

Biological Resources Assessment

Fairway Oaks Project and Annexation Area

Sacramento County, California

Prepared For:
Raney Management

CLIENT REVIEW DRAFT



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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- Attachment A – Representative Site Photographs
- Attachment B – Results of Database Queries
- Attachment C – Special-Status Species Evaluated for the Study Area
- Attachment D – Wildlife Observed Onsite
- Attachment E – SSHCP-Modeled Species Habitat Maps
- Attachment F – SSHCP Avoidance and Minimization Measures

LIST OF ACRONYMS AND ABBREVIATIONS

AMMs	Avoidance and Minimization Measures
ARP	Aquatic Resources Program
BCC	Birds of conservation concern
BIOS	Biogeographic Information and Observation System
BRA	Biological resources assessment
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Galt
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Sacramento County
CRPR	California Rare Plant Ranks
CWA	Clean Water Act
CWR	Clean Water Rule
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
MSL	Mean sea level
NCCP	Natural Community Conservation Plan
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
Project	±90.4-acre Study Area for the proposed Fairway Oaks Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SSHCP	South Sacramento Habitat Conservation Plan
SWRCB	State Water Resources Control Board
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
VELB	Valley elderberry longhorn beetle
WBWG	Western Bat Working Group

1.0 INTRODUCTION

On behalf of Raney Management, ECORP Consulting, Inc. conducted a biological resources assessment (BRA) for a ±90.4-acre Study Area for the proposed Fairway Oaks Project (Project) and Annexation Area located in Sacramento County, California.

1.1 Study Area Location

The Study Area is located west of U.S. Highway 99, east of Joy Drive, south of Glendale Avenue, and north of Dry Creek in Sacramento County, California (Figure 1. *Study Area Location and Vicinity*). The Study Area corresponds to a portion of Section 35, Township 5 North, Range 6 East (Mount Diablo Base and Meridian) of the “Lodi North, California” 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1976). The approximate center of the Study Area is located at 38.245316° latitude and -121.291183° longitude within the Upper Cosumnes and Upper Mokelumne watersheds (Hydrologic Unit Code #18040013 and 18040012, respectively, Natural Resources Conservation Service [NRCS], USGS, and U.S. Environmental Protection Agency [USEPA] 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 participation in the South Sacramento Habitat Conservation Plan (SSHCP).

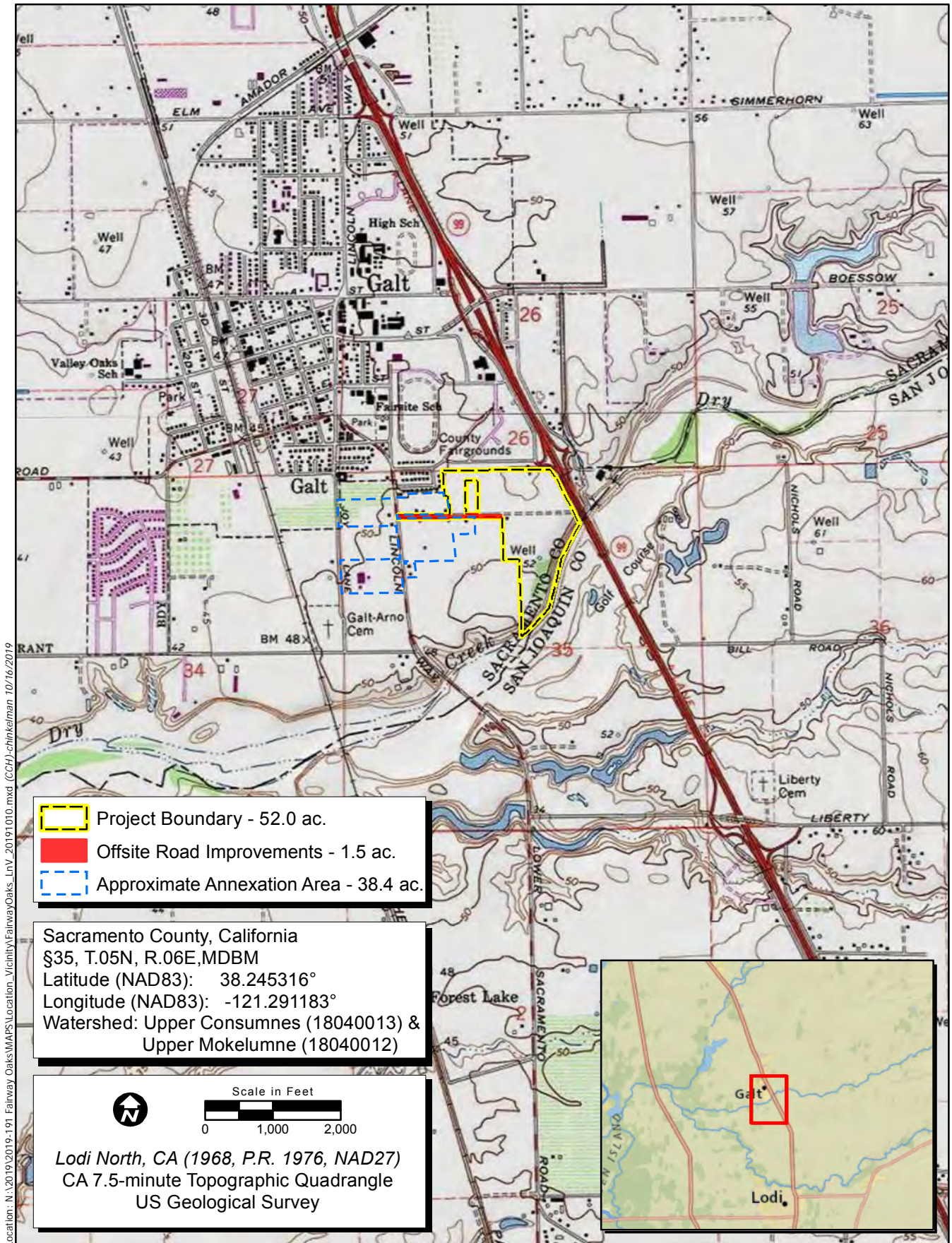
This BRA includes information generated from the reconnaissance-level site assessment and literature review and does not include determinate field surveys for special-status plant and wildlife species. A preliminary aquatic resources assessment was conducted to determine the approximate extent of potential Waters of the U.S. as defined by the CWA and is included as part of this BRA.

1.3 Project Description

The Study Area includes a Project Area and an Annexation Area. The proposed actions for each area are summarized in the following sections. The Study Area is located within the Plan Area of the recently implemented SSHCP.

1.3.1 Project Area

The 52-acre Fairway Oaks Project is proposing the development of 169 lots (ranging in size from 6,500 square feet to 13,690 square feet) for single-family homes and the dedication of 12 acres of open space along the Dry Creek riparian corridor. Access to the proposed subdivision comes from four different roadways: Glendale Avenue from the north, Cornell Road from the west, and Ranch Road and Chase Drive from the south. The Fairway Oaks Project also includes 1.5 acres for offsite road improvements along Cornell Road. Representative site photographs of the Project Area are provided as Attachment A.



Location: N:\2019\2019-191 Fairway Oaks\MAPS\Location_Vicinity\FairwayOaks_LnV_20191010.mxd (CCH)-chinkelman 10/16/2019

Map Date: 10/16/2019
 iService Layer Credits: Copyright: © 2013 National Geographic Society, i-cubed
 National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Figure 1. Study Area Location and Vicinity

1.3.2 Annexation Area

The only action proposed within the 38.4-acre Annexation Area is annexation of an area of land referred to as the County Island in the City of Galt (City). Annexation of the County Island would transfer land use authority for the area from Sacramento County (County) to the City, replacing existing County land use regulations and the County's planning and zoning designations (County of Sacramento 2018) with those of the City (City of Galt 2005, updated 2008).

Although the Project will include the annexation of the County Island, there are no development plans for property located in the County Island. It is included as part of the Project in order to ensure access to the Fairway Oaks development site and to provide for more efficient municipal service to those living in and near the County Island.

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Endangered Species Act

The federal Endangered Species Act (ESA) protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of the 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 the 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, 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 or adversely modify critical habitat. Section 10 of the 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 2.2.8.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. 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 United States" without a permit from the 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 Waters, 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 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 2.2.8.

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 2.2.8.

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 2.2.8.

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 2.2.8.

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 the federal 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 the federal 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 2.2.8.

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, 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.
- 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 U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS’ 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

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. The CDFW maintains the *California Natural Community List* (CDFW 2018), 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.

Wildlife Movement/Corridors and Nursery Sites

As part of the California Essential Habitat Connectivity Project, the CDFW and California Department of Transportation maintain data on Essential Habitat Connectivity areas. This data is available in the California Natural Diversity Database (CNDDDB). The goal of this project is to map large intact habitat or natural landscapes and potential linkages that could provide corridors for wildlife. For urban settings such as the Project, riparian vegetated stream corridors can also serve as wildlife movement corridors.

CDFW's Biogeographic Information and Observation System (BIOS) database, the CDFW Mule Deer Range, identifies winter range, migration corridors, critical range, or critical fawning areas for mule deer (CDFW 2019a).

For the purposes of this analysis, nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries, bat maternity roosts, mule deer critical fawning areas. This data is available through CDFW's BIOS database or as occurrence records in the CNDDDB and is supplemented with the results of the field reconnaissance.

California Rare Plant Ranks

The 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 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 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 California Native Plant Society 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 2019).

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 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 for 28 Covered Species and defines a number of Avoidance and Minimization Measures (AMMs) with which projects must comply. In addition to streamlining the ESA permitting processes, a parallel ARP has been developed to address permitting pursuant to the CWA Section 404 and 401 permitting process. The ARP authorizes low impact projects through a Programmatic General Permit (PGP); a streamlined Letter of Permission (LOP) procedure for projects exceeding the thresholds set by the PGP; or an abbreviated Standard Permit (SP) process for projects not meeting the eligibility requirements of the LOP process. See 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 Common Name	Status		
	Federal	State	CRPR
Invertebrates			
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE	—	—
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT	—	—
<i>Branchinecta mesoamericana</i> Mid-valley fairy shrimp	—	—	—
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT	—	—
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	—	—	—
Amphibians			
<i>Ambystoma californiense</i> California tiger salamander, (Central Valley population)	FT	CT	—
<i>Spea hammondi</i> Western spadefoot	—	SSC	—
Reptiles			
<i>Actinemys marmorata</i> Western pond turtle	—	SSC	—
<i>Thamnophis gigas</i> Giant garter snake	FT	CT	—
Birds			
<i>Accipiter cooperii</i> Cooper's hawk	—	WL	—

Table 1. SSHCP-Covered Species			
Scientific Name Common Name	Status		
	Federal	State	CRPR
<i>Agelaius tricolor</i> Tricolored blackbird	BCC	CT	—
<i>Athene cunicularia hypugaea</i> Western burrowing owl	BCC	SSC	—
<i>Buteo regalis</i> Ferruginous hawk	BCC	—	—
<i>Buteo swainsoni</i> Swainson's hawk	BCC	CT	—
<i>Circus hudsonius</i> Northern harrier	—	SSC	—
<i>Elanus leucurus</i> White-tailed kite	—	CFP	—
<i>Antigone canadensis tabida</i> Greater sandhill crane	—	CT; CFP	—
<i>Lanius ludovicianus</i> Loggerhead shrike	BCC	SSC	—
Mammals			
<i>Lasiurus blossevillei</i> Western red bat	—	SSC	—
<i>Taxidea taxus</i> American badger	—	SSC	—
Plants			
<i>Downingia pusilla</i> Dwarf downingia	—	—	2.2
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	—	CE	1B.2
<i>Juncus leiospermus</i> var. <i>ahartii</i> Ahart's dwarf rush	—	—	1B.2
<i>Legenere limosa</i> Legenere	—	—	1B.1
<i>Navarretia myersii</i> Pincushion navarretia	—	—	1B.1

Table 1. SSHCP-Covered Species			
Scientific Name Common Name	Status		
	Federal	State	CRPR
<i>Orcuttia tenuis</i> Slender Orcutt grass	FT	CE	1B.1
<i>Orcuttia viscida</i> Sacramento Orcutt grass	FE	CE	1B.1
<i>Sagittaria sanfordii</i> Sanford's arrowhead	—	—	1B.2

Status Definitions**Federal:**

FE = Listed as endangered under the federal ESA

FT = Listed as threatened under the federal ESA

— = No federal ESA listing

BCC = Bird of Conservation Concern, USFWS 2008.

State:

CE = Listed as endangered under state ESA

CT = Listed as threatened under state ESA

CFP = Fully protected under the California Fish and Game Code

SSC = Species of special concern in California

WL = Watch List

— = No State status

CNPS 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 Galt Heritage Tree Protection

Section 18.52.060: *Cutting and Removal of Heritage Oak Trees* of the Galt Municipal Code requires a tree permit for removal of any heritage oak trees. Heritage oak trees are defined as a tree with a single trunk with a diameter of six inches or greater measured four feet above the ground or a multi-trunk tree with a diameter of eight inches or greater measured four feet above the ground. Species covered include Valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), and oracle oak (*Quercus x morehus*). For discretionary projects, the preservation or removal of trees as a condition of approval is enforced by the Community Development Director or his duly authorized representative as part of the conditions of approval (City of Galt 2019).

3.0 METHODS

For the purposes of this assessment, special-status species are defined as plants or animals that¹:

¹ Species that are tracked by the CNDDDB but having no other special status are not considered to be special-status species.

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal 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 an 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.

3.1 Analysis of Special-Status Species Occurrence

The two different procedures used to assess the potential for special-status species, including those that are SSHCP-Covered Species and those that are not Covered Species, to occur within the Study Area are described below.

3.1.1 Analysis of Occurrence of SSHCP-Covered Species

SSHCP-Modeled Species Habitat data were used to determine which SSHCP-Covered Species have the potential to occur within the Study Area (SSHCP-Covered Species are listed in Table 1). Modeled Species Habitat data were obtained from the City and were assessed by ECORP to determine actual potential based on the results of the site reconnaissance and revisions to the land cover type mapping.

3.1.2 Analysis of Occurrence of Other Special-Status Species

Literature Review

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

- CDFW CNDDDB record search for the "Lodi North, California" 7.5-minute quadrangle and the eight surrounding USGS quadrangles (CDFW 2019b).
- USFWS Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2019).

- CNPS' electronic *Inventory of Rare and Endangered Plants of California* was queried for the "Lodi North, California" 7.5-minute quadrangle and the eight surrounding USGS quadrangles (CNPS 2019).

The results of the database queries are included in Attachment B.

Aerial imagery and site characteristics such as elevation, aspect, vegetation, and hydrology; species-specific information as cited throughout this document; and the eBird online database of bird distribution and abundance (eBird 2019) were also reviewed to determine the potential for occurrence of special-status species within or near the Study Area.

Field Assessment

ECORP biologists Keith Kwan and Hannah Stone conducted a reconnaissance-level site investigation of the Project Area, which includes the offsite road improvements area. During the reconnaissance visit, the Project Area was walked on foot, and topographic maps and aerial imagery were referenced. Biological communities occurring within the Project Area were characterized and the following biological resource information was collected:

- Potential aquatic features;
- Animal species directly observed;
- Habitat and vegetation communities (including Sensitive Natural Communities); and
- Representative photographs of the Project Area, provided as Attachment A.

A reconnaissance-level site investigation was not conducted for the Annexation Area. The Annexation Area was visually assessed from public roads and from within the Project due to access constraints.

3.2 Evaluation of Special-Status Species

Based on SSHCP-modeled species habitat, species occurrence information from the literature review, and field assessments, a complete list of special-status plant and animal species considered to have the potential to occur within the Study Area was generated (Attachment C).

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 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 or SSHCP-Modeled Species Habitat data does not indicate that habitat for the species occurs within the site.

Species determined to have some potential to occur in the Study Area are summarized in Section 4.5.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The Study Area is located on relatively flat terrain at approximately 40-60 feet above mean sea level (MSL) in the Sacramento Valley region of California (Baldwin et. al. 2012). The average winter low temperature in the vicinity of the Study Area is 38.9°F and the average summer high temperature is 90.1°F. Average annual precipitation is approximately 19 inches, which falls as rain (National Oceanic and Atmospheric Administration [NOAA] 2019).

4.1.1 Project Area

The Project Area is primarily composed of mechanically-tilled, undeveloped, ruderal grassland bounded by residential subdivisions to the north and west, Highway 99 to the northeast, and Dry Creek to the southeast. Dry Creek marks the boundary between Sacramento and San Joaquin County. The adjacent residential subdivisions are mostly intermediate-density, single-family homes. A riparian strip with some well-established native and planted trees and evidence of use by campers exists within the Project Area along Dry Creek. A golf course is adjacent to the Project Area on the south side of Dry Creek. A dirt road runs parallel to the east Project Area boundary and narrows to a trail that connects the south end of the Project Area to open space. The open space features a developed trail that connects to Lincoln Way and appears to receive regular use by residents.

The offsite road improvement area is Cornell Road, an existing tree-lined residential road that begins at S. Lincoln Way and dead ends just east of Bernall Road. A dirt road, which may have once been paved and appears to receive infrequent use, continues from the dead end of Cornell Road and ends at the dirt road which parallels the east Project Area boundary.

4.1.2 Annexation Area

The Annexation Area is an agricultural-residential area between Joy Drive and Bernall Road and mostly consists of low-density, single-family residences and associated roadways. The Annexation Area is currently an island of County lands within the City and is surrounded by public/quasi-public and residential properties.

4.2 Soils

4.2.1 Project Area

According to the *Web Soil Survey* (NRCS 2019), five soil units, or types, have been mapped within the Project Area (Figure 2. *Natural Resources Conservation Service Soil Types*).

- 166 – Kimball-Urban land complex, 0 to 2 percent slopes
- 208 – Sailboat silt loam, drained, 0 to 2 percent slopes, occasionally flooded, MLRA 17
- 213 – San Joaquin silt loam, leveled, 0 to 1 percent slopes
- 219 – San Joaquin-Urban land complex, 0 to 2 percent slopes.
- 235 – Sailboat silt loam, drained, 0 to 2 percent slopes, wet, occasionally flooded, MRLA 17.

San Joaquin silt loam makes up the majority of the Project Area. The other three soil types occur in relatively small areas found in the periphery of the Project Area.

San Joaquin soils are formed in alluvium derived from granite. San Joaquin silt loam, leveled, 0 to 1 percent slopes (213) does not contain hydric elements. San Joaquin-Urban land complex, 0 to 2 percent slopes (219) contains both hydric and non-hydric minor components (NRCS 2019).

Sailboat soils are formed in alluvium derived from igneous, metamorphic, and sedimentary rock. Sailboat silt loam contain both hydric and non-hydric minor components (NRCS 2019).

Kimball soils are formed in alluvium derived from granite and does not contain hydric minor components (NRCS 2019).

No soil units derived from serpentinite or other ultramafic parent materials have been reported to occur within the Project Area or its immediate vicinity (NRCS 2019).

4.2.2 Annexation Area

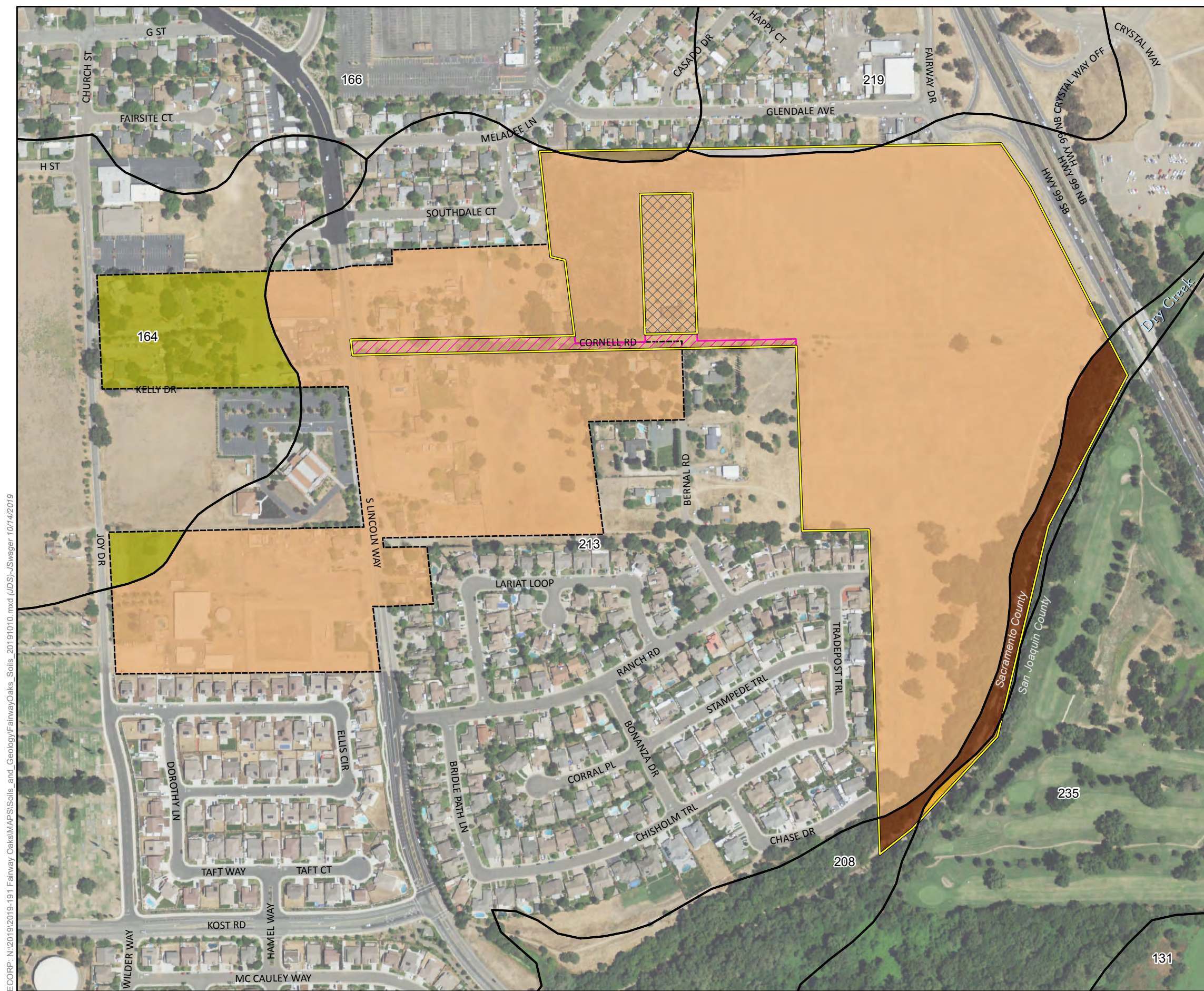
According to the *Web Soil Survey* (NRCS 2019), two soil types have been mapped within the Annexation Area (Figure 2).

- 164 – Kimball silt loam, 0 to 2 percent slopes
- 213 – San Joaquin silt loam, leveled, 0 to 1 percent slopes

Both San Joaquin and Kimball soils are formed in alluvium derived from granite. These soil units/types do not contain hydric minor components (NRCS 2019).

No soil units derived from serpentinite or other ultramafic parent materials have been reported to occur within the Annexation Area or its immediate vicinity (NRCS 2019).

