, can affect Covered Species. AMMs included for Condition 4 seek to avoid or minimize direct and indirect impacts that may result from construction of roadways or roadway improvements. Condition 4 applies to all transportation-related Covered Activities (see Sections 5.2.1 and 5.2.3).

Plan Permittees and Third-Party Project Proponents implementing Urban Development transportation or Rural Transportation Project Covered Activities must comply with the roadway siting, design, and construction AMMs described below.

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**ROAD-1 (Road Project Location):** Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.

**ROAD-2 (Wildlife Crossing Structures):** Road projects that are Urban Development Covered Activities (see Section 5.2.1) (including the Capital Southeast Connector, see Section 5.2.1.1) or are Rural Transportation Covered Activities (see Section 5.2.3) will include an adequate number of wildlife crossing structures, as depicted in Figure 5-10. An adequate number of wildlife crossing structures within the Urban Development Area (UDA) and outside the UDA will provide for continued dispersal and movement of native wildlife throughout the SSHCP Plan Area, as required by the SSHCP Biological Goals and Objectives (see Chapter 7).

The Plan defines “wildlife crossing structure” as a physical structure specifically designed or retrofitted to facilitate undercrossing for target wildlife species. The Plan further classifies wildlife crossings as hydrologic crossings and dry crossings. Hydrologic crossings are built where there is an existing stream, creek, or intermittent drainage to maintain existing hydrologic connectivity within the Plan Area. As described below, hydrologic crossings require specialized features to be built into the crossing structure, such as elevated platforms to allow wildlife to pass under a crossing structure when it is inundated with water. Dry wildlife crossings are built where there is no hydrologic feature but where a crossing is needed to provide for overland connectivity. SSHCP wildlife crossing structures may include structures such as bridges, arches, or box and pipe culverts.

Plan Permittees expect that future wildlife movement and dispersal within the UDA will occur almost entirely within the boundaries of the future interconnected SSHCP Preserve System (see Section 7.5). Therefore, wildlife crossings are needed wherever a roadway crosses (bisects) the conceptual SSHCP Preserve System (see Figure 5-10). Wildlife crossing structures inside the UDA will be sized to accommodate movement of a highly mobile native indicator species (i.e., coyote (*Canis latrans*)). By designing UDA wildlife crossing structures to meet the movement and dispersal requirements of coyote, the Plan Permittees anticipate that the crossing structure will also accommodate most native wildlife species that currently occupy the UDA (see Chapter 3).

The Plan Permittees expect that most of the Plan Area outside of the UDA will remain as Open Space over the 50-year Permit Term (see Chapter 4). Therefore,

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the Plan Permittees expect that the Rural Transportation Project Covered Activities proposed outside the UDA will have a relatively small effect on the movement and dispersal of larger or more mobile native wildlife species, including coyote. Consequently, the Plan Permittees anticipate that the design of Rural Transportation Project Covered Activities outside the UDA will need to include wildlife crossing structures primarily where the Rural Transportation Project Covered Activities occur within California tiger salamander modeled habitat (see CTS-3 and also Chapter 3, Figure 3-16).

The design and location of wildlife crossing structures both inside the UDA and outside the UDA will be determined by collaboration between the Third-Party Project Proponent, the Land Use Authority, and the Implementing Entity. Crossing design will use the best available scientific and commercial information for the target species. The design of crossing structures will be based on demonstrated effectiveness of design for the target species when such information is available, or will be designed with a high level of certainty of success based on studies of similar taxa in similar environmental settings. The proposed wildlife crossing structures designs will be reviewed and approved by the Implementing Entity prior to final design.

The Implementing Entity will develop a Wildlife Crossing Maintenance Manual to be provided to the entity responsible for maintaining the wildlife crossing. The Wildlife Crossing Maintenance Manual will identify vegetation management, clearing of obstructions, and other techniques to maintain the desired movement and hydrologic connectivity, and to avoid effects to adjacent Preserves.

All SSHCP wildlife crossing structures in the UDA will include the following design elements:

- Open-bottom bridges or arches where the roadway crosses a river or stream. Where an open-bottom bridge or arch is used, the span of the crossing will be at least 1.2 times the bankfull width of the stream and span the banks to allow for dry wildlife passage along each side of the stream and to avoid or minimize piers or footings within the stream. (Bankfull width refers to the width of a stream channel at the point where over-bank flow begins during a flood event.)
- Any wildlife crossing structure that also maintains hydrologic connectivity will be designed to maintain pre-construction water capacity, depth, and velocity. The crossing structure will not restrict or impede normal flows or flood flows, unless a primary purpose of the structure is to manage such



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flow(s). Wildlife crossing structures must be designed to provide a dry passage (e.g., a platform ledge) higher than flows for a 10-year storm event to allow wildlife to pass through an inundated crossing structure.

- Wildlife crossing structures in the UDA will be designed and sized to accommodate movement of at least medium-sized mammals (e.g., coyote). The opening must be at least 3 feet high and the crossing structure must have a minimum openness ratio of at least 0.4.
- Vegetation leading up to the entrance of a crossing structure and the substrate leading into and within the crossing structure will be natural and appropriate to provide for continuity of habitat, attract the target animal species for which the crossing is designed, and facilitate use of the crossing structure.
- A wildlife crossing under six-lane roads or larger will be designed to provide ambient light and temperature in the longer crossing structures (e.g., either by providing a larger opening or a grate at the top of the structure to improve the attractiveness of the crossing to certain Covered Species and wildlife that may hesitate to cross through dark, confined structures or one with a temperature gradient (Jackson and Griffin 2000)). If a road is less than six lanes in width, these designs will be optional.
- Lighting will not be placed at or near the entrance of a wildlife crossing structure to maintain natural ambient light conditions at night and to increase chances of wildlife use. However, a Land Use Authority Permittees may allow lighting if necessary for human health or safety.

