

Appendix “J”

Biological Resources Assessment



**Biological Resources Assessment
and Western Riverside County Multiple Species Habitat
Conservation Plan Consistency Analysis
Highland Grove V Development Project
Unincorporated Riverside County, California**

Assessor's Parcel Numbers (APNs) 270-160-006 and -008

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SECTION 1: INTRODUCTION

This Biological Resources Assessment (BRA) and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis was prepared by FirstCarbon Solutions (FCS) to support the proposed Highland Grove V Project (proposed project) in unincorporated Riverside County, California. The purpose of this document is to (1) briefly describe the proposed project and characterize existing and potentially occurring biological resources on the project site and adjacent areas; (2) summarize relevant local, State, and federal regulations pertaining to biological resources; (3) identify and analyze requirements of the MSHCP and determine project consistency with its goals, objectives, and requirements; (4) analyze potential project-related impacts on regulated biological resources in the context of the California Environmental Quality Act (CEQA); and (5) recommend appropriate measures to mitigate potential impacts on biological resources to less than significant levels according to CEQA standards.

1.1 - Project Location and Setting

The approximately 36.56-acre project site is located in unincorporated Riverside County (County), California (Exhibit 1). Additional off-site improvements are proposed on approximately 1.02 acres. The proposed project site and off-site improvement area is referred to as the Study Area. The project site is surrounded by the City of Riverside to the north, the community of Woodcrest to the east, Lake Mathews to the south, and the City of Corona to the west. Regional access to the site is provided via Interstate 15 (I-15), which bisects the project vicinity north to south. Additional regional access to the site is provided via State Route (SR) 91, which bisects the project vicinity east to west. Local access to the site is provided via Cambria Court in the adjacent Citrus Heights neighborhood.

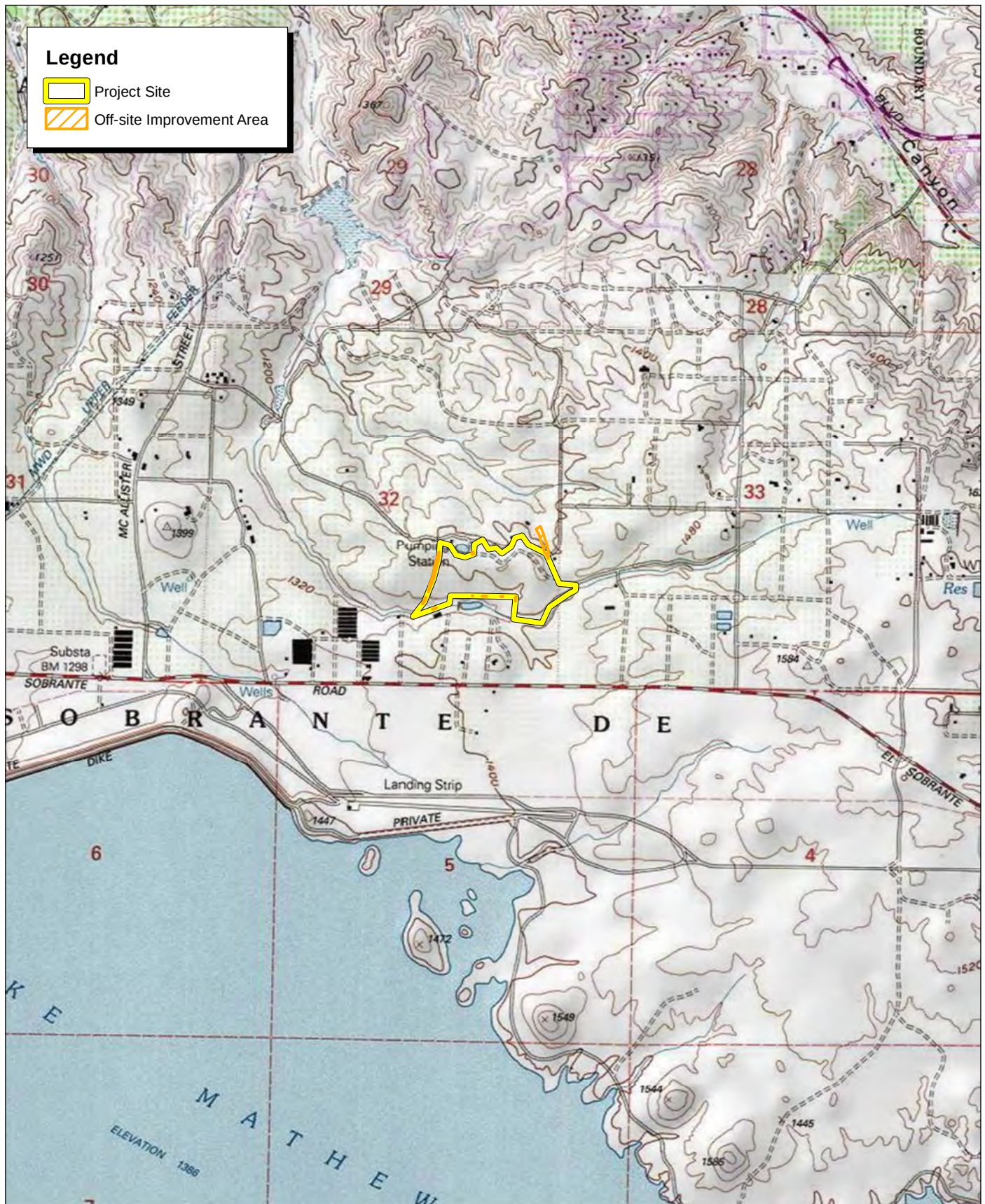
The site is located at the southwest corner of McAllister Street and El Sobrante Road on several parcels, which includes Assessor's Parcel Numbers (APNs) 270-160-006 and -008. The site is located within the *Lake Mathews, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map.

1.1.1 - Environmental Setting

The project site is surrounded by undeveloped lands to the north and west, and agricultural operations to the east and south (Exhibit 2 and Exhibit 3). The project site is vacant and undeveloped and has been used for hay production. Undeveloped lands directly north and west of and adjacent to the project site have been previously used for agricultural production. The project site and adjacent undeveloped areas functioned as a citrus operation until the early 2000s. Evidence of operational site disturbance includes compacted soils, erosional areas, debris piles, and various dirt roads. There is a drainage feature along the southern boundary of the project site.

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Source: adkan Engineers, October 2024. USGS Lake Mathews 7.5' Quadrangles / T03S,R05W,sec32,33.

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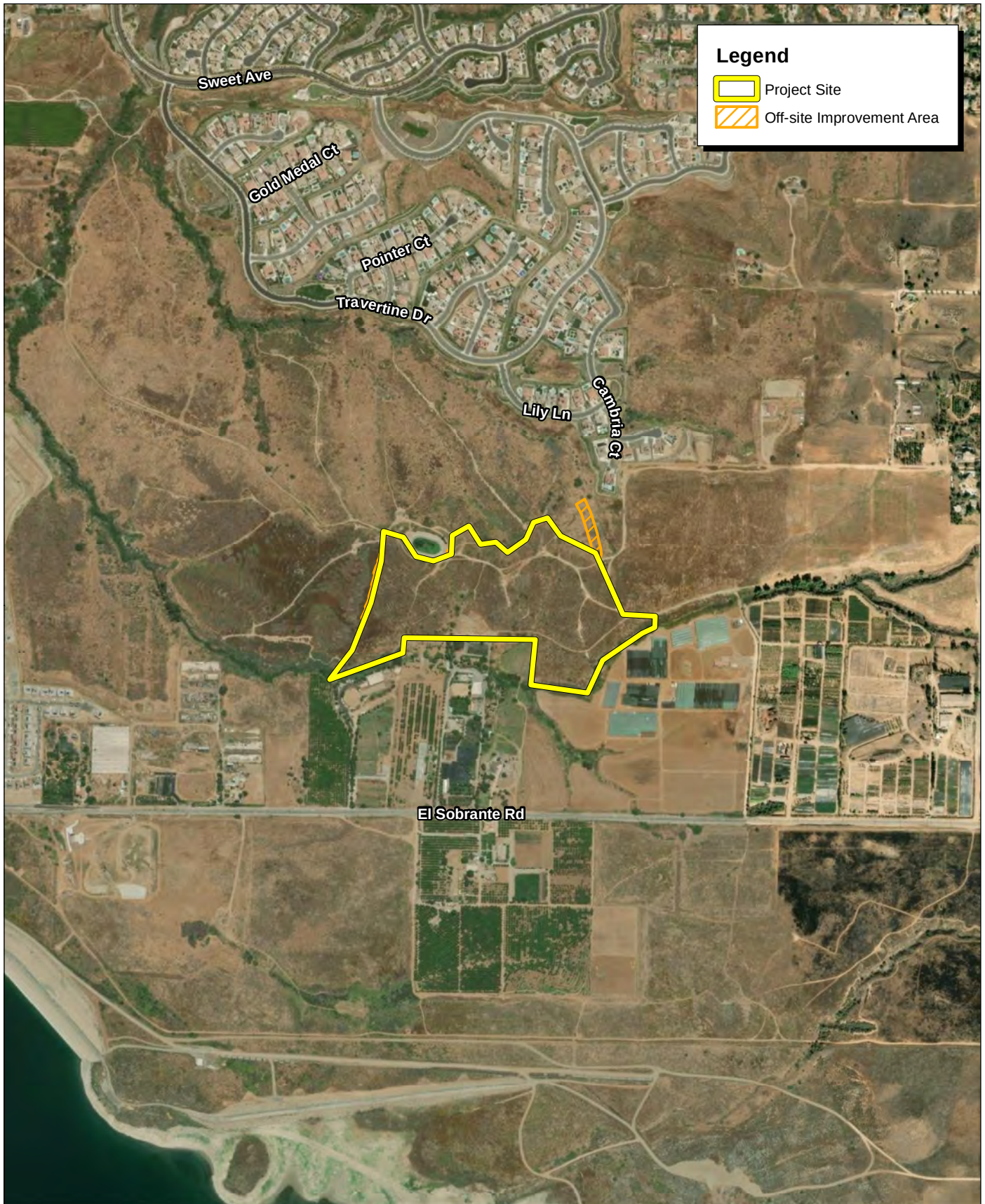
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Exhibit 2

**Local Vicinity Map
Topographic Base**

RIVERSIDE COUNTY
HIGHLAND GROVE V
BIOLOGICAL RESOURCES ASSESSMENT/MSHCP CONSISTENCY ANALYSIS

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Source: ESRI Aerial Imagery. adkan Engineers, October 2024.

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1.2 - Project Description

Adkan Engineers (project applicant) proposes a residential subdivision on the 36.56-acre project site, located north of El Sobrante Road, east of McAllister Street, and southeast of Sweet Avenue in the Lake Mathews/Woodcrest community of unincorporated Riverside County (Exhibit 3). The proposed project would consist of subdividing the 36.56-acre property to accommodate a total of 68 single-family detached lots having a minimum pad size of 8,000 square feet and lot size of 10,000 square feet (Exhibit 4). The proposed project would include a basin for water quality purposes and an open space area for a community park. This proposed project is contingent upon the development of Tract 38605 for access and utilities.

1.2.1 - Off-site Improvements

The project proposes off-site improvements on approximately 1.02 acres, installing a linear 18-inch pipe for approximately 1.42 miles along Blackburn Road, connecting the proposed site and the Lockwood Tank within the Western Municipal Water District (WMWD). The proposed project would also include improvements along the northern property line, with a road installation connecting the project site and Cambria Court in the adjacent Citrus Heights neighborhood.

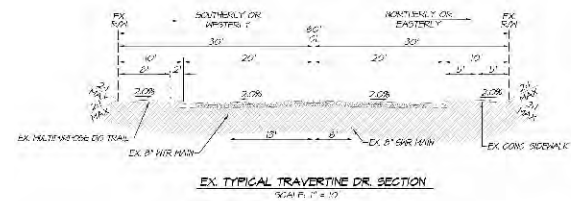
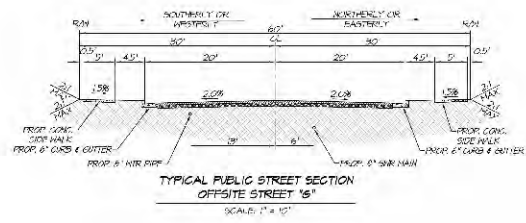
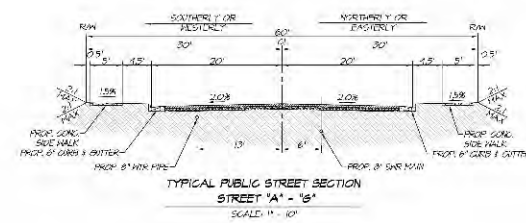
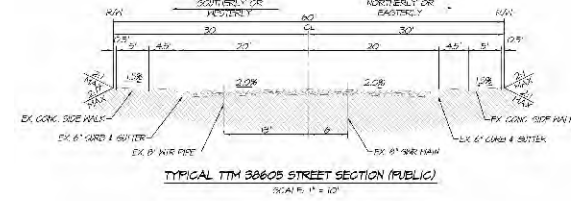
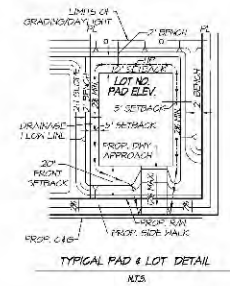
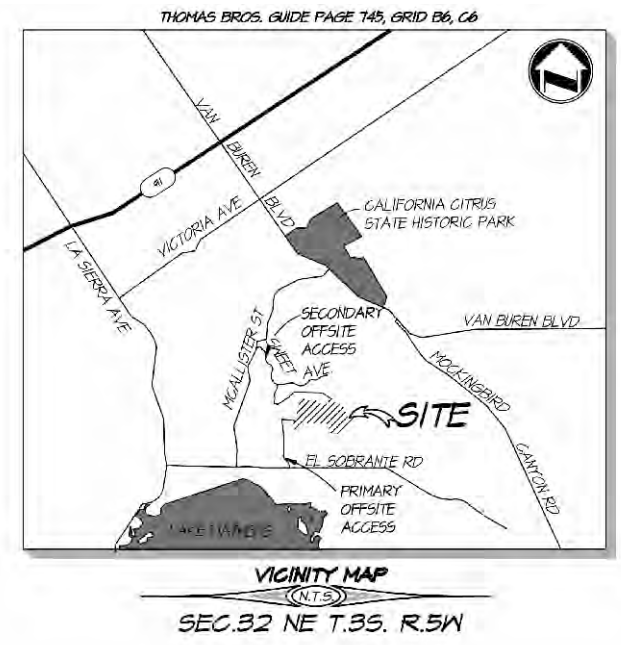
1.2.2 - Site Access and Circulation

Local access to the site is provided via Cambria Court in the adjacent Citrus Heights neighborhood. The proposed project would include roadway installation along the northern property line, connecting the project site and Cambria Court. On-site circulation would consist of several new two-lane, two-way roadways throughout the project site with interconnecting roads. The proposed project would include on-street parking available on all public streets in the tract in addition to private residential parking within garages.

1.2.3 - Lighting

Existing outdoor lighting at and near the project site is associated with residential and street lighting typical of suburban areas. The proposed project would generate lighting from two primary sources: lighting from building interiors that would pass through windows and lighting from exterior sources (e.g., street lighting, vehicles, security lighting, and landscape lighting). Lighting associated with the proposed project would not be directed toward adjacent properties.

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Source: adkan Engineering, October 2024.

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SECTION 2: REGULATORY SETTING

2.1 - Federal

2.1.1 - Endangered Species Act

The United States Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under the Endangered Species Act. Section 9 of the Endangered Species Act protects listed species from “take,” which is broadly defined as actions taken to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” The Endangered Species Act protects threatened and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were listed during the environmental review process.

A proposed project may acquire permission to take listed and candidate species through implementation of sections of the Endangered Species Act. If the proposed project is funded by, authorized by, or otherwise involves a federal agency, Section 7 requires those agencies to consult with the USFWS to ensure that the project does not jeopardize the future existence of any listed species. The consultation results in either a concurrence letter from USFWS stating that the proposed action does not jeopardize the species, or a Biological Opinion issued by USFWS that includes a defined limit of take of listed species that is authorized for the action. When there is no federal nexus to pursue Section 7 permissions, USFWS may authorize take of listed species through Section 10, which allows private landowners, corporations, Native American Tribes, states, cities, and counties to implement projects that could affect listed species. Under this process, the project proponent seeks take permissions through completing and submitting for approval a Habitat Conservation Plan (HCP) approved by the USFWS. The HCP defines the project and potential for take of species and outlines measures to mitigate or compensate for impacts that would occur during implementation of the project. Often a draft Implementing Agreement (IA) is included with the permit application for larger HCPs, such as a regional plan. An IA is a contract that describes the roles and responsibilities of the permit holder, the federal wildlife agency, and any other parties responsible for implementing the HCP.

2.1.2 - Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, 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. All migratory birds and their nests are protected from take and other impacts under the MBTA (16 United States Code [USC] § 703, *et seq.*).

2.1.3 - Bald and Golden Eagle Protection Act

The golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) are afforded additional protection under the Eagle Protection Act, amended in 1973 (16 USC § 669, *et seq.*) and the Bald and Golden Eagle Protection Act (16 USC §§ 668–668d).

2.1.4 - Clean Water Act

Section 404

The agencies are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. In light of this decision, the agencies will interpret the phrase "waters of the United States" consistent with the Supreme Court's decision in the *Sackett* case. In *Sackett*, the Supreme Court adopted the *Rapanos* plurality's test for adjacent wetlands: only those wetlands with a continuous surface connection to other regulated waters, such that the two are indistinguishable.

The United States Army Corps of Engineers (USACE) administers Section 404 of the federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. The term "waters of the United States" is defined in accordance with the USACE regulations at 33 Code of Federal Regulations Part 328.3(a) as:

1. Waters which are:
 - a. Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - b. The territorial seas; or
 - c. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
3. Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
 - a. Waters identified in paragraph (a)(1) of this section; or
 - b. Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

The following are not "waters of the United States":

1. Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
2. Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean

Water Act, the final authority regarding Clean Water Act jurisdiction remains with United States Environmental Protection Agency (EPA);

3. Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
4. Artificially irrigated areas that would revert to dry land if the irrigation ceased;
5. Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
7. Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA and/or USACE.

"Wetland" refers to areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and seasonal wetlands. Wetlands are considered jurisdictional if they fall under one of the categories of waters of the United States defined above. The USACE jurisdiction typically extends up to the ordinary high water mark (OHWM).

In general, a USACE permit must be obtained before placing fill in wetlands or other waters of the United States. The type of permit depends on the impacted acreage, the purpose of the proposed fill, and other factors.

Section 401

Section 401 of the CWA states that "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act." Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB).

2.2 - State

2.2.1 - CEQA Guidelines

The following CEQA Guidelines Appendix G checklist questions serve as thresholds of significance when evaluating the potential impacts of a proposed project on biological resources. Impacts are considered significant if a project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

2.2.2 - California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with the CDFW when preparing CEQA documents to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code [FGC] § 2080). CESA directs agencies to consult with the CDFW on projects or actions that could affect listed species, directs the CDFW to determine whether jeopardy would occur, and allows the CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. CESA allows the CDFW to authorize exceptions to the State’s prohibition against take of a listed species if the take of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (FGC § 2081). Under CESA, the California Fish and Game Commission may authorize taking of candidate species, and the CDFW may recommend that the Commission authorize (or not authorize) the taking of listed or candidate species (FGC § 2084).

2.2.3 - California Fish and Game Code

Rare, Threatened, and Endangered Species

Under CESA, the CDFW has the responsibility for maintaining a list of endangered and threatened species (FGC § 2070). Fish and Game Code Sections 2050 through 2098 outline the protection provided to California's rare, endangered, and threatened species. Fish and Game Code Section 2080 prohibits the taking of plants and animals listed under the CESA, and Fish and Game Code Section 2081 established an incidental take permit program for State-listed species. The CDFW maintains a list of "candidate species" which it formally notices as being under review in addition to the list of endangered or threatened species.

Fully Protected Species

Fish and Game Code Sections 3500–5500 outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Species of Special Concern

In addition to formal listing under the Endangered Species Act and CESA, some species receive additional consideration by the CDFW and local lead agencies during the CEQA process. Species that may be considered for review are those listed as a "Species of Special Concern." The CDFW maintains lists of Species of Special Concern that serve as species "watch lists." Species with this status may have limited distributions or limited populations and/or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA, and specific protection measures may be warranted. In addition to Species of Special Concern, the CDFW Special Animals List identifies animals that are tracked by the California Natural Diversity Database (CNDDB) and may be potentially vulnerable but warrant no federal interest and no legal protection.

Other Sensitive Species

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society (CNPS) List ranked 1A, 1B, 2A, and 2B would typically require evaluation under CEQA.

Native Bird Protection

Sections 3503, 3503.5, and 3513 protect native birds. Under Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any native bird. Under Fish and

Game Code Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird. Under Fish and Game Code Section 3513, it is unlawful to take or possess any native, migratory bird as designated in the MBTA except as provided by rules and provisions of the MBTA. Mitigation for avoidance of impacts to nesting birds is typically included in CEQA and other permitting documents to ensure project compliance with these Fish and Game Code Sections.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (NPPA) (FGC § 1900, *et seq.*) prohibits the taking, possessing, or sale within the State of any plants with a State designation of rare, threatened, or endangered (as defined by the CDFW). An exception to this prohibition in the NPPA allows landowners to take listed plant species under specified circumstances, provided that the owners first notify CDFW and give the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. Fish and Game Code Section 1913 exempts from take prohibition “the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right-of-way.” Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

Lake or Streambed Alteration

Fish and Game Code Section 1602 requires any entity to notify the CDFW before beginning any activity that “may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake” or “deposit debris, waste, or other materials that could pass into any river, stream, or lake.” “River, stream, or lake” includes waters that are episodic and perennial and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement will be required if the CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.

Natural Community Conservation Planning Act

Section 2800 of the California Fish and Game Code establishes the Natural Community Conservation Planning Act (NCCP Act), which allows the CDFW to authorize Natural Community Conservation Plans (NCCPs) to allow take of species listed under CESA and other sensitive species and vegetation communities on a regional scale. The primary objective of the NCCP Act is to conserve covered natural communities and species at the ecosystem scale while accommodating compatible land uses, or covered activities. NCCPs must provide conservation and management of natural communities and species in perpetuity within the area covered by permits. Each NCCP provides measures necessary to conserve and manage sensitive biological resources, including natural vegetation communities and the plant and wildlife species they support, within a reserve system, while also allowing compatible developments and other projects to take species and habitats under special conditions outside of areas targeted for conservation. NCCPs are different from HCPs because the NCCP Act requires that conservation actions improve the long-term conservation of species, whereas HCPs typically only require avoidance of adverse impacts to species. Additionally, while HCPs can be

implemented at a project or regional scale, an NCCP must be applied across regional scales to promote the long-term recovery of species, protection of habitats and natural communities, and maintenance of species diversity at the landscape level.