ECORP: N:\2019\2019-191 Fairway Oaks\MAPS\Soils_and_Geology\FairwayOaks_Soils_20191010.mxd (JDS)-JSwager 10/14/2019



Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

NRCS Soils within Project and Annexation Area

Series Number - Series Name

- 164 - Kimball silt loam, 0 to 2% slopes *
- 166 - Kimball-Urban land complex, 0 to 2% slopes *
- 208 - Sailboat silt loam, drained, 0 to 2% slopes, occasionally flooded, MLRA 17 *
- 213 - San Joaquin silt loam, leveled, 0 to 1% slopes *
- 219 - San Joaquin-Urban land complex, 0 to 2% slopes *
- 235 - Sailboat silt loam, drained, 0 to 2% slopes, wet, occasionally flooded, MLRA 17 **

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

Sources: ESRI, NAIP (2018), GBG, NRCS
1762-000_EXMABD.dwg

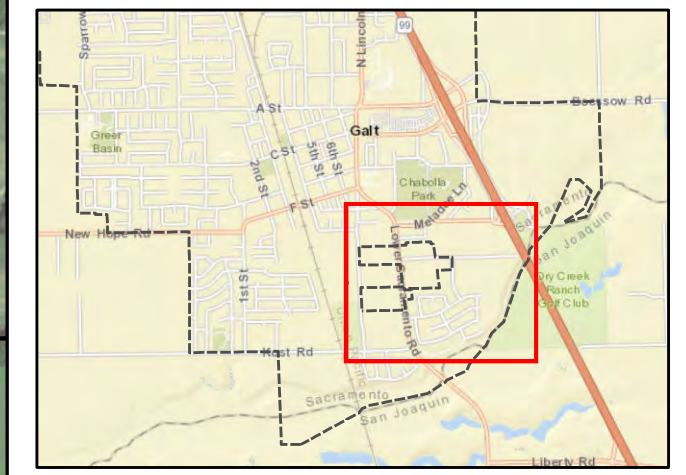


Figure 2. Natural Resources Conservation Service Soil Types
2019-191 Fairway Oaks

4.3 SSHCP Land Cover Types and Vegetation Communities

SSHCP Land Cover data within the Study Area were reviewed and are shown in Figure 3. *Original South Sacramento Habitat Conservation Plan Land Cover*. Based on the site assessment, revision to the type and extent of the SSHCP Land Cover types within the Project Area were made to accurately reflect current field conditions and vegetation communities (Figure 4. *Revised South Sacramento Habitat Conservation Plan Land Cover*). The Land Cover types and acreages occurring within the Study Area are summarized in Table 2 and are discussed below.

Table 2. Land Cover Types within Study Area		
SSHCP Land Cover Type (Aquatic Resource Delineation Wetland Type)	Acreage in Project Area	Acreage in Annexation Area
High Density Development	-	5.19
Low Density Development	1.92	27.26
Major Roads	0.02	0.91
Valley Grassland	42.9	4.98
Mixed Riparian Woodland	4.96	-
Stream/Creek	2.22	-
Total:	52	38.34

4.3.1 Project Area

The following descriptions are based on the revised land cover map. Common vegetation for each land cover type is described as observed during the September 27, 2019 site assessment. Vegetation composition for the site is likely to exhibit seasonal and temporal variation.

Terrestrial Land Cover Types

Based on the site assessment, the primary SSHCP Terrestrial Land Cover types within the Project Area include Low-Density Development and Valley Grassland with a very small portion of Major Roads (Figure 4). The SSHCP Terrestrial Land Cover data for the Project Area also identified Vernal Pool land cover but this was removed from the land cover map as it was determined to not be present within the Project Area during the site assessment.

Major Roads

The SSHCP data identifies the Major Roads land cover type within the S. Lincoln Way right-of-way (ROW). Based on the site assessment, the Major Roads land cover type consists of the paved roadbeds for S. Lincoln Way and Cornell Road where they intersect, barren road-side ditches, utility poles, and street signs.

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Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

SSHCP Cover Type

- High Density Development
- Low Density Development
- Major Roads
- Mixed Riparian Scrub
- Mixed Riparian Woodland
- Streams/Creeks
- Valley Grassland
- Vernal Pool

Sources: ESRI, NAIP (2018), CBG, SSHCP
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ECORP: N:\2019\2019-191 Fairway Oaks\Vegetation and LandCover\FairwayOaks_SSHCP_RevisedLandCover_20190926.mxd (JDS)-JSwager 10/16/2019



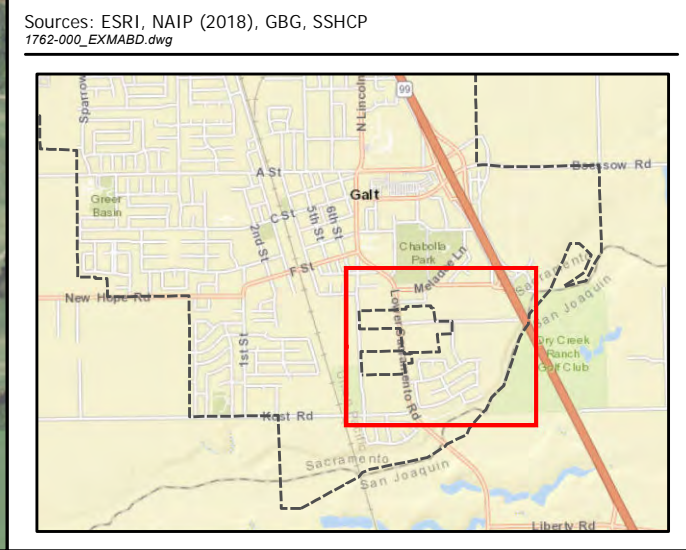
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Revised SSHCP Cover Type

- High Density Development
- Low Density Development
- Major Roads
- Mixed Riparian Woodland
- Streams/Creeks
- Valley Grassland

Sources: ESRI, NAIP (2018), GBG, SSHCP
1762-000_EXMABD.dwg



Low-Density Development

The SSHCP data identifies the Low-Density Development land cover type in and adjacent to the offsite road improvements area. Based on the site assessment, the Low-Density Development land cover type consists of the existing residential roads, Cornell Road, portions of driveways within the Cornell Road ROW that provide access to residential developments, and low and intermediate-density, single-family homes and associated landscaping areas planted with ornamental trees and turfgrass (Figure 4). Trees are described further in Section 3.8. Ruderal vegetation is also present within this land cover and is dominated primarily by a mix of nonnative annual grasses and forbs such as wild oat (*Avena* sp.), prickly lettuce (*Lactuca serriola*), and poke weed (*Phytolacca americana*).

The original SSHCP Terrestrial Land Cover data also identified low-density development in a relatively small area in the middle of the Valley Grassland land cover type and adjacent to a residence at the east end of Ranch Road (Figure 3), but these areas were removed as they were determined in the field to be the Valley Grassland land cover type (Figure 4).

Valley Grassland

The SSHCP data identifies the Valley Grassland land cover type throughout the Project Area (Figure 3); the presence of this cover type was verified during the site reconnaissance (Figure 4). Based on the site reconnaissance the valley grasslands consist of mechanically tilled annual grassland that encompasses the entire Project Area except for the Cornell Road ROW and land east of the riparian woodland. Common vegetation includes wild oat, prickly lettuce, field bindweed (*Convolvulus arvensis*), short-pod mustard (*Hirschfeldia incana*), narrowleaf milkweed (*Asclepias fascicularis*), and Russian-thistle (*Salsola tragus*). The vegetation composition is typical of what would be found in the SSHCP Disturbed land cover type, likely due to years of tillage, although the site did not seem disturbed enough to revise the land cover from Valley Grassland and still had characteristics of Valley Grassland.

SSHCP Aquatic Land Cover Types and Aquatic Resources

Based on the site assessment, the primary SSHCP Aquatic Land Cover types within the Project Area include Stream/Creek and Mixed Riparian Woodland (Figure 4). The original SSHCP Land Cover data also identifies Mixed Riparian Scrub in the Project Area but this was removed from the land cover map as it was determined to not be present within the Project Area during the site assessment.

A preliminary aquatic resources assessment was conducted for the Project Area to determine the approximate extent of potential Waters of the U.S. as defined by the CWA. Based on the preliminary assessment, Dry Creek is the only aquatic resource found within the Project Area, totaling approximately 2.2 acres (Figure 5. *Preliminary Aquatic Resources Assessment*).

SSHCP Aquatic Land Cover Types present within the Project Area are further discussed below.



**Figure 5. Preliminary
Aquatic Resources Assessment**

Map Features

- Project Area Boundary
- NAPOTS

Preliminary Aquatic Resources Assessment¹

Other Waters

- Streams/Creeks - 2.216 acres

¹ 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, Acid 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.
* 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



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Stream/Creek

The SSHCP land cover type data identify Stream/Creek at the southern boundary of the Project Area (Figure 3); the presence of this cover type was verified during the site reconnaissance. SSHCP land cover types do not represent the limits of potential Waters of the U.S. Based on the preliminary aquatic resources assessment conducted by ECORP, approximately 2.2 acres of Dry Creek occur within the Project Area (Figure 5). Under the SSHCP, the Stream/Creek land cover type includes intermittent and perennial linear water features such as rivers, streams, creeks, drainages, and roadside and irrigation ditches. According to the Lodi North 7.5-minute USGS quadrangle, Dry Creek is considered an intermittent creek. No emergent or aquatic vegetation was observed within this land cover type.

Mixed Riparian Woodland

The SSHCP describes Mixed Riparian Woodland as an aquatic land cover type mapped along the Dry Creek corridor (Figure 3); the presence of this cover type was verified during the site reconnaissance (Figure 4). Based on the site reconnaissance, common overstory species include interior live oak, pecan (*Carya illinoensis*), Oregon ash (*Fraxinus latifolia*), black walnut (*Juglans nigra*), and box-elder (*Acer negundo*). The understory is relatively open and not densely vegetated with evidence of abandoned homeless encampments and well-worn walking trails. Common understory species include wild oat, white horehound (*Marrubium vulgare*), Himalayan blackberry (*Rubus armeniacus*), and California wild grape (*Vitis californica*). The SSHCP also mapped Mixed Riparian Scrub in this area (Figure 3) but this was removed from the land cover map as it was determined to not be present within the Project Area during the site assessment.

4.3.2 Annexation Area

A site assessment was not conducted for the Annexation Area. Revision to the type and extent of the SSHCP Land Cover types within the Annexation Area were made based on interpretation of aerial imagery (Figure 4). The following descriptions are based on the revised land cover map.

Terrestrial Land Cover Types

The primary SSHCP Terrestrial Land Cover types within the Annexation Area include Low-Density Development, High Density Development, Major Roads, and Valley Grassland (Figure 4). Major Roads, Low-Density Development, and Valley Grasslands are described above for the Project Area and vegetation in these land cover types within the Annexation Area is likely to be similar to the composition present in the same land cover types within the Project Area. Aerial and street imagery indicated ongoing development within the Annexation Area, so it is possible that the aerial imagery used to assess land cover is not entirely up to date with current conditions (Google 2019).

High-Density Development

The SSHCP data map high-density development land cover type in limited areas of dense clusters of residential homes and commercial developments (Figure 3); based on examination of aerial imagery the presence of this cover type appears accurate (Figure 4).

SSHCP Aquatic Land Cover Types and Aquatic Resources

There are no SSHCP Aquatic Land Cover Types within the Annexation Area (Figures 3 and 4). Based on a literature review and interpretation of aerial imagery, no aquatic resources are expected to be present in the Annexation Area. However, site-specific field assessment will be necessary to determine the presence/absence of aquatic resources within the Annexation Area.

4.4 Wildlife Observations

4.4.1 Project Area

Wildlife species detected within and around the Project Area during the September 27, 2019 reconnaissance-level site assessment are listed in Attachment D.

4.4.2 Annexation Area

A reconnaissance-level site assessment was not conducted for the Annexation Area. Wildlife species present are likely to be similar to those present within and around the Project Area.

4.5 Special-Status and SSHCP-Covered Species Occurrence

4.5.1 Project Area

Based on the original SSHCP Land Cover Data, the Project Area contains SSHCP-Modeled Species Habitat for 23 SSHCP-Covered Species. Based on the site reconnaissance and revised land cover type mapping, which removed the Vernal Pool Land Cover Type in the Project Area, the Project Area contains SSHCP-Modeled Species Habitat data for 16 SSHCP-Covered Species. SSHCP-Modeled Species Habitat maps for the revised Land Cover Type mapping are provided in Attachment E. Seven SSHCP-Covered Species were determined to be absent from the Study Area because no SSHCP-Modeled Species Habitat existed within the Study Area or the site reconnaissance determined there was no suitable habitat present.

The literature sources described in Section 2.1 were queried to determine the potential for occurrence of other special-status species (i.e., non SSHCP Covered Species) within the Project Area. Twenty-three additional species were considered for their potential to occur in the Project Area, eight of which are considered to have potential or low potential to occur in the Project Area.

Tabulated results of all species evaluated for occurrence in the Project Area are presented in Attachment B. Species descriptions are provided in Section 4.5.3 for those species that were considered (1) to be present, or (2) have potential to occur, or (3) have low potential to occur (according to the definitions in Section 3.2). Species that were considered to be absent from the Project Area due to the lack of suitable habitat, or because the known distribution of the species does not include the vicinity of the Project Area, are not discussed further in this document.

Plants

One SSHCP-Covered Species plant was determined to have the potential to occur within the Project Area based on presence of SSHCP-Modeled Species Habitat, and five other species were identified as having

low potential to occur within the Project Area based on the literature review and site assessment (Table 3). Brief descriptions of these species are presented in the following sections.

Watershield

Watershield (*Brasenia schreberi*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.3 species (CNPS 2019). This species is an herbaceous rhizomatous perennial that occurs usually in freshwater marshes and swamps (CNPS 2019). Watershield blooms from June through September and is known to occur from 98 to 7,218 feet above MSL (CNPS 2019). The current range for Watershield in California includes Butte, Calaveras, El Dorado, Fresno, Kern, Lake, Lassen, Mendocino, Merced, Nevada, Plumas, Sacramento, Shasta, Sierra, Siskiyou, San Joaquin, Sutter, Tehama, Tulare, and Tuolumne counties. Its presence in Butte and Kern counties is uncertain (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, the Stream/Creek land cover type found in the Project Area (Dry Creek) provides marginal habitat for this species. Watershield has low potential to occur within the Project Area.

Bristly Sedge

Bristly sedge (*Carex comosa*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.1 plant. This species is a perennial rhizomatous herb that occurs in coastal prairies, marshes and swamps including lake margins, and in valley and foothill grassland (CNPS 2019). Bristly sedge blooms from May through September and is known to occur at elevations ranging from sea level to 2,051 feet above MSL (CNPS 2019). The current range of this species in California includes Contra Costa, Lake, Mendocino, Sacramento, San Bernardino, Santa Cruz, San Francisco, Shasta, San Joaquin, and Sonoma counties, and is considered to be extirpated from San Bernardino and San Francisco counties (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, the edges of the Stream/Creek land cover type (Dry Creek) found in the Project Area provides marginal habitat for this species. Bristly sedge has low potential to occur within the Project Area.

Parry's Rough Tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in valley and foothill grassland with alkaline and vernal mesic soils, seeps, and sometimes roadsides (CNPS 2019). Parry's rough tarplant blooms from May to October and is known to occur at elevations ranging from sea level to 328 feet above MSL (CNPS 2019). Parry's rough tarplant is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Merced, Sacramento, San Joaquin, Solano, Sutter and Yolo counties (CNPS 2019).

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Plants							
Watershield <i>(Brasenia schreberi)</i>	–	–	2B.3	Freshwater marshes and swamps (98'–7,218').	June–September	Low potential to occur. Marginal habitat is present onsite.	Absent. No habitat onsite.
Bristly sedge <i>(Carex comosa)</i>	–	–	2B.1	Marshes and swamps, including lake margins, coastal prairie, and valley and foothill grassland (0'–2,051').	May–September	Low potential to occur. Marginal habitat is present onsite.	Absent. No habitat onsite.
Succulent Owl's Clover <i>(Castilleja campestris</i> ssp. <i>succulenta)</i>	FT	CE	1B.2	Vernal pools, often in acidic environments. (164'–2,461').	April–May	Absent. No habitat onsite.	Low Potential to Occur.
Parry's rough tarplant <i>(Centromadia parryi</i> ssp. <i>rudis)</i>	–	–	4.2	Alkaline, vernally mesic areas and seeps in valley and foothill grassland, vernal pools, sometimes found on roadsides (0'–328').	May–October	Low potential to occur. Marginal habitat is present onsite.	Low potential to occur.
Dwarf downingia <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 2019b) (3'–1,460').	March–May	Absent. No SSHCP-Modeled habitat or actual habitat onsite.	Low Potential to Occur. No SSHCP-Modeled habitat onsite but actual habitat may be present.
Legenere <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 2005a) (3'–2,887').	April–June	Absent. No SSHCP-Modeled habitat or actual habitat onsite.	Low Potential to Occur. No SSHCP-Modeled habitat onsite but actual habitat may be present.

Table 3. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Sanford's arrowhead (<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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Marsh skullcap (<i>Scutellaria galericulata</i>)	–	–	2B.2	Mesic areas in lower montane coniferous forest, meadows and seeps, and marshes and swamps (0'–6,400').	June–September	Low Potential to Occur. Marginal habitat is present onsite.	Low Potential to Occur.
Side-flowering skullcap (<i>Scutellaria lateriflora</i>)	–	–	2B.2	Mesic areas in meadows and seeps and marshes and swamps (0'–1,640').	July–September	Low Potential to Occur. Marginal habitat is present onsite.	Low Potential to Occur.
Invertebrates							
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	–	SSHCP-Covered Species	Vernal pools/wetlands.	November–April	Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Midvalley fairy shrimp (<i>Branchinecta mesoavallensis</i>)	–	–	CNDDDB, SSHCP-Covered Species	Vernal pools/wetlands.	November–April	Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	-	SSHCP-Covered Species	Elderberry shrubs.	Any season	Potential to Occur. SSHCP-Modeled Species Habitat is present and elderberry shrubs observed onsite in Modeled habitat and other habitat during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat is absent, but elderberry shrubs may be present onsite.
Ricksecker's water scavenger beetle (<i>Hydrochara rickseckeri</i>)	-	-	SSHCP-Covered Species	Vernal pools/wetlands.		Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Low Potential to Occur. No SSHCP-Modeled habitat onsite but actual habitat may be present.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	-	SSHCP-Covered Species	Vernal pools/wetlands.	November-April	Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Fish							
Sacramento splittail (<i>Pogonichthys macrolepidotus</i>)	-	-	SSC	San Francisco bay estuary. Spawns in upstream floodplains and backwater sloughs.	N/A	Low Potential to Occur. Marginal habitat present onsite.	Absent. No habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Steelhead (CA Central Valley DPS) <i>(Oncorhynchus mykiss)</i>	FT	-	-	Undammed rivers, streams, creeks.	N/A	Low Potential to Occur. Marginal habitat present onsite.	Absent. No habitat onsite.
Amphibians							
California tiger salamander (Central California DPS) <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	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Western spadefoot <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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Reptiles							
Northwestern pond turtle <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. SSHCP-Modeled Species Habitat present onsite.	Absent. No habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Birds							
Burrowing owl (<i>Athene cunicularia</i>)	-	-	BCC, SSC, SSHCP- Covered 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	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Cooper's hawk (<i>Accipiter cooperii</i>)	-	-	CDFW WL, SSHCP- Covered Species	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes	March-July	Present. SSHCP-Modeled Species Habitat present onsite and species observed during September 2019 site assessment.	Present. SSHCP-Modeled Species Habitat present onsite and species observed during September 2019 site assessment.
Ferruginous hawk (<i>Buteo regalis</i>)	-	-	BCC, CDFW WL, SSHCP- Covered 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 onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Greater sandhill crane (<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)	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Loggerhead shrike (<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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Northern harrier (<i>Circus hudsonius</i>)	-	-	SSC, SSHCP-Covered 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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Swainson's hawk <i>(Buteo swainsoni)</i>	-	CT	BCC, SSHCP- Covered Species	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during discing/harvesting, irrigated pastures	March- August	Present. SSHCP-Modeled Species Habitat present onsite and species observed during September 2019 site assessment.	Present. SSHCP-Modeled Species Habitat present onsite and species observed during September 2019 site assessment.
Tricolored blackbird <i>(Agelaius tricolor)</i>	-	CT	BCC, SSC, SSHCP- Covered Species	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Counties 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	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
White-tailed kite <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 onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Yellow warbler (<i>Setophaga petechia</i>)	-	-	SSC, BCC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte Counties), Sierra Nevada range above tree line, and southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America.	May-August	Potential to Occur. Foraging habitat onsite.	Potential to Occur. Foraging habitat onsite.
Mammals							
Western red bat (<i>Lasiurus blossevillii</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) (Western Bat Working Group [WBWG] 2018).	April- September	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
American badger <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 onsite.	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.
FC	Candidate for ESA listing as Threatened or Endangered.
BCC	USFWS Bird of Conservation Concern
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, § 5050-reptiles/amphibians).
CE	CESA or NPPA listed, Endangered.
CR	CESA or NPPA listed, Rare.
CT	CESA or NPPA listed, Threatened.
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern
SSHCP	South Sacramento Habitat Conservation Plan
CNDDDB	Species that is tracked by California Department of Fish and Game's (CDFG's) CNDDDB but does not have any of the above special-status designations otherwise.
1B	California Rare Plant Ranks (CRPRs)/Rare or Endangered in California and elsewhere.
2B	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 percent of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, the Valley Grassland land cover type in the Project Area provides marginal habitat for this species. Parry's rough tarplant has low potential to occur within the Project Area.

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 are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for Sanford's arrowhead and the Stream/Creek land cover type (Dry Creek) within the Project Area provides suitable habitat for this species. Sanford's arrowhead has potential to occur within the Project Area.

Marsh Skullcap

Marsh skullcap (*Scutellaria galericulata*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.2 species. This species is an herbaceous rhizomatous perennial that occurs in mesic areas in lower montane coniferous forests, meadows and seeps, and marshes and swamps (CNPS 2019). Marsh skullcap blooms between June and September and is known to occur at elevations ranging from sea level to 6,400 feet above MSL (CNPS 2019). Marsh skullcap's current range in California includes El Dorado, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Siskiyou, and San Joaquin counties (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, edges of the Stream/Creek land cover type (Dry Creek) within the Project Area provides marginal habitat for this species. Marsh skullcap has low potential to occur within the Project Area.

Side-Flowering Skullcap

Side-flowering skullcap (*Scutellaria lateriflora*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.2 species. This species is an herbaceous rhizomatous perennial that occurs in mesic meadows and seeps and marshes and swamps (CNPS 2019). Side-flowering skullcap blooms between July and September and is known to occur at elevations ranging from sea level to 1,640 feet above MSL (CNPS 2019). Side-flowering skullcap's current range in California includes Inyo, Sacramento, and San Joaquin counties (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, edges of the Stream/Creek land cover type (Dry Creek) within the Project Area provides marginal habitat for this species. Side-flowering skullcap has low potential to occur within the Project Area.

Invertebrates

One SSHCP-Covered Species invertebrate was determined to have the potential to occur within the Project Area based on SSHCP-Modeled Species Habitat. No additional invertebrate species were identified as having the potential to occur within the Project Area based on the literature review and site assessment (Table 2). A brief description of this species is presented in the following section.

Valley Elderberry Longhorn Beetle

The Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*, VELB) is listed as threatened in accordance with ESA (USFWS 1980). The VELB is completely dependent on its larval host plant, elderberry (*Sambucus* sp.), which occurs in riparian and other woodland and scrub communities (USFWS 1999; USFWS 2017). Elderberry plants, located within the range of the beetle, with one or more stems measuring 1.0 inch or greater in diameter at ground level are considered to be habitat for the species (USFWS 1999). The adult flight season extends from late March through July (USFWS 2017). During that time the adults feed on foliage and perhaps flowers, mate, and females lay eggs on living elderberry plants (Barr 1991). The first instar larvae bore into live elderberry stems, where they develop for one to two years, feeding on the pith. The fifth instar larvae create exit holes in the stems and then plug the holes and remain in the stems through pupation (Talley et al. 2007). The VELB occurs in metapopulations throughout the Central Valley (Collinge et. al 2001 as cited in USFWS 2017). These metapopulations (subpopulations) occur throughout contiguous riparian habitat, which shift temporarily and spatially based on changing environmental conditions. This temporal and spatial shifting of the metapopulations results in a patchy and ever-changing distribution of the species. Research indicates that dense elderberry shrub clumps in healthy riparian habitat is the primary habitat for the VELB (USFWS 2017). The beetle's current distribution extends from Shasta County in the north to Fresno County in the south and includes everything from the valley floor up into the lower foothills (USFWS 2017). The vast majority of VELB occurrences have been recorded below 500 feet (152 meters); however, rare occurrences have been recorded up to approximately 3,000 feet (USFWS 1999; USFWS 2017).

There is one documented CNDDDB occurrence of this species located within five miles of the Study Area (CDFW 2019b). SSHCP-Modeled Species Habitat is present within the Project Area for VELB and two clumps of elderberry shrubs were mapped in the Project Area during the September 2019 site visit (Figure 6: *Potential Habitat for Valley Elderberry Longhorn Beetle*). VELB has potential to occur within the Project Area.