Outside the UDA, wildlife crossing structures may be required for California tiger salamander (refer to CTS-1), and could also be required for other native species.

**ROAD-3 (Roadside Pesticide Use<sup>20</sup>):** If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP

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<sup>20</sup> Use of pesticides (including rodenticides and herbicides) is not an SSHCP Covered Activity. However, pesticide use specified in Section 5.3 is an allowed land management tool, provided the pesticide application is otherwise legal and conforms to all conditions in Section 5.4.

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Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.

### **Condition 5. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves**

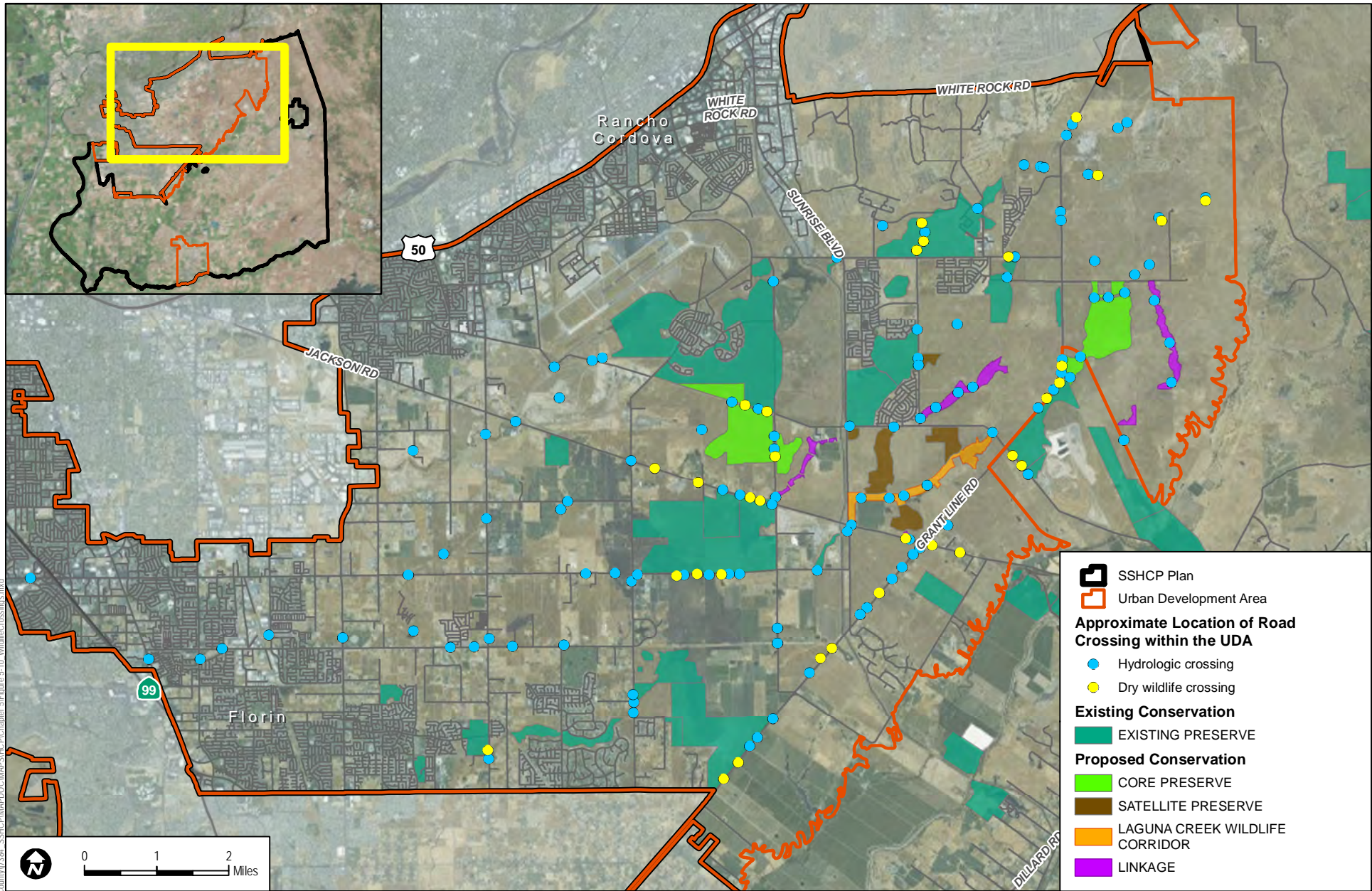
Preserves within the UDA are likely to be surrounded by urban development. As discussed in Section 5.2.7, allowing limited use of SSHCP Preserves will help to foster a sense of community ownership and will provide an opportunity to educate the community about the natural resources to be protected within the SSHCP Preserve System.

Low-impact nature trails will be designed following the AMMs outlined below.

**NATURE TRAIL-1 (Nature Trail Plan):** A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and approved by the Permitting Agencies. A trail plan will include the following:

- Maps identifying areas that contain sensitive habitats or species occurrences.
- Maps that show the location and footprint of proposed trails.
- Methods used to control public access.
- Trail and use monitoring methods, schedules, and responsibilities.
- Trail operation and maintenance guidelines and responsibilities.
- Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).

**NATURE TRAIL-2 (Nature Trail Protection of Duripan):** Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.



SOURCE: ESRI, County of Sacramento 2014, USFWS 2015



SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

**FIGURE 5-10**  
**Wildlife Crossings**

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**NATURE TRAIL-3 (Nature Trail Location):** Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (*Agelaius tricolor*) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.

**NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design):** Biological studies will be conducted within the area being considered for nature trail construction prior to project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into project siting, design, construction, and operation.

**NATURE TRAIL-5 (Monitoring of Nature Trail Impacts):** Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.

## Condition 6. Avoid and Minimize Impacts When Re-Establishing or Establishing Wetlands

As discussed in Chapter 7, the Plan Permittees anticipate that 389 acres of Vernal Pool habitat will be re-established or established<sup>21</sup> within the Plan Area as part of the SSHCP Conservation Strategy. Although re-establishment or establishment of vernal pools is a Measurable Objective under this Plan, if not done correctly, the action could have an adverse impact on existing vernal pools.

**RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool):** Re-establish or establish Vernal Pool Wetland according to the following guidelines:

- Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.

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<sup>21</sup> In the context of this Plan, “establish” is synonymous with “create.”

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- When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.
- Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).
- Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.
- Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.
- Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.
- The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater densities.
- Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.

**RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank):** Vernal pool re-establishment or establishment may include “soil inoculation” when it is likely that no seed or cyst bank of vernal pool species remains at a re-establishment or establishment site.

- During conversion of Urban Development Area vernal pools to a developed land cover type, project proponents will excavate and retain soil from vernal pools following protocols developed by the SSHCP Technical Advisory Committee (Chapter 9).



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- Inocula applied in re-established or established vernal pools must be harvested from a vernal pool that is on the same geologic formation and soil type shown on the County General Soil Map as the re-establishment/establishment site. Geologic formations and soil types will follow U.S. Department of Agriculture Soil Conservation Service's 1993 Soil Survey of Sacramento County, California. Proposed off-site inocula sources must be approved by the Wildlife Agencies.

**RE-ESTABLISHMENT/ESTABLISHMENT-3 (Re-Establishment/Establishment of Freshwater Marsh or Open Water Near Airports):** During review of proposed re-establishment/establishment projects for freshwater marsh or open water on SSHCP Preserves, the Implementing Entity shall consider the potential for the location of the re-establishment/establishment projects to increase the risk of wildlife strikes or generation of ground fog at airports. If a re-establishment/establishment project would result in (1) a net increase in open water or freshwater marsh acreage over baseline conditions<sup>22</sup> within 5 miles of Mather Field, Sacramento Executive Airport, or Franklin Field; or (2) replacement of open water/freshwater marsh habitat that is located 2 or more miles from Mather Field or Sacramento Executive Airport with open water/freshwater marsh habitat that is located less than 2 miles from those airports, a qualified biologist shall prepare a concise letter report. The letter report shall summarize the biologist's findings regarding (1) the species likely to use the re-established/established habitat, (2) a rough order of magnitude estimate on the peak number of birds that might use the re-established/established habitat, and (3) potential movement patterns for birds using the re-established/established habitat and whether they might cross through the airport safety zones (e.g., to reach foraging habitat or another wildlife attractant). The letter report will also provide recommendations to the Implementing Entity on how they could reduce any of the identified wildlife hazards if there are any feasible means to do so that would not conflict with the biological goals and measurable objectives of the Conservation Plan.

### Condition 7. Avoid and Minimize Impacts to Streams and Creeks

AMMs associated with Condition 7 must be applied to all Covered Activities where a stream or creek is located within a project footprint.

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<sup>22</sup> For purposes of establishing baseline conditions, Freshwater Marsh and Open Water acreages will be calculated using that version of the SSHCP Land Cover Type Map in existence as of the date that the SSHCP permit was issued to the Plan Permittees by the USFWS.

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**STREAM-1 (Laguna Creek Wildlife Corridor):** A 150-foot setback measured from the top of the bank on both sides of the stream will be applied to Laguna Creek within the Urban Development Area (minimum 300-foot corridor width). If trails are located within the Laguna Creek Wildlife Corridor, the nearest edge of the trail will be located at least 80 feet from the top of the bank.

**STREAM-2 (UDA Stream Setbacks):** A 100-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all streams listed in Table 5-1 (see also Figure 2-4). If a stream reach supports woody riparian vegetation, the setback will be equal to the riparian edge plus 25 feet or will be the setback defined above, whichever is greater. If trails are located within the Stream Setback, the nearest edge of the trail will be located at least 50 feet from the top of the bank.

**Table 5-1  
Stream Setback Minimum Requirements in the Urban Development Area**

| Stream         | Minimum Setback (from the Top of Bank Measured in Aerial Perspective) on Both Sides of the Stream       |
|----------------|---|
| Elder Creek    | 100 feet  |
| Frye Creek     | 100 feet or as depicted as part of the NewBridge development project hardline Preserve (see Appendix K) |
| Gerber Creek   | 100 feet  |
| Morrison Creek | 100 feet  |
| Central Paseo  | 100 feet or as depicted as part of the Cordova Hills development project hardline Preserve (Appendix K) |
| Sun Creek      | 100 feet or as depicted as part of the Sun Creek development project hardline Preserve (see Appendix K) |

**STREAM-3 (Minor Tributaries to UDA Streams):** A 25-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all avoided first and second order tributaries to the streams listed in Table 5-1 and Laguna Creek. Refer to Objective W6 in Chapter 7 (Table 7-1) regarding avoided first and second order tributaries. Trails are not permitted within headwater ephemeral Stream Setbacks.

**STREAM-4 (Minimize Effects from Temporary Channel Re-Routing):** When an Urban Development Covered Activity temporarily re-routes a stream, creek, or drainage, the re-routing will be completed in a manner that minimizes impacts to beneficial uses and habitat. The following measures will be employed to minimize disturbances that will adversely impact water quality:

- No equipment will be operated in areas of flowing or standing water.
- Construction materials and heavy equipment must be stored outside of the active flow of any waters.