2.2.4 - California Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State” (Water Code § 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. “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)).

2.2.5 - California State Water Resources Control Board/RWQCB Stormwater Management Permitting

While federal CWA National Pollutant Discharge Elimination System (NPDES) regulations allow two permitting options for construction-related stormwater discharges (individual permits and General Permits), the State Water Board has elected to adopt only one Statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (Caltrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than 1 acre of land or those sites less than 1 acre that are part of a common plan of development or sale that disturbs more than 1 acre of land surface to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off-site into receiving waters.
2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project’s projected risk level.
3. Perform inspections of all BMPs.

2.2.6 - California Oak Woodlands Conservation Act (AB 242)

The State of California enacted the California Oak Woodlands Conservation Act (Assembly Bill [AB] 242) in 2001. It established requirements for the preservation and protection of oak woodlands and trees and allocated funding to be managed by the Wildlife Conservation Board that would support a variety of ways to preserve oak woodlands throughout the State. In order to qualify to use these funds, counties were required to adopt an oak woodland conservation management plan. In 2004, Senate Bill (SB) 1334 (Public Resources Code [PRC] § 21083.4) expanded this preservation effort by requiring that a county, “in determining whether CEQA requires an environmental impact report,

negative declaration, or mitigated negative declaration, to determine whether a project in its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment, and would require the county, if it determines there may be a significant effect to oak woodlands, to require one or more of specified mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands.”

2.2.7 - California Native Plant Society Rare Plant Rankings

The CNPS maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Following are the definitions of the CNPS ranks:

- **Rank 1A:** Plants presumed extirpated in California and either rare or extinct elsewhere
- **Rank 1B:** Plants Rare, Threatened, or Endangered in California and elsewhere
- **Rank 2A:** Plants presumed extirpated in California but common elsewhere
- **Rank 2B:** Plants rare, threatened, or endangered in California but more common elsewhere
- **Rank 3:** Plants about which more information is needed
- **Rank 4:** Watch List: Plants of limited distribution

Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. All plants appearing on the CNPS List ranked 1 or 2 are considered to meet the CEQA Guidelines Section 15380 criteria. Rank 3 and 4 plants do not automatically meet this definition. Rank 4 plants do not clearly meet CEQA standards and thresholds for impact considerations.¹

2.3 - Regional and Local Ordinances

2.3.1 - Riverside County Ordinance Number 559

Ordinance Number 559 (codified at Riverside County Code of Ordinances Chapter 12.24) stipulates that no person shall remove any living native tree on any parcel or property greater than 0.5 acre in size located in an area above 5,000 feet in elevation and within the unincorporated area of the County of Riverside without first obtaining a permit to do so. Native trees within the scope of this ordinance are defined as any woody plant which is indigenous to Riverside County, and all smog-resistant species introduced as part of a reforestation program, which have one well-defined stem that at maturity normally attains a height of at least 15 feet and which is not less than 6 inches in diameter measured 4 feet above the ground.

2.3.2 - County Code Chapter 12.24

The County of Riverside Code of Ordinances Chapter 12.24 stipulates Tree Protection Ordinances. The Ordinance defines native trees as plants which, at maturity, normally attain a height of at least 30 feet and are not less than 12 inches in diameter when measured 4.5 feet above the ground and includes woody plants indigenous to Riverside County and all smog-resistant species introduced as part of a reforestation program. The Ordinance requires that no person shall remove any living

¹ California Native Plant Society (CNPS). 2020. Considerations for Including CRPR Four Plant Taxa in CEQA Biological Resource Impact Analysis. Sacramento, CA.

native tree on any parcel or property greater than 0.5 acre in size located in an area above 5,000 feet in elevation and within the unincorporated area of the County without first obtaining a permit to do so, unless exempted by the provisions of Section 12.24.040. Applications for a permit to remove one or more living native trees shall be made in writing to the planning director on the form provided by the Riverside County planning department.

2.3.3 - Riverside County Oak Tree Management Guidelines

The Riverside County Oak Tree Management Guidelines require a biological study for all applications on properties that contain oak trees. This study would produce an inventory of on-site vegetation, including oak trees and oak woodlands.

2.4 - Habitat Conservation Plans

2.4.1 - Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP serves as a multijurisdictional HCP pursuant to Section 10(a)(1)(B) of the Endangered Species Act and an NCCP pursuant to Fish and Game Code Section 2081.1 that focuses on the conservation of species and habitats in western Riverside County. The MSHCP allows permittees to obtain take of threatened, endangered, and rare plant and animal species covered by the MSHCP. Regulation of take of species is authorized by the USFWS and the CDFW for lawful actions (e.g., public and private projects) in exchange for the assembly and management of a conservation reserve system. The MSHCP covers take of 146 species in the plan area, including 32 that are State and/or federally listed.

The MSHCP area encompasses approximately 1.26 million acres and includes all unincorporated land in Riverside County west of the crest of the San Jacinto Mountains to the Orange County line, inclusive of the jurisdictional areas of the cities of Eastvale, Jurupa Valley, Wildomar, Menifee, San Jacinto, Hemet, Perris, Calimesa, Beaumont, Banning, Moreno Valley, Riverside, Corona, Norco, Canyon Lake, Lake Elsinore, Murrieta, and Temecula. Conservation areas that comprise the reserve system will be assembled from Criteria Area cells that consist of cells of approximately 160 acres, each with specific criteria for conservation.

The Conservation Areas that comprise the reserve system will total 500,000 acres when complete, which is projected by 2028. Of the 500,000 acres targeted for conservation, 347,000 were in existing open spaces in Public/Quasi-Public (PQP) Lands at the time the MSHCP was adopted in 2003. These lands are under ownership or management of government agencies and their development is not likely. The County and City permittees are responsible for assembling the remaining 153,000 acres in the reserve system by 2028 through implementing the MSHCP during the development and entitlement process.

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SECTION 3: METHODS

3.1 - Literature and Database Reviews

FCS Biologists performed literature and database reviews to establish a baseline from which to evaluate potential project impacts on biological resources within the project site and the surrounding area.

3.1.1 - Existing Documentation

As part of the literature review, an FCS Biologist examined existing environmental documentation for the project site and vicinity. This documentation included literature pertaining to MSHCP conservation requirements, habitat requirements of special-status species with the potential to occur in the project vicinity, federal register listings, protocols, and species data provided by USFWS and CDFW or contained within the MSHCP. The Regional Conservation Authority (RCA) website was also accessed to review the RCA MSHCP Information Map² tool to identify conservation requirements for the parcel(s), survey requirements for MSHCP wildlife and plant species, and to map the limits of Criteria Cells, Cell Groups, and the MSHCP Conservation Areas.

3.1.2 - Topographic Maps and Aerial Photographs

An FCS Biologist reviewed current USGS 7.5-minute topographic quadrangle map(s) and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity.³ Information obtained from the topographic maps included elevation and general watershed information. The locations of potential drainage features on-site were further evaluated using Google Earth in conjunction with the EPA Watershed Assessment, Tracking, and Environmental Results System (WATERS).⁴ The aerial photograph review provided a perspective of the current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors.

3.1.3 - Soil Surveys

FCS Biologists reviewed United States Department of Agriculture (USDA) soil surveys⁵ to establish if soil conditions on the project site are suitable for occurrence of special-status plant species. The soil surveys provide descriptions of taxonomy, parent material, landform, thickness, arrangement, and other important characteristics. FCS Biologists reviewed characteristics for soils mapped on the

² Regional Conservation Authority (RCA). 2024. RCA MSHCP Information Map. Website: <https://wrcrca.maps.arcgis.com/apps/webappviewer/index.html?id=2b9d4520bd5f4d35add35fb58808c1b7>. Accessed June 12, 2024.

³ United States Geological Survey (USGS). 2024. National Geospatial Program. Website: https://www.usgs.gov/core-science-systems/national-geospatial-program/us-topo-maps-america?qt-science_support_page_related_con=4#qt-science_support_page_related_con. Accessed June 12, 2024.

⁴ United States Environmental Protection Agency (EPA). 2024. Watershed Assessment, Tracking and Environmental Results System (WATERS). Website: <https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system>. Accessed June 12, 2024.

⁵ Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey (WSS). United States Department of Agriculture (USDA). Website: <https://websoilsurvey.nrcs.usda.gov/app/>. Accessed June 12, 2024.

project site and habitat requirements for special-status plant species that occur in the project vicinity to determine whether there was potential for these species to occur on the project site.

3.1.4 - Special-status Species Database Search

An FCS Biologist compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the project vicinity based on a search of the USFWS Information for Planning and Consultation (IPaC) database,⁶ the CNDDDB, and the CNPS Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California.^{7,8} The CNDDDB search focused on species records within 5 and 10 miles of the project site. The CNPSEI search focused on records from the *Lake Mathews, California* USGS 7.5-minute Topographic Quadrangle Map and the eight surrounding quadrangles. The CNDDDB Biogeographic Information and Observation System (BIOS 6) was used to determine distances between species occurrences and the project site.⁹

3.1.5 - Assessment of Potential for Occurrence of Special-status Species

The potential for occurrence on the project site was assessed for each of the special-status species identified in the database searches. The assessment of potential for occurrence was based on conditions on the project site, habitat requirements of special-status species, and number of recent (<20 years old) occurrences in the project vicinity. The occurrence potential for each special-status species was classified into one of the following categories:

No Potential for Occurrence or Absent—There is no suitable habitat for the species on the project site or the project site is located outside of the known range of the species.

Low Potential to Occur—Species is known to occur in the project vicinity (within the nine USGS quadrangle search area); however, there is only poor quality or marginal habitat on the project site.

Moderate Potential to Occur—Species is known to occur in the vicinity of the project site (based on recent [within 20 years] CNDDDB or other records within 10 miles of the project site or based on professional expertise specific to the project site or species) and there is marginally or partially suitable habitat on the project site. Alternatively, there is marginally or partially suitable habitat on the project site and the project site is within the known range of the species.

High Potential to Occur—Species is known to occur in the vicinity of the project site (based on recent [within 20 years] CNDDDB or other records within 5 miles of the project site or based on professional expertise specific to the project site or species) and there is suitable

⁶ United States Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation (IPaC). Website: <https://ecos.fws.gov/ipac/>. Accessed June 12, 2024.

⁷ California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database (CNDDDB) RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx>. Accessed June 12, 2024.

⁸ California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: <http://www.rareplants.cnps.org/>. Accessed June 12, 2024.

⁹ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 12, 2024.

habitat on the project site. Alternatively, there is suitable habitat on the project site and the project site is within the known range of the species.

Present—Species is known to occur on the project site based on recent (within 20 years) CNDDDB or other records and there is suitable habitat present on the project site or the species was observed on the project site during the field survey(s).

3.1.6 - Trees and Native Vegetation

Prior to conducting the reconnaissance-level field survey, an FCS Biologist reviewed applicable County ordinances pertaining to tree and native vegetation preservation and protection and ascertained whether measures or permits are required to remove, replace, or transplant protected trees or native vegetation.

3.1.7 - Jurisdictional Waters and Wetlands

Prior to conducting the reconnaissance-level survey, an FCS Biologist reviewed EPA WATERS and aerial photography to identify potential natural drainage features and water bodies.¹⁰ In general, all surface drainage features identified as blue-line streams on USGS maps and linear patches of vegetation are expected to exhibit evidence of flow and be considered potentially subject to State and federal regulatory authority as waters of the United States and/or State. A preliminary assessment was conducted to determine the location of any existing drainages and limits of project-related grading activities to aid in determining whether a formal delineation of waters of the United States or State is necessary. A formal jurisdictional delineation is provided in a separate report.

3.2 - Field Surveys

3.2.1 - Survey Personnel

A general biological survey, focused burrowing owl surveys, focused rare plant surveys, and vegetation community mapping of the project site were performed on April 17 and 18, 2024; May 8 and 9, 2024; July 3, 11, 23, 24, and 31, 2024; and August 2 and 23, 2024, by FCS Staff Biologists. FCS Biologists also conducted focused Crotch's bumble bee surveys on April 1 and 23, 2025, and May 9, 2025. Focused surveys for least Bell's vireo (*Vireo bellii pusillus*) were performed by South Environmental Biologists between May and July 2024 on an adjacent project site with similar habitat.

3.2.2 - General Biological Survey

The objective of the general biological survey was to ascertain general site conditions and identify whether existing vegetation communities provide suitable habitat for special-status plant or wildlife species, including burrowing owls (*Athene cunicularia*). During this survey, the Biologist walked and drove the project site and characterized and mapped vegetation communities, identified and recorded plants and wildlife observed on-site, and recorded evidence of wildlife habitats, including wildlife corridors, nests, dens, or burrows. Special-status or unusual biological resources identified

¹⁰ United States Environmental Protection Agency (EPA). 2024. Watershed Assessment, Tracking and Environmental Results System (WATERS). Website: <https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system>. Accessed June 12, 2024.

during the literature review were ground-truthed during the field survey for mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status floral and faunal species.

Vegetation Communities and Plants

Common plant species observed during the general biological survey were identified by visual characteristics and morphology in the field and recorded in a field notebook and on field maps. Uncommon and unfamiliar plants were identified with the use of taxonomical guides, including Jepson eFlora and Calflora.^{11,12} Taxonomic nomenclature used in this study follows The Jepson Manual: Vascular Plants of California.¹³ Common plant names, when not available from The Jepson Manual, were taken from other regionally specific references. Vegetation community types and boundaries were noted on aerial photos, verified through field observation, and digitized using Esri ArcGIS software® ArcMap 10.0. By incorporating collected field data and interpreting aerial photography, a map of habitat types, land cover types, and other biological resources within the project site was prepared. Vegetation community and land cover types used to help classify habitat types are based on the CNPS Manual of California Vegetation (MCV) and cross-referenced with the CDFW Natural Communities List.^{14,15,16}

Wildlife

Wildlife species detected during the general biological survey by sight, calls, tracks, scat, or other signs were recorded. Notations were made regarding suitable habitat for those special-status species determined to have the potential to occur within the project site.¹⁷ Appropriate field guides were used to assist in species identification during surveys, such as Peterson, Reid, and Stebbins.^{18,19,20} Online resources such as eBird and California Herps were also consulted as necessary.^{21,22}

Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting

¹¹ Jepson Flora Project (eds.) 2023. Jepson eFlora. Website: <https://ucjeps.berkeley.edu/eflora/>. Accessed June 12, 2024.

¹² Calflora. 2020. Calflora: Information on California plants for education, research, and conservation. Website: <http://www.calflora.org/>. Accessed June 12, 2024.

¹³ Baldwin, B., et al. 2012. The Jepson Manual: Vascular Plants of California. Berkeley: University of California Press. County of San Bernardino (Bernardino). 2007 (amended 2015).

¹⁴ Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento.

¹⁵ California Department of Fish and Wildlife (CDFW). 2024. Natural Communities List, Sacramento: California Department of Fish and Wildlife. June 12, 2024. Website: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>. Accessed June 12, 2024.

¹⁶ California Native Plant Society (CNPS). 2024. A Manual of California Vegetation Online. Website: <https://vegetation.cnps.org/>. Accessed June 12, 2024.

¹⁷ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx>. Accessed June 12, 2024.

¹⁸ Peterson, T.R. 2010. A Field Guide to Birds of Western North America, 4th Edition. Boston: Houghton Mifflin Harcourt.

¹⁹ Reid, F. 2006. A Field Guide to Mammals of North America, Fourth Edition. Boston: Houghton Mifflin Harcourt.

²⁰ Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Third Edition. Boston: Houghton Mifflin Harcourt.

²¹ eBird. 2024. Online bird occurrence database. Website: <http://ebird.org/content/ebird/>. Accessed June 12, 2024.

²² California Herps. 2024. A Guide to the Amphibians and Reptiles of California. Website: <http://www.californiaherps.com/>. Accessed June 12, 2024.

fragmentation of open space areas create isolated “islands” of wildlife habitat, forming separated populations. Corridors act as an effective link between populations.

The project site was evaluated for evidence of a wildlife movement corridor during the general biological survey. The scope of the biological resource assessment did not include a formal wildlife movement corridor study utilizing track plates, camera stations, scent stations, or snares. Rather, the focus of this study was to determine whether a change in land use at the project site could have significant impacts on the regional movement of wildlife. Conclusions are based on the information compiled during the literature review, including aerial photographs, USGS topographic maps, and resource maps for the vicinity; the field survey; and professional experience with the desired topography, habitat, and resource requirements of the special-status species potentially utilizing the project site and vicinity.

3.2.3 - Rare Plant Surveys

The surveys to search for rare plants were floristic in nature, performed over the entirety of the project site, and followed the CDFW Rare Plant Survey protocol.²³ The surveys were timed to coincide with flowering phenology or other diagnostic features of target species. Prior to entering the field, FCS Biologists reviewed detailed ecological and taxonomic information, maps, and photographs about each of the target species. All plant species were identified to the level necessary to determine listing status using appropriate taxonomical guides, including Jepson eFlora and Calflora.^{24,25} Taxonomic nomenclature used in this study follows The Jepson Manual: Vascular Plants of California.²⁶ Common plant names, when not available from The Jepson Manual, were taken from other regionally specific references. Vegetation types and boundaries were noted on aerial photos, verified through field observation, and digitized using Esri ArcGIS software® ArcMap 10.8. By incorporating collected field data and interpreting aerial photography, a map of habitat types, land cover types, and other biological resources within the project site was prepared.

Reference Sites

Where possible, known reference populations of target species were visited to assess whether these plants could be observed in a vegetative state at nearby localities with ecological conditions comparable to those on the project site. Potential reference sites were selected by reviewing CNDDDB records for special-status plant occurrences and the Calflora online database²⁷ for herbaria records.

3.2.4 - Burrowing Owl Surveys

Focused burrowing owl surveys were conducted between July 3, 11, 24, and 31, 2024, and August 23, 2024, by FCS Biologists Kayla Belanger, David Ortiz, Kelly Evans, Jeremy Reinhard, and Hannah

²³ California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities. Website: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959>. Accessed June 12, 2024.

²⁴ Jepson Flora Project (eds.) 2024. Jepson eFlora. Website: <https://ucjeps.berkeley.edu/eflora/>. Accessed June 12, 2024.

²⁵ Calflora. 2024. Calflora: Information on California Plants for Education, Research, and Conservation. Website: <http://www.calflora.org/>. Accessed June 12, 2024.

²⁶ Baldwin, B., et al. 2012. The Jepson Manual: Vascular Plants of California. Berkeley: University of California Press. County of San Bernardino (Bernardino). 2007 (amended 2015).

²⁷ Calflora. 2024. Calflora: Information on California Plants for Education, Research, and Conservation. Website: <http://www.calflora.org/>. Accessed June 12, 2024.

Carney. Surveys were conducted according to the MSHCP Burrowing Owl Survey Instructions, which are divided into two main steps. Step I included a general habitat assessment for the burrowing owl. Because of the presence of suitable habitat on-site, Step II surveys were conducted, including a Step II, Part A focused burrow survey to locate and map suitable burrows and Step II, Part B searches for burrowing owls over three subsequent visits throughout the breeding season (March 1 through August 31). During each survey, FCS Biologists searched for diagnostic owl signs, including whitewash, regurgitated pellets, bones, feathers, etc. The locations of suitable burrows, burrowing owls, and sign of burrowing owls at burrows were recorded using GPS technology and documented in field notes and photographs.

3.2.5 - Least Bell's Vireo Surveys

Focused surveys for least Bell's vireo were not performed on this project site. Least Bell's vireo surveys conducted on an adjacent project site (Highland Grove IV) resulted in detection of the species along riparian drainages throughout the area (Appendix A).

3.2.6 - Crotch's Bumble Bee Surveys

Focused Crotch's bumble bee surveys were conducted by FCS Biologists on April 1 and 23, 2025, and on May 9, 2025 (Appendix C). Three surveys were conducted by FCS Biologists according to the CDFW Survey Conditions for CESA Candidate Bumble Bee Species.²⁸ During the surveys, FCS Biologists recorded floral resources available within the survey area, recorded habitat conditions with photography, searched for bees, and noted presence of other pollinating insects.

²⁸ California Department of Fish and Wildlife (CDFW). 2023. Survey Conditions for CESA Candidate Bumble Bee Species. Website: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inline>. Accessed April 30, 2025.

SECTION 4: RESULTS

This section summarizes the results of the literature search and general biological reconnaissance survey. The results of the sensitive biological resources database reviews and an analysis for the potential for occurrence of these resources on the project site are presented in Section 5. An analysis of project requirements for MSHCP consistency is presented in Section 6.

4.1 - Literature Review

4.1.1 - Environmental Setting

The project site is surrounded by undeveloped lands to the north, west, and east, and an agricultural operation to the south (Exhibits 2 and 3). The project site is vacant and undeveloped and functioned as a citrus operation until the early 2000s, along with the surrounding undeveloped areas. Evidence of operational site disturbance includes compacted soils, erosional areas, debris piles, and various dirt roads. Elevation on the project site ranges from approximately 1,400 feet above mean sea level (AMSL) along the northern boundary to 1,360 feet AMSL along the southern boundary. Elevation on the western boundary is 1,350 feet AMSL and elevation along the eastern boundary is 1,430 feet AMSL.

Soils

The Natural Resources Conservation Service (NRCS) has mapped the following three soil types on the project site (Exhibit 5). None of the soil types mapped or observed are classified as hydric soils.

- Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded
- Cajalco Rocky Fine Sandy Loam, 15 to 50 Percent Slopes, Eroded
- Fallbrook Sandy Loam, 8 to 15 Percent Slopes, Eroded

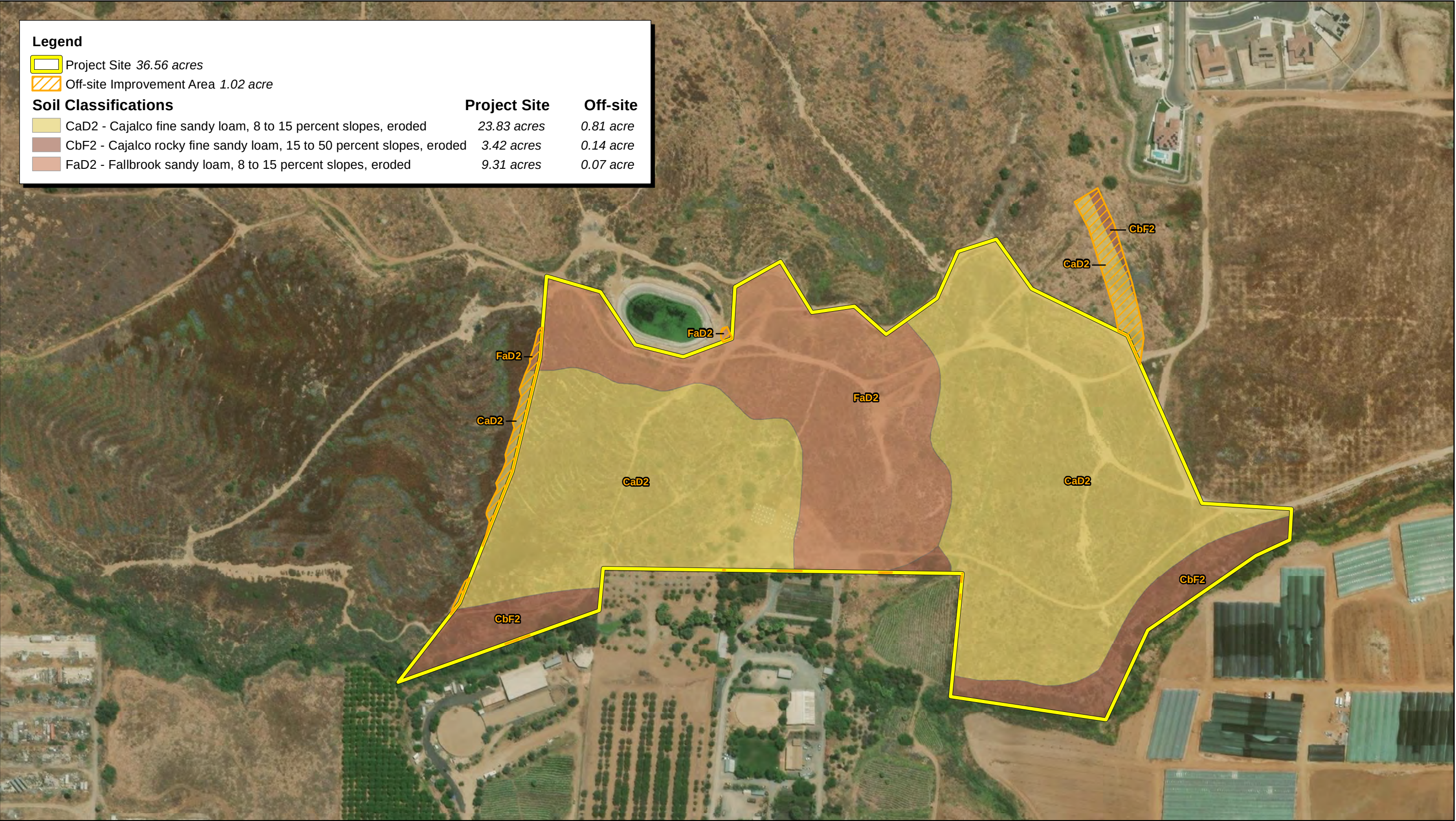
4.2 - Biological Surveys

FCS Biologist Joseph Vu conducted a general biological survey of the project site on July 23, 2024. Weather conditions during the field surveys were sunny with some cloud cover, with an average temperature of 64°F (degrees Fahrenheit) and wind speeds between 1 and 4 miles per hour (mph).

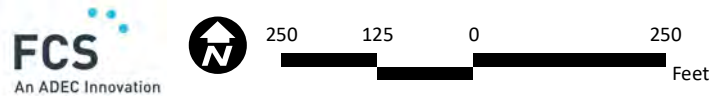
4.2.1 - Vegetation Communities and Land Use

The vegetation communities and land cover types recorded on the project site are described below. A map showing vegetation communities and land cover types is presented in Exhibit 6. Photographs are presented in Appendix B.

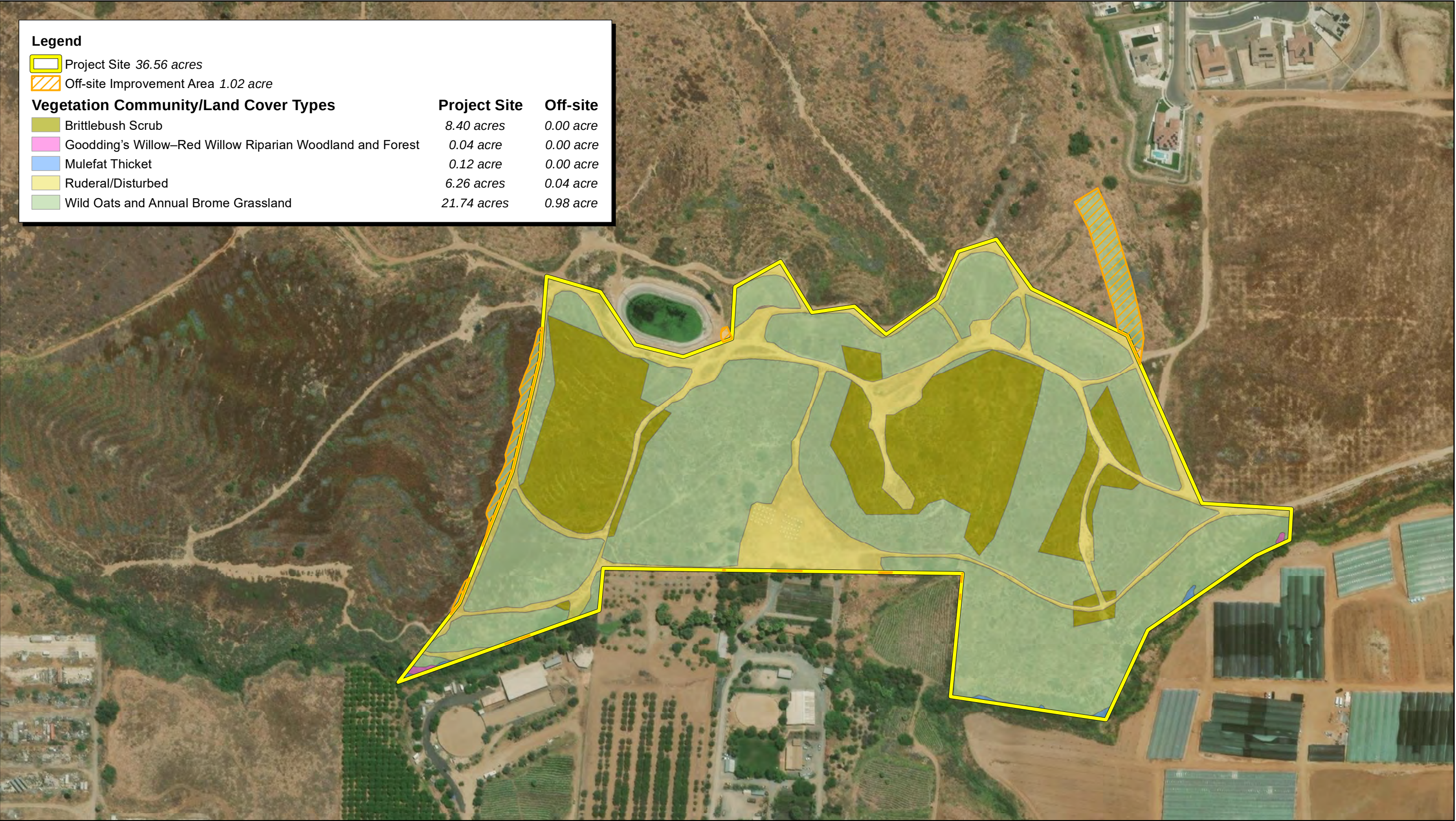
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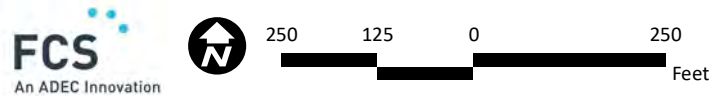
Source: ESRI Aerial Imagery. adkan Engineers, October 2024. USDA Soils Data Mart, Riverside County.



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Source: ESRI Aerial Imagery. adkan Engineers, October 2024.



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Exhibit 6
Vegetation Community/Land Cover Map

RIVERSIDE COUNTY
HIGHLAND GROVE V
BIOLOGICAL RESOURCES ASSESSMENT/MSHCP CONSISTENCY ANALYSIS

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Wild Oats and Annual Brome Grassland

The site contains non-native annual grassland that best matches wild oats and annual brome grassland as described in the CNPS MCV.²⁹ This community is found throughout the project site. Species observed within this community include red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), black nightshade (*Solanum nigrum*), common fiddleneck (*Amsinckia intermedia*), white horehound (*Marrubium vulgare*), black mustard (*Brassica nigra*), and Italian thistle (*Carduus pycnocephalus*).

Mulefat Thickets

The drainage along the southern border of the project site supports riparian vegetation best described as mulefat thickets or *Baccharis salicifolia* Shrubland Alliance as described in the CNPS MCV.³⁰ This community includes mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus nigra ssp. caerulea*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*). Several emergent trees occur in scattered locations within this community, including Mexican fan palm (*Washingtonia robusta*), Canary Island date palm (*Phoenix canariensis*), and blue gum (*Eucalyptus globulus*).

Goodding's Willow–Red Willow Riparian Woodland and Forest

A portion of the drainage along the southern border of the project site supports a riparian vegetation community best described as Goodding's willow—red willow riparian woodland and forest. This community is characterized by a relatively dense canopy dominated by Goodding's black willow (*Salix gooddingii*) and red willow trees. Other species in this community include arroyo willow, mulefat, and blue elderberry (*Sambucus mexicana*).

Brittlebush Scrub

The project site includes some scrub habitat best described as brittlebush scrub or *Encelia farinosa* Shrubland Alliance as described in the CNPS MCV.³¹ This community is dominated by brittlebush (*Encelia farinosa*) with an understory of non-native grasses such as red brome and foxtail barley.

Ruderal/Disturbed

Ruderal/disturbed habitat is present throughout the project site. This land cover type is characterized by disturbed, cleared, and/or bare ground that is being invaded by native and non-native ruderal plant species. On the project site, ruderal/disturbed lands are found along a bare dirt road that traverses the site.

4.2.2 - Rare Plant Surveys

Two floristic surveys were conducted on the project site, during which all plant species observed on-site were identified and recorded. The floristic surveys were conducted on July 3, 2024, and August

²⁹ California Native Plant Society (CNPS). 2024. A Manual of California Vegetation Online. Website: <https://vegetation.cnps.org/>. Accessed June 12, 2024.

³⁰ Ibid.

³¹ Ibid.

2, 2024, by FCS Biologists Juliet Simpson and Joseph Vu. The survey dates covered the blooming periods of target rare plants and most other native annual and perennial species in the region.

One of the target species, paniculate tarplant (*Deinandra paniculata*), was observed on-site. The other target species, Brand's star phacelia (*Phacelia stellaris*), was determined not to have potential to be within the project site since the site lacked suitable habitat. In addition, although this species continues to persist in Riverside County its current distributions is restricted to a few location notably sandy benches along the Santa Ana River and the Hidden Valley Wildlife Area.^{32,33}

Reference Sites

Nearby populations of paniculate tarplant were observed blooming at Sycamore Canyon Wilderness Park on July 2, 2024, by FCS Botanist Juliet Simpson.

4.2.3 - Wildlife

The vegetation community and land cover types on the project site provide habitat for wildlife species that associate with non-native annual grassland, riparian, and disturbed or ruderal habitat types. The non-native grassland provides foraging opportunities for common invertebrates, reptiles, birds, and mammals and potential nesting habitat for ground-nesting birds. The anthropogenic features on and adjacent to the project site (buildings and ornamental trees) could provide habitat for several wildlife species, including nesting birds. Wildlife activity during the general biological reconnaissance survey was low and only one species, California ground squirrel (*Otospermophilus beecheyi*), was observed. No special-status wildlife species were observed during the survey.

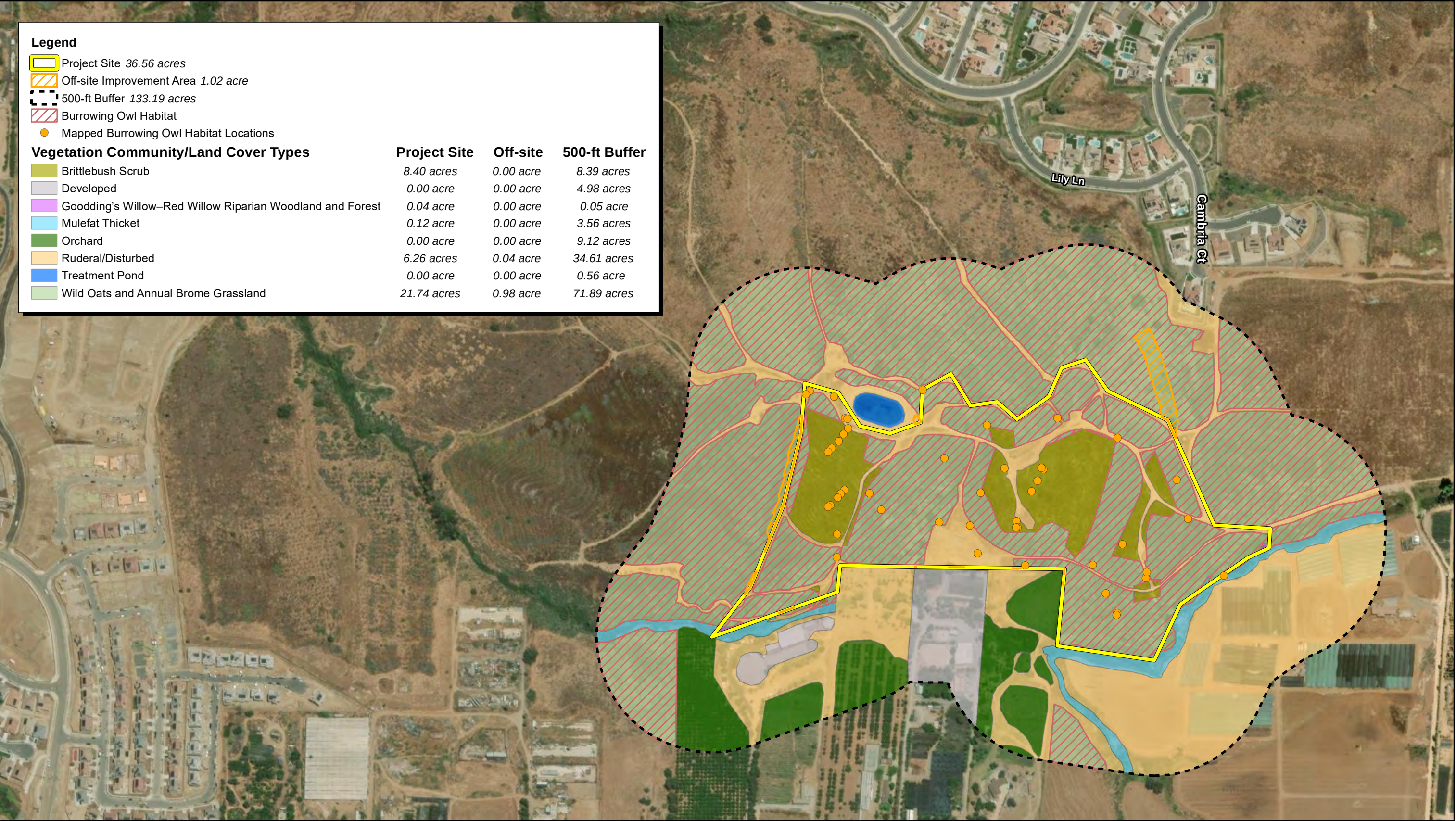
4.2.4 - Special-Status Wildlife Surveys

Burrowing Owl Surveys

Burrowing owl surveys were conducted by FCS Biologists Jeremy Reinhard, David Ortiz, and Kayla Belanger on July 3, 2024; July 11, 2024; July 24, 2024; July 31, 2024; and August 23, 2024. The habitat assessment (Step I of the protocol) found that the wild oat and annual brome grassland on and adjacent to the project site support marginally suitable foraging, burrowing, and nesting habitat for burrowing owls (Exhibit 7a). The vegetation in this community is very dense over much of the project site, but there are scattered areas of sparse vegetation clearings that would provide suitable habitat for burrowing owls. The burrow survey (Step II, Part A of the protocol) found numerous California ground squirrel burrows on-site and within 500 feet east of the site that could serve as suitable nesting habitat for burrowing owls (Exhibit 7b). The focused burrowing owl surveys (Step II, Part B of the protocol) found that no burrowing owl, nor signs of the species (i.e., whitewash, feathers, pellets), are present on-site.

³² United States Fish and Wildlife Service (USFWS). 2013. Candidate conservation agreement. Website: https://ecos.fws.gov/docs/plan_documents/tcca/tcca_1043.pdf?utm_source=chatgpt.com. Accessed July 16, 2025.

³³ Calflora. 2025. Calflora: Information on California Plants for Education, Research, and Conservation. Website: <http://www.calflora.org/>. Accessed July 16, 2025.



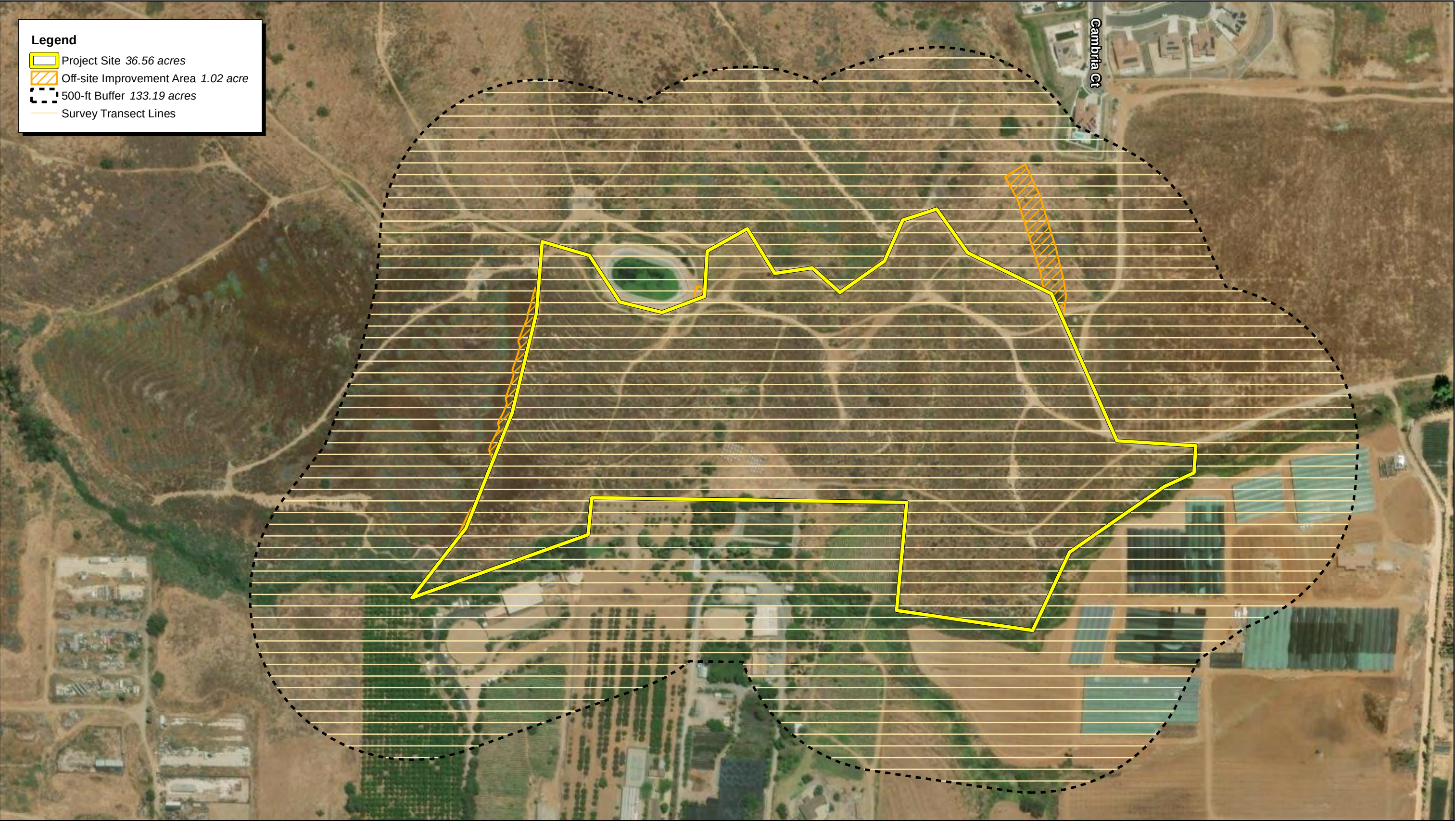
Source: ESRI Aerial Imagery. adkan Engineers, October 2024.



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Exhibit 7a
Mapped Burrowing Owl Habitat On and Adjacent to the Project Site

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Source: ESRI Aerial Imagery. adkan Engineers, October 2024.