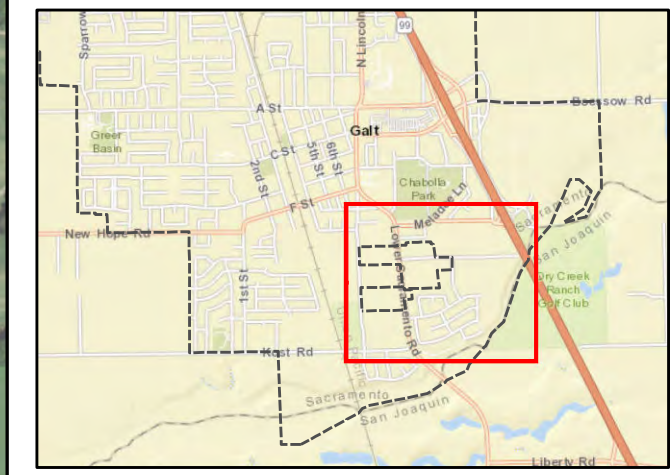
Fish

There are no SSHCP-Covered fish species. Two fish were identified as having low potential to occur within the Project Area based on the literature review and site assessment (Table 2). Brief descriptions of these species are presented in the following sections.



- Map Features**
- Approximate Annexation Area
 - Project Boundary
 - Offsite Road Improvements
 - NAPOTS
 - Elderberry Shrub Cluster

Sources: ESRI, NAIP (2018), GBG, SSHCP
1762-000_EXMABD.dwg



ECORP: N:\2019\2019-191 Fairway Oaks\BIOLOGICAL_RESOURCES\FairwayOaks_Elderberry_20190927.mxd (JDS)~Swager 10/18/2019

Figure 6. Potential Habitat for Valley Elderberry Longhorn Beetle
 2019-191 Fairway Oaks

Steelhead

The Central Valley Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*) is listed as threatened under the federal ESA. The DPS includes all naturally spawned anadromous populations of steelhead in the Sacramento and San Joaquin rivers and their tributaries and steelhead originating from two artificial propagation programs: the Coleman National Fish Hatchery and Feather River Fish Hatchery programs. Critical habitat was designated to include all river reaches accessible to steelhead in the Sacramento and San Joaquin Rivers and their tributaries in California (USFWS 2005b). The Central Valley steelhead's typical habitats are freshwater rivers and streams that are tributaries to the Sacramento and San Joaquin River systems. They run from July through May and primarily spawn December through April with peaks in September and February. Spawning takes place in shallow swift-moving riffles with small gravel and cobble as the primary substrate needed for spawning.

Dry Creek, which is the southeast boundary for the Project, is in the Upper Mokelumne Hydrologic Unit (18040012) and was historically a tributary to the lower Mokelumne River. Dry Creek was rerouted through Grizzly Slough to the Cosumnes River before 1910 and is currently a major tributary to the Cosumnes River. However, Dry Creek is still considered a tributary to the Mokelumne by the City and, based on the aerial imagery, Dry Creek contributes flow to both the Cosumnes and the Mokelumne rivers. The lower Mokelumne River is designated Critical Habitat for the species. At the time of designation, Dry Creek was considered by USFWS to be occupied but was excluded from designation as critical habitat for the species (USFWS 2005b). The current distribution of Central Valley steelhead includes Dry Creek as spawning habitat (NMFS 2014). According to the Recovery Plan for the species, Dry Creek was classified as a Core 3 watershed (NMFS 2014). Core 3 watersheds have populations that are present on an intermittent basis that require straying from other nearby populations for their existence. The populations in Core 3 watersheds do not have the potential to meet the abundance criteria for moderate risk of extinction. Core 3 watersheds are important because they support populations that provide increased life history diversity to the DPS and can buffer against catastrophic events that could affect other nearby populations.

There is one CNDDDB occurrence of this species located within five miles of the Study Area in the Mokelumne River (CDFW 2019b). However, the Stream/Creek land cover type (Dry Creek) within the Project Area provides marginal habitat for this species, primarily in the form of migration corridor to more suitable habitat upstream. There are no CNDDDB occurrences of steelhead in Dry Creek (CDFW 2019b). Steelhead are present in the lower Mokelumne River and may occur in the Cosumnes River (CDFW 2019b), presumably both the anadromous and resident life history forms (NMFS 2014). There are no known impassable barriers that would prevent steelhead from traveling from the Cosumnes or Mokelumne rivers to Dry Creek. The Central Valley DPS of steelhead has low potential to occur within the Project Area.

Sacramento Splittail

Sacramento splittail (*Pogonichthys macrolepidotus*) is not listed pursuant to either the federal or California ESA; however, it is designated as a CDFW SSC. The species was listed as threatened under the federal ESA in 1999 and was delisted in 2003. Following litigation, a new finding on a petition to list the species was announced in 2010. The USFWS found that listing the Sacramento splittail was not warranted at that time (USFWS 2010). Typical habitat includes slow moving sections of rivers and sloughs, and the Delta and

Suisun Marsh (Moyle 1976; Moyle et. al. 1982; Daniels and Moyle 1983). The species prefers low-salinity, shallow-water habitats (Meng and Moyle, 1995). Spawning requires flooded vegetation during high water flows for both spawning and foraging for young (Caywood 1974). They are primarily found in the Sacramento and San Joaquin River estuaries, especially the Delta and Suisun Marsh.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, the species is known to occur in floodplains of the lower Cosumnes River (Crain, Whitener, and Moyle 2004) and the Stream/Creek land cover type (Dry Creek) within the Project Area provides marginal habitat for this species. The closest known occurrence of the species is in the lower Mokelumne River. Dry Creek, which is the southeast boundary for the Project, was historically a tributary to the lower Mokelumne River. Dry Creek was rerouted through Grizzly Slough to the Cosumnes River before 1910 and is currently a major tributary to the Cosumnes River. However, Dry Creek is still considered a tributary to the Mokelumne by the City and, based on the aerial imagery, Dry Creek contributes flow to both the Cosumnes and the Mokelumne rivers. There are no known impassable barriers that would prevent Sacramento splittail from traveling from the Mokelumne River to Dry Creek. The Sacramento splittail has low potential to occur within the Project Area.

Amphibians

Two SSHCP-Covered Species amphibians were determined to have the potential to occur within the Project Area based on SSHCP-Modeled Species Habitat. No additional amphibian species were identified as having the potential to occur within the Project Area based on the literature review and site assessment (Table 2). Brief descriptions of these species are presented in the following sections.

California Tiger Salamander

The Central Valley DPS of California tiger salamander (*Ambystoma californiense*) is listed as threatened under the federal ESA. The species is listed as threatened under the California ESA throughout its range. Critical habitat was designated for the Central Valley DPS in 2005. The California tiger salamander occurs from Yolo County (Dunnigan area) south through the Central Valley to Kern County, and discontinuously from Santa Barbara County north through the inner coast range to Sonoma County (USFWS 2003a, 2015). Necessary habitat components include extensive uplands and breeding ponds. Tiger salamanders spend most of their adult life within underground refugia, such as California ground squirrel (*Otospermophilus beecheyi*) or Botta's pocket gopher (*Thomomys bottae*) burrows. Breeding sites include vernal pools, seasonal wetlands, stock ponds, or slow-moving streams that do not support fish, although streams are rarely used for reproduction. This species may use permanent manmade ponds for reproduction if predatory species (e.g., fish, crayfish) are absent.

There are three documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). SSHCP-Modeled Species Habitat is present within the Project Area for California tiger salamander and the Valley Grassland cover type within the Project Area provides suitable upland habitat for this species. The closest known occurrence was one individual detected in 1915 at a site that is now considered extirpated (CDFW 2019b). The other two occurrences are presumed to be extant. Both occurrences were detected in the 1970s in what is now mostly agricultural land approximately 2 to 3 miles

southeast of the Study Area on the other side of Dry Creek. The combination of Dry Creek and infrastructure, including U.S. Highway 99, between the extant occurrences and the Study Area would likely present a barrier to movement of California tiger salamander from these locations to the Project Area. California tiger salamander has potential to occur within the Project Area.

Western Spadefoot

The western spadefoot (*Spea hammondi*) is not listed pursuant to either the federal or California ESA; 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 feet (Jennings and Hayes 1994).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). The closest occurrence is in the vicinity of Coyote Creek, which is a tributary to Dry Creek. SSHCP-Modeled Species Habitat is present within the Project Area for western spadefoot and the Stream/Creek and Valley Grassland land cover types within the Study Area provide suitable aquatic and upland habitat for this species. Western spadefoot has potential to occur within the Project Area.

Reptiles

Two SSHCP-Covered Species reptiles were determined to have the potential to occur within the Project Area based on SSHCP-Modeled Species Habitat. No additional reptile species were identified as having the potential to occur within the Project Area based on the literature review and site assessment (Table 2). Brief descriptions of these species are presented in the following sections.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is not listed pursuant to either the federal or California ESAs; however, it is designated as a CDFW SSC. Northwestern 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 require shallow edgewater with relatively dense submergent or short emergent vegetation in which to forage. Northwestern 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 feet (200 meters)

of the aquatic sites; however, nests have been documented as far as 1,310 feet (400 meters) from the aquatic habitat.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for northwestern pond turtle and the Stream/Creek and Valley Grassland land cover types within the Project Area provides suitable aquatic and upland habitat for this species. Northwestern pond turtle has potential to occur within the Project Area.

4.5.1.6 Birds

Nine SSHCP-Covered Species birds were determined to have the potential to occur within the Project Area based on SSHCP-Modeled Species Habitat, and one other bird species were identified as having the potential to occur within the Project Area based on the literature review and site assessment (Table 2). In addition, migratory birds protected under the MBTA have potential to occur within the Project Area. Brief descriptions of these species are presented in the following sections.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the federal or California ESAs; however, it is designated as a BCC by the USFWS and an 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, but may also use manmade 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 (CDFG 2012).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Study Area for western burrowing owl and the Valley Grassland land cover type provides suitable wintering habitat for this species. The Valley Grassland landcover type in the Project Area is occupied by California ground squirrel, whose burrows provide suitable nesting habitat for the species. Burrowing owl has potential to occur within the Project Area.

Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the federal or California ESAs. However, it is a CDFW "watch list" species. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawk nest throughout California from Siskiyou County to San Diego County, including the Central Valley (Curtis et al. 2006). Breeding occurs during March through July, with a peak from May through July.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). SSHCP-Modeled Species Habitat is present within the Project Area for Cooper's hawk and the trees within the Valley Grassland and Mixed Riparian Woodland within the Project Area provides suitable nesting and foraging habitat for this species. Cooper's hawk was observed onsite during the September 2019 site assessment within the Project Area.

Ferruginous Hawk

Ferruginous hawk (*Buteo regalis*) is not listed pursuant to either the federal or California ESAs. However, it is a CDFW watch list species and USFWS BCC. This species typically occurs in open environments and nests from Oregon to Canada, though nesting has 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 onsite during winter or migration.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Study Area for ferruginous hawk and the Valley Grassland land cover type present within the Project Area provides suitable foraging habitat for this species. Ferruginous hawk has potential to occur within the Project Area.

Greater Sandhill Crane

Greater sandhill crane (*Antigone canadensis tabida*) is listed as a threatened species by CDFW and is protected pursuant to the California ESA, but has no federal special status. In addition, the greater sandhill crane is fully protected pursuant to the California Fish and Game Code. This subspecies nests in northeastern California (Modoc, Siskiyou, Lassen, and Shasta counties and formerly in the Sierra Valley, Sierra and Plumas counties) (Small 1994) and winters in the Central Valley. Nesting occurs during March through August. Wintering habitat includes wetlands and agricultural fields (Gerber et al. 2014).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Study Area for greater sandhill crane and the Valley Grassland land cover type in the Study Area provides suitable foraging habitat for this species. Greater sandhill crane has potential to occur within the Project Area.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is not listed pursuant to the federal or California ESAs, but is considered a BCC by the USFWS and an 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 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for loggerhead shrike and the trees and Valley Grassland provide suitable nesting and foraging habitat for this species. Loggerhead shrike has potential to occur within the Project Area.

Northern Harrier

The northern harrier (*Circus cyaneus*) is not listed pursuant to either the federal or California ESAs; however, it is considered to be an 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 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for northern harrier and the Valley Grassland present within the Project Area provides suitable nesting and foraging habitat for this species. Northern harrier has potential to occur within the Project 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 U.S., 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 in 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, ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* sp.). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, 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 58 documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). SSHCP-Modeled Species Habitat is present within the Project Area for Swainson's hawk and the Valley Grassland and Mixed Riparian Woodland land cover types within the Project Area provide suitable nesting and foraging habitat for this species. A Swainson's hawk was observed flying overhead during the September 2019 site assessment within the Project 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 BCC 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 blackbirds 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 21 documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). SSHCP-Modeled Species Habitat is present within the Project Area for tricolored blackbird and the Valley Grassland land cover type present within the Project Area provide suitable foraging habitat for this species. Based on the September 2019 site assessment, there is a low probability that suitable nesting habitat for tricolored blackbird exists in the Project Area. Tricolored blackbird has potential to occur within the Project Area.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the federal or California 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 no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for white-tailed kite and the Mixed Riparian Woodland and Valley Grassland land cover types present in the Project Area provide suitable nesting and foraging habitat for this species. White-tailed kite has potential to occur within the Project Area.

Yellow Warbler

Yellow warbler (*Setophaga petechia*) not listed pursuant to either the federal or California ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. Yellow warbler nest from Baja California northward to Alaska and winter from southern California to South America (American Ornithologists' Union 1983). Breeding occurs throughout much of California up to 8,000 feet elevation, except the Central

Valley and southeastern deserts (Heath 2008). Breeding habitat includes riparian vegetation in close proximity to water along streams and wet meadows (Heath 2008). During migration, yellow warbler may occur in a wide variety of woodland habitats throughout California. The nesting season is May through August.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b) and yellow warbler are largely extirpated as breeders in the Central Valley (Heath 2008). However, yellow warbler may be found foraging in the riparian woodland onsite during Spring and Fall migration. Yellow warbler has potential to occur within the Project Area.

Migratory Birds

While not considered special status as previously defined in this BRA, many birds, including common species such as house finch (*Haemorrhous mexicanus*), northern mockingbird (*Mimus polyglottos*), and American robin (*Turdus migratorius*), and their eggs/active nests are protected under the MBTA.

Mammals

Two SSHCP-Covered Species mammals were determined to have potential to occur in the Project Area based on SSHCP-Modeled Species Habitat. No additional mammals were identified as having potential to occur within the Project Area based on the literature review and site assessment (Table 2). Brief descriptions of these species are presented in the sections below.

Western Red Bat

The western red bat (*Lasiurus blossevillii*) is not listed pursuant to either the federal or California ESAs; however, this species is considered an 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 U.S. 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 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for western red bat and the Mixed Riparian Woodland and Valley Grassland land cover types within the Project Area provide suitable nesting and foraging habitat for this species. Western red bat has potential to occur within the Project Area.

American Badger

The American badger (*Taxidea taxus*) is not listed pursuant to either the federal or California ESAs; however, this species is considered an 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 are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP-Modeled Species Habitat is present within the Project Area for American badger and the Valley Grassland land cover type within the Project Area provides suitable habitat for this species. American badger has potential to occur within the Project Area.

4.5.2 Annexation Area

Based on the SSHCP Land Cover Data, the Annexation Area contains SSHCP-Modeled Species Habitat data for 21 SSHCP-Covered Species. SSHCP-Modeled Species Habitat maps are provided in Attachment E.

The literature sources described in Section 2.1 were queried to determine the potential for occurrence of other special-status species (i.e., non SSHCP Covered Species) within the Annexation Area. Twenty-three additional species were considered for their potential to occur in the Annexation Area, five of which are considered to have potential or low potential to occur in the Annexation Area.

Tabulated results of all species evaluated for the Annexation Area are presented in Attachment B. Each of the species that were considered (1) to be present, or (2) have potential to occur, or (3) have low potential to occur (according to the definitions in Section 3.2) are summarized in Table 3, and species descriptions are provided in the following sections. Species that were considered to be absent from the Annexation Area due to the lack of suitable habitat, or because the known distribution of the species does not include the vicinity of the Annexation Area, are not discussed further in this document.

Plants

Two SSHCP-Covered Species plants were determined to have the potential to occur within the Annexation Area based on presence of SSHCP-Modeled Species Habitat, and five other species were identified as having potential or low potential to occur within the Project Area based on the literature review and site assessment (Table 3). Brief descriptions of these species are presented in the following sections.

Succulent Owl's Clover

Succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) is listed as threatened pursuant to the federal ESA, endangered pursuant to the California ESA, and is designated as a CRPR 1B.2 species. This species is a hemiparasitic herbaceous annual that occurs in vernal pools that are often acidic (CNPS 2019). Succulent owl's clover blooms from April to May, and it is known to occur at elevations ranging from 164 to 2,461

feet above MSL (CNPS 2019). Succulent owl's clover is endemic to California; the current range of this species includes Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus counties (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. Succulent owl's clover has low potential to occur within the Annexation Area.

Parry's Rough Tarplant

Parry's rough tarplant is described in Section 4.5.1.1.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. Parry's rough tarplant has low potential to occur within the Annexation Area.

Dwarf Downingia

Dwarf downingia (*Downingia pusilla*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.2 species. This species is an herbaceous annual that occurs in vernal pools and mesic areas in valley and foothill grasslands (CNPS 2019). Dwarf downingia also appears to have an affinity for slight disturbance since it has been found in manmade features such as tire ruts, scraped depressions, stock ponds, and roadside ditches (Baldwin et al. 2012; CDFW 2019b). This species blooms from March through May and is known to occur at elevations ranging from 3 to 1,460 feet above MSL (CNPS 2019). The current range of this species in California includes Amador, Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. Dwarf downingia has low potential to occur within the Annexation Area.

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 2005a). Legenere blooms from April through June and is known to occur at elevations ranging from 3 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; is believed to be extirpated from Stanislaus County (CNPS 2019).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. Legenere has low potential to occur within the Annexation Area.

Sanford's Arrowhead

Sanford's arrowhead is described in Section 4.5.1.1

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, habitat may be present within the Annexation Area. Sanford's arrowhead has potential to occur within the Annexation Area.

Marsh Skullcap

Marsh skullcap is described in Section 4.5.1.1

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. Marsh skullcap has low potential to occur within the Annexation Area.

Side-Flowering Skullcap

Side-flowered skullcap is described in Section 4.5.1.1

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. Side-flowered skullcap has low potential to occur within the Annexation Area.

Invertebrates

Three SSHCP-Covered Species invertebrates were determined to have the potential to occur within the Annexation Area based on SSHCP-Modeled Species Habitat. Two additional invertebrate species, both of which are also covered by the SSHCP but did not have modeled habitat within the Annexation Area, were identified as having the potential to occur within the Annexation Area based on the literature review and interpretation of the aerial imagery (Table 2). A brief description for these species is presented in the following sections.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened in accordance with the federal ESA. 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 2003b).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP modeled habitat is present and, based on the aerial imagery and literature review, habitat may be present within the Annexation Area. Vernal pool fairy shrimp has potential to occur within the Annexation Area.

Midvalley Fairy Shrimp

The Midvalley fairy shrimp (*Branchinecta meso Vallensis*) is not listed pursuant to either the California or federal ESAs, 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; CDFW 2019b; USFWS 2004).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP modeled habitat is present and, based on the aerial imagery and literature review, habitat may be present within the Annexation Area. The Midvalley fairy shrimp has potential to occur within the Annexation Area.

Valley Elderberry Longhorn Beetle

VELB is described in Section 4.5.1.2.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, habitat may be present within the Annexation Area even though there is no SSHCP modeled habitat for this species. VELB has potential to occur within the Annexation Area.

Ricksecker's Water Scavenger Beetle

Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*) is not listed pursuant to either the California or federal ESAs, but occurrences of this species are tracked in the CNDDDB. Ricksecker's water scavenger beetles inhabit ponds and vernal pools in the Coast Range and Central Valley.

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). Based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area even though there is no SSHCP modeled habitat for this species. Ricksecker's water scavenger beetle has low potential to occur within the Annexation 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 2003b). 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 2003b). 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 2003b).

There are no documented CNDDDB occurrences of this species located within five miles of the Study Area (CDFW 2019b). However, SSHCP modeled habitat is present and, based on the aerial imagery and literature review, there is a low probability that habitat is present within the Annexation Area. vernal pool tadpole shrimp has potential to occur within the Annexation Area.

Fish

Based on the literature review and interpretation of aerial imagery, there is no habitat for special-status fish species in the Annexation Area. No special-status fish species are expected to occur in the Annexation Area.

Amphibians

Two SSHCP-Covered Species amphibians were determined to have the potential to occur within the Annexation Area based on SSHCP-Modeled Species Habitat. No additional amphibian species were identified as having the potential to occur within the Annexation Area based on the literature review and interpretation of aerial imagery (Table 2). The evaluation for special-status amphibians (California tiger salamander and western spadefoot) for the Annexation Area is the same as the evaluation for the Project Area. The discussions provided in Section 4.5.1 also apply to the Annexation Area.

Reptiles

No SSHCP-Covered Species reptiles were determined to have the potential to occur within the Annexation Area based on SSHCP-Modeled Species Habitat. No additional reptile species were identified as having the potential to occur within the Annexation Area based on the literature review and interpretation of aerial imagery (Table 2).

Birds

Nine SSHCP-Covered Species birds were determined to have the potential to occur within the Annexation Area based on SSHCP-Modeled Species Habitat, and one other bird species was identified as having the potential to occur within the Annexation Area based on the literature review and interpretation of aerial imagery (Table 2). In addition, migratory birds protected under the MBTA have potential to occur in the

Annexation Area. The evaluation for special-status birds (burrowing owl, Cooper's hawk, ferruginous hawk, greater sandhill crane, loggerhead shrike, Northern harrier, Swainson's hawk, tricolored blackbird, white-tailed kite, yellow warbler, and migratory birds) in the Annexation Area is the same as the evaluation for the Project Area. The descriptions in Section 4.5.1 also apply to the Annexation Area.

Mammals

Two SSHCP-Covered Species mammals were determined to have potential to occur in the Project Area based on SSHCP-Modeled Species Habitat. No additional mammals were identified as having potential to occur within the Project Area based on the literature review and interpretation of aerial imagery (Table 2). The evaluation for special-status mammals (Western red bat and American badger) in the Annexation Area is the same as the evaluation for the Project Area. The descriptions in Section 4.5.1 also apply to the Annexation Area.

4.6 Sensitive Natural Communities

4.6.1 Project Area

Five sensitive natural communities were identified as having the potential to occur within the Study Area based on the literature review (CDFW 2019b). These included Coastal and Valley Freshwater Marsh, Great Valley Mixed Riparian Forest, Great Valley Oak Riparian Forest, Northern Hardpan Vernal Pool, and Valley Oak Woodland. However, based on the September 2019 site visit, there is no marsh habitat present within the Study Area and the vegetation composition of the Mixed Riparian Woodland land cover type along the southeastern boundary of the Project Area (see Section 4.8) is not characteristic of the Great Valley Mixed Riparian Forest, Great Valley Oak Riparian Forest, or Valley Oak Woodland. Vegetation keys in the Manual of California Vegetation were used to confirm the lack of sensitive natural communities (Sawyer et al. 2009). The SSHCP Vernal Pool land cover type was absent from the Project Area and soils within the Study Area would not support a Northern Hardpan Vernal Pool vegetation community. There are no sensitive natural communities within the Study Area.

4.6.2 Annexation Area

Based on the evaluation in Section 4.6.1 for the Project Area, there are no sensitive natural communities within the Annexation Area.

4.7 Wildlife Movement/Corridors and Nursery Sites

4.7.1 Project Area

The Project Area is an undeveloped area within the city limits of Galt, bounded by U.S. Highway 99 to the northeast and surrounded by development to the north and west. The southeast boundary is Dry Creek, which runs east-west and supports a narrow riparian corridor through the Project Area. The Dry Creek corridor west of the Project Area is an existing open space preserve. Based on the aerial imagery, there are no obvious barriers to wildlife movement along the Dry Creek corridor, although U.S. Highway 99 may limit wildlife movement along Dry Creek east of the Project Area. The Dry Creek riparian corridor appears

to continue through open space, agricultural land, and low-density housing for many miles west of the Project Area and connect to the riparian corridor for the Mokelumne River, which is connected to the Cosumnes River Preserve. The Dry Creek corridor appears to continue through agricultural land and low-density housing for many miles west of U.S. Highway 99.