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- When work within waters is necessary, the entire stream flow will be diverted around the work area.
- In the event of rain, the disturbed in-water work area will be temporarily stabilized before water body flow exceeds the capacity of the diversion structure. The disturbed water body will be stabilized so that the disturbed areas will not come in contact with the flow.
- Once construction is complete, all project-introduced material (e.g., pipes, gravel, cofferdam, sandbags) must be removed, leaving the water as it was before construction. Excess materials will be disposed of at an appropriate disposal site.
- All work areas will be effectively isolated from stream flows using suitable control measures before commencement of any in-water work. The diverted stream flow will not be contaminated by construction activities. Structures for isolating the in-water work area and/or diverting the stream flow (e.g., cofferdam, geo-textile silt curtain) will not be removed until all disturbed areas are cleaned and stabilized.
- Any flow diversion used during construction will be designed in a manner to prevent pollution and minimize siltation, and will provide flows to downstream reaches. Flows will be maintained to support existing aquatic life, riparian wetlands, and habitat that may be located upstream and downstream from any temporary diversion.
- All surface waters, including ponded waters, will be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity that may result in a discharge to waters.
- All temporary dewatering methods will be designed to have the minimum necessary impacts to waters to isolate the immediate work area. All dewatering methods will be installed such that natural flow is maintained upstream and downstream of the diversion area. Any temporary dams and diversions will be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the diversion area. All dewatering methods will be removed immediately upon completion of diversion activities.
- A method of containment must be used below any bridge, boardwalk, and/or temporary crossing to prevent debris from falling into the waters through the entire duration of a project.



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- If temporary surface water diversions and/or dewatering are anticipated, the Third-Party Project Proponent will develop and maintain on site a surface water diversion and/or dewatering plan. The plan(s) must be developed prior to initiation of any water diversions and will include the proposed method and duration of diversion activities. The plan(s) must be made available to Central Valley Water Board staff upon request.
- When work in a flowing stream is unavoidable and any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water will be allowed at all times to pass downstream to maintain beneficial uses of waters below the dam. Construction, dewatering, and removal of temporary cofferdams will not violate the turbidity, settle-able matter, pH, temperature, or dissolved oxygen requirements of any Water Quality Control Plan.
- Any temporary dam or other artificial obstruction will only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel that will cause little or no siltation. Stream flow will be temporarily diverted using gravity flow through temporary culverts or pipes, or pumped around the work site with the use of hoses.

**STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening):** When an Urban Development Covered Activity alters a stream, creek, or drainage by re-routing, widening, or deepening a channel, the project design will include the following:

- The main channel of a re-routed channel will be free to migrate laterally over its active and terrace floodplain.
- Channel geometry (plan, profile, and cross-section) of the site will be appropriate for the watershed location and physical/hydrologic condition.
- Local, native materials will be used as fill material to the extent practicable.
- Bioengineering techniques will be used for construction and maintenance of bank stabilization. Bioengineered bank stabilization structures will use vegetation in combination with bank reshaping; biodegradable geotextile materials; and, in some cases, a minimal amount of rock or wood to the extent practicable to dissipate erosive energy. Third-Party Project Proponents will consult a professional engineer when considering using bioengineering techniques.
- All re-routed, widened, or deepened streams are required to establish Stream Setbacks with minimum widths required under STREAM-1, STREAM-2, or STREAM-3. All re-routed, widened, or deepened streams must re-establish/

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establish and maintain native Woody Riparian land cover and/or native Grassland Riparian land cover in the entire Stream Setback.

### **Condition 8. Avoid and Minimize Impacts to Covered Species from Utility and Utility Maintenance Covered Activities**

AMMs associated with Condition 8 must be applied to all Covered Activities associated with construction and maintenance of infrastructure projects.

**UTILITY-1 (Avian Collision Avoidance):** Installation of new, or relocation of existing, utility poles, lines, and cell towers located within the Preserve System or within 1,000 feet of a Preserve boundary will be coordinated with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. The applicant or relevant utility/service provider will install utility poles, lines, and cell towers in conformance with Avian Powerline Interaction Committee (APLIC) standards for collision-reducing techniques, as outlined in Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012), or any superseding document issued by the APLIC.

**UTILITY-2 (Utility Maintenance on Preserves):** Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.

**UTILITY-3 (Trenchless Construction Methods):** Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.

**UTILITY-4 (Siting of Entry and Exit Location):** The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.

### **Condition 9. Avoid and Minimize Impacts That Might Result From Removing or Breaching Levees to Establish or Re-establish Riparian Habitat**

**LEVEE-1 (Preparation of Hydrologic Analysis):** Prior to approving a draft Preserve Management Plan that includes (1) modifying or breaching an existing levee, or (2) would place a potential impedance to high-water event flood-flows on the water side of an existing levee (including new riparian vegetation plantings or

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other new Preserve facilities), a hydrologic analysis will be conducted. The Preserve activity will only be implemented if the hydrologic analysis concludes that the activity will not result in a substantial increase in flood stage elevations or flood risk on lands outside the Preserve.

### **Condition 10. Avoid and Minimize Impacts That Might Result From Potential Residual Contamination of Preserves and Related Exposure of People to Such Hazardous Materials**

#### **HAZARDOUS MATERIALS-1 (Preparation of Phase I Environmental Site Assessment):**

Prior to the acquisition of a preserve site or implementation of a stream or riparian restoration project, a Phase I Environmental Site Assessment shall be conducted in general accordance with the American Society for Testing and Materials Standard Practice E1527-05. The purpose of this Environmental Site Assessment is to identify, to the extent feasible pursuant to the American Society for Testing and Materials Standard, recognized environmental conditions in connection with the potential site. The term “recognized environmental condition” means the presence or likely presence of hazardous substances or petroleum products on the property under conditions that may indicate an existing release, a past release, or a material threat of release of these substances to the property. If the Phase I Environmental Site Assessment indicates the presence of a recognized environmental condition, the Implementing Entity shall consider the following options.