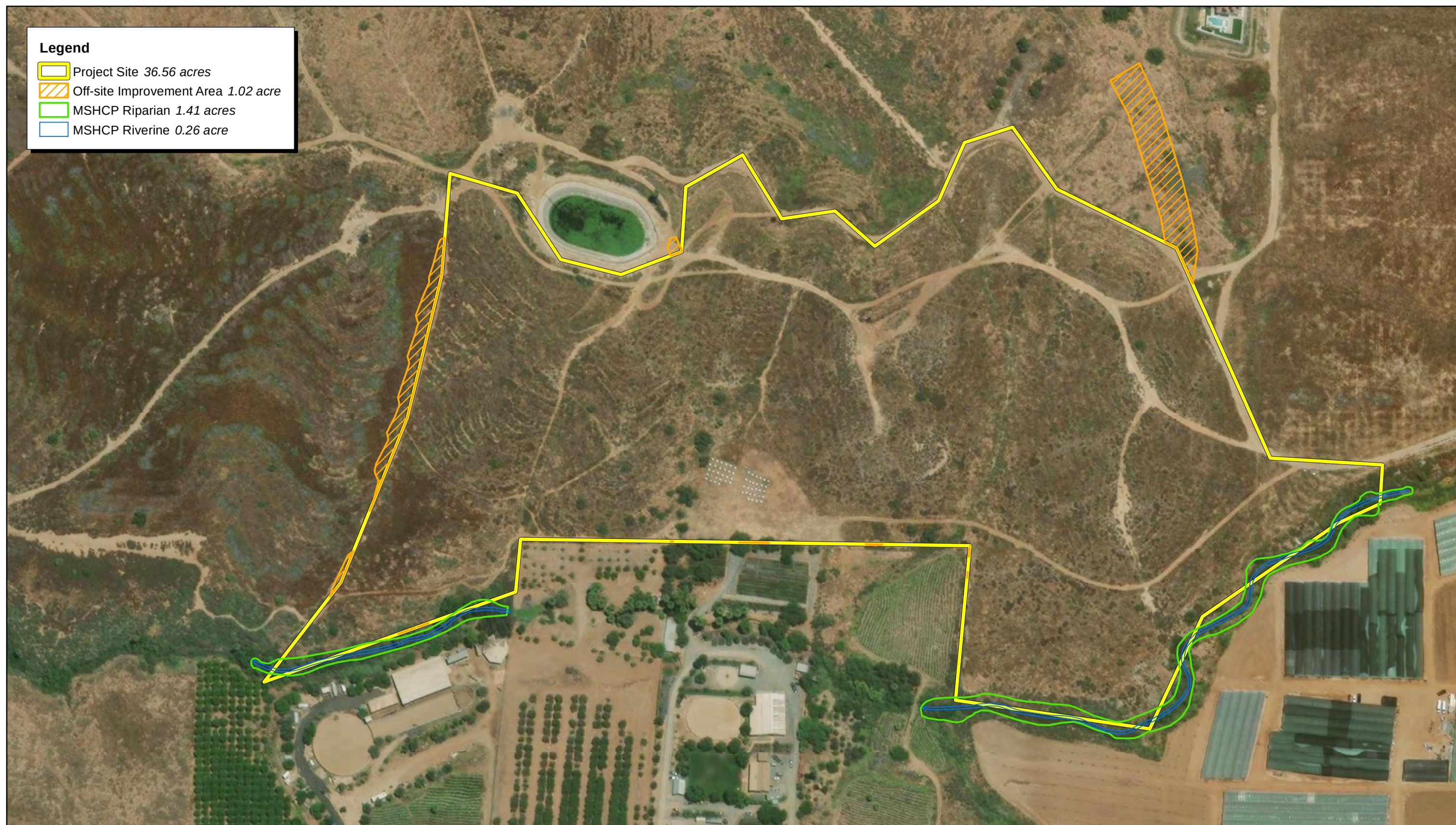


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Exhibit 7b
Burrowing Owl Survey Transect Map

RIVERSIDE COUNTY
HIGHLAND GROVE V
BIOLOGICAL RESOURCES ASSESSMENT/MSHCP CONSISTENCY ANALYSIS

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Source: ESRI Aerial Imagery. adkan Engineers, October 2024.



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Exhibit 8 MSHCP Riparian/Riverine Resources

RIVERSIDE COUNTY
HIGHLAND GROVE V
BIOLOGICAL RESOURCES ASSESSMENT/MSHCP CONSISTENCY ANALYSIS

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Least Bell's Vireo Surveys

Focused surveys for least Bell's vireo were not performed on the project site. Least Bell's vireo surveys conducted on an adjacent project site (Highland Grove IV) resulted in detection of the species along riparian drainages throughout the area (Appendix A). Because similar riparian habitat occurs on the current project site, it is assumed that least Bell's vireo are present in the riparian habitat in the drainage along the southern project boundary. As such, the riparian habitat located in the drainage is considered occupied by the least Bell's vireo.

Crotch's Bumble Bee Surveys

FCS performed focused Crotch's bumble bee surveys on April 1 and 23, 2025, and on May 9, 2025 (Appendix C). The species was not observed during the focused surveys and is therefore considered absent from the project site. Other bee species observed during the surveys included European honeybee (*Apis mellifera*). Other pollinator species observed included *Copestylum marginatum*, a species of syrphid fly, seven-spot ladybird (*Coccinella septempunctata*), weevil sp. (*Curculionoidea*), and common damselflies (*Enallagma cyathigerum*). The full results of the focused Crotch's bumble bee surveys are provided in Appendix C.

4.2.5 - Wildlife Movement Corridors

The project site consists primarily of non-native grassland and disturbed/ruderal habitat and is surrounded by urbanized and disturbed areas and roads to the south that limit wildlife movement through the project site. The project site itself does not serve as a wildlife movement corridor nor is it within a proposed MSHCP Core, Linkage, or Constrained Linkage.

4.2.6 - Potentially Jurisdictional Water and Wetlands

A formal Aquatic Resource Delineation was performed on the project site by FCS Staff on July 9, 2024 (Appendix D). Results of the delineation are summarized below.

The project includes one drainage feature, designated herein as Drainage A. Drainage A is an incised drainage that conveys intermittent flows in a westward direction prior to exiting the site at the western boundary of the project site. Flows that enter the project site originate from agricultural runoff from the surrounding orchards and seeps within the drainage. The active channel has loam and sandy substrate and vegetation includes riparian species such as mulefat (facultative [FAC]), Goodding's black willow (*Salix goodingii*; Facultative Wetland [FACW]) and arroyo willow (FACW), and obligate wetland species such as southern cattail (*Typha domingensis*; obligate wetland species [OBL]), duckweed (*Lemna* sp., OBL), and water cress (*Nasturtium officinale*; OBL). Other species found in Drainage A include Mexican fan palm (FACW), castor bean (*Ricinus communis*; Facultative Upland [FACU]), blue elderberry (FACU), California buckwheat (*Eriogonum fasciculatum*; Upland [UPL]), black mustard (UPL), perennial pepperweed (*Lepidium latifolium*, FAC), and several non-native grasses. Drainage A has an OHWM of 8 feet and includes OHWM indicators/evidence such as break in bank slopes, destruction of terrestrial vegetation, vegetation wracking, sediment sorting and deposition, and presence of bed and bank.

USACE Jurisdiction

There is no USACE jurisdiction within the project site. Flows associated with Drainage A do not contain a continuous surface connection with a navigable water of the United States. Flows associated with Drainage A leave the project site and terminate approximately 2.5 miles northwest within a concrete pipe culvert at an agricultural field south of the intersection of Cleveland Avenue and Harrison Street. Subsurface flow continues in the storm drain indefinitely and does not appear to reemerge as surface flow. Therefore, Drainage A does not contain a continuous surface connection to a navigable water of the United States and would likely not be classified as waters of the United States under the jurisdiction of the USACE. Note that a final jurisdictional determination can only be made by the USACE following verification.

RWQCB Jurisdiction

RWQCB jurisdiction is limited to Drainage A and totals approximately 0.61 acre (0.26 acre of which consists of State wetlands) (Appendix D). A total of approximately 1,914 linear feet of intermittent stream are present.

Since Drainage A is not subject to USACE jurisdiction pursuant to Section 404 of the CWA, this feature is also not subject to RWQCB jurisdiction pursuant to Section 401 of the CWA. However, since Drainage A conveys surface flow with the potential to support beneficial uses and includes State wetlands, Drainage A is considered to be waters of the State that would be regulated by the Regional Board pursuant to the Porter-Cologne Act and would require a Waste Discharge Requirement if there any impacts to the drainage.

CDFW Jurisdiction

CDFW jurisdiction is limited to Drainage A and totals approximately 1.67 acres (0.26 acre of which consists of riparian and wetland habitats) (Appendix D). A total of approximately 1,914 linear feet of intermittent stream are present.

Drainage A exhibited defined stream flow indicators as evidenced by changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, and incised channel bank. Because of the presence of beds and banks and the presence of riparian and wetland habitat, it is expected that the CDFW will assert regulatory oversight over potential impacts on Drainage A pursuant to California Fish and Game Code Section 1602, *et seq.* (Streambed Alteration Program) and would require a Notification of Streambed Alteration and subsequent Streambed Alteration Agreement for any work that could adversely affect the Drainage A and associated riparian/wetland vegetation.

MSHCP Jurisdiction

The MSHCP defines Riparian habitat as “lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source. In the absence of Riparian habitat, the MSHCP defines Riverine areas as areas with fresh water flow during all or a portion of the year.” The MSHCP defines “vernal pools as seasonal wetlands that occur in depression areas that have wetlands indicators of all three

parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetland indicators of hydrology and/or vegetation during the drier portion of the growing season.”

MSHCP Riparian/Riverine resources on the project site total approximately 1.67 acres (1.41 acres of which consist of MSHCP Riparian habitat) and are identical to that of CDFW jurisdiction (Appendix D). No vernal pools were observed during field surveys.

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SECTION 5: ANALYSIS OF POTENTIAL FOR OCCURRENCE OF SENSITIVE BIOLOGICAL RESOURCES

The following section discusses the results of the database reviews for sensitive biological resources and an analysis of the potential for these resources to occur on the project site based on existing biological conditions on and adjacent to the site.

5.1 - Sensitive Natural Communities

Sensitive natural communities are vegetation communities or special wildlife habitats that are rare or occur in limited distributions or provide specific habitat requirements for special-status plant or wildlife species. The CDFW maintains a list of natural vegetation communities found in California and ranks them based on rarity. Communities ranked S1–S3 are considered sensitive natural communities.³⁴ The CNDDDB identified seven sensitive natural community types—Southern Interior Cypress Forest, Southern California Arroyo Chub/Santa Ana Sucker Stream, Southern Sycamore Alder Riparian Woodland, Southern Riparian Forest, Southern Willow Scrub, Southern Cottonwood Willow Riparian Forest, Southern Coast Live Oak Riparian Forest—within 5 miles of the project site. An additional two sensitive natural community types, Southern Interior Cypress Forest and Southern Sycamore Alder Riparian Woodland, have been recorded in the CNDDDB between 5 and 10 miles from the site.³⁵ No sensitive vegetation communities were recorded on or directly adjacent to the project site.

5.2 - Special-status Plant Species

Within 10 miles of the project site, 46 special-status plant species have been recorded in the CNDDDB (Exhibit 9),^{36,37} on the nine-quadrangle search area of the CNPSEI,³⁸ and in the IPaC query results and were considered in an analysis of their potential to occur on the project site (Appendix E, Table 1). Table 1 in Appendix E includes the legal status of each species, their required habitat, and a summary analysis of the potential for each species to occur on the project site. The potential for occurrence of a species was based on current biological conditions on the project site and presence of suitable habitats, soil types, and proximity and number of occurrences recorded in the CNDDDB.^{39,40,41} Intensive agricultural land uses and associated previous surface disturbances evident throughout the

³⁴ California Department of Fish and Wildlife (CDFW). 2024. Natural Communities List, Sacramento: California Department of Fish and Wildlife. Website: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities>. Accessed June 14, 2024.

³⁵ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 14, 2024.

³⁶ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed June 14, 2024.

³⁷ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 14, 2024.

³⁸ California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: <http://www.rareplants.cnps.org/>. Accessed June 14, 2024.

³⁹ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed June 14, 2024.

⁴⁰ California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: <http://www.rareplants.cnps.org/>. Accessed June 14, 2024.

⁴¹ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 14, 2024.

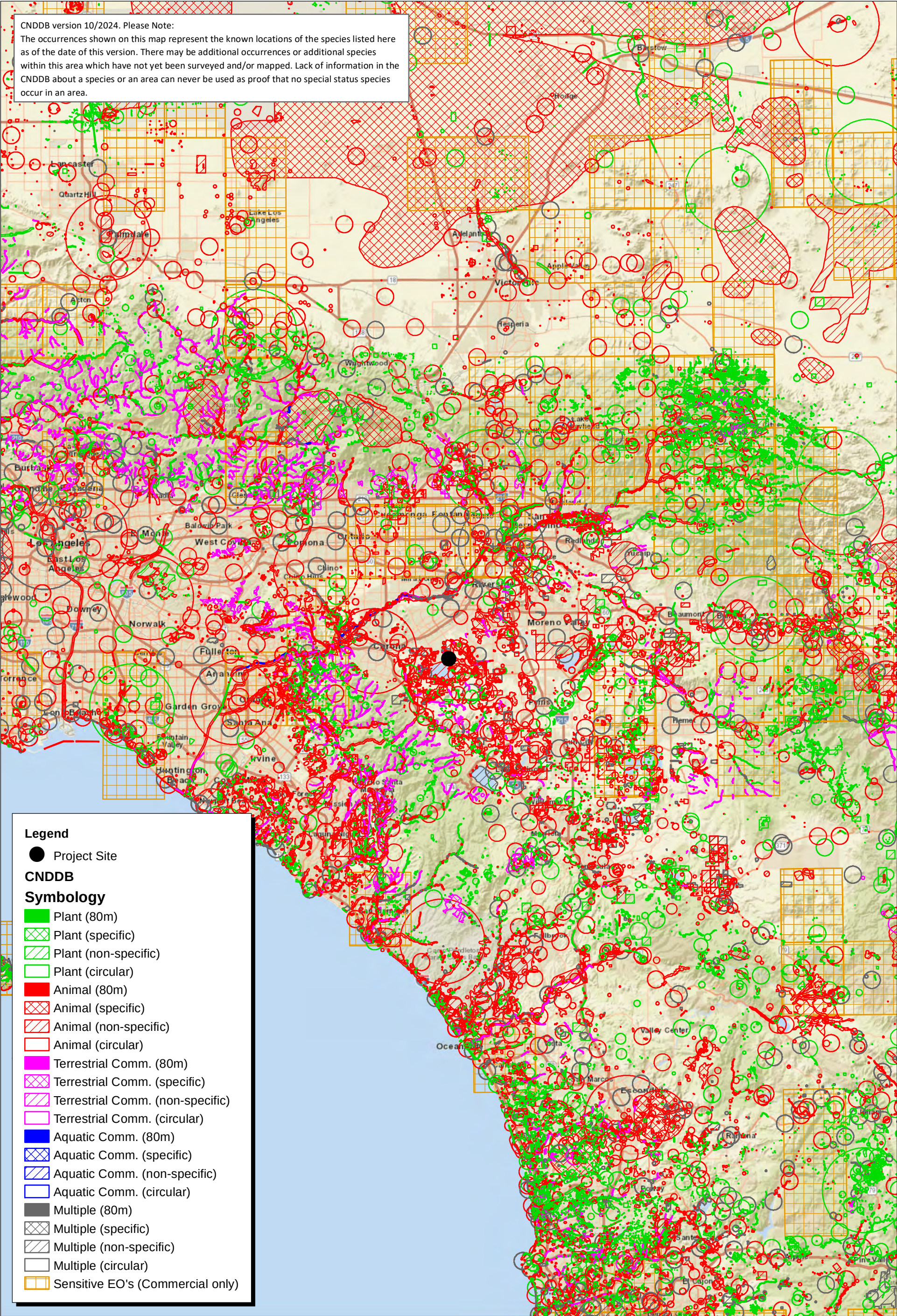
project site have limited the possibility for persistence and occurrence of most special-status plant species that were considered in the analysis. Most special-status plant species considered in the analysis were determined to have no or low potential to occur on-site due to the absence of suitable habitat or the lack of recent records in the project vicinity. Special-status plant species with moderate to high potential to occur on-site are analyzed further below.

Paniculate Tarplant

The paniculate tarplant has a CNPS ranking of 4.2 and is an annual herb found in sandy soils (sometimes) and in vernal mesic soils (usually) in coastal scrub, valley and foothill grassland, and vernal pool communities. Its blooming period is between April and November and occurs within elevations of 82–3,083 feet. The project site supports suitable habitat for this species in the wild oats and annual brome grassland. One individual species was observed on project site during a rare plant survey conducted by FCS Biologist Juliet Simpson on July 3, 2024 (Exhibit 9).⁴² Therefore, this species is considered present on the project site.

⁴² California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 14, 2024.

CNDDDB version 10/2024. Please Note:
The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDDB about a species or an area can never be used as proof that no special status species occur in an area.



Source: ESRI Street Imagery. California Natural Diversity Database (CNDDDB), October 2024.

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5.3 - Special-status Wildlife Species

A total of 57 special-status wildlife species were identified as occurring within 10 miles of the project site as recorded in the CNDDDB (Exhibit 9)^{43,44} or listed in the IPaC query results and were considered in an analysis of their potential to occur on the project site (Appendix E, Table 2). Table 2 in Appendix E includes the legal status of each species, their required habitat types and features, and a summary analysis of the potential for each species to occur on the project site. The potential for wildlife to occur on the project site was based on presence of suitable habitats and proximity and recency of occurrences recorded in the CNDDDB.^{45,46} Numerous special-status wildlife species considered in the analysis were determined to have no or low potential to occur on-site, primarily based on the project site being situated outside of the range of the species or absence of suitable habitat or the lack of recent records in the project vicinity, along with other justification(s) for their exclusion from further discussion. Special-status wildlife species with moderate to high potential to occur on-site are analyzed further below.

5.3.1 - Potential for Occurrence of Special-status Wildlife

Most species with records in the project vicinity were assessed as having no or low potential to occur because the project site is outside of the known distributional range of the species or because the project site does not support suitable habitat (Appendix E, Table 2). These species are not discussed further. The following species were assessed as having moderate to high potential to occur on or adjacent to the project site:

- Red-diamond rattlesnake (*Crotalus ruber*): moderate potential to occur
- Cooper's hawk (*Accipiter cooperii*): moderate potential to occur
- Burrowing owl: moderate potential to occur
- White-tailed kite (*Elanus leucurus*): moderate potential to occur
- Loggerhead shrike (*Lanius ludovicianus*): moderate potential to occur
- Yellow warbler (*Setophaga petechia*): moderate potential to occur
- Least Bell's vireo: assumed present
- Stephens' kangaroo rat (*Dipodomys stephensi*): moderate potential to occur
- Western yellow bat (*Lasiurus xanthinus*): moderate potential to occur
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*): moderate potential to occur
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*): moderate potential to occur
- Crotch's bumble bee (*Bombus crotchii*): moderate potential to occur

⁴³ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed June 13, 2024.

⁴⁴ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 13, 2024.

⁴⁵ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed June 13, 2024.

⁴⁶ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 13, 2024.

Red-diamond Rattlesnake

The red-diamond rattlesnake is a species that occurs in arid, rocky areas in creosote scrub, coastal sage and Riversidean alluvial fan sage scrub, chaparral, oak and pine woodlands, and grasslands and on cultivated areas. The red-diamond rattlesnake is a California Species of Special Concern and it is covered under the MSHCP. The project site contains suitable habitat for this species within the wild oats and annual brome grassland present on the project site. There are 12 recent and 12 historical records within 5 miles of the project site, and there are 10 recent and 15 historical records between 5 and 10 miles from the project site (Exhibit 9).⁴⁷ This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

Cooper's Hawk

Cooper's hawk is a hawk in the family Accipitridae. This species occurs in riparian forests and woodlands throughout California, including urban forests. It prefers patchy wooded areas, such as groves with edges with snags for perching. It nests in dense stands with moderate crown-depths, usually in second-growth conifer stands or in deciduous riparian areas, and usually near streams. Cooper's hawk preys on mid-sized birds such as jays, starlings, and doves, but they also consume small rodents. The species capture prey from cover or while flying quickly through dense vegetation, relying on surprise. The Cooper's hawk is designated as a California Watch List species, and it is covered under the MSHCP. Their nests are protected by the MBTA and California Fish and Game Code pertaining to native nesting avian species. Suitable foraging and nesting habitat for this species is present in the mulefat thickets and other areas containing trees on and adjacent to the project site. There is one recent and one historical record between 5 and 10 miles from the project site (Exhibit 9).⁴⁸ This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

Burrowing Owl

The burrowing owl is an owl in the family Strigidae. Burrowing owls occur in open, dry, annual, or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species utilizes, modifies, and nests in burrows created by other species, most notably those of the California ground squirrel but also those excavated by coyotes, American badgers, and other burrowing mammals. Burrowing owl populations are threatened by habitat loss, pesticide use, and ground squirrel eradication programs, which limit suitable burrowing habitat. In October of 2024, the California Fish and Game Commission voted unanimously that listing the western burrowing owl (*Athene cunicularia hypugaea*) was warranted under CESA, and the species was advanced to candidate status. The burrowing owl is designated as a California Species of Special Concern and a federal Bird of Conservation Concern, and it is covered under the MSHCP. Limited take of this species is permitted under the MSHCP under certain conditions; however, their nesting burrows are protected by the MBTA and California Fish and Game Code pertaining to native nesting avian species. The project site is also located within the MSHCP burrowing owl species survey zone, requiring that a

⁴⁷ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed June 13, 2024.

⁴⁸ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 13, 2024.

habitat assessment and surveys (if habitat is present) for burrows and burrowing owls be performed. Marginally suitable burrowing and nesting habitat for this species is present on the project site within wild oats and annual brome grassland where California ground squirrel burrows occur. Much of the vegetation in this community is too tall and dense to support burrowing and foraging activities of this species. Focused burrowing owl surveys conducted on the project site in 2024 did not detect the species, so this species is considered absent from the project site. There are two historical records within 5 miles and 12 recent and two historical records between 5 and 10 miles from the project site. (Exhibit 9).⁴⁹

White-tailed Kite

The white-tailed kite is a hawk in the family Accipitridae. This species inhabits open habitats such as grasslands, marshes, and farmlands and is often found near agricultural areas. It prefers areas with trees for perching and nesting and forages in open areas that support diurnal rodent populations. Preferred nesting habitat consists of oak woodlands or trees along marsh edges. Suitable nesting substrates include trees or shrubs of moderate height, such as eucalyptus, cottonwoods, toyons, and coyote bush, with the nests placed near the tops of the shrubs or trees. Nesting occurs in February through August with peak activity in March, April, and May. The white-tailed kite is designated as a California Fully Protected species and it is covered under the MSHCP. Their nests are protected by the MBTA and California Fish and Game Code pertaining to native nesting avian species. Suitable foraging habitat for this species is present on-site and trees adjacent to the project site provide potentially suitable nesting habitat. Suitable foraging habitat exists within the wild oats and annual brome grassland on and adjacent to the project site. There is one historical record between 5 and 10 miles from the project site (Exhibit 9).⁵⁰ This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

Loggerhead Shrike

The loggerhead shrike is a passerine bird in the family Laniidae. This species inhabits open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Loggerhead shrikes were once widely distributed across southern Canada, the contiguous United States, and Mexico; however, their populations have declined significantly since the 1960s. They are considered a California Special Species of Concern and a federal Bird of Conservation Concern. Their nests are protected by the MBTA and Fish and Game Codes pertaining to native nesting avian species. Suitable foraging habitat is present in the wild oats and annual brome grassland on and adjacent to the project site, and suitable nesting habitat is present in trees and shrubs on and adjacent to the project site. There is one historical record between 5 and 10 miles of the project site (Exhibit 9).⁵¹ This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

⁴⁹ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://map.dfg.ca.gov/bios/>. Accessed June 13, 2024.

⁵⁰ Ibid.

⁵¹ Ibid.