While the Dry Creek corridor through the Study Area is not considered an Essential Connectivity Area by the CDFW (CDFW 2019c), it connects to planned and existing preserves and likely serves as a movement corridor for wildlife.

No nursery sites have been documented within the Project Area (CDFW 2019b) and none were observed during the site reconnaissance.

4.7.2 Annexation Area

The Annexation Area is a residential area consisting of low-density, single-family homes and associated roadways. Based on aerial imagery, there are no habitat corridors (e.g., riparian), emergent wetlands complexes, or other native vegetation communities that would support a high diversity of wildlife species within or in the vicinity of the Annexation Area. The Annexation Area is not considered an Essential Connectivity Area by the CDFW (CDFW 2019c) and is unlikely to provide important movement corridors for wildlife.

No nursery sites have been documented within the Annexation Area (CDFW 2019b).

4.8 Local Plan and Ordinances (Heritage Trees)

4.8.1 Project Area

An arborist survey has not been conducted for the Project Area. Ornamental trees are present along the roads and around the residences in the low-density development land cover type in the Project Area, which includes the Offsite Road Improvements Area. Additionally, a stand of trees is present along the southeastern boundary adjacent to Dry Creek and a few isolated patches of trees exist within the Valley Grassland land cover type within the Project Area. Trees present along roads and near residences within the Project Area include blue-gum (*Eucalyptus globulus*), cherry plum (*Prunus cerasifera*), apple (*Malus* sp.), and common jujube (*Ziziphus jujube*). Trees present along Dry Creek include interior live oak, valley oak, pecan, Oregon ash, black walnut, box-elder, and California buckeye (*Aesculus californica*). Interior live and valley oaks are also found scattered within the Valley Grassland land cover type within the Project Area. A small clump of honey locust (*Gleditsia triacanthos*) also occurs within the Valley Grassland land cover type near the end of Cornell Road adjacent to residences.

Based on the site visit, many of the oak trees appear to be heritage trees as defined by the City Heritage Tree Ordinance.

4.8.2 Annexation Area

An arborist survey or site assessment has not been conducted for the Annexation Area. Based on interpretation of the aerial imagery, trees are present along the roads and around residences. Tree

composition is likely to be similar to tree composition within the same land cover types in the Project Area.

Oak trees considered to be heritage trees as defined by the City Heritage Tree Ordinance may be present within the Annexation Area.

5.0 IMPACT ANALYSIS

The impact analysis provided below is organized to specifically address the CEQA Appendix G Environmental Checklist Form for biological resources.

5.1 Special-Status and SSHCP-Covered Species

5.1.1 Project Area

The ±52-acre Project Area would require grading of the proposed development area and may require grading for trail development within the proposed open space area. As such, the Project would have the potential to have a substantial adverse effect, either directly or through habitat modifications, on special-status species and/or SSHCP-Covered Species.

Of the 24 species identified as having the potential to occur within the Project Area in Table 2, 16 species are SSHCP-Covered Species and are considered adequately conserved through the provisions of the SSHCP because Project impacts would be mitigated through the SSHCP In-Lieu Fee Program and the Project proponent will comply with SSHCP Avoidance and Minimization Measures (AMMs) as described in Section 6.0.

The remaining eight species that are not SSHCP-Covered Species and that have potential or low potential to occur onsite include five plants, two fish, and one bird. These species use similar habitats to the SSHCP-Covered species. The potential impacts to these species are expected to be minimized by implementation of the SSHCP AMMs for covered plants, SSHCP AMMs for streams and low-impact development, and by the restoration, enhancement and preservation of habitats accomplished by the SSHCP In-Lieu Fee Program as described in Measures BIO-6, BIO-8, BIO-11 through BIO-22, BIO-24, and BIO-25 in Section 6.0. Additionally, Measures BIO-5 and BIO-23 in Section 6.0 are recommended to be implemented in order to minimize effects on these eight special-status species.

5.1.2 Annexation Area

The act of annexing the County Island to the City of Galt would not impact SSHCP-Covered Species or other special-status species.

Future projects on undeveloped lands within the Annexation Area may impact special-status and/or SSHCP-Covered Species. Future projects in the Annexation Area may potentially include road improvements, development of Valley Grassland land cover type, or further development of the low- and/or high-density development land cover types.

Of the 26 species identified as having the potential to occur within the Annexation Area in Table 2, 21 species are SSHCP-Covered Species and are considered adequately conserved through the provisions of the SSHCP because impacts of future development projects would be mitigated through the SSHCP In-Lieu Fee Program and the Project proponent will comply with SSHCP AMMs as described in Section 6.0.

The remaining five species that are not SSHCP-Covered Species and that have potential or low potential to occur within the Annexation Area include four plants and one bird. As stated for the Project Area, these species use similar habitats to the SSHCP-Covered Species and potential impacts to these species are likely to be mitigated through participation in the SSHCP by the restoration, enhancement, and preservation of habitats accomplished by the SSHCP In-Lieu Fee Program (see Measures BIO-AA1 and BIO-AA2 in Section 6.0).

5.2 Sensitive Natural Communities

There are no Sensitive Natural Communities as defined by CDFW within the Study Area (CDFW 2019b).

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

5.3.1 Project Area

Based on the preliminary aquatic resources assessment, approximately 2.2 acres of potential Waters of the U.S. exist within the Project Area. The Project may impact potential Waters of the U.S. The Project applicant is anticipated to complete a wetland delineation for the Project, and if necessary, 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-2 through BIO-6 and BIO-11 are recommended to address impacts to wetlands and other Waters of the U.S.

5.3.2 Annexation Area

Annexation is not expected to impact potential Waters of the U.S.

A wetland delineation was not completed for the Annexation Area. Based on a literature review and interpretation of aerial imagery, it is unlikely that aquatic resources are present in the Annexation Area. However, site-specific assessments will be necessary to determine the presence/absence of potential Waters of the U.S. within the Annexation Area.

A site investigation is not necessary for annexation at this time, since there would be no impact to aquatic resources from that action. However, future development projects in the Annexation Area could impact potential Waters of the U.S. Mitigation Measures BIO-AA1 and BIO-AA2 are recommended to address impacts to wetlands and other Waters of the U.S. from future development projects.

5.4 Wildlife Movement/Corridors and Nursery Sites

5.4.1 Project Area

The Project Area does not fall within an Essential Habitat Connectivity area mapped by the CDFW (CDFW 2019c). While the Project may impact the existing riparian corridor and perennial stream (Dry Creek) occurring onsite, the Project is expected to protect movement corridors for wildlife by preserving the riparian corridor for Dry Creek as designated open space, in accordance with the City zoning ordinance and General Plan Policy PFS-8.2, which requires developers of land adjacent to Dry Creek to provide a continuous trail system and set aside land for dedicated wildlife habitat (City of Galt 2009). Human presence within the riparian corridor will likely increase due to the Project, because the subdivision will bring more people into the area and the open space may include pedestrian and bicycle trails. The increase in human activity may result in increased disturbance to wildlife. Development of the Project Area is not expected to have a significant impact on the movement of wildlife along Dry Creek because wildlife using the corridor are expected to have some tolerance to the existing proximity to residential developments and use of the riparian corridor by humans.

The Project Area does not include a known nursery site (CDFW 2019b) or critical mule deer fawning site (CDFW 2019a) and no nursery sites were identified during the field reconnaissance. The Project is anticipated to have minimal impact on wildlife movement corridors and no impact on nursery sites.

5.4.2 Annexation Area

The Annexation Area does not fall within an Essential Habitat Connectivity area mapped by the CDFW (CDFW 2019c). The Annexation Area does not include a known nursery site (CDFW 2019b) or critical mule deer fawning site (CDFW 2019a).

Annexation would not impact wildlife movement/corridors or known nursery sites. However, future development projects in the Annexation Area could impact unmapped nursery sites if they are found to occur in the Annexation Area. Mitigation Measure BIO-AA1 is recommended to reduce potential adverse effects on wildlife movement/corridors or nursery sites.

5.5 Local Policies and Ordinances (Heritage Trees)

5.5.1 Project Area

An arborist survey has not been conducted for the Project Area; however, oak trees that may be protected by § 18.52.060 of the Galt Municipal Code (i.e., heritage oak trees) were observed onsite during the September 2019 site visit. The trees onsite may provide nesting habitat for birds.

Per § 18.52.060, a tree permit is required for removal of heritage trees (see Section 2.2.9 for definition). For discretionary projects, tree removal enforcement is under the jurisdiction of the Community Development Director and may be implemented through the conditions of approval for the Project. Recommended Mitigation Measure BIO-26 addresses impacts to heritage trees.

5.5.2 Annexation Area

An arborist survey has not been conducted for the Annexation Area; however, oak trees that may be protected by § 18.52.060 of the Galt Municipal Code (i.e., heritage oak trees) may be onsite. The trees onsite may provide nesting habitat for birds. Annexation is not expected to impact trees. However, future development projects in the Annexation Area have the potential to impact trees.

Per § 18.52.060, a tree permit is required for removal of heritage trees (see Section 2.2.9 for definition). For discretionary projects, tree removal enforcement is under the jurisdiction of the Community Development Director and may be implemented through the conditions of approval for the Project. Recommended Mitigation Measure BIO-AA2 incorporates BIO-26 to address impacts to heritage trees for future development projects.

5.6 Habitat Conservation Plans

5.6.1 Project Area

As stated previously, the Project Area is located in the SSHCP Plan Area, is an SSHCP-Covered Activity, and is expected to be consistent with the provisions of the SSHCP and ARP permitting programs and comply with the AMMs as discussed in the recommended Mitigation Measures in Section 6.0 (full text of AMMs is provided as Attachment F). The Project impacts are anticipated to be mitigated through the SSHCP In-Lieu Fee Program as discussed in BIO-3 and BIO-4.

5.6.2 Annexation Area

The Annexation Area is planned for annexation to the City. Annexation would transfer land use authority for the area from the County to the City, replacing existing County land use regulations and the County's planning and zoning designations (County of Sacramento et al. 2018). The annexation of lands into the City is not expected to conflict with the SSHCP or other local, regional, or State conservation plans.

If a future development application is submitted to the City within the Annexation Area for projects on undeveloped lands, implementation of mitigation measure BIO-AA2 is recommended to ensure consistency with the SSHCP.

6.0 RECOMMENDATIONS

6.1 Project Area

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

BIO-1. Obtain an SSHCP Permit

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 SSHCP will

be obtained. To obtain such authorization, the SSHCP Permit Application shall include the following components as identified in Chapter 10, Section 10.4.2 of the SSHCP:

- Applicant Information.
- Project Description and Map.
- Land Cover Type Map.
- Wetland Delineation Map.
- Modeled Species Habitat map.
- Description of How the Development Complies with the SSHCP Avoidance and Minimization Measures outlined in Chapter 5, Section 5.4 of the SSHCP.
- Proposed Mitigation.
- Results of Covered Species (special-status species) Pre-Construction Surveys.

BIO-2. Comply with Waters of the U.S./State Regulations

Approximately 2.2 acres of potential Waters of the U.S. are located within the Project Area (Figure 5). If the Proponent proposes work in or around Waters of the U.S./State, the following mitigation measures are recommended to minimize and compensate for potential impacts to Waters of the U.S./State:

- A. Before applying for a SSHCP permit or authorization under the SSHCP ARP, the Project applicant shall secure verification of aquatic resources on the Project Area by the USACE. This process requires submittal of a wetland delineation map 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 (USACE 2008). The wetland delineation will follow the minimum standards set forth by the Sacramento District USACE and State Water Resources Control Board (SWRCB) at the time of the delineation. The results of the wetland delineation will be documented in a letter or report that describes all aquatic resources, including wetlands, that may be regulated by USACE under Section 404 of the federal CWA or by the SWRCB. The wetland delineation and map will describe and quantify all aquatic resources defined as Waters of the U.S./State as well as the SSHCP aquatic land cover type as defined in Appendix E of SSHCP.
- B. 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 (i.e., through permitting under the SSHCP ARP) for any potential impacts to Waters of the U.S./State/SSHCP aquatic land cover types. The construction contractor shall adhere to all conditions outlined in the SSHCP ARP and 401 Certification. 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./State 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/SSHCP ARP permitting processes.

BIO-4. Obtain CDFW 1602 Streambed Alteration Agreement 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 Section 1600-1616 of the California Fish and Game Code (CDFW 1602 Streambed Alteration Agreement) has been obtained (i.e., through direct application to CDFW for a Section 1602 SAA). The Project applicants can fulfill compensatory mitigation requirements either through the SSHCP In-Lieu Fee Program or by other methods agreeable to CDFW. The construction contractor shall adhere to all conditions outlined in the Section 1602 SAA and SSHCP Permit.

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, 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, and the City, as appropriate, depending on agency jurisdiction.

BIO-6. Avoid and Minimize Impacts to Watershed Hydrology and Water Quality:

The Project applicants shall comply with SSHCP AMMs LID-1 through LID-3.

BIO-7. Avoid and Minimize Impacts to the SSHCP Preserve System:

The Project applicants shall comply with SSHCP AMMs EDGE-1 through EDGE-10.

BIO-8. Implement Construction Best Management Practices:

The Project applicants shall comply with SSHCP AMMs BMP-1 through BMP-11.

BIO-9. Avoid and Minimize Impacts from Implementation of Covered Transportation Projects:

The Project applicants shall comply with SSHCP AMMs ROAD-1 through ROAD-3.

BIO-10. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves:

If the Project applicants propose the onsite designation of Preserves within the Project Area, the Project applicants shall comply with SSHCP AMMs NATURE TRAIL-1 through NATURE TRAIL-5.

BIO-11. Avoid and Minimize Impacts to Streams and Creeks:

If determined to be applicable, the Project applicants shall comply with SSHCP AMMs STREAM-1 through STREAM-5.

BIO-12. Implement General Covered Species Take Avoidance and Minimization Measures:

The Project applicants shall comply with SSHCP AMMs SPECIES-1 through SPECIES-4.

BIO-13. Special-Status Plant Surveys and Protection:

The Project applicants shall comply with SSHCP AMMs PLANT-1 (Rare Plant Surveys). There are five special-status plant species with the potential to occur in the Project Area that are not considered SSHCP-Covered Species (see Table 2). Therefore, the following mitigation measure is recommended:

- Special-status plant surveys conducted per PLANT-1 shall also identify whether special-status plant species not covered by the SSHCP are present onsite. If SSHCP-covered plants are determined to be present, PLANT-2 (Rare Plant Protection) shall be implemented. If non SSHCP-covered special-status plant species are determined to be present, a mitigation plan shall be prepared for review and approval by the City. Depending on the listing status of the plant, appropriate mitigation will be determined and may include avoidance, transplantation, or inoculation (if species are present in wetland habitats). Avoided areas containing special-status plants shall be fenced with orange construction fencing during Project implementation.

BIO-14. VELB:

There are no species-specific SSHCP AMMs for VELB. However, VELB is a Covered Species, and the Project applicants shall comply with SSHCP requirements, In-Lieu Fee Program, and relevant general AMMs.

BIO-15. California Tiger Salamander:

The Project applicants shall comply with SSHCP AMMs CTS-1 through CTS-7.

BIO-16. Western Spadefoot:

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

BIO-17. Western Pond Turtle:

The Project applicants shall comply with SSHCP AMMs WPT-1 through WPT-9.

BIO-18. Burrowing Owl:

The Project applicants shall comply with SSHCP AMM WBO-1 through WBO-7.

BIO-19. Covered Raptor Species:

The Project applicants shall comply with SSHCP AMM RAPTOR 1 through RAPTOR-4 for Cooper's hawk, loggerhead shrike, northern harrier, and white-tailed kite.

BIO-20. Greater Sandhill Crane:

The Project applicants shall comply with SSHCP AMMs GSC-1 through GSC-5.

BIO-21. Swainson's Hawk:

The Project applicants shall comply with SSHCP AMMs SWHA-1 through SWHA-4.

BIO-22. Tricolored Blackbird:

The Project applicants shall comply with SSHCP AMMs TCB-1 through TCB-5.

BIO-23. Other Nesting Birds:

The SSHCP AMMs require species-specific preconstruction nesting bird surveys. However, the Project Area may support other special-status nesting birds and nesting migratory birds protected by other regulations. Therefore, the following measure is recommended:

- A qualified biologist shall conduct a preconstruction nesting bird survey (can be conducted concurrently with BIO-14) 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). These surveys can be conducted concurrently with surveys required under BIO-14. If active nests are found, 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-24. Western Red Bat:

The Project applicants shall comply with SSHCP AMM BAT-1 through BAT-5.

BIO-25. American Badger:

There are no species-specific SSHCP AMMs for American badger. However, this is a Covered Species, and the Project applicants shall comply with SSHCP requirements, In-Lieu Fee Program, and relevant AMMs.

BIO-26. Heritage Oak Tree Removal:

A tree removal permit shall be procured from the City for removal of any heritage oak trees and the Project proponent will provide appropriate mitigation as required by the tree removal permit. Mitigation may include payment into the City's Tree Preservation Fund.

6.2 Annexation Area

BIO-AA1. Conduct a Reconnaissance-level Site Investigation and Literature Review:

The proponent for future road improvement or development projects within the Annexation Area shall ensure completion of a reconnaissance-level site investigation and a literature review to determine the approximate extent of potential Waters of the U.S., to verify the SSHCP land cover types, and to determine the presence of potential habitat for special-status plants and animals. The literature review shall include available information and a query of the CDFW CNDDDB, CNPS, and USFWS databases for potentially occurring special-status species near the Project and annexation areas. If there is potential for impacts to biological resources not evaluated within this BRA, completion of a project-specific BRA and/or wetland delineation may be necessary.

BIO-AA2. Incorporate Relevant Mitigation Measures:

If the reconnaissance-level site assessment and literature review described in BIO-AA1 determine that all potential impacts from future projects to biological resources evaluated within this BRA have been adequately assessed within the impact analysis for this BRA, the following mitigation measures as described in Section 6.1 for the Project Area shall be implemented for the Annexation Area: BIO-1, BIO-8, BIO-9, BIO-12 through BIO-26. In addition, if the reconnaissance-level site assessment and literature review described in BIO-AA1 confirm the presence of potential Waters of the U.S., BIO-2 through BIO-6 shall be implemented for the Annexation Area. For proposed projects on developed lands in the Annexation Area, the City would determine whether participation in the SSHCP would be required.

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LIST OF ATTACHMENTS

Attachment A – Representative Site Photographs

Attachment B – Results of Database Queries

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

Attachment D – Wildlife Observed Onsite

Attachment E – SSHCP-Modeled Species Habitat Maps

Attachment F – SSHCP Avoidance and Minimization Measures

ATTACHMENT A

Project Description



Photo 1. SSHCP Valley Grassland land cover type that makes up majority of Project Area. View West. Photo taken September 27, 2019.



Photo 2. SSHCP Valley Grassland land cover type in southwest portion of Project Area. View North. Photo taken September 27, 2019.



Photo 3. SSHCP Valley Grassland land cover type in northwest portion of Project Area. View Northeast. Photo taken September 27, 2019.



Photo 4. SSHCP Valley Grassland land cover type adjacent to low/high density development in northwest portion of Project Area. View South. Photo taken September 27, 2019.



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Representative Site Photographs
2019-191 – Fairway Oaks Project



Photo 5. Edge of SSHCP Riparian Woodland land cover type on southeast Project Area boundary. View Northeast. Photo taken September 27, 2019.



Photo 6. Riparian Woodland land cover type on southeast Project Area boundary. View Southeast. Photo taken September 27, 2019.



Photo 7. SSHCP Stream/Creek land cover type on southeast project boundary. View Southeast. Photo taken September 27, 2019.



Photo 8: SSHCP Low Density Development land cover type in Off-site Road Improvements Area.



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Representative Site Photographs
2019-191 – Fairway Oaks Project

ATTACHMENT B

Representative Site Photographs



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

October 09, 2019

Consultation Code: 08ESMF00-2020-SLI-0070

Event Code: 08ESMF00-2020-E-00197

Project Name: Fairway Oaks Project and Annexation Area

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-0070

Event Code: 08ESMF00-2020-E-00197

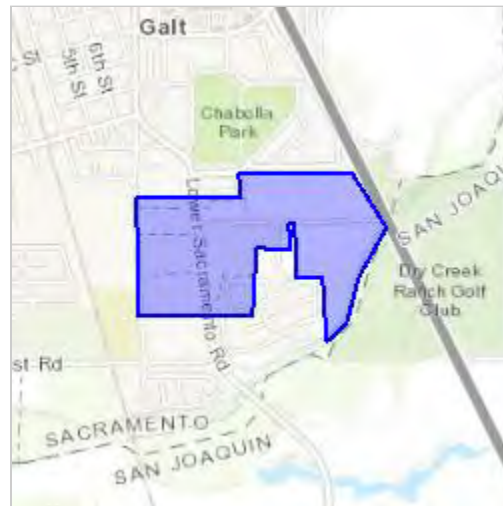
Project Name: Fairway Oaks Project and Annexation Area

Project Type: DEVELOPMENT

Project Description: The Project includes 50.5-acres for construction of a residential development, 1.5-acres for offsite road improvements along Cornell Road, and Annexation into the City of Galt and potential road improvements within a 39.5-acre Annexation Area.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.24439041011031N121.29771391698593W>



Counties: Sacramento, CA | San Joaquin, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Riparian Brush Rabbit <i>Sylvilagus bachmani riparius</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6189	Endangered

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
<p>California Red-legged Frog <i>Rana draytonii</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2891</p> <p>Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf</p>	Threatened
<p>California Tiger Salamander <i>Ambystoma californiense</i></p> <p>Population: U.S.A. (Central CA DPS)</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2076</p>	Threatened

Fishes

NAME	STATUS
<p>Delta Smelt <i>Hypomesus transpacificus</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/321</p>	Threatened

Insects

NAME	STATUS
<p>Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/7850</p> <p>Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf</p>	Threatened

Crustaceans

NAME	STATUS
<p>Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/498</p>	Threatened
<p>Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2246</p>	Endangered

Flowering Plants

NAME	STATUS
Fleshy Owl's-clover <i>Castilleja campestris ssp. succulenta</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS (Lodi North (3812123) OR Bruceville (3812134) OR Galt (3812133) OR Clay (3812132) OR Thornton (3812124) OR Lockeford (3812122) OR Terminous (3812114) OR Lodi South (3812113) OR Waterloo (3812112))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branchinecta mesoatlantica</i> midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
<i>Brasenia schreberi</i> watershield	PDCAB01010	None	None	G5	S3	2B.3
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Carex comosa</i> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<i>Castilleja campestris</i> var. <i>succulenta</i> succulent owl's-clover	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock	PDAP10M051	None	None	G5T4T5	S2?	2B.1
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<i>Downingia pusilla</i> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Great Valley Mixed Riparian Forest</i> Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
Hibiscus lasiocarpus var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidurus packardii vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Lilaeopsis masonii Mason's lilaeopsis	PDAP119030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
Rana boylei foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Scutellaria galericulata marsh skullcap	PDLAM1U0J0	None	None	G5	S2	2B.2
Scutellaria lateriflora side-flowering skullcap	PDLAM1U0Q0	None	None	G5	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<i>Sylvilagus bachmani riparius</i> riparian brush rabbit	AMAEB01021	Endangered	Endangered	G5T1	S1	
<i>Symphyotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Thamnophis gigas</i> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Valley Oak Woodland Valley Oak Woodland	CTT71130CA	None	None	G3	S2.1	

Record Count: 47

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

17 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quads 3812134, 3812133, 3812132, 3812124, 3812123, 3812122, 3812114 3812113 and 3812112;

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

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Castilleja campestris var. succulenta	succulent owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	(Mar)Apr-May	1B.2	S2S3	G4? T2T3
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2?	G5T4T5
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	4.2	S3	G3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Scutellaria galericulata	marsh skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G5
Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S2	G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2

[Trifolium hydrophilum](#)

saline clover

Fabaceae

annual herb

Apr-Jun

1B.2

S2

G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 23 October 2019].