- Determine that the acquisition/project can proceed on the basis that the Habitat Plan goals and objectives can be met on the site even with the presence of a recognized environmental condition.
- Conduct a Phase II Environmental Site Assessment, including soil and groundwater testing, to further study the potential for contamination to limit the Implementing Entity’s management activities.
- If the results of the Phase I (or Phase II) Environmental Site Assessment indicate that the Habitat Plan goals and objectives cannot be met on the site, the Implementing Entity should not acquire the site.

**HAZARDOUS MATERIALS-2 (Contingency Plan):** As part of each Preserve Management Plan or site restoration plan, a Contingency Plan shall be prepared to address the actions that would be taken during construction in the event that unexpected contaminated soil or groundwater is discovered. The Contingency Plan shall include health and safety considerations, handling and disposal of wastes, reporting requirements, and emergency procedures. The Contingency Plan shall include a requirement that if evidence of contaminated materials is encountered



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during construction, construction would cease immediately and applicable requirements of the Comprehensive Environmental Release Compensation and Liability Act and the California Code of Regulations Title 22 regarding the disposal of waste would be implemented.

### 5.4.2 Covered Species Take Avoidance and Minimization Measures

The following section describes measures to avoid or minimize effects of Covered Activities on specific SSHCP Covered Species. Species-specific AMMs include species surveys, pre-construction surveys, and construction monitoring. Most species-specific AMMs require that species surveys be conducted if Covered Species modeled habitat is within the proposed Covered Activity footprint or within a specified distance of the proposed Covered Activity. Section 3.4 provides maps and descriptions of modeled habitat for each Covered Species. The AMMs described below apply to Covered Activities when Covered Species modeled habitat or a Covered Species occurrence are at a project site. The Implementing Entity and Wildlife Agencies may update specific SSHCP AMMs over the Permit Term to provide the best and most appropriate protective measures for a Covered Species.

#### General Covered Species Take Avoidance and Minimization Measures

The following AMMs will apply to all Covered Activities that are required to implement Covered Species take AMMs.

**SPECIES-1 (Litter Removal Program):** A litter control program will be instituted for the entire project site. All workers will ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage will be removed from the project site at the end of each work day, and construction personnel will not feed or otherwise attract wildlife to the area where construction activities are taking place.

**SPECIES-2 (No Pets in Construction Areas):** To avoid harm and harassment of native species, workers and visitors will not bring pets onto a project site.

**SPECIES-3 (Take Report):** If accidental injury or death of any Covered Species occurs, workers will immediately inform the approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor will phone the appropriate contact person at the Implementing Entity. The Implementing Entity will immediately contact the Wildlife Agencies by telephone. A memorandum will be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report will provide the date and location of the incident, number of individuals taken,

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the circumstances resulting in the take, and any corrective measures taken to prevent additional take.

**SPECIES-4 (Post-Construction Compliance Report):** A post-construction compliance report will be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report will detail the construction start and completion dates, any information about meeting or failing to meet species take Avoidance and Minimization Measures (AMM), effectiveness of each AMM that was applied at the project site, and any known project effects to Covered Species.

### Rare Plants

**PLANT-1 (Rare Plant Surveys):** If a Covered Activity project site contains modeled habitat for Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), Legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii*), or Sanford's arrowhead (*Sagittaria sanfordii*), the Covered Activity project site will be surveyed for the rare plant by an approved biologist and following the California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols. See Chapter 10 for the process to submit survey information to the Plan Permittee and the Permitting Agencies.

**PLANT-2 (Rare Plant Protection):** If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the project site.

### Sacramento and Slender Orcutt Grass

Sacramento Orcutt grass (*Orcuttia viscida*) is a federally and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Slender Orcutt grass (*Orcuttia tenuis*) is a federally threatened and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Both Orcutt grasses are very rare, and the likelihood of finding new occurrences within the Plan Area is low. Due to their rarity, take of either of these species is not permitted under the SSHCP, with the exception of take related to Preserve management and monitoring (see Section 5.2.7, SSHCP Preserve System Covered Activities).

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**ORCUTT-1 (Orcutt Grass Surveys):** If a Covered Activity project site is located within 1 mile of the Mather Core Recovery Area and contains the Vernal Pool land cover type, the project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences. See Chapter 10 for the process to conduct and submit survey information.

**ORCUTT-2 (Orcutt Grass Protection):** Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a Third-Party Project Proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity project site, the Third-Party Project Proponent will contact the Implementing Entity or Land Use Authority Permittee with authority over the project, who will coordinate with the Wildlife Agencies for written concurrence of avoidance to ensure that the project does not cause take of the species.

### California Tiger Salamander

To avoid direct and indirect effects of Covered Activities on California tiger salamander (*Ambystoma californiense*), the following AMMs will be implemented.

**CTS-1 (California Tiger Salamander Daily Construction Schedule):** Ground-disturbing Covered Activities within California tiger salamander modeled habitat (Figure 3-16) will occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), construction activities will not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset.