Yellow Warbler

The yellow warbler is a passerine bird in the family Parulidae. This species is a Neotropical migrant that breeds in California. It inhabits dense, shrubby areas, often near water. It breeds in riparian thickets, especially in willows. They forage predominantly on caterpillars and insects but will also eat berries and other fruits. The yellow warbler is designated as a California Species of Special Concern. Their nests are protected by the MBTA and Fish and Game Codes pertaining to native nesting avian species. Suitable foraging and nesting habitat is present in the mulefat thickets and riparian areas within the drainage along the southern boundary of the project site. There is one recent record between 5 and 10 miles from the project site (Exhibit 9).⁵² This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

Least Bell's Vireo

Least Bell's vireo is a passerine bird in the family Vireonidae. This species is a Neotropical migrant that breeds in California. This species occurs and nests in willow-dominated, riparian woodland or scrub habitats in the vicinity of water or in dry river bottoms. Least Bell's vireo is federally and State-listed as an Endangered species. Their nests are protected by the MBTA and Fish and Game Codes pertaining to native nesting avian species. Suitable habitat for this species exists within the riparian drainage along the southern project boundary. There are 13 recent and three historical records within 5 miles of the project site and 29 recent and three historical records between 5 and 10 miles from the project site (Exhibit 9).⁵³

South Environmental conducted focused surveys for the least Bell's vireo between May 1 and July 24, 2024, on the adjacent Highland Grove IV project site (Appendix A). Because the species was detected in riparian habitat similar to that found on the current project site, least Bell's vireo is assumed to occupy riparian habitat in Drainage A along the southern project site boundary.

Stephens' Kangaroo Rat

The Stephens' kangaroo rat occurs primarily in annual and perennial grasslands but also occurs in coastal scrub and sagebrush with sparse canopy cover. This species prefers buckwheat, chamise, brome grass, and filaree. It will also burrow into firm soil. The Stephen's kangaroo rat is listed as Threatened under both CESA and the Endangered Species Act. It is covered under the Stephen's Kangaroo Rat HCP. Suitable habitat for this species exists within the wild oats and annual brome grassland on the project site. There is one recent and 25 historical records within 5 miles of the project site, and there are 45 historical records between 5 and 10 miles from the project site (Exhibit 9).⁵⁴ This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

⁵² California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 13, 2024.

⁵³ Ibid.

⁵⁴ Ibid.

Western Yellow Bat

Western yellow bat occurs in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats and is a year-round resident in California. This species roosts in the skirts of dead fronds in both native and non-native palm trees. The western yellow bat is designated as a California Species of Special Concern. Palm trees present on the project site may provide potential roosting habitat, and this species may forage in the wild oats and annual brome grassland. There is one historical record within 5 miles and there are two historical records between 5 and 10 miles from the project site (Exhibit 9).⁵⁵ GLA conducted focused, acoustic surveys for bats on the adjacent Highland Grove III project site and detected western yellow bats in habitat conditions similar to those on the current project site.

San Diego Black-tailed Jackrabbit

San Diego black-tailed jackrabbit is a lagomorph in the family *Leporidae*. This species occurs primarily in arid regions with short grass including open grasslands, agricultural fields, and sparse coastal scrub. It nests under bushes or shrubs that have shallow depressions. The San Diego black-tailed jackrabbit is covered under the MSHCP. Suitable habitat for this species is present on and adjacent to the project site in the wild oats and annual brome grassland. The wild oats and annual brome grassland on the project site provide suitable habitat for this species. There are two historical records within 5 miles and there are three historical records between 5 and 10 miles from the project site (Exhibit 9).⁵⁶ This species was not observed during any surveys conducted for the proposed project but has a moderate potential to occur on-site.

Pocketed Free-tailed Bat

Pocketed free-tailed bats are believed to be non-migratory and are generally distributed within a wide range of habitats from sea level to approximately 7,300 feet AMSL, including pinon-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian. This bat is colonial and roosts primarily in crevices of rugged cliffs, high rocky outcrops and slopes but may also roost in buildings, caves, and roof tiles. Maternity colonies are formed and females bear a single young in late June or July. Juveniles become volant in August. This species forages primarily on large moths but will also take small moths, beetles, and a variety of other insects. Suitable foraging habitat is present within the wild oats and annual grassland community and riparian areas on the project site. There are two historical records within 5 miles of the project site and two historical records 5 and 10 miles from the project site (Exhibit 9).⁵⁷ GLA conducted focused, acoustic surveys for bats on the adjacent Highland Grove III project site and detected pocketed free-tailed bats in habitat conditions similar to those on the current project site.

Crotch's Bumble Bee

The Crotch's bumble bee is a species of bee in the family *Apidae*. This species occurs primarily in California, including coastal habitats, the western Mojave Desert, the San Joaquin Valley, and

⁵⁵ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 13, 2024.

⁵⁶ Ibid.

⁵⁷ Ibid.

adjacent foothills through most of southwestern California. It inhabits arid grasslands and shrublands, and its food sources including milkweed, pincushion, lupine, clover, phacelia, sage, clarkia, poppy, and buckwheat. Threats to this species include climate change, pesticide use, competition from non-native bees, reduced genetic diversity, and habitat loss and degradation, including agricultural intensification in California's northern Central Valley and rapid urbanization in the southern Central Valley. In June of 2019, the California Fish and Game Commission (Commission) voted 3-1 that listing the Crotch's bumble bee may be warranted under CESA; however, a Superior Court ruling in January 2021 blocked the listing. The listing decision by the Commission was ultimately upheld and the species' candidacy was reinstated under CESA on September 30, 2022. The Crotch's bumble bee is not covered under the MSHCP. A Crotch's bumble bee habitat assessment was conducted by FCS and the assessment determined that marginally suitable habitat for this species is present on and adjacent to the project site in the wild oats and annual brome grassland and flowering plants. There is one historical record within 5 miles and one recent and four historical records between 5 and 10 miles from the project site (Exhibit 9).⁵⁸ This species was not observed during the focused surveys; therefore, this species is considered absent from the project site. The full results of the focused Crotch's bumble bee surveys are provided in Appendix C.

5.3.2 - Nesting Birds

The project site and adjacent areas contain vegetation and other potential nesting platforms that could provide suitable nesting habitat for bird species protected under the MBTA and the Fish and Game Code, including loggerhead shrike, yellow warbler, least Bell's vireo, Cooper's hawk, burrowing owl, white-tailed kite, and other native avian species. Construction activities could disturb birds that breed and nest in shrubs or on the ground surface on and adjacent to the project site. Potential impacts on special-status and migratory birds that could result from construction and operation of the proposed project include destruction of eggs or occupied nests, mortality of young, and abandonment of nests with eggs or young birds prior to fledging.

5.3.3 - Roosting Bats

The project site offers potentially viable roosting habitat (tree cavities) for special-status bat species, including the pocketed free-tailed bat and the western yellow bat. Bats could potentially forage in the wild oats and annual brome grassland. Roosts are used during the daytime to seek refuge; at night between foraging excursions to rest, digest prey, seek refuge from predators or poor weather conditions, or for social purposes; and in winter for hibernation. Adult females and their young use particularly secure roosts as maternity roosts. The number of bats occupying a given roost can vary from a solitary individual to a large colony, depending on the species. Roosting sites are very sensitive to human disturbance, especially when bats are hibernating or rearing young. At dusk, bats leave their roosts to forage for insects near ponds or riparian habitats. Ecotone areas (areas of transition between habitats) are also used as foraging areas. The project site and adjacent riparian area has foraging potential for bat species. No bats were observed during the general biological field survey conducted by FCS; however, GLA detected pocketed free-tailed bats and western yellow bats during focused acoustic surveys of the nearby Highland Grove III project site.

⁵⁸ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed June 13, 2024.

SECTION 6: MSHCP CONSISTENCY ANALYSIS

6.1 - Relationship to Criteria Cells, Cell Groups, and Conservation Areas

The project site is located within the MSHCP plan area and is not within or adjacent to a Criteria Cell. The nearest Criteria Cell Group (2026) is located approximately 1.20 miles southwest of the project site (Exhibit 10). The project site is not in or adjacent to a Conservation Area or PQP Conserved Land (Exhibit 10). The project site is not located within any MSHCP Core, Linkage or Constrained Linkage. Because of its location outside of any Criteria Cells or Cell Groups, the proposed project is not subject to Reserve Assembly Analysis requirements under the MSHCP. Because the project site is not located in or adjacent to an MSHCP Conservation Area, the proposed project would not be subject to MSHCP Guidelines Pertaining to the Urban/Wildlands Interface.

The project site is not located within an area slated for Existing or Pending Conservation. The project site does not feature Avoidance Areas or areas that must be protected by, or are proposed to be protected by, deed restriction. Current conditions and full development of the approximately 36.56-acre project site would not provide for any contributions to Undeveloped Areas Potentially Available for Future Conservation.

6.2 - Covered Roads

There are no MSHCP Covered Roads within or adjacent to the project site. Because the proposed project is located outside of any Criteria Area, the proposed project is not subject to Covered Road requirements under the MSHCP. No roadway improvements are proposed within PQP Lands. Because the proposed project is located outside of any Criteria Area, the proposed project is not subject to Covered Road requirements under the MSHCP. No roadway improvements are proposed within PQP Lands. Additionally, the proposed off-site road improvements would not be considered capacity-enhancing improvements, so Joint Project Review would not be required.

6.3 - Covered Public Access Activities

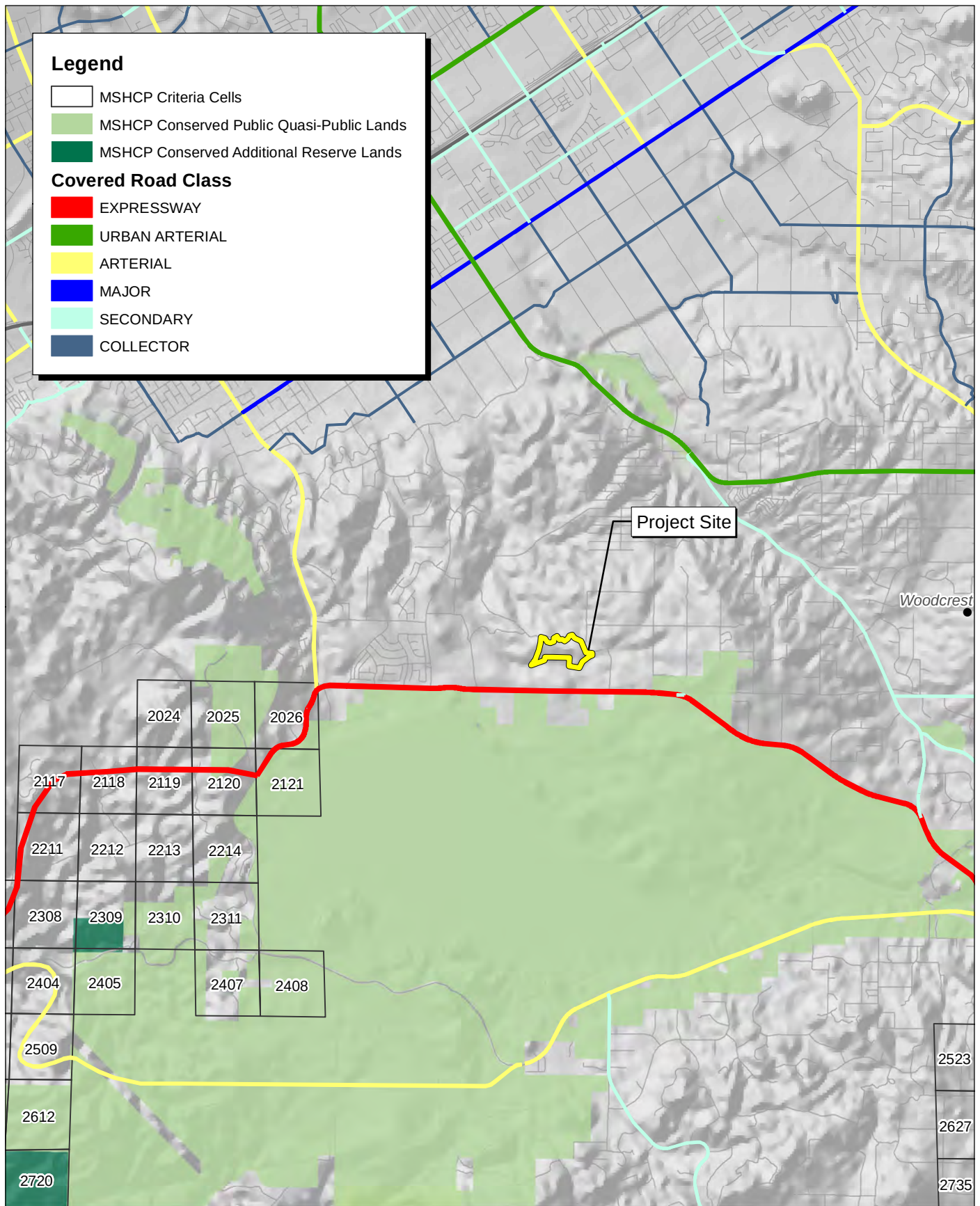
The project site is not located within the MSHCP Existing Community or Historic Trail system or on lands subject to Covered Public Access Activities and is not subject to Covered Public Access Activities requirements under the MSHCP.

6.4 - Public Quasi-public Lands

Existing Conditions

The project site is not located in or adjacent to PQP Conserved Lands and would not be subject to MSHCP PQP requirements.

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6.5 - Covered Species Survey Area Requirements

The project site is located in the following Covered Species survey area:

- Burrowing Owl Survey Area

The proposed project is therefore subject to survey requirements for burrowing owls. Initially, the project site would be subject to a burrowing owl habitat assessment on and adjacent (within 500 feet) to the project site per MSHCP protocol. Survey results and requirements for burrowing owl are discussed in Section 6.7.

The project area is not located in any of the following Covered Species survey areas:

- Amphibians Survey Area
- Mammals Survey Area
- Delhi Sands Flower-loving Fly Survey Area
- Criteria Area Species
- Narrow Endemic Species

Additionally, the project site is not located within any Additional Needs Survey Areas. The proposed project is therefore not subject to these survey requirements under the MSHCP.

6.6 - Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

6.6.1 - Riparian/Riverine Areas

Methods

Riparian/Riverine resources were recorded in the field during a formal jurisdictional delineation by FCS Senior Biologist Joseph Vu on July 9, 2024. The extents of any Riparian habitat or Riverine feature were mapped using Google Earth Pro and later digitized in shape files using Esri ArcGIS software® ArcMap 10.0. Any drainage features were examined downstream during the surveys and with subsequent mapping in Google Earth Pro. The vegetation communities were mapped on-site and described based on MCV community classifications and cross-referenced with the CDFW Natural Communities List.⁵⁹ Riparian/Riverine areas are defined for this section as follows in accordance with Section 6.1.2, Vol. I, of the Final MSHCP Plan:

Riparian/Riverine Areas are lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.

⁵⁹ California Native Plant Society (CNPS). 2024. A Manual of California Vegetation Online. Website: <https://vegetation.cnps.org/>. Accessed September 4, 2024.

Existing Conditions and Results

Riparian Habitat

A total of 1.41 acres of Riparian habitat occurs on the project site in the form of mulefat thickets (CDFW Natural Community Code 63.510.00) and Goodding's Willow–Red Willow Riparian Woodland and Forest (CDFW Natural Community Code 61.216.00). The Riparian habitat is located in and adjacent to Drainage A that borders the southern boundary of the project site (Exhibit 8). The mulefat thickets community is not considered sensitive natural community by the CDFW and is ranked S4.⁶⁰ The Goodding's Willow–Red Willow Riparian Woodland and Forest is considered a sensitive natural community by the CDFW and is ranked S3. The presence of riparian habitat on the project site requires that habitat assessments and, if habitat is suitable, focused surveys for riparian bird species (least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo) be completed, as discussed further below.

Riverine Feature

A total of 0.26 acre of Riverine habitat occurs on the project site within Drainage A. Drainage A is an incised drainage that conveys intermittent flows in a westward direction prior to exiting the site at the southwestern boundary of the project site. Flows that enter the project site originate from agricultural runoff from the surrounding orchards and seeps within the drainage.

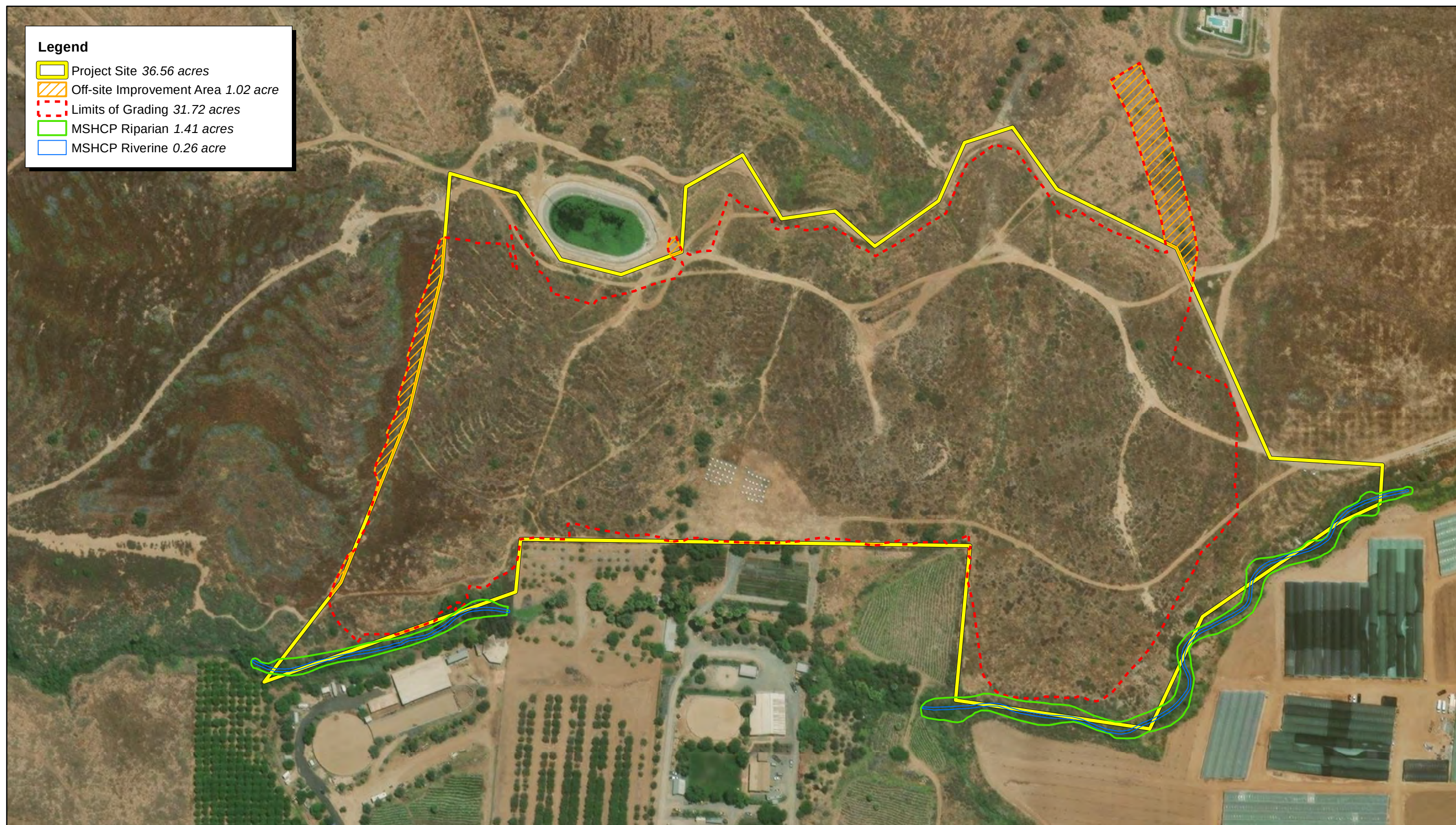
Potential Project Impacts

The proposed project has been designed to avoid all impacts to the Drainage A Riverine feature and its associated Riparian habitat (Exhibit 11). Therefore, there are no anticipated project impacts to MSHCP Riparian/Riverine resources.

Proposed Avoidance Measure

Mitigation Measures (MM) BIO-4a through MM BIO-4c are provided in Section 7.1.2 to avoid any potential project impacts to MSHCP Riparian/Riverine resources during the construction phase.

⁶⁰ California Department of Fish and Wildlife (CDFW). 2022. Natural Communities List, Sacramento: California Department of Fish and Wildlife. July 5, 2022.



Source: ESRI Aerial Imagery. adkan Engineers, October 2024.



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Exhibit 11 Avoidance of MSHCP Riparian/Riverine Resources

RIVERSIDE COUNTY
HIGHLAND GROVE V
BIOLOGICAL RESOURCES ASSESSMENT/MSHCP CONSISTENCY ANALYSIS

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6.6.2 - Riparian Birds

Methods

The potential for occurrence of riparian birds on the project site was assessed based on habitat conditions on the project site, habitat requirements of each species, focused surveys conducted for the proposed project, and number of recent (<20 years old) occurrences in the project vicinity.

Existing Conditions and Results

The riparian habitat on and adjacent to the project site is situated within a narrow drainage along the northern and eastern boundaries of the project site. The Riparian feature on-site consists of 1.41 acres. Vegetation present in the riparian habitat include mulefat thickets and Goodding's black willow trees. Characteristic species present include mulefat, Goodding's black willow, and blue elderberry.

The riparian habitat is a small patch of mostly low-growing species that would be unsuitable for occupancy by western yellow-billed cuckoo (*Coccyzus americanus*), a species that prefers larger or more extensive riparian forests. The riparian habitat patch includes several willows but not in densities preferred by southwestern willow flycatcher (*Empidonax traillii extimus*); thus, it is not suitable for occupancy by this species. The riparian habitat could potentially provide suitable foraging and nesting habitat for least Bell's vireo.

Focused surveys for least Bell's vireo were not performed on the project site. South Environmental conducted focused surveys for the least Bell's vireo between May 1 and July 24, 2024, on the adjacent Highland Grove IV project site (Appendix A). Because the species was detected in riparian habitat similar to that found on the current project site, least Bell's vireo is assumed to occupy riparian habitat in Drainage A along the southern project site boundary. As such, the riparian habitat located in the drainage is considered occupied by the least Bell's vireo.

Potential Project Impacts

Least Bell's vireos have been detected on the adjacent project site and the species is assumed to be present within Drainage A on the current project site. There are no anticipated direct project impacts to occupied riparian habitat or to individual least Bell's vireos. However, construction of the proposed project could result in indirect noise impacts to nesting least Bell's vireos if ground-disturbing or vegetation-removing construction activities are initiated or conducted during the species' breeding season (March 15 through September 15).