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ATTACHMENT C

Special-Status Species Evaluated for the Project Area

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Plants							
Watershield <i>(Brasenia schreberi)</i>	–	–	2B.3	Freshwater marshes and swamps (98'–7,218').	June–September	Low potential to occur. Marginal habitat is present onsite.	Absent. No habitat onsite.
Bristly sedge <i>(Carex comosa)</i>	–	–	2B.1	Marshes and swamps, including lake margins, coastal prairie, and valley and foothill grassland (0'–2,051').	May–September	Low potential to occur. Marginal habitat is present onsite.	Absent. No habitat onsite.
Succulent Owl's Clover <i>(Castilleja campestris ssp. succulenta)</i>	FT	CE	1B.2	Vernal pools, often in acidic environments. (164'–2,461').	April–May	Absent. No habitat onsite.	Low Potential to Occur.
Parry's rough tarplant <i>(Centromadia parryi ssp. rudis)</i>	–	–	4.2	Alkaline, vernally mesic areas and seeps in valley and foothill grassland, vernal pools, sometimes found on roadsides (0'–328').	May–October	Low potential to occur. Marginal habitat is present onsite.	Low potential to occur.
Bolander's water–hemlock <i>(Cicuta maculata var. bolanderi)</i>	–	–	2B.1	Coastal, fresh, or brackish marshes and swamps (0'–656').	July–September	Absent. No habitat onsite. Known to occur mostly in coastal wetlands in California and unlikely to occur in small marshy areas that may exist along Dry Creek.	Absent. No habitat onsite.
Dwarf downingia <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 2019b) (3'–1,460').	March–May	Absent. No SSHCP-Modeled habitat or actual habitat onsite.	Low Potential to Occur. No SSHCP-Modeled habitat onsite but actual habitat may be present.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Rose-mallow <i>(Hibiscus lasiocarpus</i> <i>var. occidentalis)</i>	–	–	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees (0'–394').	June–September	Absent. No habitat onsite.	Absent. No habitat onsite.
Ferris' goldfields <i>(Lasthenia ferrisiae)</i>	–	–	4.2	Alkaline and clay vernal pools (66'–2,297').	February–May	Absent. No habitat onsite.	Absent. No habitat onsite.
Delta tule pea <i>(Lathyrus jepsonii</i> <i>var. jepsonii)</i>	–	–	1B.2	Freshwater and brackish marshes and swamps (0'–16').	May–September	Absent. Known to occur mostly in coastal wetlands and sloughs in California delta habitat and unlikely to occur in small marshy areas that may exist along Dry Creek.	Absent. No habitat onsite.
Legenere <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	Absent. No SSHCP-Modeled habitat or actual habitat onsite.	Low Potential to Occur. No SSHCP-Modeled habitat onsite but actual habitat may be present.
Mason's lilaeopsis <i>(Lilaeopsis masonii)</i>	–	CR	1B.1	Tidal zones in brackish or freshwater marshes or swamps and riparian scrub (0'–33').	April–November	Absent. No habitat onsite.	Absent. No habitat onsite.
Delta mudwort <i>(Limosella australis)</i>	–	–	2B.1	Usually mud banks in freshwater or brackish marshes and swamps and riparian scrub (0'–10').	May–August	Absent. No habitat onsite.	Absent. No habitat onsite.
Sanford's arrowhead <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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Marsh skullcap (<i>Scutellaria galericulata</i>)	–	–	2B.2	Mesic areas in lower montane coniferous forest, meadows and seeps, and marshes and swamps (0'–6,400')	June–September	Low Potential to Occur. Marginal habitat is present onsite.	Low Potential to Occur.
Side-flowering skullcap (<i>Scutellaria lateriflora</i>)	–	–	2B.2	Mesic areas in meadows and seeps and marshes and swamps (0'–1,640').	July–September	Low Potential to Occur. Marginal habitat is present onsite.	Low Potential to Occur.
Suisun marsh aster (<i>Symphyotrichum lentum</i>)	–	–	1B.2	Brackish and freshwater marshes and swamps (0'–10').	May–November	Absent. No habitat onsite.	Absent. No habitat onsite.
Saline clover (<i>Trifolium hydrophilum</i>)	–	–	1B.2	Marshes and swamps, mesic and alkaline areas in valley and foothill grassland, and vernal pools (0'–984').	April–June	Absent. No habitat onsite.	Absent. No habitat onsite.
Invertebrates							
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	–	SSHCP-Covered Species	Vernal pools/wetlands.	November–April	Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Midvalley fairy shrimp (<i>Branchinecta mesoamericana</i>)	–	–	CNDDDB, SSHCP-Covered Species	Vernal pools/wetlands.	November – April	Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	-	SSHCP-Covered Species	Elderberry shrubs.	Any season	Potential to Occur. SSHCP-Modeled Species Habitat is present and elderberry shrubs observed onsite in Modeled habitat and other habitat during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat is absent, but elderberry shrubs may be present onsite.
Ricksecker's water scavenger beetle (<i>Hydrochara rickseckeri</i>)	-	-	SSHCP-Covered Species	Vernal pools/wetlands.		Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Low Potential to Occur. No SSHCP-Modeled habitat onsite but actual habitat may be present.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	-	SSHCP-Covered Species	Vernal pools/wetlands.	November-April	Absent. SSHCP-Modeled Species Habitat determined to be absent during September 2019 site assessment.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Fish							
Delta smelt (<i>Hypomesus transpacificus</i>)	FT	CE	-	Sacramento-San Joaquin delta.	N/A	Absent. No habitat onsite.	Absent. No habitat onsite.
Longfin smelt (<i>Spirinchus thaleichthys</i>)	FC	CT	SSC	Freshwater and seawater estuaries.	N/A	Absent. No habitat onsite.	Absent. No habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Sacramento splittail <i>(Pogonichthys macrolepidotus)</i>	-	-	SSC	San Francisco bay estuary. Spawns in upstream floodplains and backwater sloughs.	N/A	Low Potential to Occur. Marginal habitat present onsite.	Absent. No habitat onsite.
Steelhead (CA Central Valley DPS) <i>(Oncorhynchus mykiss)</i>	FT	-	-	Undammed rivers, streams, creeks.	N/A	Low Potential to Occur. Marginal habitat present onsite.	Absent. No habitat onsite.
Amphibians							
California tiger salamander (Central California DPS) <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	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Foothill yellow-legged frog <i>(Rana boylei)</i>	-	CT	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. Outside of range for species. Closest known occurrence was in the Mokelumne River drainage and is now extirpated (CDFW 2019b). The presence at that locality was likely due to waif dispersal (CDFW 2019b).	Absent. Outside of range for species. Closest known occurrence was in the Mokelumne River drainage and is now extirpated (CDFW 2019b). The presence at that locality was likely due to waif dispersal (CDFW 2019b).
California red-legged frog <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.	May 1- November 1	Absent. Outside of range for species. No habitat onsite.	Absent. Outside of range for species. No habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Western spadefoot (<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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Reptiles							
Northwestern pond turtle (<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. SSHCP-Modeled Species Habitat present onsite.	Absent. No habitat onsite.
Giant garter snake (<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 habitat onsite. The Study Area is located within the Cosumnes-Mokelumne River Basin Recovery Unit (USFWS 2017b). However, there are no marshes or seasonal wetlands to provide suitable aquatic habitat for the species within the Study Area.	Absent. No habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Birds							
Burrowing owl <i>(Athene cunicularia)</i>	-	-	BCC, SSC, SSHCP- Covered 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	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Cooper's hawk <i>(Accipiter cooperii)</i>	-	-	CDFW WL, SSHCP- Covered Species	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes	March-July	Present. SSHCP-Modeled Species Habitat present onsite and species observed during September 2019 site assessment.	Present. SSHCP-Modeled Species Habitat present onsite and species observed during September 2019 site assessment.
Ferruginous hawk <i>(Buteo regalis)</i>	-	-	BCC, CDFW WL, SSHCP- Covered 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 onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Greater sandhill crane <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)	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Loggerhead shrike <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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Northern harrier <i>(Circus hudsonius)</i>	-	-	SSC, SSHCP-Covered 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.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Swainson's hawk <i>(Buteo swainsoni)</i>	-	CT	BCC, SSHCP-Covered Species	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during discing/harvesting, irrigated pastures	March-August	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Tricolored blackbird <i>(Agelaius tricolor)</i>	-	CT	BCC, SSC, SSHCP-Covered Species	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Counties 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	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
White-tailed kite <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 onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Yellow-billed cuckoo <i>(Coccyzus americanus)</i>	FT	CE	BCC	Breeds in California, Arizona, Utah, Colorado, and Wyoming. In California, they nest along the upper Sacramento River and the South Fork Kern River from Isabella Reservoir to Canebrake Ecological Reserve. Other known nesting locations include Feather River (Butte, Yuba, Sutter counties), Prado Flood Control Basin (San Bernadino and Riverside Co.), Amargosa River and Owens Valley (Inyo Co.), Santa Clara River (Los Angeles Co.), Mojave River and Colorado River (San Bernardino Co.). Nests in riparian woodland. Winters in South America.	June 15- August 15	Absent. No habitat onsite.	Absent. No habitat onsite.
Yellow warbler <i>(Setophaga petechia)</i>	-	-	SSC, BCC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte Counties), Sierra Nevada range above tree line, and southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America.	May-August	Potential to Occur. Foraging habitat onsite.	Potential to Occur. Foraging habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				
Mammals							
Western red bat <i>(Lasiurus blossevillii)</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) (Western Bat Working Group [WBWG] 2018).	April- September	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
American badger <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 onsite.	Potential to Occur. SSHCP-Modeled Species Habitat present onsite.
Riparian brush rabbit <i>(Sylvilagus bachmani riparius)</i>	FE	CE	-	Riparian brush rabbits inhabit dense, brushy areas of valley riparian forests marked by extensive thickets of California wild rose (<i>Rosa californica</i>), California blackberries (<i>Rubus ursinus</i>), and willows (<i>Salix</i> spp.). Thriving mats of low-growing vines and shrubs serve as ideal living sites where they build tunnels under and through the vegetation.	Any season	Absent. No habitat onsite.	Absent. No habitat onsite.

Table 3. Special-Status Species Evaluated for the Study Area							
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential to Occur in Project Area	Potential to Occur in Annexation Area
	ESA	CESA	Other				

Status Codes:

ESA	Endangered Species Act
CESA	California Endangered Species Act
FE	ESA listed, Endangered.
FT	ESA listed, Threatened.
FC	Candidate for ESA listing as Threatened or Endangered.
BCC	USFWS Bird of Conservation Concern
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, § 5050-reptiles/amphibians).
CE	CESA or NPPA listed, Endangered. CESA or NPPA listed, Rare.
CR	
CT	CESA or NPPA listed, Threatened.
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern
SSHCP	South Sacramento Habitat Conservation Plan
CNDDDB	Species that is tracked by CDFG's CNDDDB but does not have any of the above special-status designations otherwise.
1B	California Rare Plant Ranks (CRPRs)/Rare or Endangered in California and elsewhere.
2B	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 D

Wildlife Observed Onsite

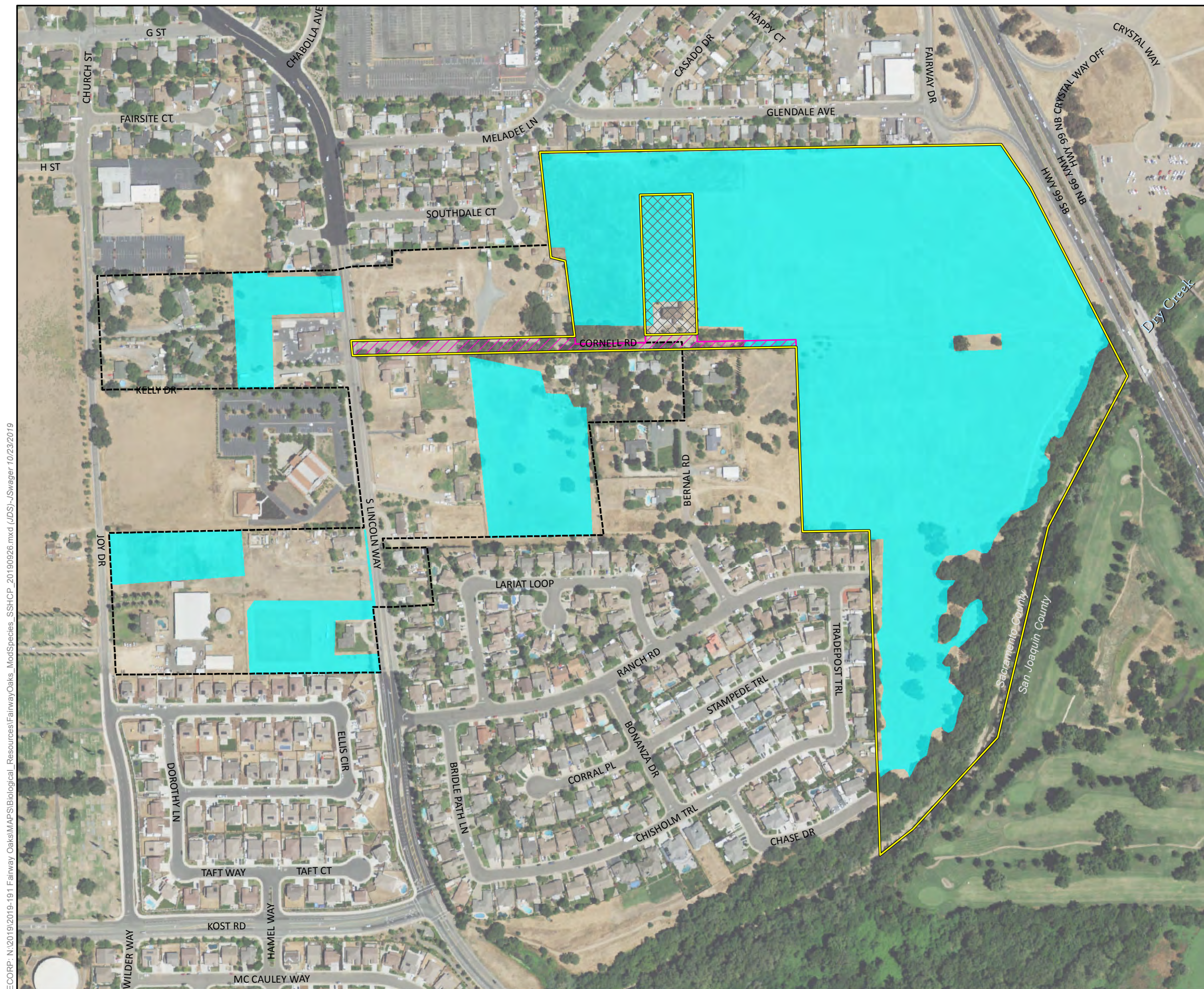
Fairway Oaks

Wildlife Observed Onsite (September 27, 2019)

Common Name	Scientific Name
Birds	
Wood Duck	<i>Aix sponsa</i>
Rock Pigeon	<i>Columba livia</i>
Anna's Hummingbird	<i>Calypte anna</i>
Turkey Vulture	<i>Cathartes aura</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Downy Woodpecker	<i>Dryobates pubescens</i>
Nuttall's Woodpecker	<i>Dryobates nuttallii</i>
Northern Flicker	<i>Colaptes auratus</i>
Black Phoebe	<i>Sayornis nigricans</i>
Say's Phoebe	<i>Sayornis saya</i>
California Scrub-Jay	<i>Aphelocoma californica</i>
American Crow	<i>Corvus brachyrhynchos</i>
Bushtit	<i>Psaltiriparus minimus</i>
House Wren	<i>Troglodytes aedon</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
American Robin	<i>Turdus migratorius</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
House Finch	<i>Haemorhous mexicanus</i>
Lesser Goldfinch	<i>Spinus psaltria</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
California Towhee	<i>Melospiza crissalis</i>
Orange-crowned Warbler	<i>Leiothlypis celata</i>
Yellow-rumped Warbler	<i>Setophaga coronata</i>
Mammals	
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>
California Ground Squirrel	<i>Spermophilus beecheyi</i>

Amphibians	
Pacific Tree Frog	<i>Pseudacris regilla</i>

ATTACHMENT E**SSHCP-Modeled Species Habitat Maps**



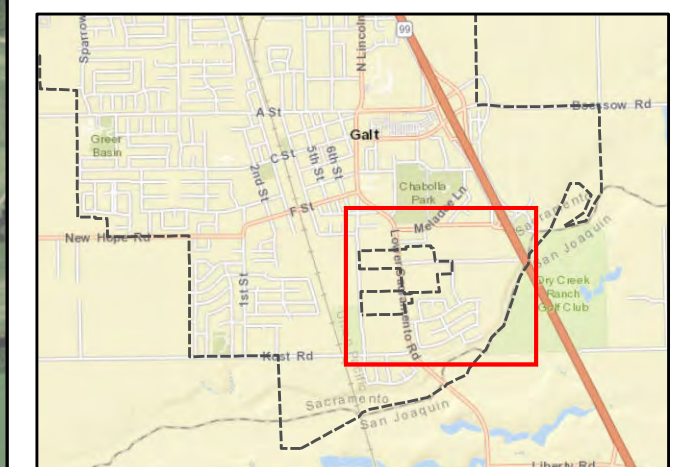
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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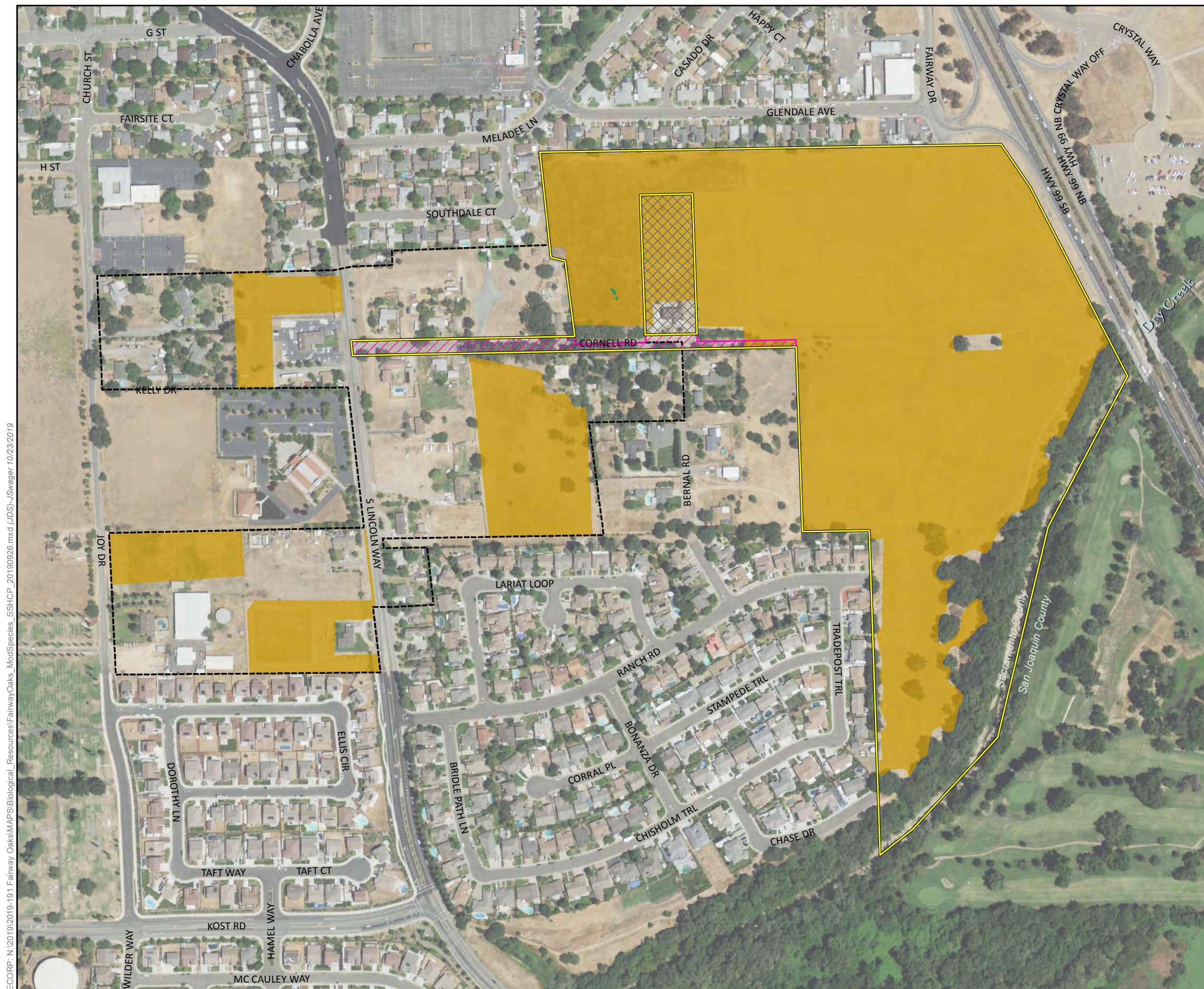


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Map Date: 10/23/2019



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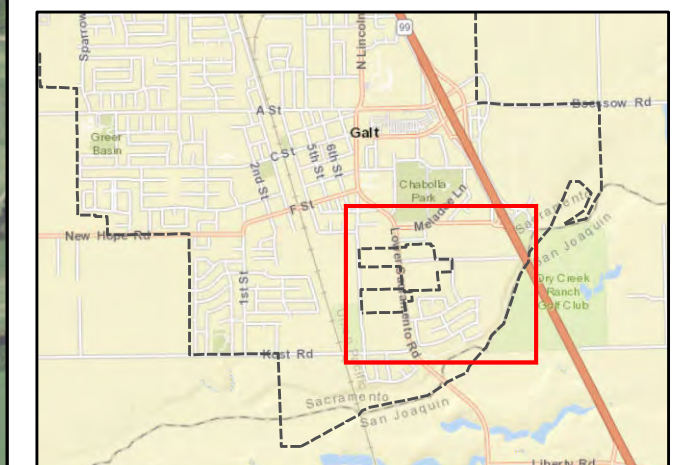
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Nesting
- Wintering

Sources: ESRI, NAIP (2018), CBG, SSHCP
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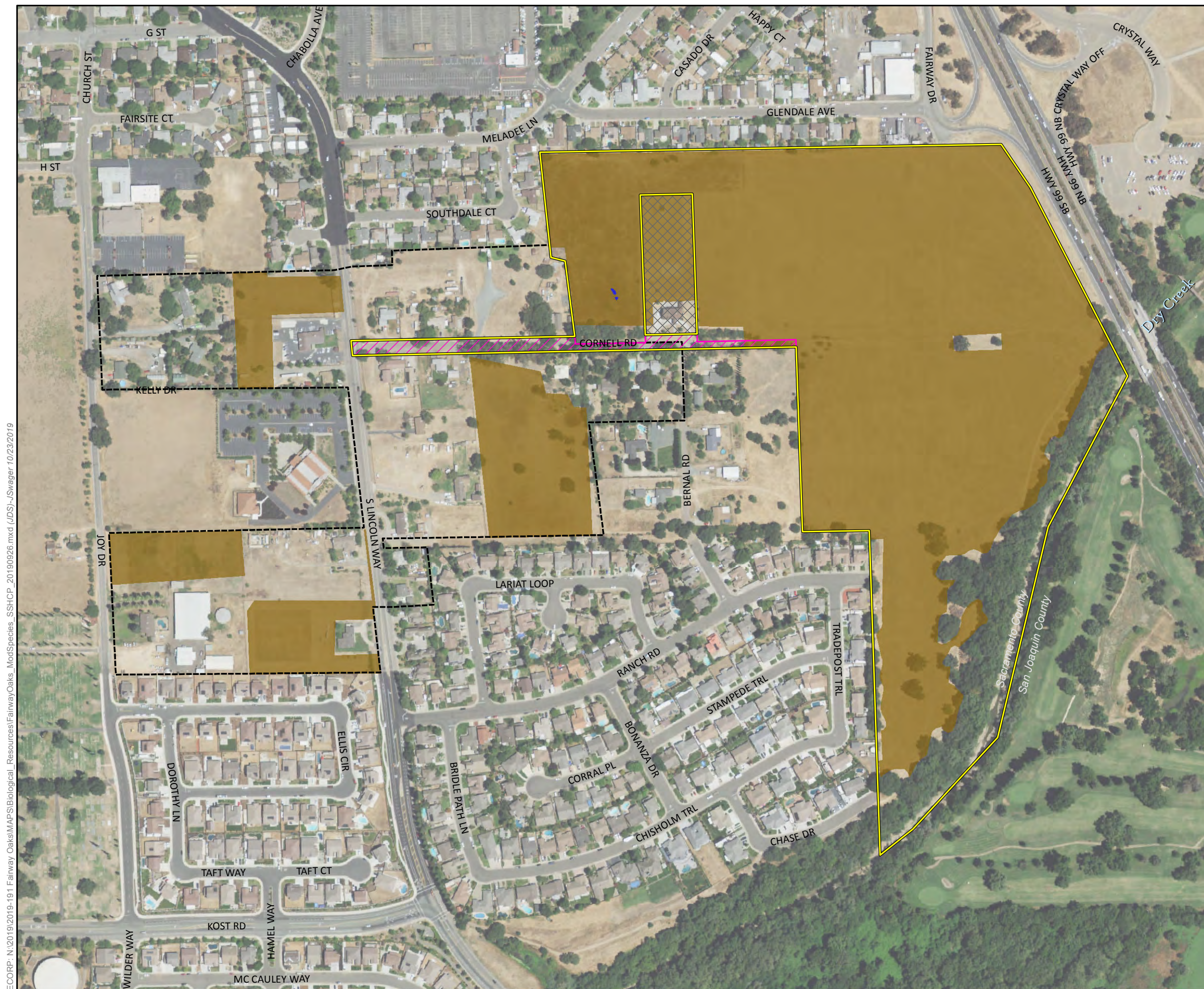