**CTS-2 (California Tiger Salamander Exclusion Fencing):** If a Covered Activity must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing will be installed around the project footprint before October 15. Temporary high-visibility construction fencing will be installed along the edge of work areas, and exclusion fencing will be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing will be at least 1 foot tall and be buried

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at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing will remain in place until all construction activities within the construction area are complete. No project activities will occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. If a California tiger salamander is encountered, refer to CTS-5, below. (However, the Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for a Covered Activity project to not implement CTS-2 for certain long and linear roadway Covered Activity projects if it appears that the exclusion fencing will likely trap individuals or cause more take of California tiger salamander than it would prevent.)

**CTS-3 (California Tiger Salamander Monitoring):** If Covered Activities must be implemented in modeled habitat (Figure 3-16), an approved biologist experienced with California tiger salamander identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site for California tiger salamander every morning before 7:00 a.m., or prior to construction activities. As required by BMP-8 (Training of Construction Staff), the approved biologist will also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone. If a California tiger salamander is encountered, refer to CTS-5, below.

**CTS-4 (Avoid California Tiger Salamander Entrapment):** If Covered Activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat will be inspected for California tiger salamanders by the approved biologist prior to being moved. If a California tiger salamander is encountered, refer to CTS-5, below.

**CTS-5 (California Tiger Salamander Encounter Protocol):** If a California tiger salamander is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW))



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and U.S. Fish and Wildlife Service (USFWS)). Construction activities will be suspended in a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist.

**CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat):** If erosion control (BMP-2) is implemented within California tiger salamander modeled habitat (Figure 3-16), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package.

**CTS-7 (Rodent Control):** CTS-7 only applies to projects that are within California tiger salamander modeled habitat (Figure 3-16) and on Covered Activities. Rodent control will be allowed only in developed portions of a Covered Activity project site. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

### Western Spadefoot

To avoid direct and indirect effects of Covered Activities on western spadefoot (*Spea hammondi*), the following AMMs will be implemented.

**WS-1 (Western Spadefoot Work Window):** Ground-disturbing Covered Activities within western spadefoot modeled habitat (Figure 3-17) will occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.

**WS-2 (Western Spadefoot Exclusion Fencing):** If Covered Activities must be implemented in modeled habitat (Figure 3-17) after October 15 and before May 15, exclusion fencing

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will be installed around the project footprint before October 15, and the project site must be monitored by an approved biologist following rain events. Temporary high-visibility construction fencing will be installed along the edge of work areas, and silt fencing will be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing will remain in place until all construction activities within the construction area are completed. No project activities will occur outside the delineated project footprint. If a western spadefoot is encountered, refer to WS-6, below.

**WS-3 (Western Spadefoot Monitoring):** If Covered Activities must be implemented in modeled habitat (Figure 3-17) in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site daily for western spadefoot prior to construction activities. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.

**WS-4 (Avoid Western Spadefoot Entrapment):** If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.

**WS-5 (Erosion Control Materials in Western Spadefoot Habitat):** If erosion control (BMP-2) is implemented within western spadefoot modeled habitat (Figure 3-17), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

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**WS-6 (Western Spadefoot Encounter Protocol):** If Covered Activities must be implemented in modeled habitat (Figure 3-17) during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.

### Giant Gartersnake

To avoid direct and indirect effects of Covered Activities on giant gartersnake (*Thamnophis gigas*), the following AMMs will be implemented.

**GGGS-1 (Giant Gartersnake Surveys):** If the SSHCP giant gartersnake modeled habitat maps (Figure 3-18) show that modeled habitat for giant gartersnake is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate giant gartersnake aquatic habitat within the project footprint and adjacent areas within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-18, giant gartersnake aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, agricultural ditches, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide these maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated giant gartersnake habitat must also be noted on plans that are submitted to a Local Land Use Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as giant gartersnake habitat is identified and fully avoided. Otherwise, Covered Activities must comply with GGS-2 through GGS-8, below. See Chapter 10 for the process to conduct and submit survey information.

**GGGS-2 (Giant Gartersnake Work Window):** Covered Activities that do not fully avoid giant gartersnake modeled habitat (Figure 3-18) will be conducted during the snake's active

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season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15. If it appears that construction activities may go beyond September 15, the Third-Party Project Proponent or Plan Permittee will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1. The Local Land Use Permittee and the Implementing Entity will discuss with the Wildlife Agencies additional measures necessary to minimize take.

**GGGS-3 (Giant Gartersnake Monitoring):** If a Covered Activity is occurring in giant gartersnake modeled habitat (Figure 3-18), an approved biologist experienced with giant gartersnake identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for giant gartersnake prior to construction activities. If a giant gartersnake is encountered, refer to GGS-7. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant gartersnake enters an active construction zone (i.e., outside the buffer zone).

**GGGS-4 (Giant Gartersnake Habitat Dewatering and Exclusion):** If construction activities will occur in giant gartersnake aquatic habitat, aquatic habitat will be dewatered and then remain dry and absent of aquatic prey (e.g., fish and tadpoles) for 15 days prior to initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to giant gartersnake. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent snakes from attempting to move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify the construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Giant gartersnake habitat outside construction fencing will be avoided by all construction personnel. The fencing and the work area will be inspected by the approved biologist to ensure that the fencing is intact and that no snakes have entered the work area before the start of each work day. The fencing will be maintained by the contractor until completion of the project. If giant gartersnake is encountered, refer to GGS-7, below.

**GGGS-5 (Avoid Giant Gartersnake Entrapment):** If a Covered Activity occurs in giant gartersnake modeled habitat (Figure 3-18), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or



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provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant gartersnake modeled habitat will be inspected for giant gartersnake by the approved biologist prior to being moved. If a giant gartersnake is encountered, refer to GGS-7.