Proposed Mitigation Measure

MM BIO-2a, MM BIO-2b, and MM BIO-2c are provided in Section 7.1.1 to avoid potential project impacts to least Bell's vireo.

6.6.3 - Vernal Pools

Vernal pools are depressions in areas where a hard underground layer prevents rainwater from draining downward into the subsoils. When rain fills the pools in the winter and spring, the water collects and remains in the depressions. In the springtime the water gradually evaporates away until

the pools become completely dry in the summer and fall.⁶¹ In California, vernal pools formed tens of thousands of years ago on ancient alluvial soils. Soils that support vernal pools include extremely impervious clay layers above thick indurated hardpans or cracked basalt that allows water to slowly percolate downward.⁶²

According to the NRCS WSS, three soil types are mapped on the project site, all loam soils (Exhibit 5).⁶³ One of the soil series mapped on the project site, Cajalco series, is known to support vernal pool habitat under certain conditions.⁶⁴ However, the Cajalco soils on the project site do not have the clay content to support vernal pools, and no vernal pools or features indicative of the historic presence of vernal pools were observed on the project site. Furthermore, the surface soils on the project site have a long history of disturbances due to agricultural use of the site, and vernal pools would not be able to persist under this land use regime. Therefore, vernal pools are absent from the project site and the proposed project would not be subject to Vernal Pool or Vernal Pool Species requirements under the MSHCP.

6.7 - Additional Survey Needs and Procedures

6.7.1 - Burrowing Owl

Methods

The project site is located within the MSHCP Survey Area for the burrowing owl, which requires an assessment of burrowing owl habitat and a determination of species occupancy on-site. Pursuant to Section 6.3.2 of the MSHCP, a burrowing owl habitat assessment is required (Step I of the protocol), followed by a burrow survey (Step II, Part A of the protocol) and focused burrowing owl surveys (Step II, Part B of the protocol) in areas of suitable habitat. Per the MSHCP Burrowing Owl Survey Instructions, FCS Biologists conducted a Step I habitat assessment by walking the project site and mapping areas of suitable habitat on the project site and within 500 feet of the project boundary. During the habitat assessment, the Biologists characterized and mapped vegetation communities and searched for suitable habitat for burrowing owls, including open habitats with low-growing and/or spaced vegetation and burrows or other potential cover (e.g., concrete slabs, pipes). FCS Biologists then initiated a burrow survey (Step I, Part A) in areas mapped as suitable habitat to locate and record burrows suitable for occupancy by burrowing owls. This included observing the burrows for diagnostic burrowing owl sign, including whitewash (feces), regurgitated pellets, bones, feathers, etc. Following the burrow survey, FCS Biologists conducted four focused surveys to search for burrowing owls during the breeding season (March 1 through August 31). The focused surveys were conducted during periods of the day when burrowing owls are most active and during weather conditions suitable for burrowing owl activity (outside of periods of rain, high winds [> 20 mph], dense fog, or temperatures over 90°F [degrees Fahrenheit]). Focused burrowing owl surveys were conducted by FCS on July 3 ($68\text{--}90^{\circ}\text{F}$, winds $0\text{--}3$ mph, clear, sunny), July 11 ($70\text{--}89^{\circ}\text{F}$, winds $3\text{--}5$ mph,

⁶¹ California Department of Fish and Wildlife (CDFW). 2022. California's Vernal Pools. Website: <https://wildlife.ca.gov/Conservation/Plants/Vernal-Pools>. Accessed July 19, 2024.

⁶² California Department of Fish and Wildlife (CDFW). 1996. Vernal Pool Substrate and Plant Community Study. Website: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3216>. Accessed July 19, 2024.

⁶³ Natural Resources Conservation Service (NRCS). 2023. NRCS Web Soil Survey. Website: <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed July 19, 2024.

⁶⁴ United States Fish and Wildlife Service (USFWS). 2017. Survey Guidelines for the Listed Large Branchiopods. Website: <https://www.fws.gov/sites/default/files/documents/survey-guidelines-for-large-branchiopods.pdf>. Accessed July 19, 2024.

clear, sunny), July 24 (73–90°F, winds 1–5 mph, clear, sunny), July 31 (63–85°F, winds 0–5 mph, clear, sunny), 2024 between approximately 7:00 a.m. and 11:45 a.m. and August 23, 2024 (74–91°F, winds 2–7 mph, clear, sunny), between approximately 7:45 a.m. and 12:30 p.m.

Existing Conditions and Results

The habitat assessment (Step I of the protocol) found that the wild oat and annual brome grassland on and adjacent to the project site supports marginally suitable foraging, burrowing, and nesting habitat for burrowing owls. The vegetation in this community supports very dense and tall stands of mustard over much of the project site, rendering the habitat unsuitable or marginal, but there are scattered areas of sparse vegetation clearings that would provide suitable habitat for burrowing owls. The burrow survey (Step II, Part A of the protocol) found numerous California ground squirrel burrows on-site and within the 500-foot buffer east of the site that could serve as suitable nesting habitat for burrowing owls. The focused burrowing owl surveys (Step II, Part B of the protocol) found that no burrowing owls, nor signs of the species (i.e., whitewash, feathers, pellets), are present on-site. Burrowing owls have been recorded in the project vicinity, with CNDDDB records showing two historical records within 5 miles and 12 recent and two historical records between 5 and 10 miles from the project site. Although burrowing owls were not detected on-site during the focused surveys, there is a moderate potential for burrowing owls to occupy the project site prior to its development.

Potential Project Impacts

Although burrowing owl surveys were conducted and no signs of burrowing owls were identified on the project site, it may be possible, because of the presence of suitable burrowing owl habitat, that individuals could occupy the site before construction begins. Construction of the proposed project could potentially impact burrowing owls if burrowing owls are occupying the project site when ground-disturbing construction activities are initiated. Impacts could occur outside of the nesting season (September 1 through January 31) or during the breeding season (February 1 through August 31) of the species.

Proposed Mitigation

The project applicant shall implement a burrowing owl pre-construction survey prior to the initiation of ground-disturbing or vegetation-removing activities conducted in mapped burrowing owl habitat on the project site. A full description of mitigation proposed for burrowing owls is presented in Section 7.

6.7.2 - Nesting Birds

Analysis

The project area supports vegetation communities, land cover types, and other habitat features that provide nesting habitat for avian species covered under the MBTA and Fish and Game Codes, including common native species and Species of Special Concern such as Cooper's hawk, white-tailed kite, loggerhead shrike, and yellow warbler. These species are covered under the MSHCP without any additional conservation requirements.

Potential Project Impacts

Construction of the proposed project could potentially impact nesting birds if ground-disturbing construction activities are initiated or conducted during the avian breeding season (February 1 through September 15).

Proposed Mitigation

The project applicant shall implement a pre-construction survey for nesting birds prior to the initiation of ground-disturbing or vegetation-removing activities initiated during the avian breeding season (February 1 through September 30). A full description of mitigation for nesting birds is presented in Section 7.

6.8 - Guidelines Pertaining to the Urban/Wildlands Interface

The project site is not located in or adjacent to a MSHCP Conservation Area, and therefore the MSHCP Urban/Wildlands Interface Guidelines would not apply to the proposed project.

6.9 - Best Management Practices

The project applicant shall implement Standard BMPs of the MSHCP (MSHCP Final Plan, Volume I, Appendix C). The BMPs are presented in Section 7.

SECTION 7: IMPACT ANALYSIS AND RECOMMENDATIONS

The following discussion addresses potential project impacts on regulated biological resources, including special-status species, and recommends measures to avoid and/or mitigate impacts to a less than significant level under CEQA and to maintain consistency with the MSHCP.

7.1 - Impact Analysis and Mitigation Measures

7.1.1 - Special-status Species

Paniculate Tarplant

Potential Project Impacts

An individual paniculate tarplant is present on the project site and will likely be impacted by the proposed project. However, based on the relatively low sensitivity ranking (CNPS 4.2) and broad distribution of the species, and because an impact to a single tarplant would not negatively impact the regional population, impacts to special-status plants would be less than significant under CEQA and no mitigation is required.

Burrowing Owl

Potential Project Impacts

The wild oats and annual brome grassland on the project site support suitable foraging habitat for burrowing owls. There are numerous small mammal burrows on-site, including those of California ground squirrels that could become occupied by burrowing owls and potentially be used for nesting. The CNDDDB shows two historical records within 5 miles, and there are 12 recent and two historical records between 5 and 10 miles from the project site. This species is covered under the MSHCP and protected by the MBTA and Fish and Game Codes.

Construction of the proposed project could potentially impact burrowing owls if ground-disturbing or vegetation-removing construction activities are initiated or conducted during the burrowing owl breeding season (February 1 through August 31). Ground-disturbing and vegetation-removing construction activities could destroy burrows inhabited by burrowing owls, causing destruction of occupied burrows, including nesting burrows. Construction activities could also impact burrowing owls that occupy or nest on lands within 500 meters (1,640 feet) of the project site.

Required Mitigation Measure

To avoid potential project impacts to burrowing owls, the project applicant shall implement the following mitigation measures.

MM BIO-1a Burrowing Owl Pre-construction Survey

The project applicant shall retain a qualified Biologist to perform a pre-construction burrowing owl survey to determine whether burrowing owls are present on-site within 30 days prior to construction activities, according to the California Department of Fish and Wildlife (CDFW) guidelines and Multiple Species Habitat

Conservation Plan (MSHCP) protocol. If construction is delayed or suspended for more than 30 days after the survey, the area shall be resurveyed. The pre-construction survey shall be completed on the project site and areas within 500 feet from the project boundary (where possible and appropriate based on habitat). All occupied burrows shall be mapped in an aerial photo. The applicant shall provide a burrowing owl survey report and mapping to the County at least 15 days prior to the expected start of any project-related ground disturbance activities or restart of activities. If the survey is positive for burrowing owls, the project applicant shall implement MM BIO-1b. If no burrowing owls are detected during the pre-construction survey, no further action is necessary.

MM BIO-1b Burrowing Owl Mitigation Plan

If the pre-construction survey is positive for burrowing owls, the project proponent shall retain a qualified Biologist to develop and implement a Burrowing Owl Mitigation Plan, which must be submitted and approved by the California Department of Fish and Wildlife (CDFW) prior to implementation. The Burrowing Owl Mitigation Plan shall contain the following elements (as outlined in the CDFW 2012 guidelines) at a minimum:

- Avoidance of burrowing owls during construction, including establishment of a 160-foot radius around occupied burrows during the nonbreeding season (September 1 through January 31) or a 200 to 500 meter (656 to 1,640 feet) radius around occupied burrows during the breeding season (February 1 through August 31), within which construction activities may not occur until a qualified Biologist has determined that (1) nonbreeding season owls have dispersed from the area; or (2) breeding season owls have fledged their juveniles from the occupied burrows and the juveniles are foraging independently and are capable of independent survival or have dispersed from the area.
- A plan for implementing a passive relocation program for nonbreeding owls, should it be needed. The passive relocation techniques should be consistent with CDFW guidelines, including installation of artificial burrows at an off-site location and use of one-way exclusion doors to ensure owls have left the burrow(s).

Least Bell's Vireo

Potential Project Impacts

Least Bell's vireo was detected on an adjacent project site in riparian habitat similar to that found on the current project site. Accordingly, least Bell's vireo is assumed to occupy riparian habitat in Drainage A along the southern project site boundary. There are no anticipated direct project impacts to the riparian habitat or to individual least Bell's vireos. However, construction of the proposed project could result in indirect noise impacts if ground-disturbing or vegetation-removing construction activities are initiated or conducted during the least Bell's vireo breeding season (March 15 through September 15). Noise impacts caused by construction activities could impact least Bell's vireos nesting in areas within 500 feet of the activities.

Required Mitigation Measure

To avoid potential project indirect impacts to least Bell's vireo, the project applicant shall implement the following mitigation measures.

MM BIO-2a Establish Environmentally Sensitive Area Around LBVI Habitat

If ground-disturbing or vegetation-removing construction activities are initiated or conducted during the least Bell's vireo breeding season (March 15 through September 15), a qualified Biologist shall establish and demarcate a 300-foot avoidance buffer (e.g., using fencing, pin flags, and/or yellow caution tape) around all suitable riparian habitat within Drainage A and designate it as an Environmentally Sensitive Area (ESA). No construction activities or construction foot traffic is allowed to occur within ESA avoidance buffer(s). Construction personnel shall be instructed not to enter the ESAs and the Biologist(s) shall ensure that ESA boundaries are maintained. The ESA buffer zone shall be maintained until the end of the least Bell's vireo nesting season.

MM BIO-2b Least Bell's Vireo Pre-construction Survey

If ground-disturbing or vegetation-removing project activities are initiated within 300 feet of riparian habitat during the breeding season for least Bell's vireo (March 15 through September 15), the project applicant shall implement a pre-construction survey for the species. The pre-construction survey for least Bell's vireo shall be implemented by a qualified Biologist within any affected riparian habitat on the project site, as well as in riparian habitat (on-site or off-site) within 300 feet of the project activities. The survey shall be implemented within 3 days of the initiation of project activities. If more than 3 days passes following implementation of the survey, an additional pre-construction survey shall be implemented. If the pre-construction survey is negative for least Bell's vireo, no further action is necessary. If nesting least Bell's vireo are detected within 300 feet of planned project activities, the project applicant shall implement MM BIO-2c.

MM BIO-2c Noise Monitoring in LBVI Habitat

If ground-disturbing or vegetation-removing construction activities are planned within the least Bell's vireo breeding season (March 15 through September 15) and conducted within the 300-foot avoidance buffer, then a qualified acoustician shall be retained to determine ambient noise levels and construction-related noise levels at the edge of suitable habitat. Noise levels at the edge of the suitable habitat shall not exceed an hourly average of 60 decibels (dBA), or an hourly average increase of 5 dBA if the ambient noise level is already 60 dBA. If construction-related noise levels exceed the threshold described above, construction activities shall cease until sound attenuation devices (sound walls, sound reducing curtains, etc.) are installed. If additional sound attenuation devices do not decrease construction-related noise levels below the thresholds described above, construction activities shall cease until CDFW and/or USFWS shall be contacted to discuss alternative methods.

7.1.2 - Sensitive Communities

Riparian Habitat

The project site contains a total of 0.14 acre of riparian habitat (i.e., Goodding's Willow–Red Willow Riparian Woodland and Forest) on-site and an additional 1.27 acres located off-site. The riparian habitat is located in Drainage A along the southern boundary of the project site. This community is considered a Sensitive Vegetation Community by CDFW (ranked S3).

Sensitive Natural Communities

The project site contains Goodding's Willow–Red Willow Riparian Woodland and Forest community, which is ranked as sensitive (S3) by CDFW.

Potential Project Impacts

The proposed project would avoid Drainage A and the associated riparian/wetland habitats. Therefore, there would be no impacts on sensitive natural communities such as the Goodding's Willow–Red Willow Riparian Woodland and Forest community.

Required Mitigation Measures

To avoid impacts to sensitive natural vegetation communities during the construction of the proposed project, the following mitigation strategy is proposed:

MM BIO-3a Prior to construction, the limits of the riverine feature and riparian habitat shall be delineated with fencing or flagging (orange plastic snow fence, orange silt fencing, or stakes and flagging) and designated as an Environmentally Sensitive Area (ESA). No construction activities and/or access would be permitted within the ESA designated areas. If work occurs within the ESA areas, all work shall cease until the issue has been resolved through the appropriate regulatory agencies and the County. ESA fencing and/or flagging shall be maintained in good repair by the Contractor and shall be removed upon completion of project construction.

MM BIO-3b The proposed project would comply with all applicable water quality regulations, including obtaining and complying with those conditions established in Waste Discharge Requirements (WDRs) and an NPDES permit. Standard BMPs, which may include but are not limited to silt fencing, gravel berm, and fiber rolls, shall be installed to prevent any sediment and stormwater flows from entering the riverine feature. A project-specific Water Quality Management Plan and/or a Storm Water Pollution Prevention Plan (SWPPP) shall be implemented for the proposed project and shall detail project-specific BMPs.

MM BIO-3c Best Management Practices

The following Best Management Practices (BMPs) shall be implemented during the construction phase to reduce indirect impacts to aquatic resources:

- Time construction activities to avoid impact to sensitive biological resources and protect water quality. To the extent possible, construction activities shall occur during the dry season, between April 15 and October 15, or as otherwise determined by permitting agencies and in compliance with Section 401 of the Federal Clean Water Act.
- Locate equipment maintenance, refueling, and staging areas at least 100 feet from creeks or other aquatic habitat. Conduct refueling behind a containment barrier that prevents spilled or leaked fuel from entering the aquatic habitat. All equipment servicing shall be conducted within designated areas with appropriate setbacks from the aquatic features. All motorized equipment used during construction shall be inspected for oil, fuel, and coolant leaks prior to initiating work.
- Implement a SWPPP as part of the proposed project, to ensure that sediment and contaminants from construction areas do not enter creek channels or other aquatic habitat.
- Use only native plant species for reseeding and re-planting to minimize the expansion of exotic plants. Mitigation plantings should be implemented in accordance with applicable regulatory agency permit requirements and consistently with MSHCP requirements.

7.1.3 - State or Federally Protected Wetlands

State Protected Wetlands or Jurisdictional Features

Drainage A includes approximately 0.61 acre of potential waters of the State (including 0.26 acre of State wetlands), regulated by the RWQCB and approximately 1.67 acres of aquatic features regulated by the CDFW.

Potential Project Impacts

The proposed project would avoid Drainage A and the associated riparian/wetland habitats. Therefore, there would be no impacts on State or protected wetlands or jurisdictional features.

Required Mitigation Measures

To avoid impacts to State protected wetland and jurisdictional features during the construction of the proposed project, MM BIO-3a, MM BIO-3b, and MM BIO-3c listed above would be implemented.

Federally Protected Wetlands or Waters

The aquatic features on the project site (intermittent drainages, wetlands, and/or ephemeral drainages) do not contain a continuous surface connection with a navigable water of the United States. Flows leaving the project site terminate approximately 2.5 miles northwest within a concrete pipe culvert at an agricultural field south of the intersection of Cleveland Avenue and Harrison Street. Subsurface flow continues in the storm drain indefinitely and does not appear to reemerge as surface flow. Therefore, these intermittent segments do not have hydrological connection to the Santa Ana River and would likely not be considered a Traditional Navigable Water (TNW) by the

USACE. Note that a final jurisdictional determination can only be made by the USACE following verification. No wetlands subject to USACE jurisdiction are located within project site boundaries.

Potential Project Impacts

The proposed project would not result in permanent impacts to potential waters of the United States that are regulated by the USACE under Section 404 of the CWA.

Required Mitigation Measures

None required.

7.1.4 - Wildlife Corridors and Nursery Sites

Wildlife Corridors

There are no wildlife movement corridors on the project site. The aquatic features on and adjacent to the project site may provide movement opportunities for common wildlife species, but the construction and operation of the proposed project would not impact the corridor or influence wildlife movement within it. Therefore, mitigation is not proposed.

Nesting Birds

Potential Project Impacts

The project site and adjacent lands support vegetation communities, land cover types, trees, and other habitat features that provide nesting habitat for avian species covered under the MBTA and Fish and Game Code, including common native species. Construction of the proposed project could potentially impact nesting birds if ground-disturbing or vegetation-removing construction activities are initiated or conducted during the avian breeding season (February 1 through September 15).

Required Mitigation Measures

The project applicant shall implement the following mitigation measures to avoid potential impacts to nesting birds protected under the Fish and Game Code and/or the MBTA. Implementation of the following measures would avoid and/or minimize potential effects to migratory birds and habitat in and adjacent to the project area. These measures shall be implemented for construction work during the nesting season (February 1 through September 15):

MM BIO-4a Nesting Bird Pre-construction Surveys

If ground-disturbing or vegetation-removing construction activities or tree removal is proposed during the breeding/nesting season for migratory birds (typically February 1 through September 15), a qualified Biologist shall conduct pre-construction surveys for special-status birds and other migratory birds within the construction area, including a 300-foot survey buffer, no more than 3 days prior to the start of ground-disturbing activities in the construction area.

MM BIO-4b Avoidance of Active Avian Nests

If an active avian nest is located during the pre-construction survey, a qualified Biologist shall establish and demarcate a 200-foot (for Passerine birds) or 300-foot

(for raptors) avoidance buffer using Environmentally Sensitive Area (ESA) fencing, pin flags, and/or yellow caution tape. No construction activities or construction foot traffic is allowed to occur within the avoidance buffer(s). Construction personnel shall be instructed not to enter the ESAs, and the Biologist(s) shall ensure that ESA boundaries are maintained. The ESA buffer zone shall be maintained around the active nest site(s) until the young have fledged and are foraging independently.

Roosting Bats

Potential Project Impacts

The project site contains trees that could provide suitable bat roosting habitat, including for special-status bats such as the pocketed free-tailed bat and western yellow bat. Potential direct and indirect impacts could occur to roosting bats due to removal of potential roosting habitat during project construction. These activities could potentially subject bats to risk of death or injury, and they are likely to avoid using the area until such construction activities have dissipated or ceased. Relocation, in turn, could cause hunger or stress among individual bats by displacing them into adjacent territories belonging to other individuals.

Required Mitigation Measures

With implementation of the following mitigation measures, potential project-related impacts on protected roosting bats can be reduced to a less than significant level under CEQA.

MM BIO-5a Roosting Bat Pre-construction Survey

A qualified Biologist with relevant roosting bat experience shall conduct a survey of the project site to determine whether active bat roosts are located on or directly adjacent to the project site. The survey shall be conducted no less than 7 days and no more than 14 days prior to beginning ground disturbance and/or construction in connection with each individual development phase. The survey shall be conducted during an appropriate time of day to maximize detectability of roosting bats. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (Anabat, etc.).

MM BIO-5b Bat Roost Exclusion/Eviction

If the Biologist determines or presumes bat roosts are present, the Biologist shall exclude the bats from suitable cavity spaces by installing one-way exclusion devices. After the bats vacate the space, the Biologist shall close off the space to prevent recolonization. Construction activities in connection with the subject individual development phase shall only commence after the Biologist verifies 7 to 10 days later that the exclusion methods have successfully prevented bats from returning. To avoid impacts on non-volant (i.e., nonflying) bats, the Biologist shall only conduct bat exclusion and eviction from May 1 through October 1. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while

females in maternity colonies are nursing young). If bats are present outside the exclusion and eviction period (October 2 through April 31), then the project applicant shall coordinate with California Department of Fish and Wildlife (CDFW) to establish an appropriate buffer.

7.1.5 - Local Policies or Ordinances

There are no oak trees or woodlands that would be protected under the California Oak Woodlands Conservation Act or the Riverside County Oak Tree Management Guidelines on the project site, nor trees or woodland communities that would be protected under County Ordinance 559 or County Code Chapter 12.24, and mitigation is not proposed.