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Map Date: 10/23/2019



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Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Aquatic Habitat
- Upland Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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Map Date: 10/23/2019

Scale in Feet
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SSHCP Modeled Species Habitat
(California Tiger Salamander)
2019-191 Fairway Oaks



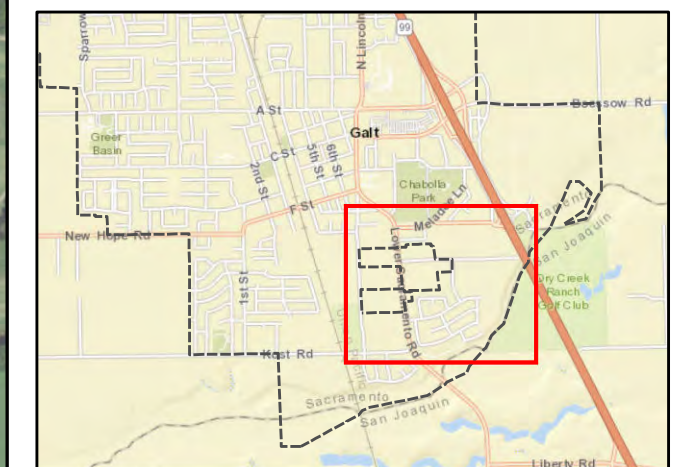
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

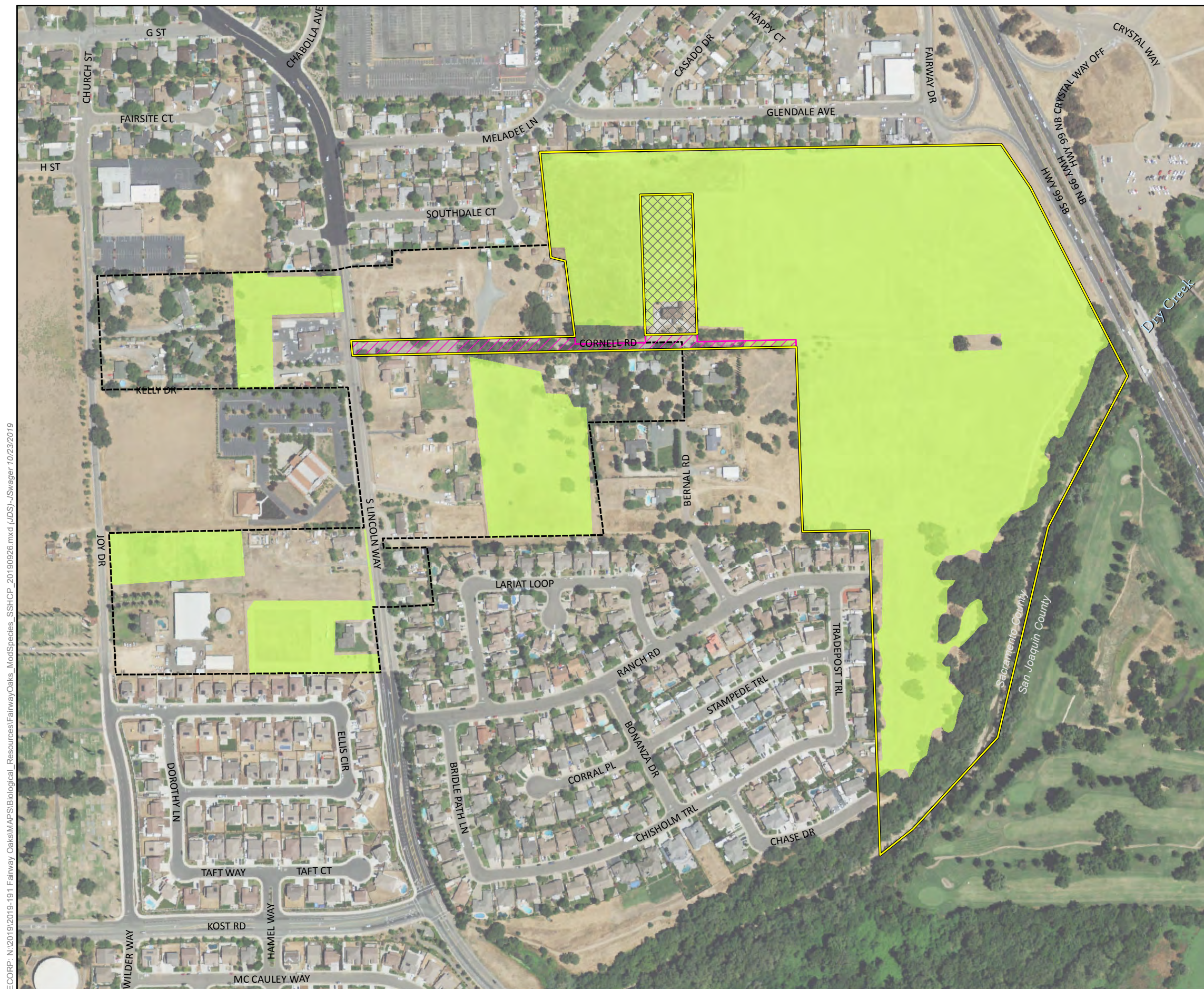
Modeled Habitat

- Nesting-Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
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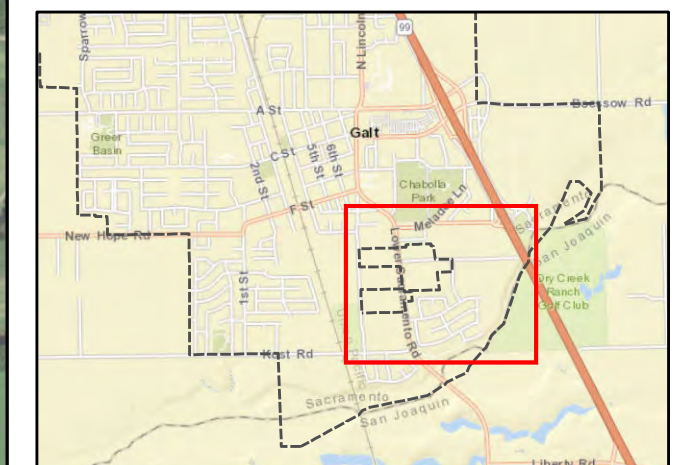
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Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS
- Modeled Habitat
- Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
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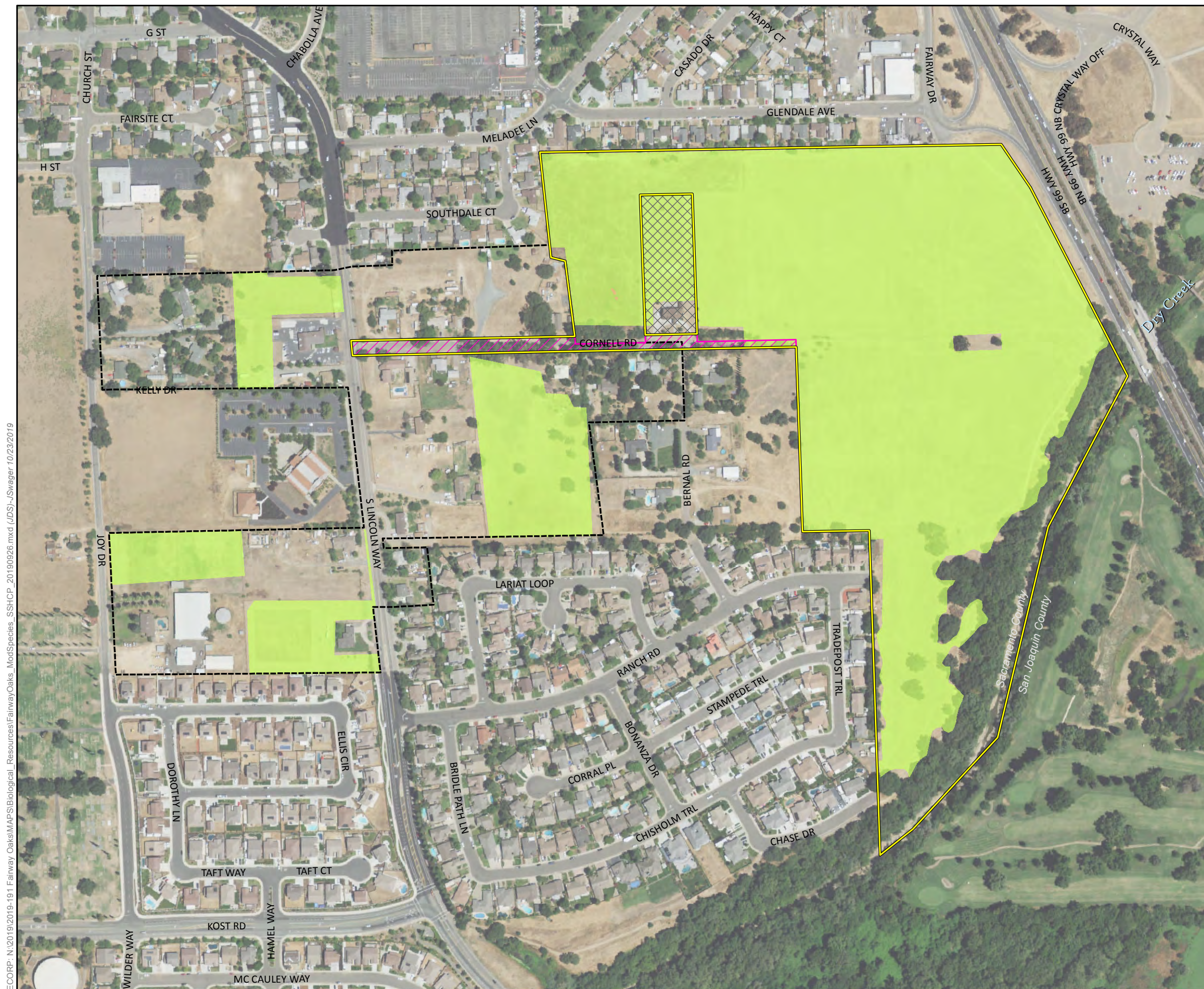


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Map Date: 10/23/2019



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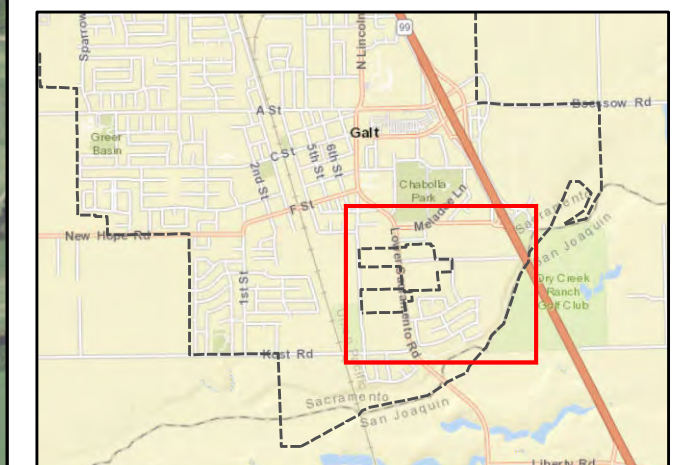
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Foraging
- Roosting

Sources: ESRI, NAIP (2018), CBG, SSHCP
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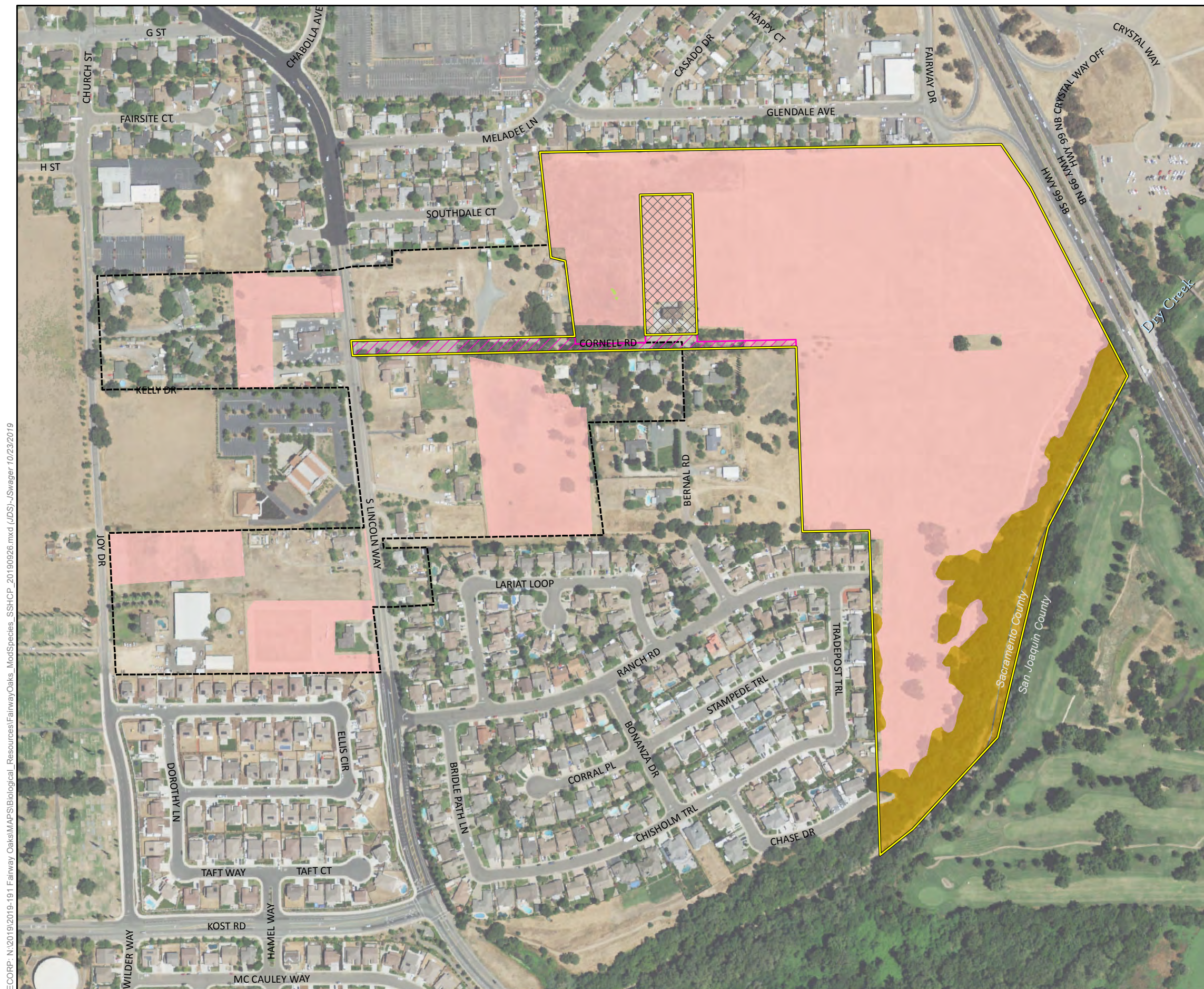


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Map Date: 10/23/2019



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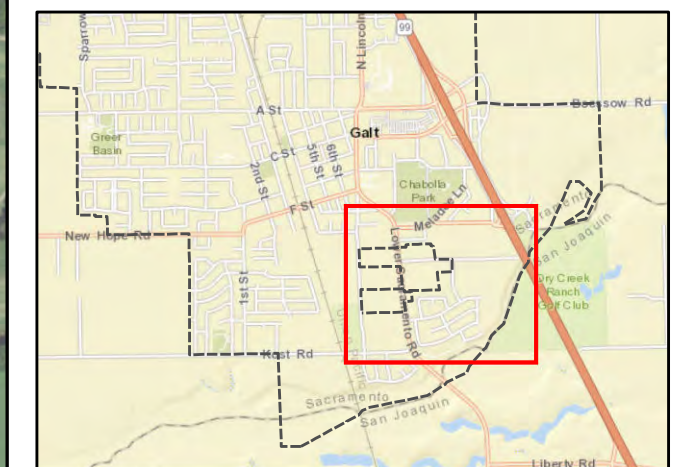
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- Offsite Road Improvements
- NAPOTS

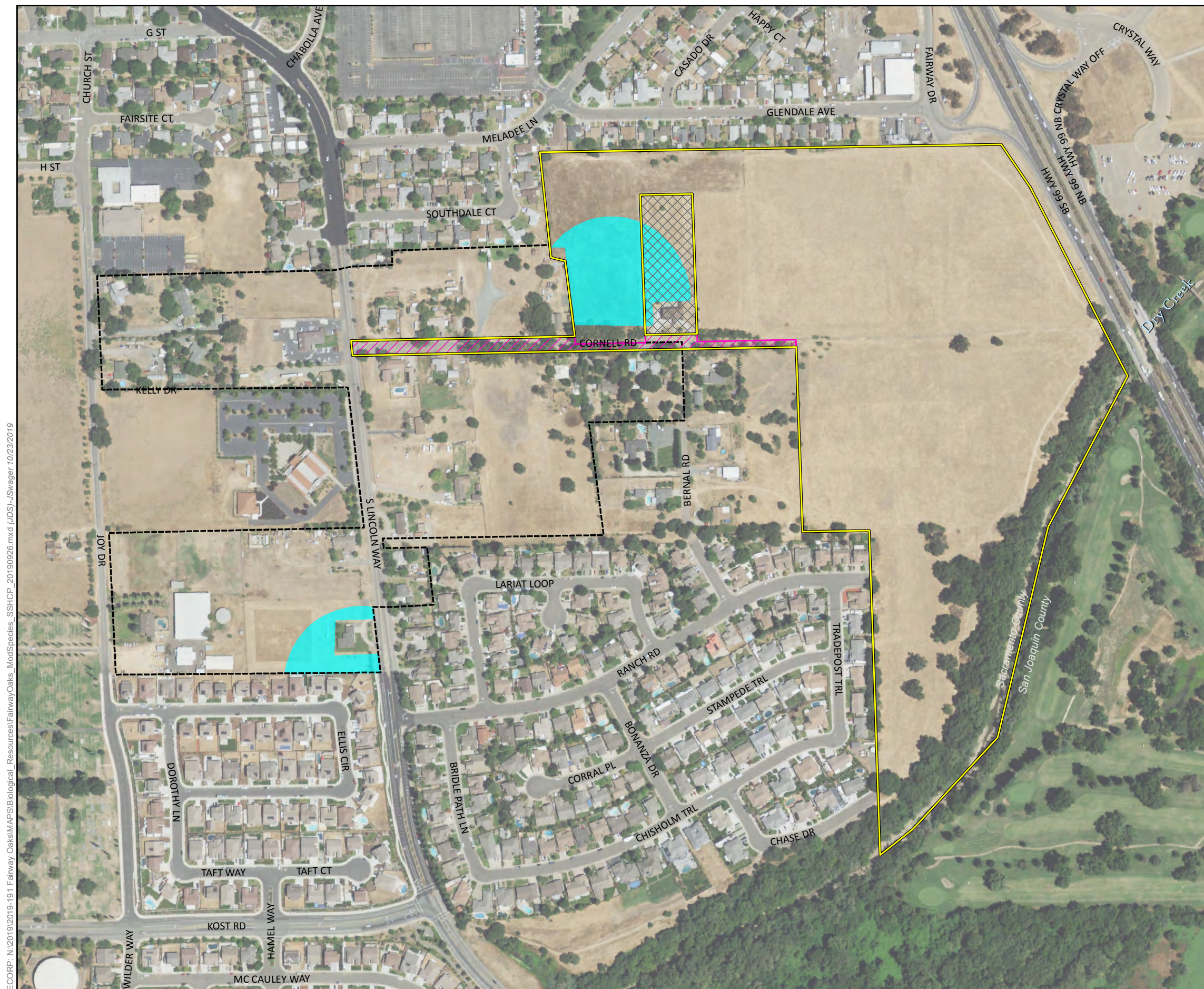
Modeled Habitat

- Foraging
- Nesting
- Nesting-Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
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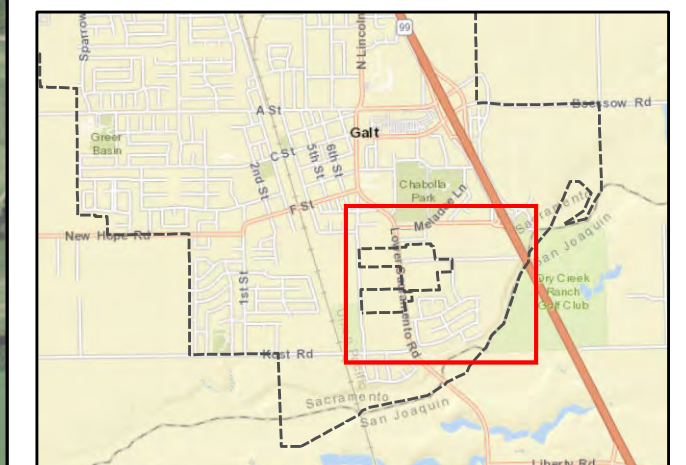
Map Features

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- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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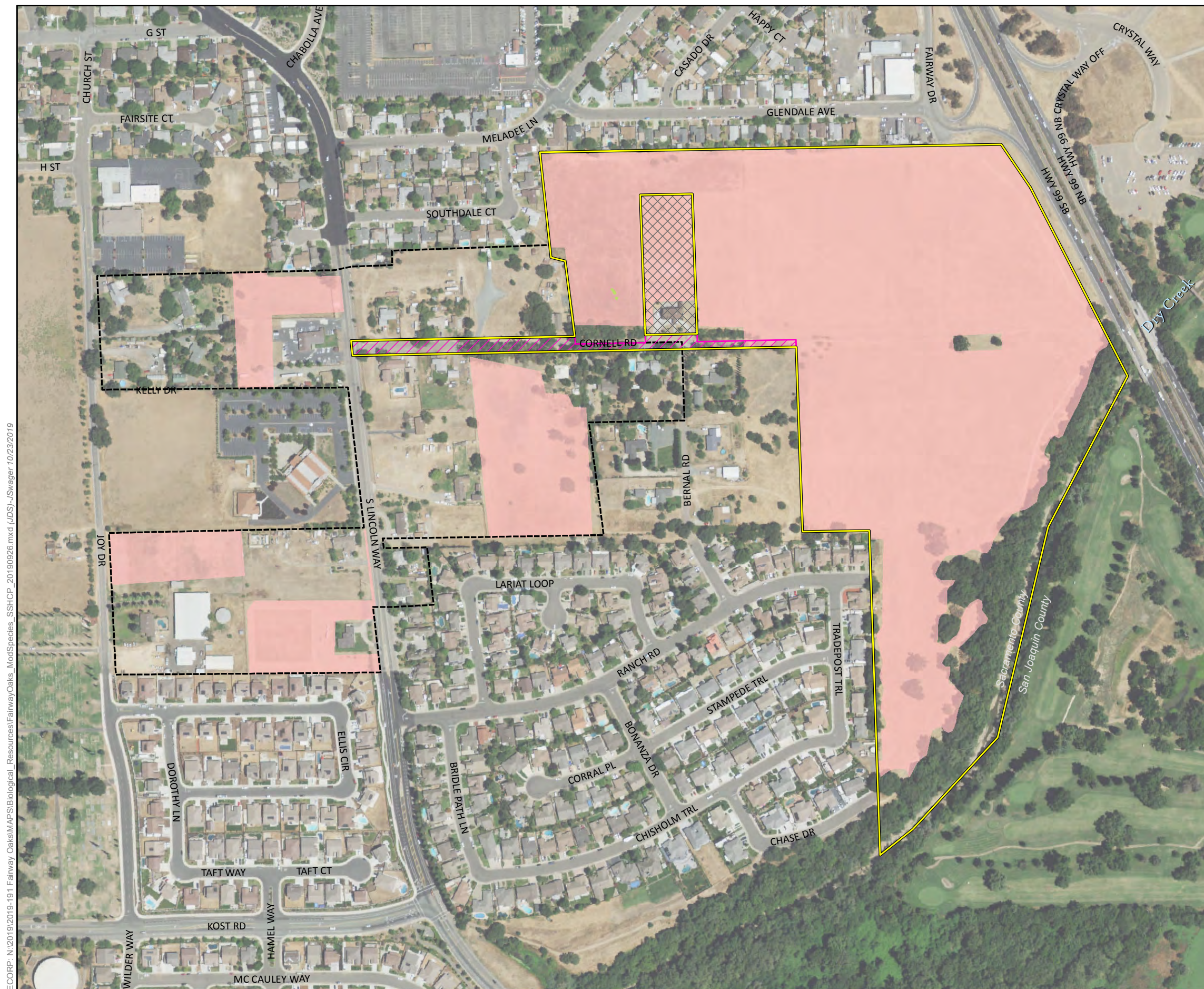