**GG-6 (Erosion Control Materials in Giant Gartersnake Habitat):** If erosion control (BMP-2) is implemented within giant gartersnake modeled habitat (Figure 3-18), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

**GG-7 (Giant Gartersnake Encounter Protocol):** If a giant gartersnake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the giant gartersnake within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a giant gartersnake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

**GG-8 (Giant Gartersnake Post-Construction Restoration):** After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation. Refer to the U.S. Fish and Wildlife Service's (USFWS) Guidelines for the Restoration and/or Replacement of Giant Gartersnake Habitat (USFWS 1997), or the most current USFWS guidelines at the time of the

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activity. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

### Western Pond Turtle

To avoid direct and indirect effects of Covered Activities on western pond turtle (*Actinemys marmorata*), the following AMMs will be implemented.

**WPT-1 (Western Pond Turtle Surveys):** If the SSHCP western pond turtle modeled habitat maps (Figure 3-19) show that modeled habitat for western pond turtle is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate western pond turtle aquatic habitat within the project footprint and within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-19, western pond turtle aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide those maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated western pond turtle habitat must also be noted on plans that are submitted to a Local Land Use Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as western pond turtle habitat is identified and fully avoided. Otherwise, Covered Activities must comply with WPT-2 through WPT-9. See Chapter 10 for the process to conduct and submit survey information.

**WPT-2 (Western Pond Turtle Work Window):** Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing Covered Activities must be conducted outside of western pond turtle's active season. Construction and ground-disturbing activities will be initiated after May 1 and will commence prior to September 15. If it appears that construction activities may go beyond September 15, the appropriate Plan Permittee will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1, to determine if additional measures are necessary to minimize take.

**WPT-3 (Western Pond Turtle Monitoring):** If a Covered Activity is occurring in western pond turtle modeled habitat (Figure 3-19), an approved biologist experienced with western pond turtle identification and behavior will monitor the project site, including the

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integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for western pond turtle prior to construction activities. The approved biologist will also training construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction zone (i.e., outside the buffer zone).

**WPT-4 (Western Pond Turtle Habitat Dewatering and Exclusion):** If construction activities will occur in western pond turtle aquatic habitat, aquatic habitat for the turtle will be dewatered and then remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent turtles from attempting to burrow or move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside construction fencing will be avoided by all construction personnel. The fencing and work area will be inspected by the approved biologist to ensure that the fencing is intact and that no turtles have entered the work area before the start of each work day. Fencing will be maintained by the contractor until completion of the project. If, after exclusion fencing and dewatering, western pond turtles are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will discuss the next best steps with the Implementing Entity and Wildlife Agencies.

**WPT-5 (Avoid Western Pond Turtle Entrapment):** If a Covered Activity occurs within western pond turtle modeled habitat (Figure 3-19), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western pond turtle modeled habitat will be inspected for western pond turtle by the approved biologist prior to being moved.

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**WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat):** If erosion control (BMP-2) is implemented within western pond turtle modeled habitat (Figure 3-19), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

**WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit):** Covered Activity construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within western pond turtle modeled upland habitat (Figure 3-19).

**WPT-8 (Western Pond Turtle Encounter Protocol):** If a western pond turtle is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the turtle, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a western pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

**WPT-9 (Western Pond Turtle Post-Construction Restoration):** After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

### Tricolored Blackbird

To avoid direct and indirect effects of Covered Activities on tricolored blackbird (*Agelaius tricolor*), the following AMMs will be implemented.



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**TCB-1 (Tricolored Blackbird Surveys):** If modeled habitat for tricolored blackbird is present within a Covered Activity's project footprint or within 500 feet of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent will map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

**TCB-2 (Tricolored Blackbird Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

**TCB-3 (Tricolored Blackbird Nest Buffer):** If active nests are found within the project footprint or within 500 feet of any project-related Covered Activity, the Third-Party Project Proponent will establish a 500-foot temporary buffer around the active nest until the young have fledged.

**TCB-4 (Tricolored Blackbird Nest Buffer Monitoring):** If nesting tricolored blackbirds are present within the project footprint or within 500 feet of any project-related Covered

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Activity, then an approved biologist experienced with tricolored blackbird behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer will not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

**TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves):** On SSHCP Agricultural Preserves, pesticides (including herbicides) will not be applied from January 1 through July 15.

### Swainson's Hawk

To avoid direct and indirect effects of Covered Activities on Swainson's hawk (*Buteo swainsoni*), the following AMMs will be implemented.

**SWHA-1 (Swainson's Hawk Surveys):** If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a survey to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), willows (*Salix* spp.), walnuts (*Juglans* spp.), eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and Deodar cedar (*Cedrus deodara*). The Third-Party Project Proponent will map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

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**SWHA-2 (Swainson's Hawk Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

**SWHA-3 (Swainson's Hawk Nest Buffer):** If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.

**SWHA-4 (Swainson's Hawk Nest Buffer Monitoring):** If nesting Swainson's hawks are present within the project footprint or within 0.25 mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

### Greater Sandhill Crane

To avoid direct and indirect effects of Covered Activities on greater sandhill crane (*Grus canadensis*), the following AMMs will be implemented.

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**GSC-1 (Greater Sandhill Crane Surveys):** If modeled habitat for greater sandhill crane (Figure 3-22) is present within a Covered Activity's project footprint or within 0.5 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential roosting sites are present within the project footprint and adjacent areas within 0.5 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Roosting sites within the Plan Area are often associated with flooded fields, seasonal wetlands, and freshwater marsh. The Third-Party Project Proponent will map all existing or potential roosting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Roosting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

**GSC-2 (Greater Sandhill Crane Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active roosting sites are present within a project footprint or within 0.5 mile of a project footprint if existing or potential roosting sites were found during initial surveys and construction activities will occur when wintering flocks are present within the Plan Area (September 1 through March 15). An approved biologist will conduct pre-construction surveys within 15 days of ground-disturbing activities, and within 0.5 mile of a project footprint, to determine presence of roosting greater sandhill cranes. Pre-construction surveys will be conducted September 1 through March 15, when wintering flocks are present within the Plan Area. If birds are present, then GSC-3, GSC-4, and GSC-5 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

**GSC-3 (Greater Sandhill Crane Roosting Buffer):** If active roosting sites are found within the project footprint or within 0.5 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.5 mile temporary roosting disturbance buffer around the roosting site until the cranes have left.