7.1.6 - Habitat Conservation Plan

Potential Project Impacts

The project site is located within the MSHCP plan area and subject to MSHCP requirements. Project consistency with the MSHCP is analyzed and presented in Section 6 of this report. To maintain consistency with the MSHCP, the proposed project would be required to address the following issues:

- Riparian/Riverine resources are located within and adjacent to the drainage that border the southern side of the project site.
- Covered species, including burrowing owl and least Bell's vireo, are presumed present or may occur on the project site.
- The proposed project is required to implement MSHCP Construction Minimization Measures and BMPs.

The proposed project would achieve MSHCP consistency with respect to potential impacts to burrowing owl and least Bell's vireo through implementation of MM BIO-1a and MM BIO-1b, and MM BIO-2a through MM BIO-2c.

Additionally, the project site is located within the Stephen's Kangaroo Rat HCP and the proposed project would be subject to payment of the HCP fee (typically \$500 per acre).

Required Mitigation Measures

To maintain consistency with MSHCP requirements and reduce impacts to a less than significant level under CEQA, the following mitigation measures shall be implemented.

MM BIO-6a Implement Construction Minimization Measures

To maintain consistency with Multiple Species Habitat Conservation Plan (MSHCP) requirements during construction, the applicant shall implement the following Construction Minimization Measures, per Section 7.5.3 of the MSHCP:

- Plans for water pollution and erosion control will be prepared. The plans shall describe sediment and hazardous materials control, dewatering or diversion structures, fueling and equipment management practices, and use of plant material for erosion control.
- Avoid work in riparian areas during most active breeding season; typically designated as March 1 to June 30 by the California Department of Fish and Wildlife (CDFW)/MSHCP Guidelines. Disturbance is restricted to a minimum of 300 feet away from any active nest.
- If vegetation removal must occur during this avoidance period, then a nest survey by a qualified Biologist is required. The nest survey shall be conducted for five consecutive days and no more than 3 days prior to clearing. If an active nest is observed, then the nest location shall be fenced off surrounding a minimum 300-foot (500 feet for raptors) radius buffer zone. The buffer zone shall not be disturbed until the nest is inactive.
- Sediment and erosion control measures will be implemented until such time soils are determined to be successfully stabilized.
- Short-term stream diversions, if needed, shall be accomplished by use of sandbags or other methods that shall result in minimal instream impacts. Short-term diversions shall consider effects on wildlife.
- Silt fencing or other sediment trapping materials shall be installed at the downstream end of construction activities to minimize the transport of sediments off-site.
- Settling ponds where sediment is collected shall be cleaned in a manner that prevents sediment from re-entering the stream or damaging/disturbing adjacent areas. Sediment from settling ponds will be removed to a location where sediment cannot re-enter the stream or surrounding drainage area. Care shall be exercised during removal of silt fencing to minimize release of debris or sediment into streams.
- No erodible materials shall be deposited into water courses. Brush, loose soils, or other debris material shall not be stockpiled within stream channels or on adjacent banks.
- The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall occur on pre-existing access routes to the greatest extent possible.
- Equipment storage, fueling, and staging areas shall be sited on non-sensitive upland habitat types with minimal risk of direct discharge into riparian areas or other sensitive habitat types.

MM BIO-6b Implement MSHCP Best Management Practices

To maintain consistency with Multiple Species Habitat Conservation Plan (MSHCP) requirements, the project applicant shall implement the following Best Management Practices (BMPs) during the construction phase of the proposed project:

1. A condition shall be placed on grading permits requiring a qualified Biologist to conduct Worker Environmental Awareness Program (WEAP) training for project personnel prior to grading. The training shall include a description of the species of concern and its habitats, the general provisions of the Endangered Species Act and the MSHCP, the need to adhere to the provisions of the Endangered Species Act and the MSHCP, the penalties associated with violating the provisions of the Endangered Species Act, the general measures that are being implemented to conserve the species of concern as they relate to the proposed project, and the access routes to and project site boundaries within which the proposed project activities must be accomplished.
2. The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall be via pre-existing access routes to the greatest extent possible.
3. Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat.
4. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials shall be reported to appropriate entities including but not limited to the City, United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and/or Regional Water Quality Control Board (RWQCB), as applicable, and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.
5. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.
6. The qualified project Biologist shall monitor construction activities (once weekly spot checks or as determined by the project Biologist) for the duration of the proposed project to ensure that practicable measures are being employed to avoid incidental disturbance of habitat and species of concern outside the project footprint.
7. The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.
8. Exotic species that prey upon or displace target species of concern should be permanently removed from the site to the extent feasible.

9. To avoid attracting predators of the species of concern, the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s).
10. Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the proposed project footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the proposed project and shall be specified in the construction plans. Construction limits will be fenced with orange snow screens. Exclusion fencing should be maintained until the completion of all construction activities. Employees shall be instructed that their activities are restricted to the construction areas.
11. The City shall have the right to access and inspect the project site to determine its compliance with project approval conditions, including these BMPs.

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SECTION 8: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this BRA and MSHCP Consistency Analysis and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: July 22, 2025

Signed: _____



Joseph Vu, Senior Biologist
FirstCarbon Solutions
967 Kendall Drive, #A-537
San Bernardino, CA 92407
714.508.4100

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Appendix A:
**Least Bell's Vireo Survey Report for Highland Grove 4 Project in
Riverside, California (South Environmental)**

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September 3, 2024

Michael Tuma
Senior Biologist
FirstCarbon Solutions
Email: mtuma@fcs-intl.com
Phone: 626-390-5717

RE: Least Bell's Vireo Survey Report for Highland Grove 4 Project in Riverside, California

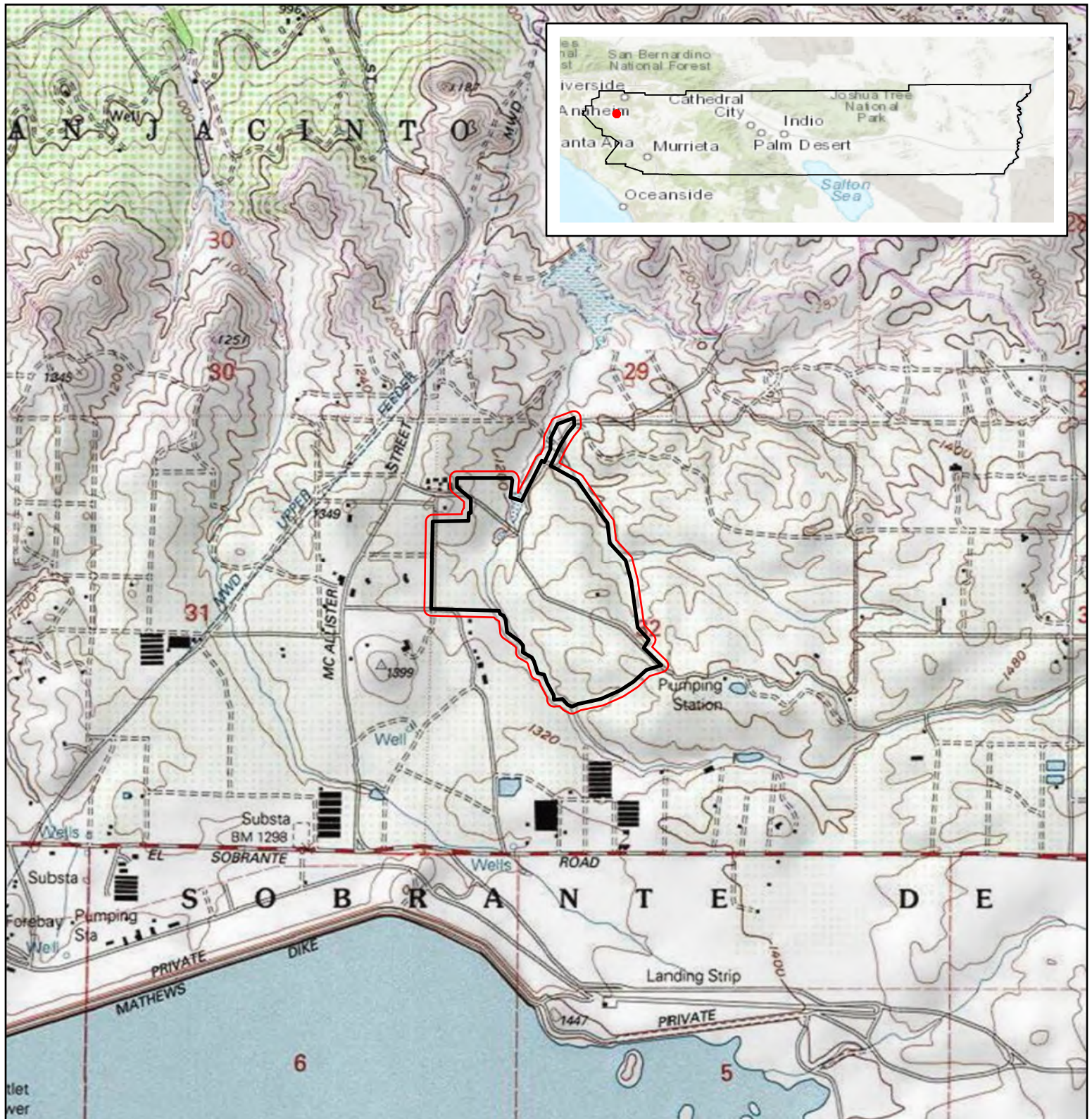
Dear Dr. Tuma,

This least bell's vireo survey report has been prepared by South Environmental for the 111.59-acre Highland Grove 4 Project in Riverside, California. The scope of this report includes a description of the project, biological setting, vegetation communities, survey methodology, and survey results. Photographs of the survey area are included as attachments to this report.

Project Description

Project Location

As shown in Figure 1 below, the survey area is located along Travertine Drive in Riverside, California. The project is within the U.S. Geological Survey (USGS) Lake Mathews 7.5" topographical map, and within Sections 00 of Township 03 South (03S) and Range 5 West (5W). As shown in Figure 2 below, the survey can be accessed from Travertine Drive at a point that is approximately 3-miles south of Highway 91 and approximately 7-miles east of Highway 15. The survey area is north of El Sobrante Road, south of Sweet Avenue, west of Travertine Street, East of McAllister Street and Lake Mathews is located south of the project site.



Source: ESRI USA Topo Maps and World Topo Map 2024

Highland Grove 4 Project

Figure 1. Regional Location

- Project Boundary
- Study Area (100-ft buffer)



0 1,000 2,000 Feet
Scale: 1:24,000



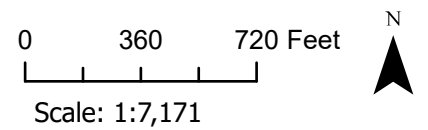


Source: BING Aerial Map 2024

Highland Grove 4 Project

Figure 2. Site Vicinity

-  Project Boundary
-  Study Area (100-ft buffer)



Proposed Activities

The project site in total is a 111.59-acres and 96.43-acres of that will have impacts from the construction of a new residential neighborhood, including new paved streets as well as new single-family homes.

Vegetation Communities

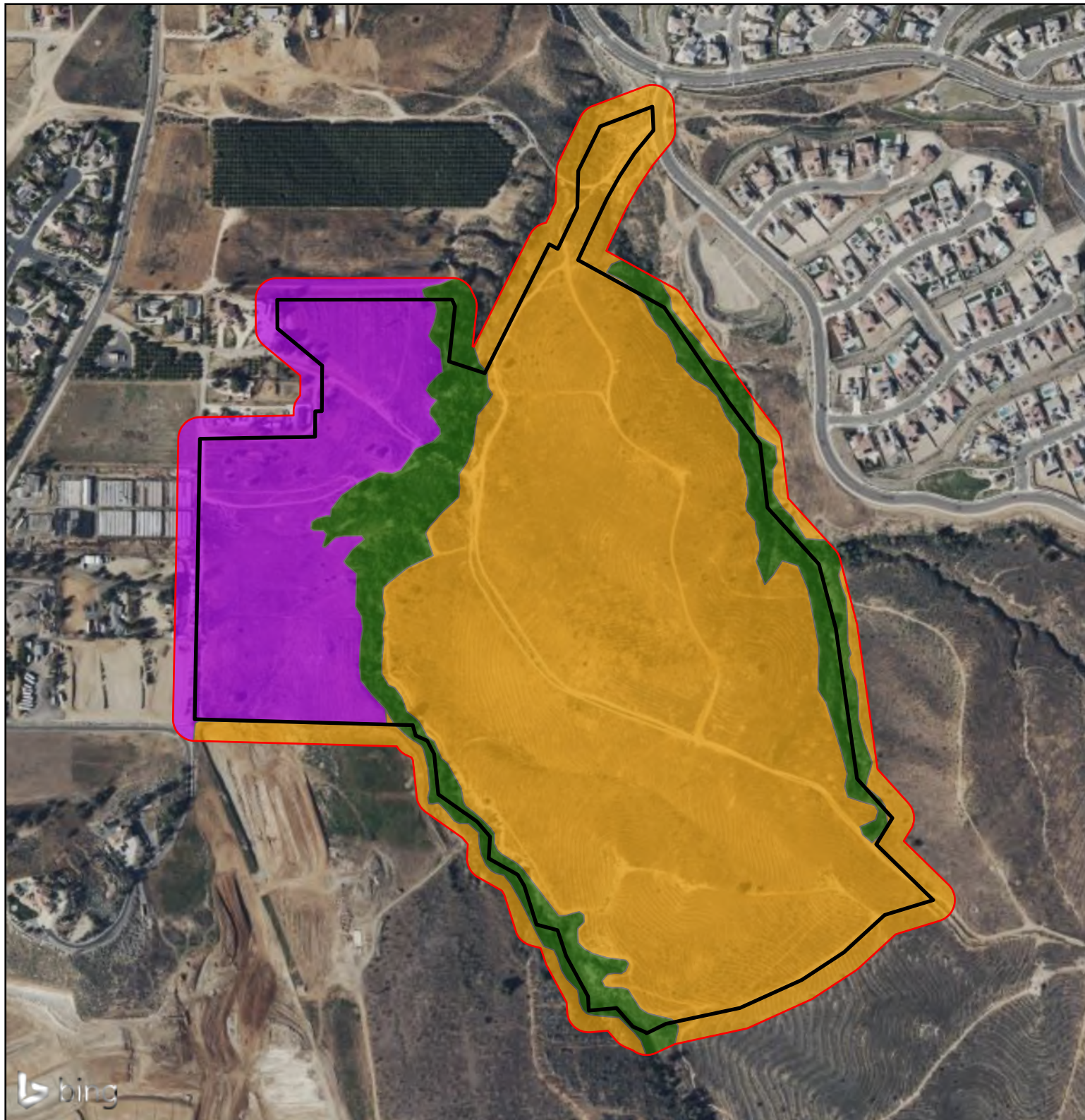
As shown in Figure 3, there are three plant communities mapped within the survey area (CNPS 2024):

- **Wild oats and annual brome grasslands** (*Avena spp.-Bromus spp.* Herbaceous Semi-Natural Alliance) is found in the study area. This area is in the northern region and central area of the project area as well as on the western most side of the riparian area. This community is co-dominated by wall barley (*Hordeum murinum*) and shortpod mustard (*Hirschfeldia incana*).
- **Goodding's Willow-Red Willow Riparian Woodland and Forest** (*Salix gooddingii-Salix laevigata* Forest and Woodland Alliance) is found on the study area on the western and eastern side of the project area. This community is dominated by black willow (*Salix gooddingii*), also present is Fremont cottonwood (*Populus fremontii*), mule fat (*Baccharis salicifolia*), pepper tree (*Schinus molle*), and tree tobacco (*Nicotiana glauca*).
- **Developed** area occurs on northwestern region of the project site. These areas include the roadway of McAllister Street and single-family homes that include garages, patios, driveways, fences, fenced-in areas, and ornamental landscaping. There is also ongoing construction work in this area.

Least bell's vireos utilize riparian willow and mule fat dominated habitat during breeding season and during migration. Therefore, the Goodding's Willow-Red Willow Riparian Woodland and Forest habitat found on the project site was the focus spot for surveying for the presence/absence of the least bell's vireo. The habitat was located on the eastern and western borders of the survey site.

Natural History

According to the U.S Fish and Wildlife service the least bell's vireo is a migratory songbird that breeds in southern California to northern Baja California, Mexico. The least bell's vireo will winter in the southern region of Baja California, Mexico from the September to March. They prefer breeding grounds that are willow-dominated riparian woodlands but will also forage and sometimes nest in mulefat scrub, oak woodlands, and chaparral, if it is nearby. They begin



Source: BING Aerial Map 2024

Highland Grove 4 Project

Figure 3. Plant Communities and Land Cover

- Project Boundary
- Study Area (100-ft buffer)
- Bromus Ruderal Grassland
- Developing / Developed
- Goodding's Willow - Red Willow Riparian Woodland and Forest

0 375 750 Feet
Scale: 1:7,500



migrating from southern Baja California, Mexico in mid-March to early April to Southern California and northern Baja California, Mexico.

Least bell's vireo's have two habitat characteristics that they require for breeding: the presence of dense cover within 3-6 feet, where nests are placed and a dense stratified canopy layer for foraging. Their nests are built using plant fibers and spiderweb silk, which can be found a few feet from the ground. Habitat loss has caused their population to decrease as well as decreased nesting productivity due to parasitism by brown-headed cowbirds (*Molothus ater*). Cowbirds will lay their eggs in nests of other birds so their young can be raised by the host species which in turn the host species young to not survive. Although least bell's vireos numbers have increased since conservation efforts, a large part of their historical range is still unoccupied by them.

Methodology

Prior to conducting surveys, South Environmental referenced the *2001 Least Bell's Vireo Survey Guidelines* regarding the survey methods proposed, timing of the survey, and potential strategies for avoiding impacts. It was determined that 8 total surveys would be sufficient. Coverage with a start date on May 1st and the final survey on July 24th, with 10 days minimum between each survey.

Least Bell's Vireo Surveys

South Environmental biologists conducted a habitat assessment and eight total least bell's vireo surveys in areas of suitable habitat throughout the entire project site. The surveys were conducted according to Appendix D of the *2001 Least Bell's Vireo Survey Guidelines*, and took place on May 1st (Survey #1), May 13th (Survey #2), May 24th (Survey #3), June 6th (Survey #4), June 14th (Survey #5), June 24th (Survey #6), July 5th (Survey #7), and July 24th (Survey #8). The habitat assessment was conducted concurrently with Survey #1. The surveys were conducted during appropriate weather conditions and were timed to occur during the most active period for least bell's vireos at intervals determined through coordination with the CDFW. Table 1 below provides a summary of the surveys.

Table 1. Least Bell's Vireo Survey Summary

Survey #	Date - Time	Conditions (Temp, Wind Speed, Cloud cover, precipitation)	Surveyors
Habitat Assessment - Survey #1	5/1/2024 7:00 – 11:00	60-67F, 0-5mph, 100% cloud cover, no precip.	Philip Samples
Survey #2	5/13/2024 7:00 – 11:00	56-60F, 0-5mph, 100-75% cloud cover, no precip.	Philip Samples
Survey #3	5/24/2024 7:00-11:00	57-61F, 0-5mph, 25-100% cloud cover, no precip.	Philip Samples
Survey #4	6/4/2024 8:00-11:00	60-73F, 0-5mph, 100-25% cloud cover, no precip.	Philip Samples, Meagan Najera
Survey #5	6/14/2024 8:00-10:00	64-74F, 0-5mph, 0% cloud cover, no precip.	Meagan Najera
Survey #6	6/24/2024 8:00-10:30	76-85F, 0-5mph, 0% cloud cover, no precip.	Meagan Najera
Survey #7	7/5/2024 7:30-9:30	73-84F, 0-5mph, 0% cloud cover, no precip.	Meagan Najera
Survey #8	7/24/2024 8:15-10:00	77-83F, 0-5mph, 5% cloud cover, no precip.	Meagan Najera

The biologist performed the survey by walking alongside the suitable habitat where they would be able to hear and/or see if the least bell's vireo is present without being too close and potentially harassing the species. Biologists would periodically scan the area for the least bell's vireo using binoculars to observe the surrounding. During the surveys, biologists recorded sightings or sound identifications. Locations of vireos were recorded in the field using ArcGIS FieldMaps mobile application. Also recorded were brown-headed cowbirds and other incidental threatened or endangered species.

Survey Results

Least Bell's Vireo Survey Results

The survey results are shown in Figure 4 and summarized in Table 2 below. During the survey period there was between 2-5 individual LBVI detected during each survey. During survey #7 and Survey #8 there was a pair of LBVI recorded together but all other detections were of a singular species. The LBVI were recorded in the riparian habitat on the northern, eastern, and western sides of the project area.



Source: BING Aerial Map 2024

Highland Grove 4 Project

Figure 4. Survey Results

- Least Bell's Vireo
- Brown Headed Cowbird
- ★ Coastal California Gnatcatcher
- Project Boundary
- Study Area (100-ft buffer)

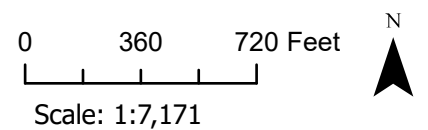


Table 2 –Survey Results Summary

Survey #	LBVI Observations	BHCO Observation	CAGN Observations
Survey #1	2	1	0
Survey #2	2	3	0
Survey #3	5	1	0
Survey #4	3	2	1
Survey #5	4	0	0
Survey #6	4	1	0
Survey #7	4	0	0
Survey #8	4	0	0

Incidental Species Survey Results

The incidental species survey results are summarized in Figure 2. There was a total of 8 brown-headed cowbird (BHCO) during all eight surveys beginning May 1st and ending July 24th. There was 1 California gnatcatcher (CAGN) detected on June 4th.

Conclusion

Throughout all eight of the focused, protocol-level least bell's vireo surveys conducted at the Highland Grove 4 project site. Figure 4 depicts the location of vireo detections, with between 2-5 individual vireo detected during any single survey. There were two recordings of a pair of least bell's vireo on separate days in similar locations on the northwest side of the project site. Also detected was one California gnatcatcher, which is federally listed as endangered. There was a total of 8 brown-headed cowbird detections during all 8 surveys, with between 0-3 per survey, which are known to parasitize least bell's vireo nest.

If you have any questions regarding the information in this report, please contact Matthew South by email: msouth@southenvironmental.com or by mobile phone: 303.818-3632.

Sincerely,



Matthew R. South
Principal Biologist

List of Attachments

1. **Attachment A.** Photograph Exhibit
2. **Attachment B.** List of Species Observed

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Attachment A

Photograph Exhibit



Photo 1. Depicts the entrance to project area in the northern project area from Travertine Drive, west facing.