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Map Date: 10/23/2019



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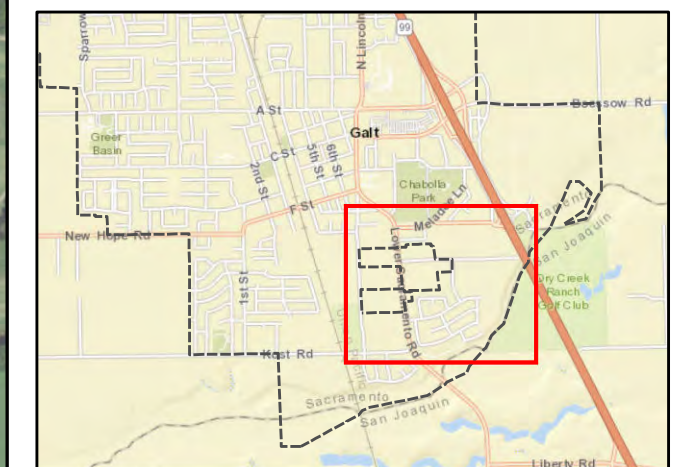
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Foraging
- Nesting-Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
1762-000_EXMABD.dwg



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Map Date: 10/23/2019



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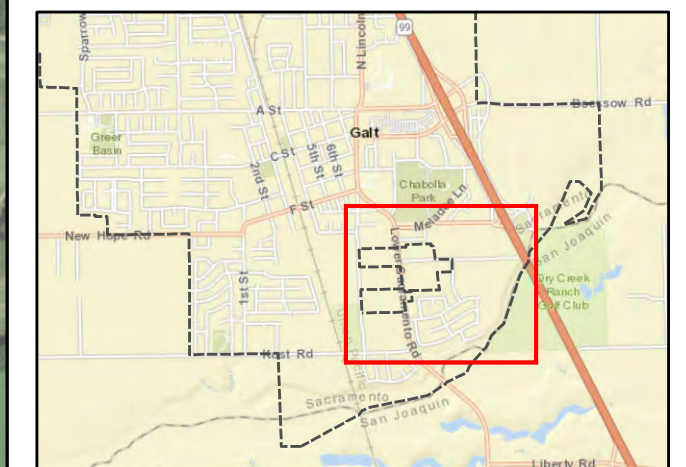
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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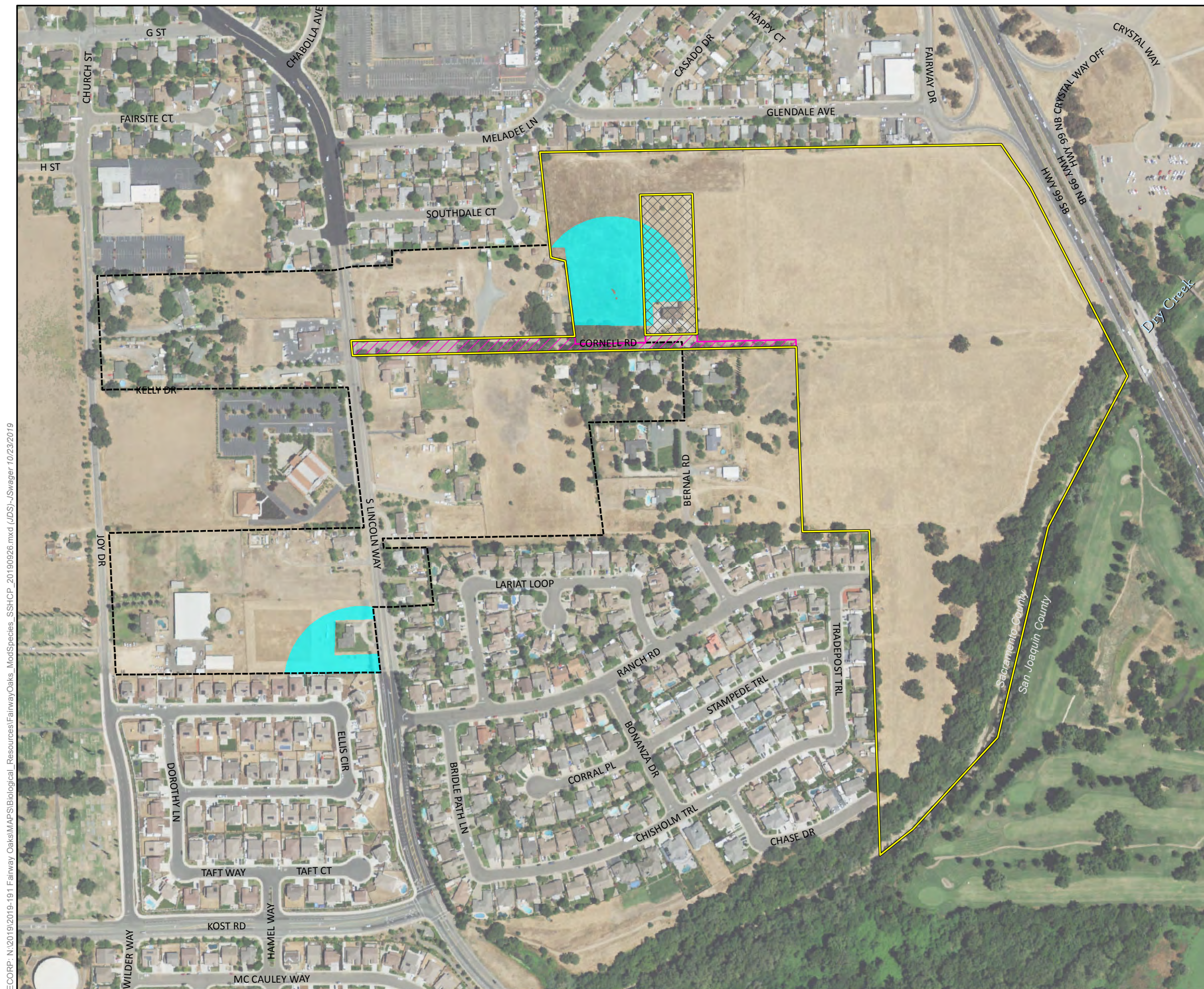


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Map Date: 10/23/2019



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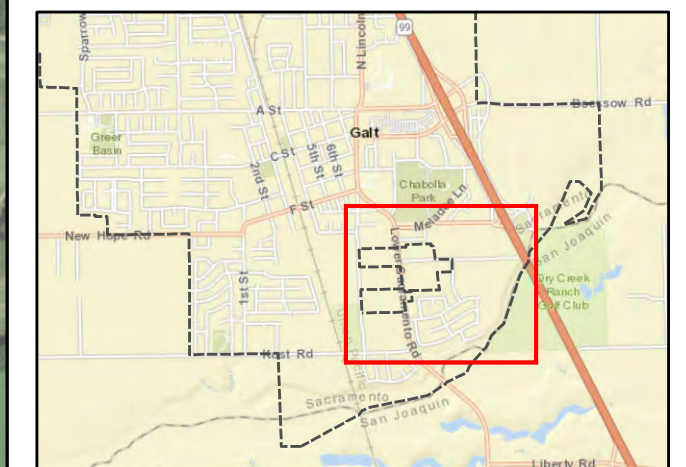
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

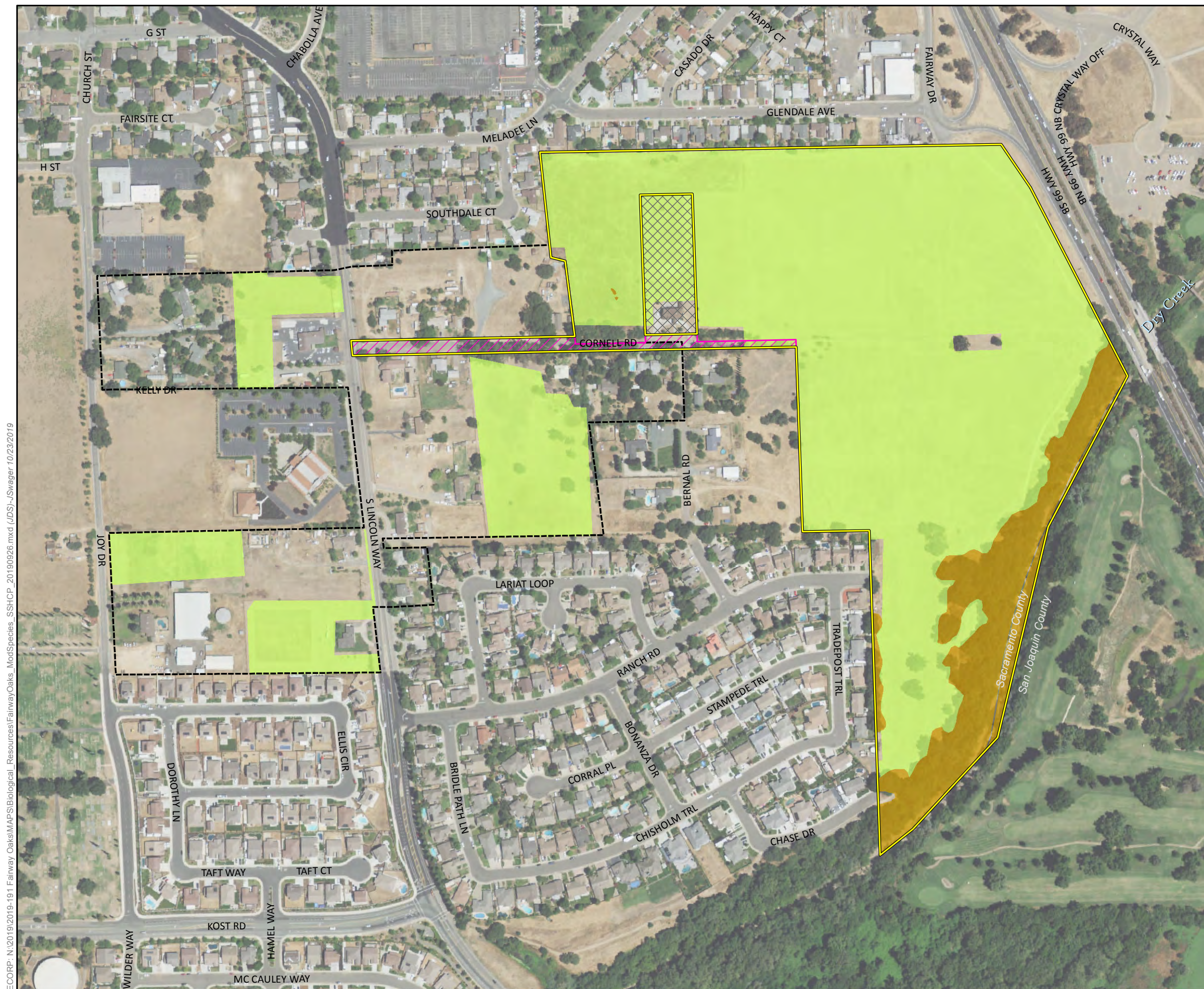
Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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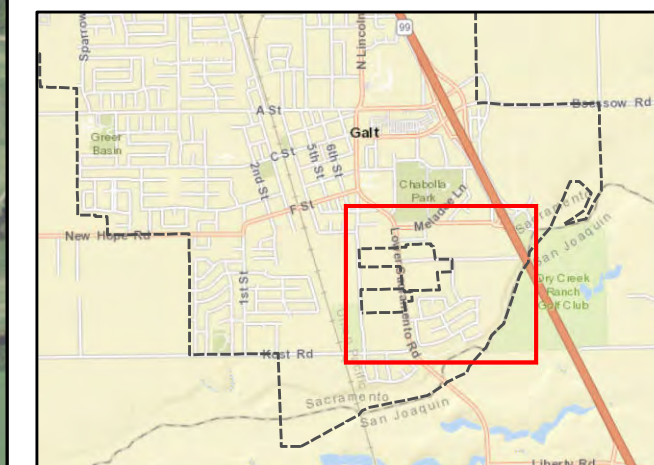
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Foraging
- Nesting

Sources: ESRI, NAIP (2018), CBG, SSHCP
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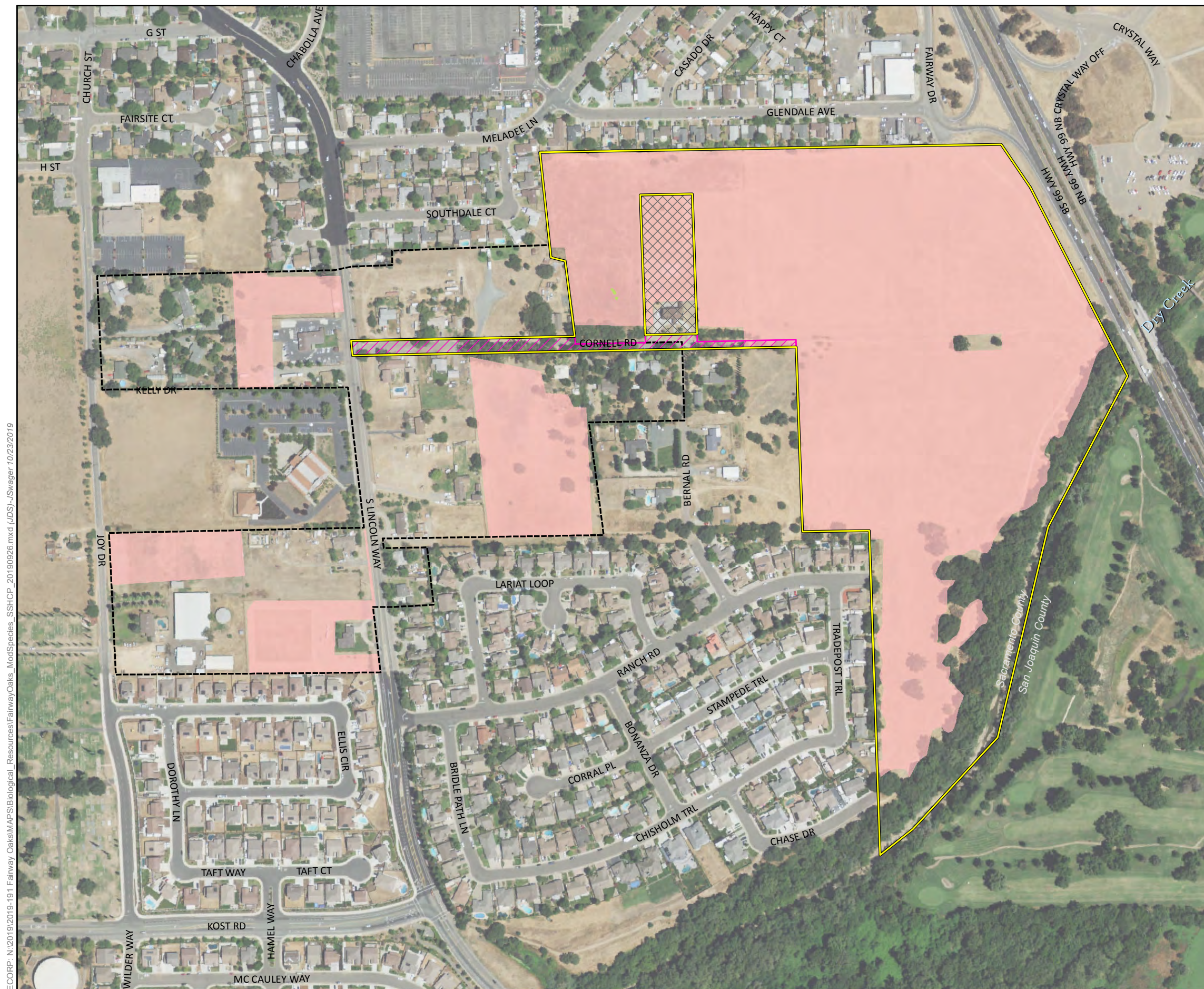


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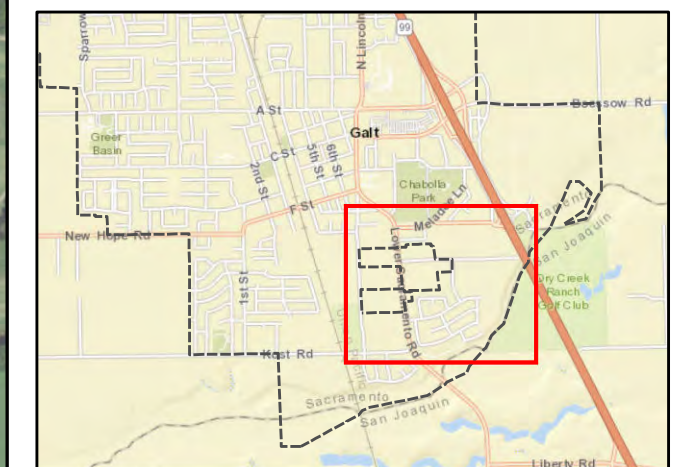
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Foraging
- Nesting-Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
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Map Date: 10/23/2019



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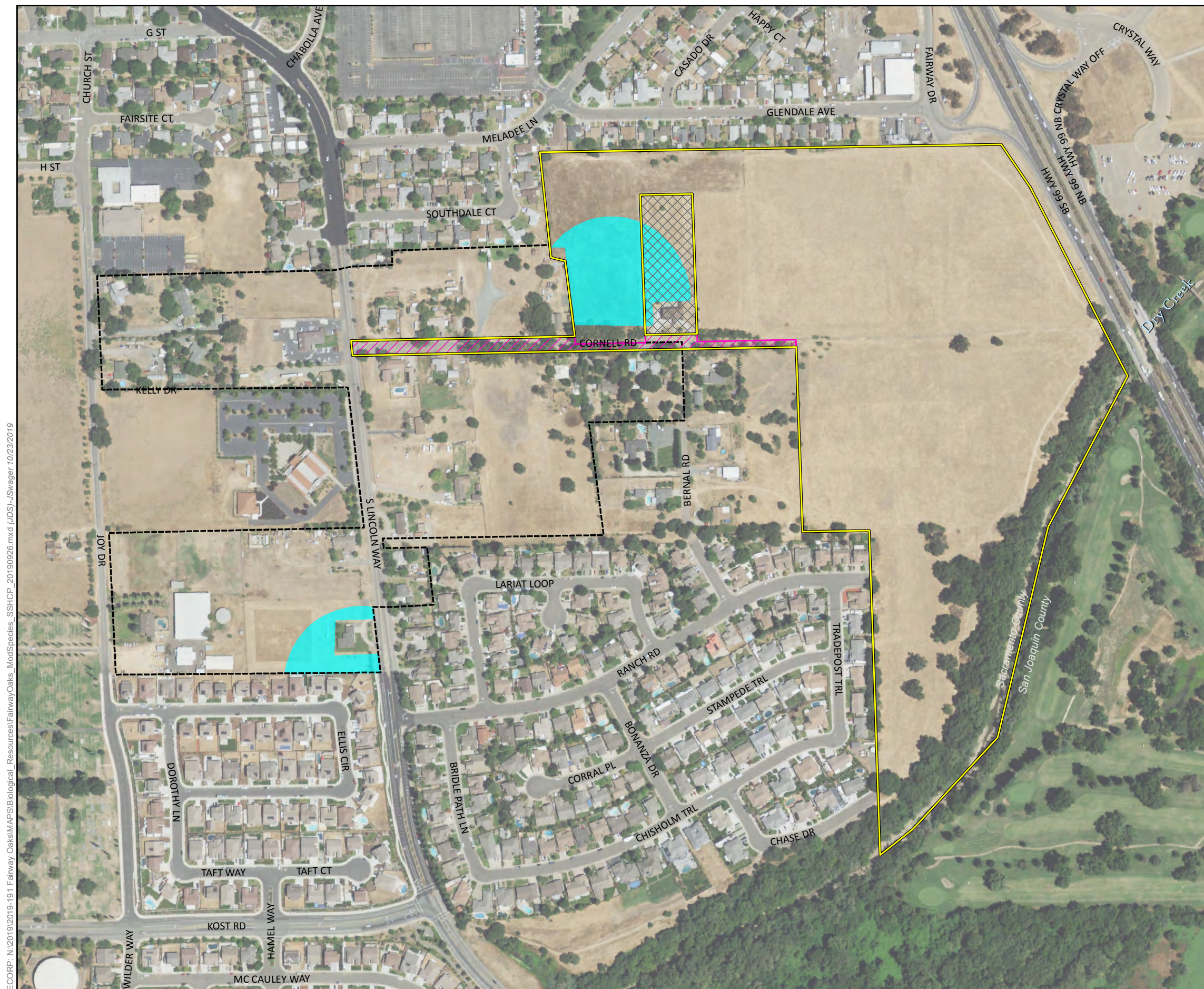
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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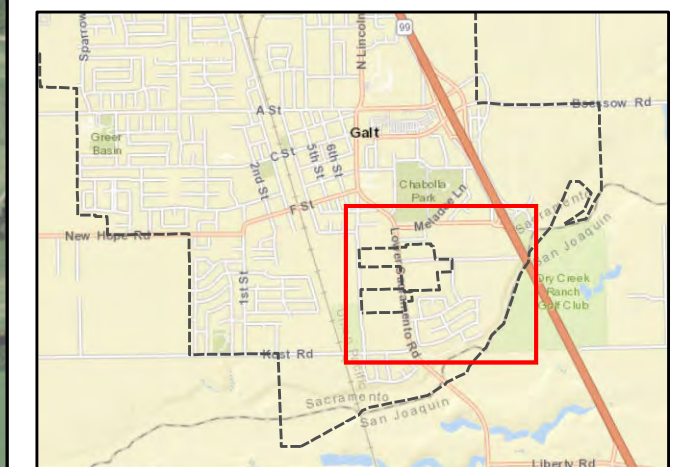
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