**GSC-4 (Greater Sandhill Crane Visual Barrier):** Greater sandhill cranes have low tolerance for human disturbance, and such disturbance has caused cranes to abandon foraging and roosting sites. Repeat disturbance affects their ability to feed and store energy needed for survival. If project-related activities occur within 0.5 mile of a known roosting site as identified by surveys conducted during implementation of GSC-1 or GSC-2, a visual barrier will be constructed.

**GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring):** If roosting sites are found within the project footprint or within 0.50 mile of any project-related Covered Activity, an



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approved biologist experienced with greater sandhill crane behavior will be retained by the Third-Party Project Proponent to monitor the roosting site throughout the roosting season and to determine when the birds have left. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary disturbance buffer can only occur with the written permission of the Implementing Entity and Wildlife Agencies. If greater sandhill cranes are abandoning their roosting and/or forage sites, the approved biologist will have the authority to shut down construction activities. If roost abandonment occurs, the approved biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid harm and harassment of individuals. The approved biologist will also train construction personnel on the avoidance procedures, buffer zones, and protocols in the event that greater sandhill cranes move into an active construction zone (i.e., outside the buffer zone).

### Western Burrowing Owl

To avoid direct and indirect effects of Covered Activities on western burrowing owl (*Athene cunicularia*), the following AMMs will be implemented.

**WBO-1 (Western Burrowing Owl Surveys):** Surveys within modeled habitat are required for both the breeding and non-breeding season. If the project site falls within modeled habitat, an approved biologist will survey the project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping will be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys will be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information.

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**WBO-2 (Western Burrowing Owl Pre-Construction Surveys):** Prior to any Covered Activity ground disturbance, an approved biologist will conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

**WBO-3 (Burrowing Owl Avoidance):** If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following will occur:

***During Breeding Season:*** If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities will avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.

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- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist will excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies will respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

***During Non-Breeding Season:*** During the non-breeding season (September 1 through January 31), the approved biologist will establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer will be allowed. Construction activities within the non-disturbance buffer will be allowed if the following criteria are met to prevent owls from abandoning overwintering sites:

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer.
- If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary

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devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

**WBO-4 (Burrowing Owl Construction Monitoring):** During construction of Covered Activities, 250-foot construction buffer zones will be established and maintained around any occupied burrow. An approved biologist will monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist will also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

**WBO-5 (Burrowing Owl Passive Relocation):** Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure that owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.

**WBO-6 (Burrowing Owl Timing of Maintenance Activities):** All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas will be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.

**WBO-7 (Rodent Control):** Rodent control will be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control will comply with the methods of



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rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

### Covered Raptor Species

To avoid direct and indirect effects of Covered Activities on covered raptor species, the following AMMs will be implemented. This measure applies to Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). The following AMMs do not apply to ferruginous hawk (*Buteo regalis*), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species.

**RAPTOR-1 (Raptor Surveys):** If modeled habitat for a covered raptor species (Figures 3-20, 3-23, 3-24, or 3-28) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

**RAPTOR-2 (Raptor Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active nests are present with a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities will occur during the raptor breeding season. An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities within the proposed project footprint and within 0.25 mile of the proposed project footprint to determine presence of nesting covered raptor species. Pre-construction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

**RAPTOR-3 (Raptor Nest/Roost Buffer):** If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project

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Proponent will establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.

**RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring):** If project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

### Western Red Bat

To avoid direct and indirect effects of Covered Activities on western red bat (*Lasiurus blossevillii*), the following AMMs will be implemented.

**BAT-1 (Winter Hibernaculum Surveys):** If modeled habitat (Figure 3-30) for western red bat is present within 300 feet of a Covered Activity's project footprint, then an approved biologist will conduct a field investigation of the project footprint and adjacent areas within 300 feet of a project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Third-Party Project Proponent will note their locations on project designs and will design the project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site. See Chapter 10 for the process to conduct and submit survey information.

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**BAT-2 (Winter Hibernaculum Pre-Construction Surveys):** If the Third-Party Project Proponent elects not to avoid potential winter hibernaculum sites within the project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist will conduct a pre-construction survey within 3 days of ground-disturbing activities within the project footprint and 300 feet of the project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys will be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

**BAT-3 (Winter Hibernaculum Buffer):** If active winter hibernaculum sites are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.

**BAT-4 (Bat Eviction Methods):** An approved biologist will determine if non-maternity and non-hibernaculum day and night roosts are present on the project site. If necessary, an approved biologist will use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities will not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.

### 5.5 How Conditions on Covered Activities are Applied to Various Urban Development Permit Types Approved by the Land Use Authority Permittees

Covered Activities can be approved by Land Use Authority Permittees at different scales. For example, master plans (including specific plans, comprehensive plans, and special planning areas) generally include large areas of land, and other permit types (conditional use permits, grading permits, and building permits) can apply over a range of project footprints. The process that Land Use Authority Permittees will use to approve Covered Activities in these planning documents is described in Chapter 10. See Table 5-2 for a list of projects and activities that are considered Covered Activities.