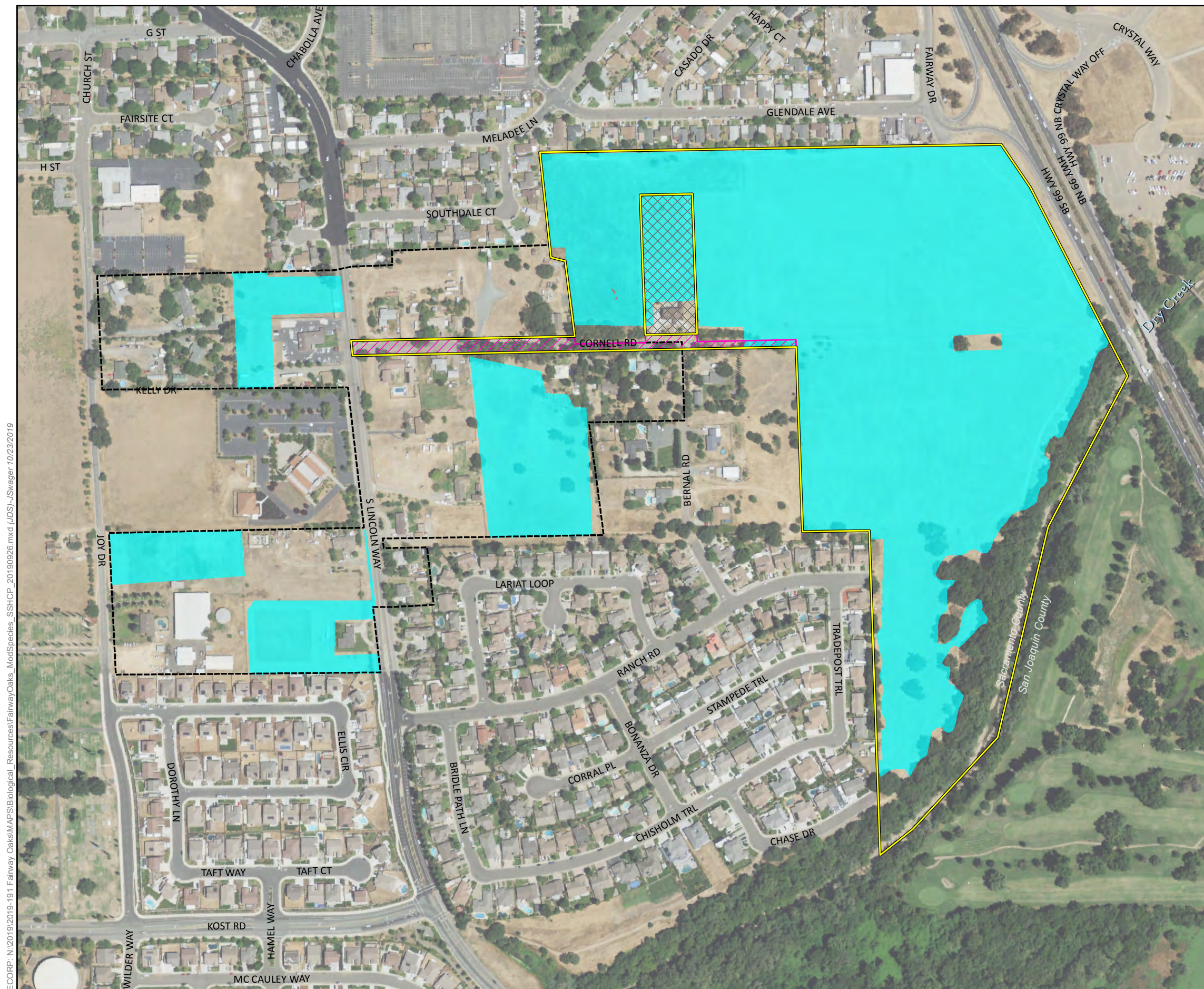
Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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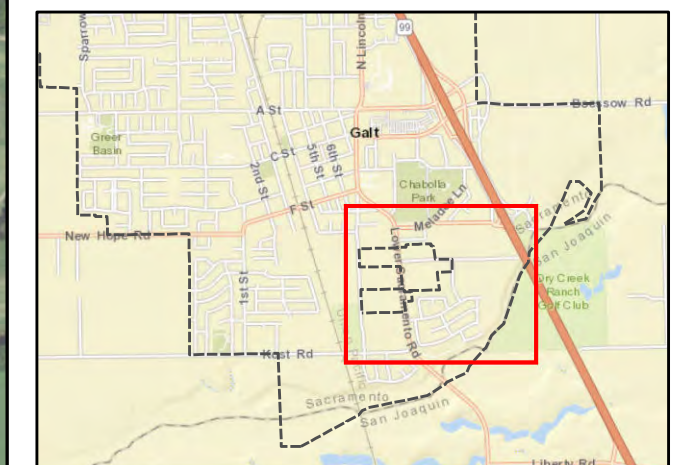
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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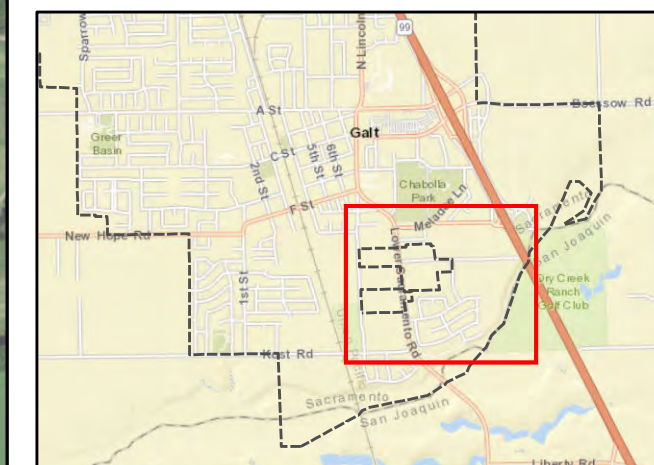
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Aquatic Habitat
- Upland Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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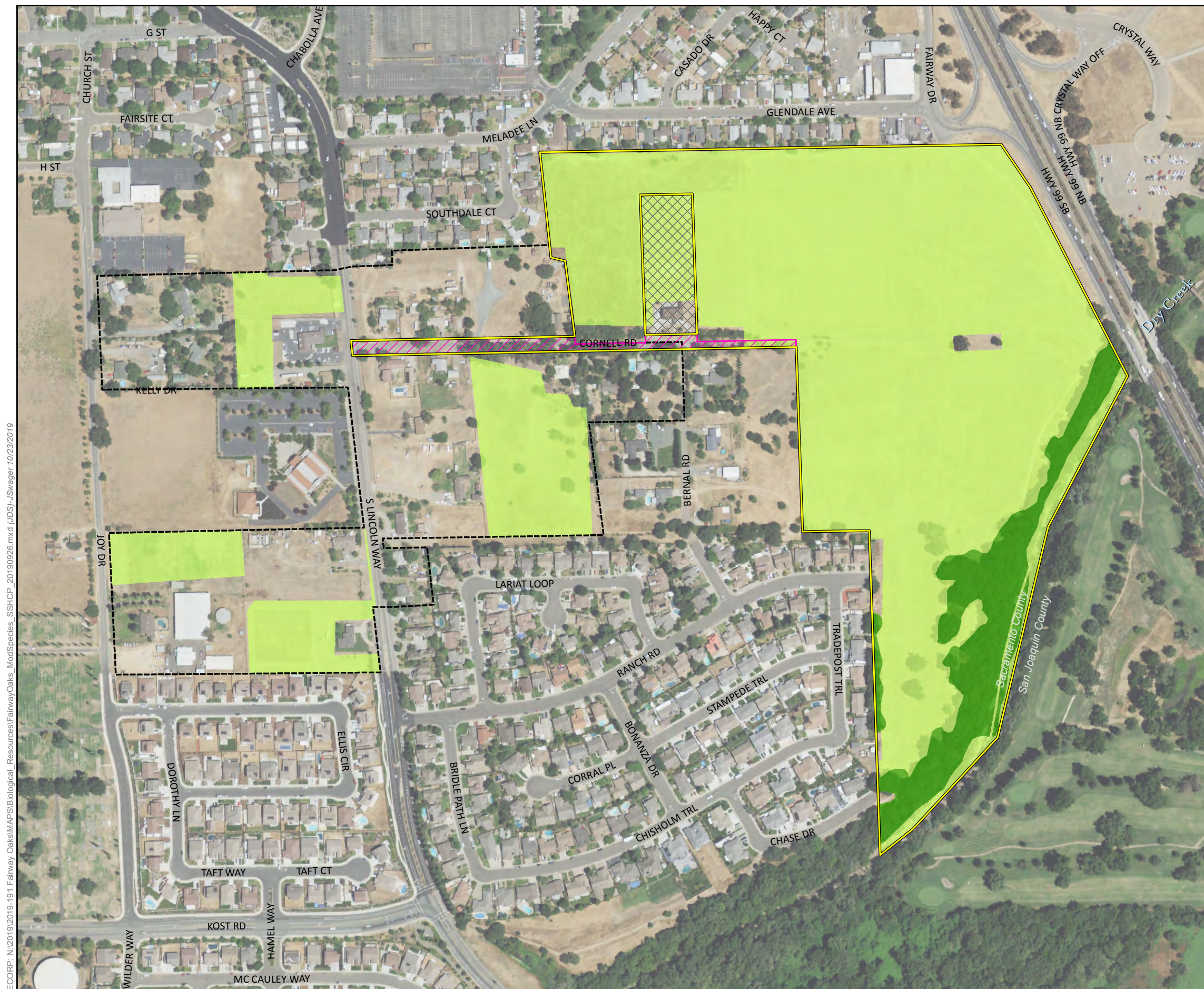


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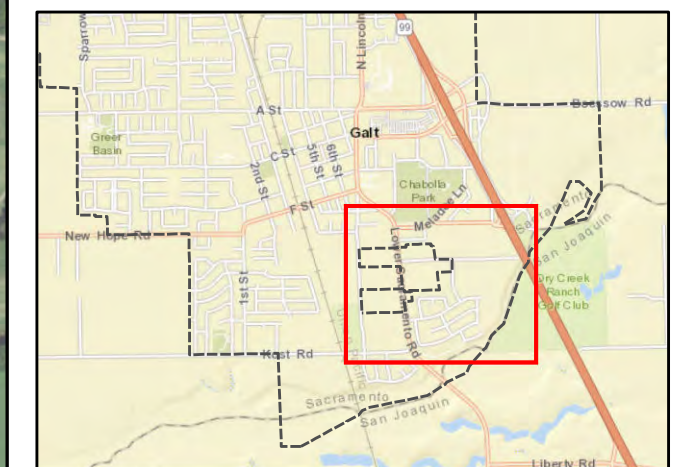
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Foraging
- Roosting-Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
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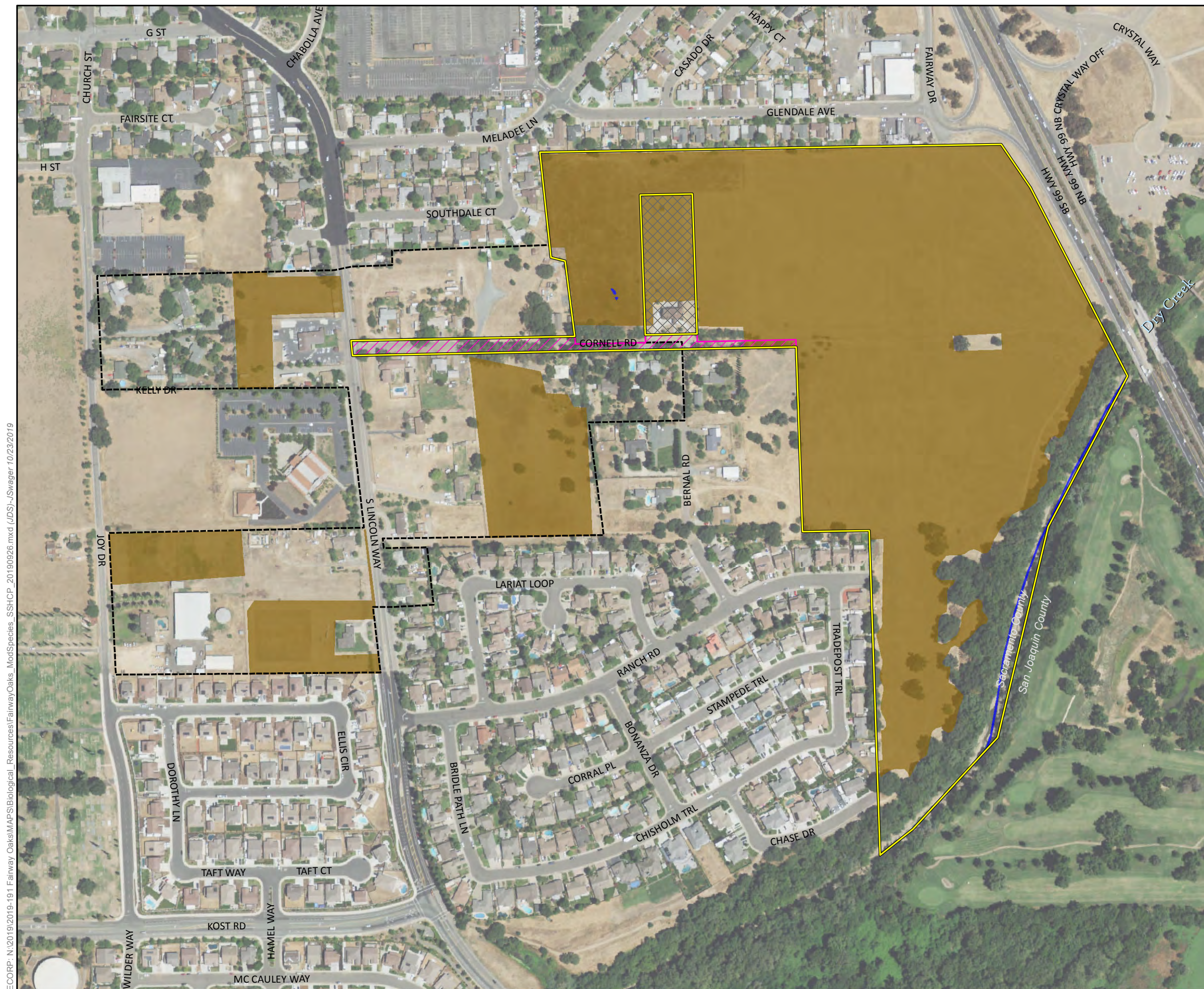


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Map Date: 10/23/2019



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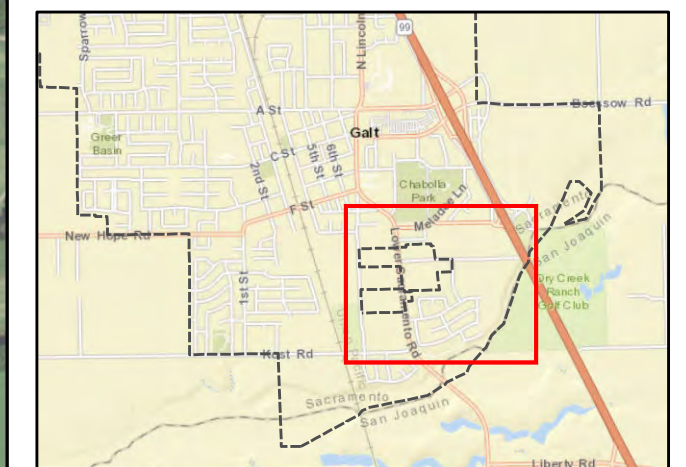
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

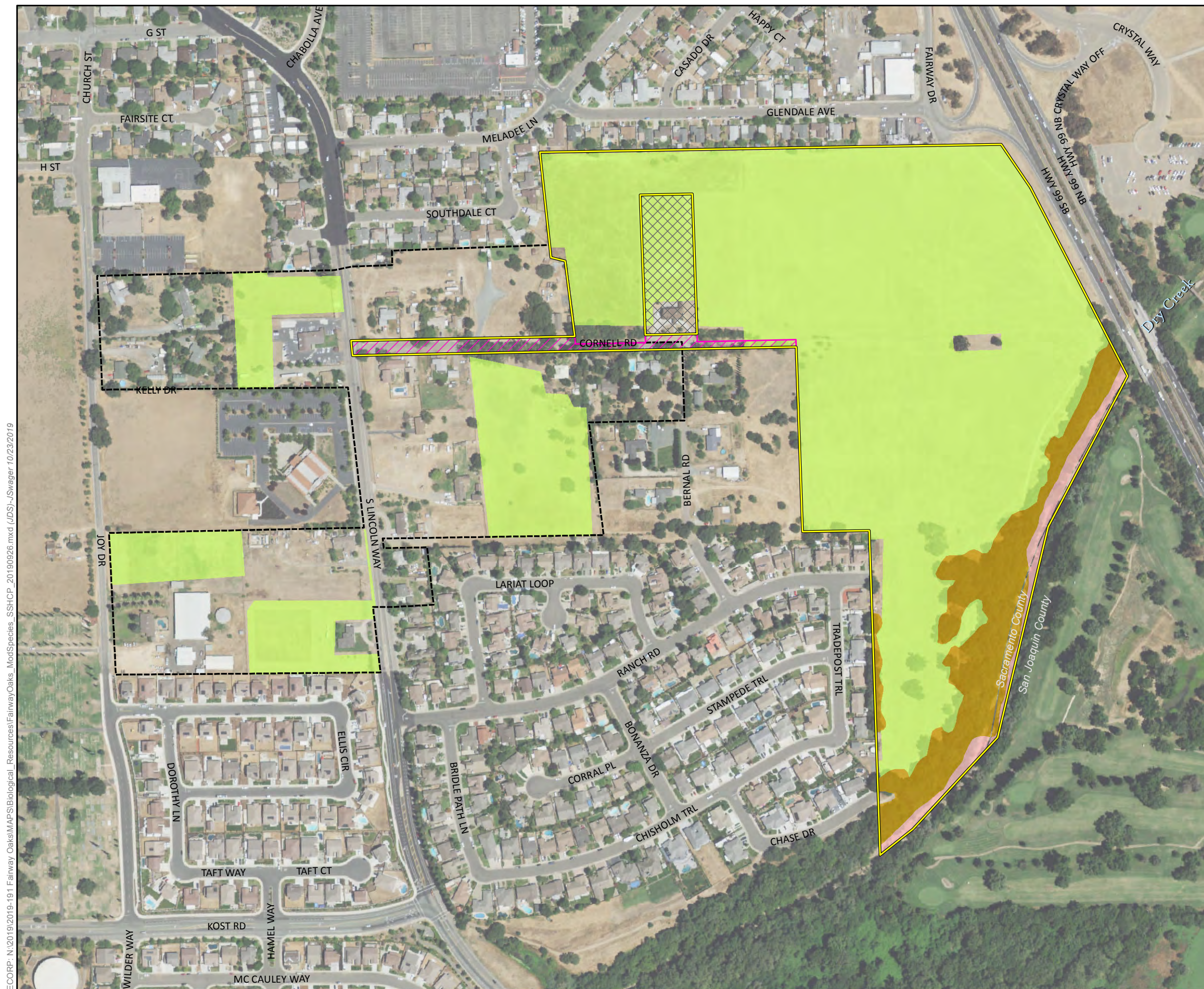
Modeled Habitat

- Aquatic Habitat
- Upland Habitat

Sources: ESRI, NAIP (2018), CBG, SSHCP
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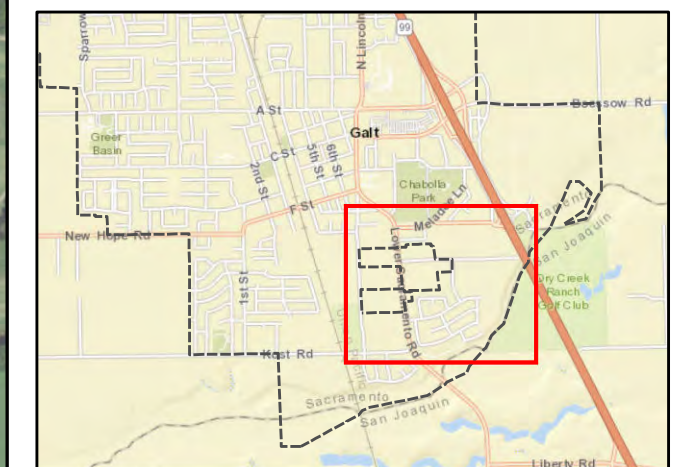
Map Features

- Approximate Annexation Area
- Project Boundary
- Offsite Road Improvements
- NAPOTS

Modeled Habitat

- Foraging
- Nesting
- Nesting-Foraging

Sources: ESRI, NAIP (2018), CBG, SSHCP
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Map Date: 10/23/2019



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SSHCP Avoidance and Minimization Measures

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.¹⁶ 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).¹⁷ 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

¹⁶ 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.

¹⁷ 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.

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)¹⁸ (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.

¹⁸ 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 punctures¹⁹ 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*

¹⁹ 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 Use²⁰): 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

²⁰ 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.

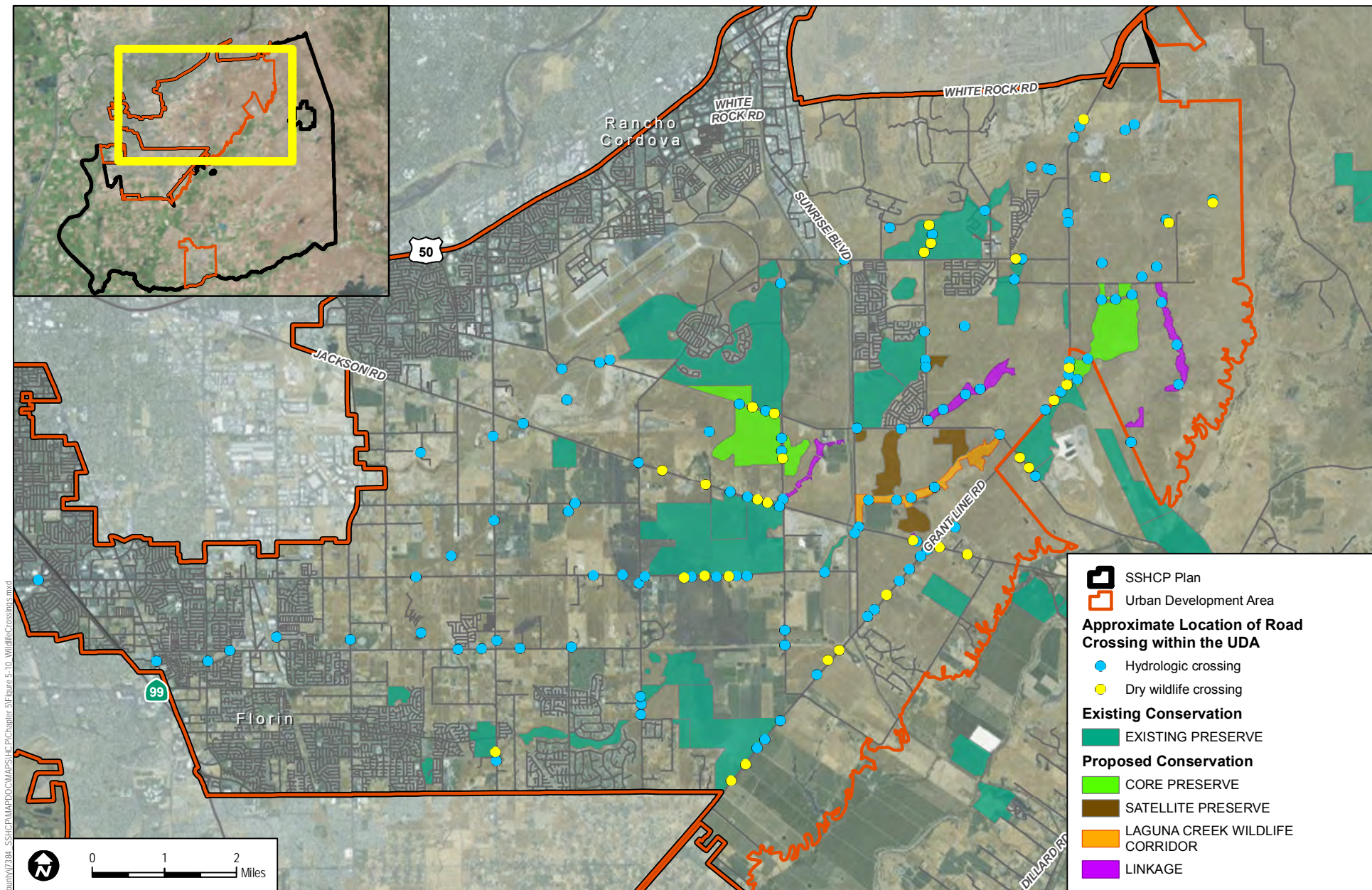


FIGURE 5-10
Wildlife Crossings

SOURCE: ESRI, County of Sacramento 2014, USFWS 2015



SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

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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 established²¹ 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.

²¹ 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 conditions²² 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.

²² 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.

GGs-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.

GGs-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.

GGGS-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.

GGGS-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.

GGGS-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.

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.