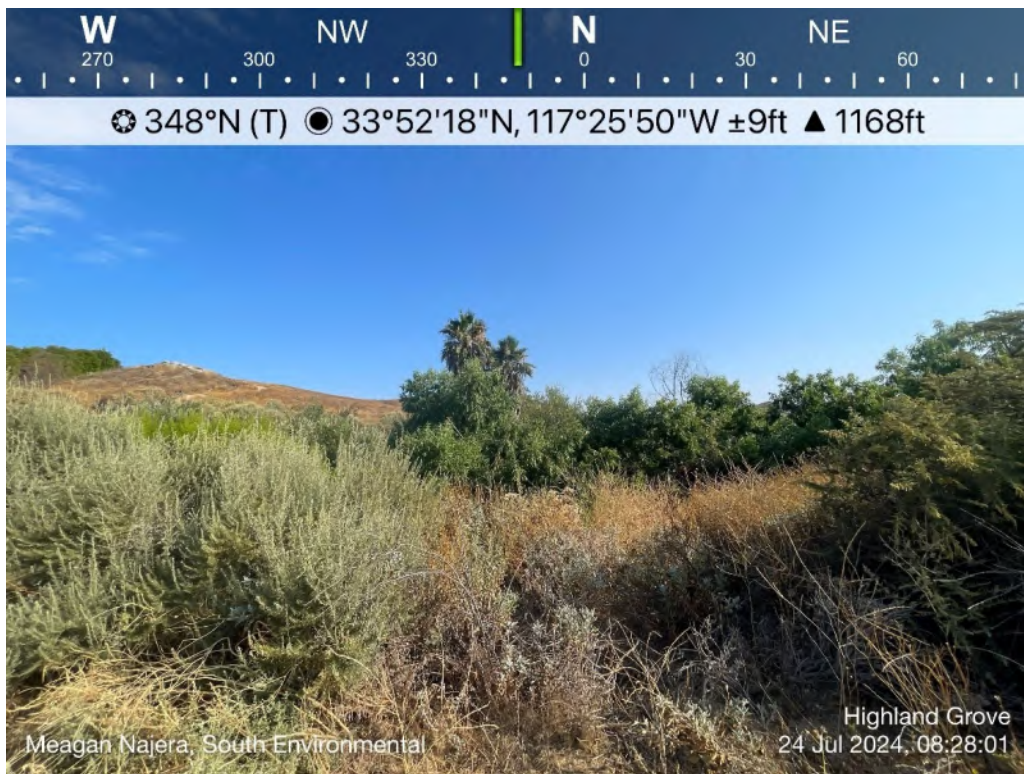


Photo 2. Depicts the riparian area near entrance, in the northern region, Facing north.



Photo 3. Depicts the grass field and riparian area in the northwest region of the project area, west facing.



Photo 4. Depicts the northwestern region of study area with riparian habitat, northwest facing.



Photo 5. Depicts the riparian area in the western region of the project area, southwest facing, with riparian habitat and the construction area in the background.

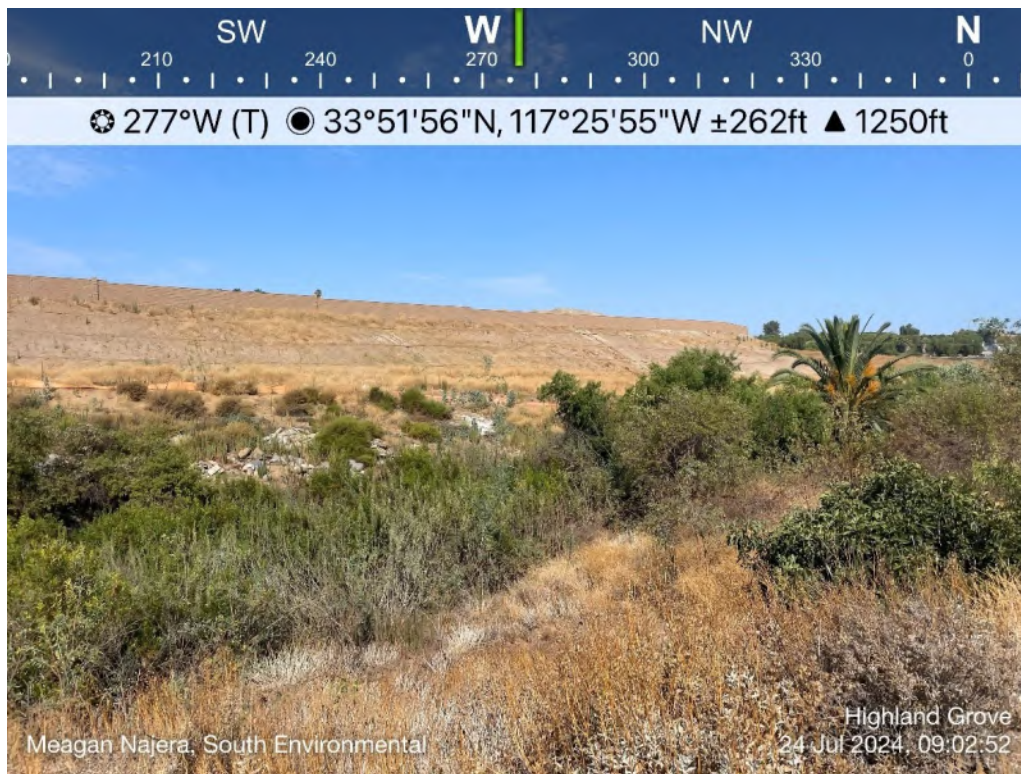


Photo 6. Depicts the western region of the project area, facing west.

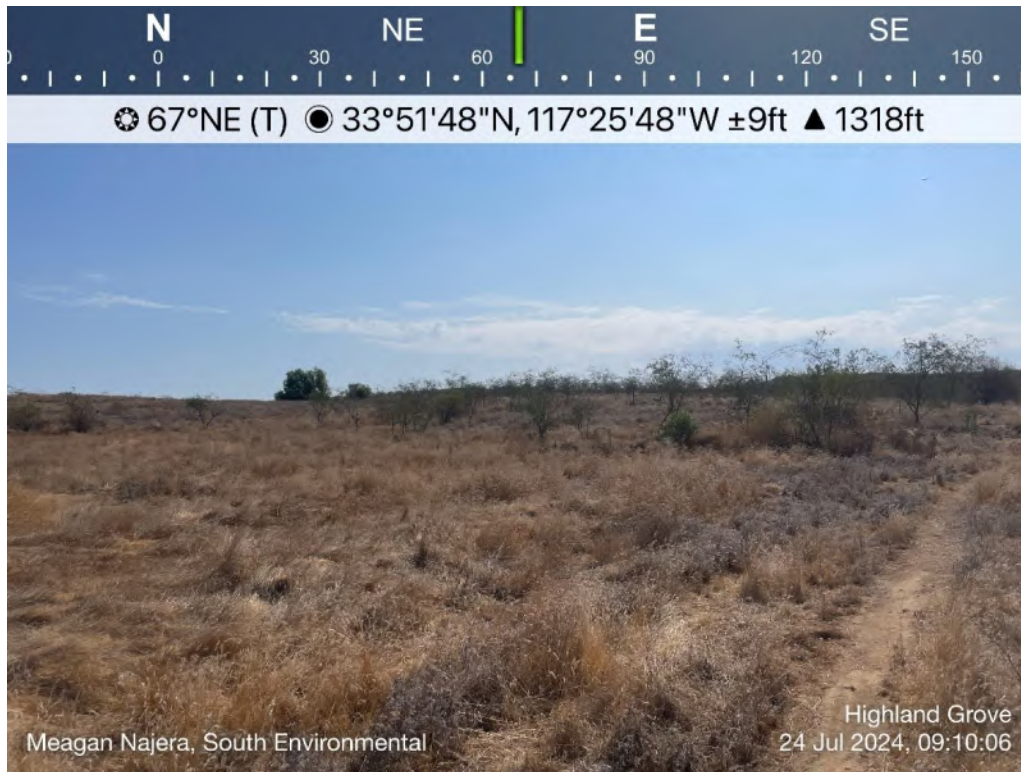


Photo 7. Depicts the grass field that dominates the central area of the project site, northeast facing.



Photo 8. Depicts the eastern side of the project area with riparian and grass fields, facing north.

Attachment B

List of Species Observed

Birds		
Family	Common Name	Scientific Name
Accipitridae		
	Red Shouldered Hawk	Buteo linatus
	Red-tailed Hawk	Buteo jamaicensis
Aegithalidae		
	Bushtit	Psaltirparus minimus
Ardeidae		
	Great Blue Heron	Ardea herodias
Apodidae		
	White-throated Swift	Aeronautes saxatilis
Bombycillidae		
	Cedar Waxwing	Bombycilla cedrorum
Cathartidae		
	Turkey Vulture	Cathartes aura
Charadriidae		
	Killdeer	Charadrius vociferus
Columbidae		
	Eurasian Collared-dove	Streptopelia decaocto
	Mourning Dove	Zenaidura macroura
Corvidae		
	California Scrub-jay	Aphelocoma californica
	Common Raven	Corvus corax
	American Crow	Corvus brachyrhynchos
Cuculidae		
	Greater Roadrunner	Geococcyx californianus
Fringillidae		
	American Goldfinch	Spinus tristis
	House Finch	Carpodacus mexicanus
	Lesser Goldfinch	Carduelis psaltria
Hirundinidae		
	Cliff Swallow	Petrochelidon pyrrhonota
	Northern Rough-winged Swallow	Stelgidopteryx serripennis
Icteridae		
	Brown-headed Cowbird	Molothrus ater
	Bullock's Oriole	Icterus bullockii
	Great-tailed Grackle	Quiscalus mexicanus
	Hooded Oriole	Icterus cucullatus
	Red-winged Blackbird	Agelaius phoeniceus
	Western Meadowlark	Sturnella neglecta
Mimidae		
	California Thrasher	Toxostoma redivivum
	Northern Mockingbird	Mimus polyglottos

Musicapidae		
	Western Bluebird	<i>Sialia mexicana</i>
Odontophoridae		
	California Quail	<i>Callipepla californica</i>
Pandionidae		
	Osprey	<i>Pandion haliaetus</i>
Parulidae		
	Common Yellowthroat	<i>Geothlypis trichas</i>
	Yellow Warbler	<i>Setophaga petechia</i>
Passerellidae		
	California Towhee	<i>Melospiza crissalis</i>
	Dark-eyed Junco	<i>Junco hyemalis</i>
	Song Sparrow	<i>Melospiza melodia</i>
	Spotted Towhee	<i>Pipilo maculatus</i>
Passeridae		
	House Sparrow	<i>Passer domesticus</i>
Picidae		
	Northern Flicker	<i>Colaptes auratus</i>
	Nuttall's Woodpecker	<i>Dryobates nuttallii</i>
Poliophtillidae		
	Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>
Ptiliognatidae		
	Phainopepla	<i>Phainopepla nitens</i>
Scolopacidae		
	Spotted Sandpiper	<i>Actitis macularia</i>
Sturnidae		
	European Starling	<i>Sturnis vulgaris</i>
Trochilidae		
	Allen's Hummingbird	<i>Selasphorus sasin</i>
	Anna's Hummingbird	<i>Calypte anna</i>
Troglodytidae		
	Bewick's Wren	<i>Thryomanes bewickii</i>
	House Wren	<i>Troglodytes aedon</i>
Tyrannidae		
	Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
	Cassin's Kingbird	<i>Tyrannus vociferans</i>
	Black phoebe	<i>Sayornis nigricans</i>
	Say's Phoebe	<i>Sayornis saya</i>
	Western Kingbird	<i>Tyrannus verticalis</i>
Vieronidae		
	Least Bell's Vireo	<i>Vireo bellii pusillus</i>
Mammals		

Family	Common Name	Scientific Name
Cricetidae		
	Woodrat	Neotoma sp.
Leporidae		
	Black-tailed jackrabbit	Lepus californicus
	Dessert Cottontail	Sylvilagus audubonii
Sciuridae		
	California Ground Squirrel	Otospermophilus beecheyi
Amphibians		
Family	Common Name	Scientific Name
Hylidae		
	Pacific Tree Frog	Pseudacris regilla
Ranidae		
	American Bullfrog	Lithobates catesbeianus
Reptiles		
Family	Common Name	Scientific Name
Colubridae		
	California Kingsnake	Lampropeltis californiae
Phrynosomatidae		
	Western side-blotched Lizard	Uta stansburiana elegans

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Appendix B: Site Photographs

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Photograph 1: Representative photograph of Drainage A, looking south towards wetland/riparian habitat.



Photograph 2: Representative photograph of the offsite improvement area, view looking north.



Photograph 4: Representative photograph of the Brittlebush Scrub vegetation community, view looking north.



Photograph 4: Representative photograph of the project site, looking west.



Photograph 5: Representative photograph of the Wild Oats and Annual Brome Grassland vegetation community, looking north.



Photograph 6: Representative photograph of the Ruderal/Disturbed land cover community, looking southwest.

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Appendix C: **Crotch's Bumble Bee Survey Report**

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Memorandum

Date: May 20, 2025

To: Mitch Adkinson, Adkan Engineers, 6879 Airport Drive, Riverside, California 92504

From: Michael Tuma, PhD, Principal Biologist, FirstCarbon Solutions, 967Kendall Drive, #A-537, San Bernardino, California 92407

Subject: Crotch's Bumble Bee Survey Report for the Highland Grove V Development Project in Unincorporated Riverside County, California

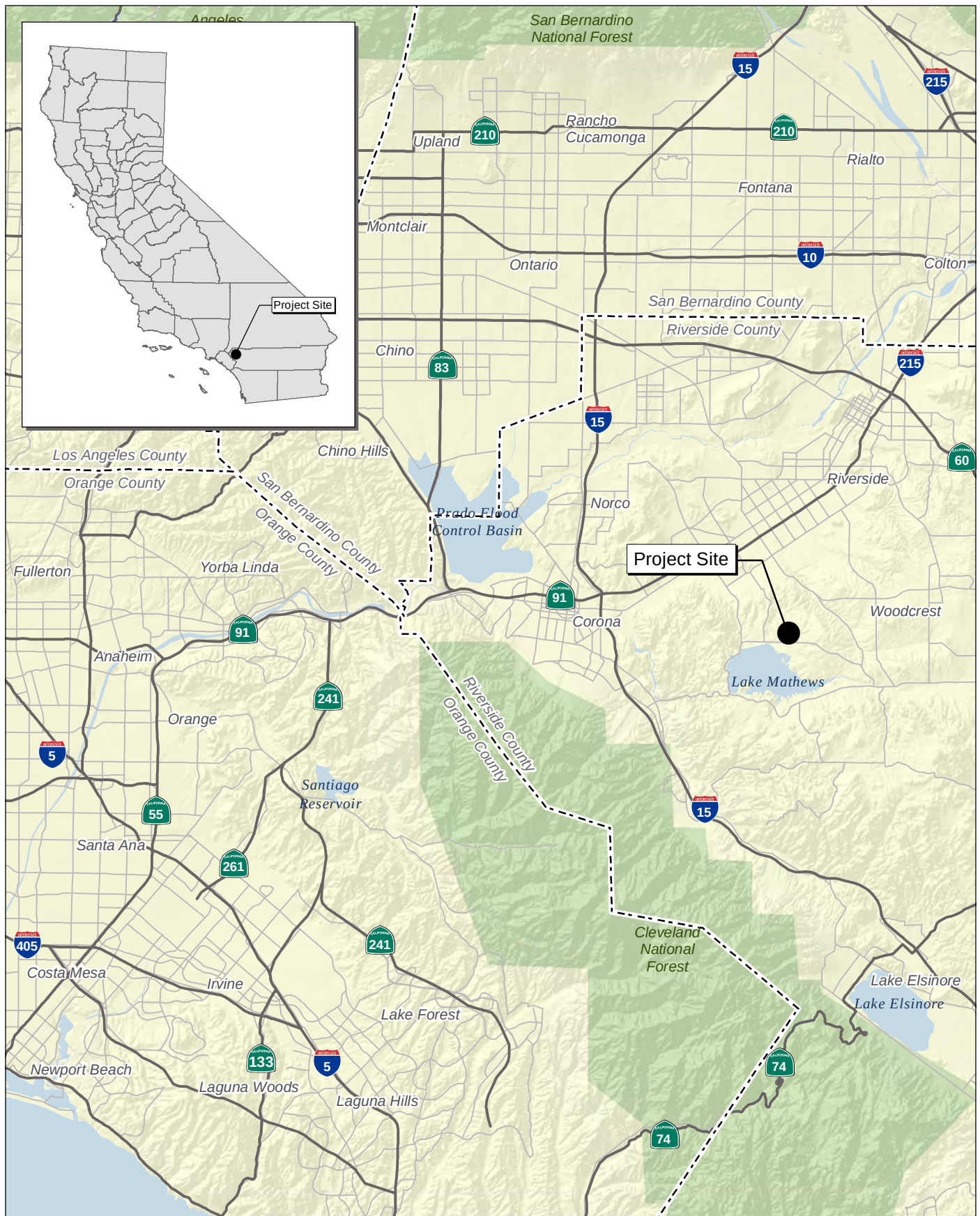
FirstCarbon Solutions (FCS) conducted protocol surveys for Crotch's bumble bee (*Bombus crotchii*) in support of the proposed Highland Grove V Development Project (proposed project) in unincorporated Riverside County, California. The following report provides details about the proposed project, its environmental setting, methods and results of the habitat assessment, and recommendations for further action.

PROJECT SITE LOCATION AND DESCRIPTION

The approximately 36.56-acre project site is located in unincorporated Riverside County (County), California (Exhibit 1). The project site is surrounded by the City of Riverside to the north, the community of Woodcrest to the east, Lake Mathews to the south, and the City of Corona to the west. Regional access to the site is provided via Interstate 15 (I-15), which bisects the project site north to south. Additional regional access to the site is provided via State Route (SR) 91, which bisects the project site east to west. Local access to the project site is provided via Cambria Court in the adjacent Citrus Heights neighborhood.

The project site is located at the southwest corner of McAllister Street and El Sobrante Road on several parcels, including Assessor's Parcel Numbers (APNs) 270-160-002, -003, -018, -020, -021, -022, -023, and -024. The site is located within the *Lake Mathews, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map.

The project site is surrounded by undeveloped lands to the north and west and agricultural operations to the east and south (Exhibit 2 and Exhibit 3). The project site is vacant and undeveloped and has been used for hay production. Undeveloped lands directly north and west of and adjacent to the project site have been previously used for agricultural production.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

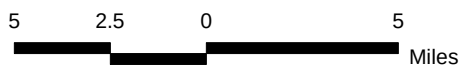
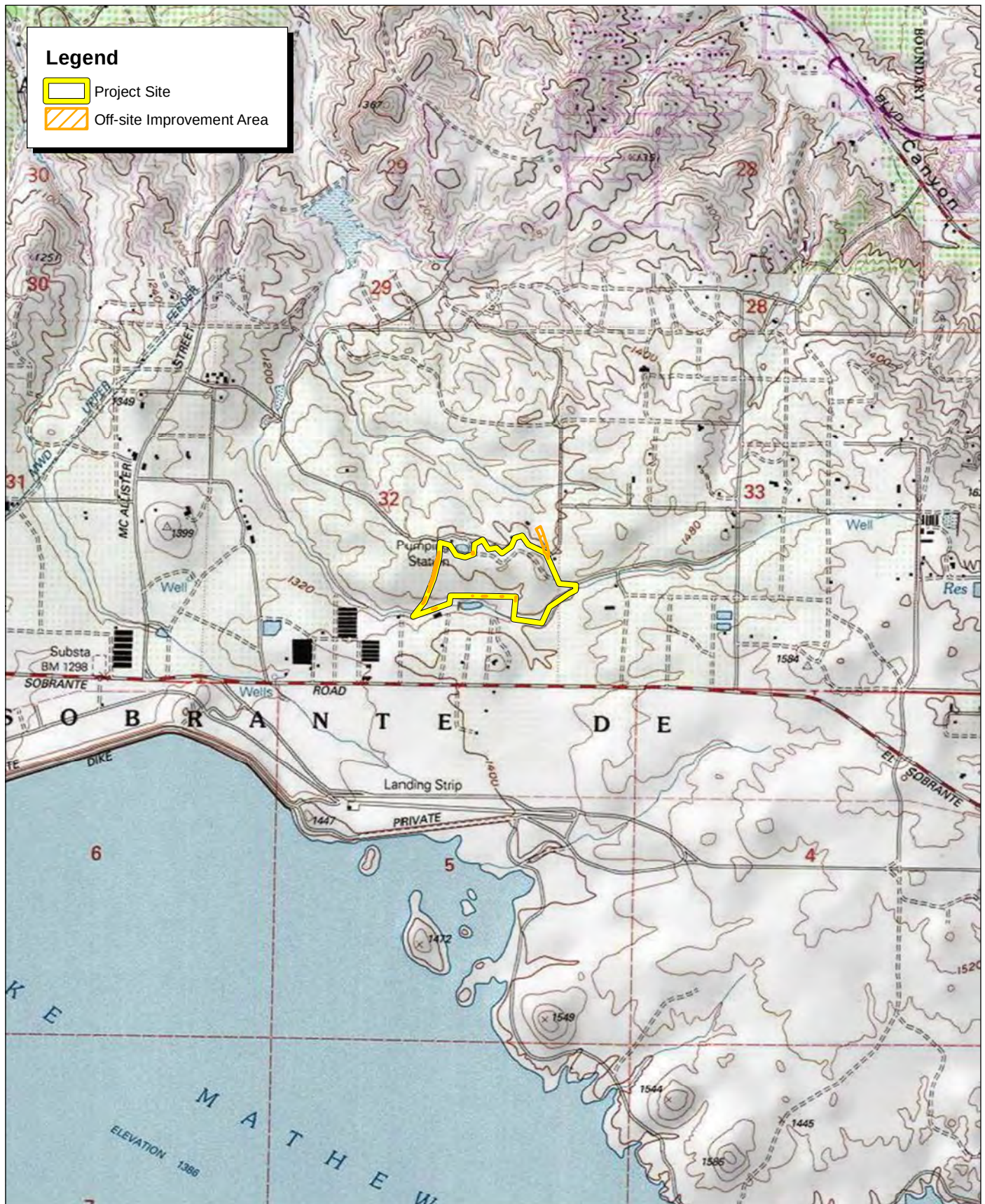


Exhibit 1 Regional Location Map



Source: adkan Engineers, October 2024. USGS Lake Mathews 7.5' Quadrangles / T03S,R05W,sec32,33.

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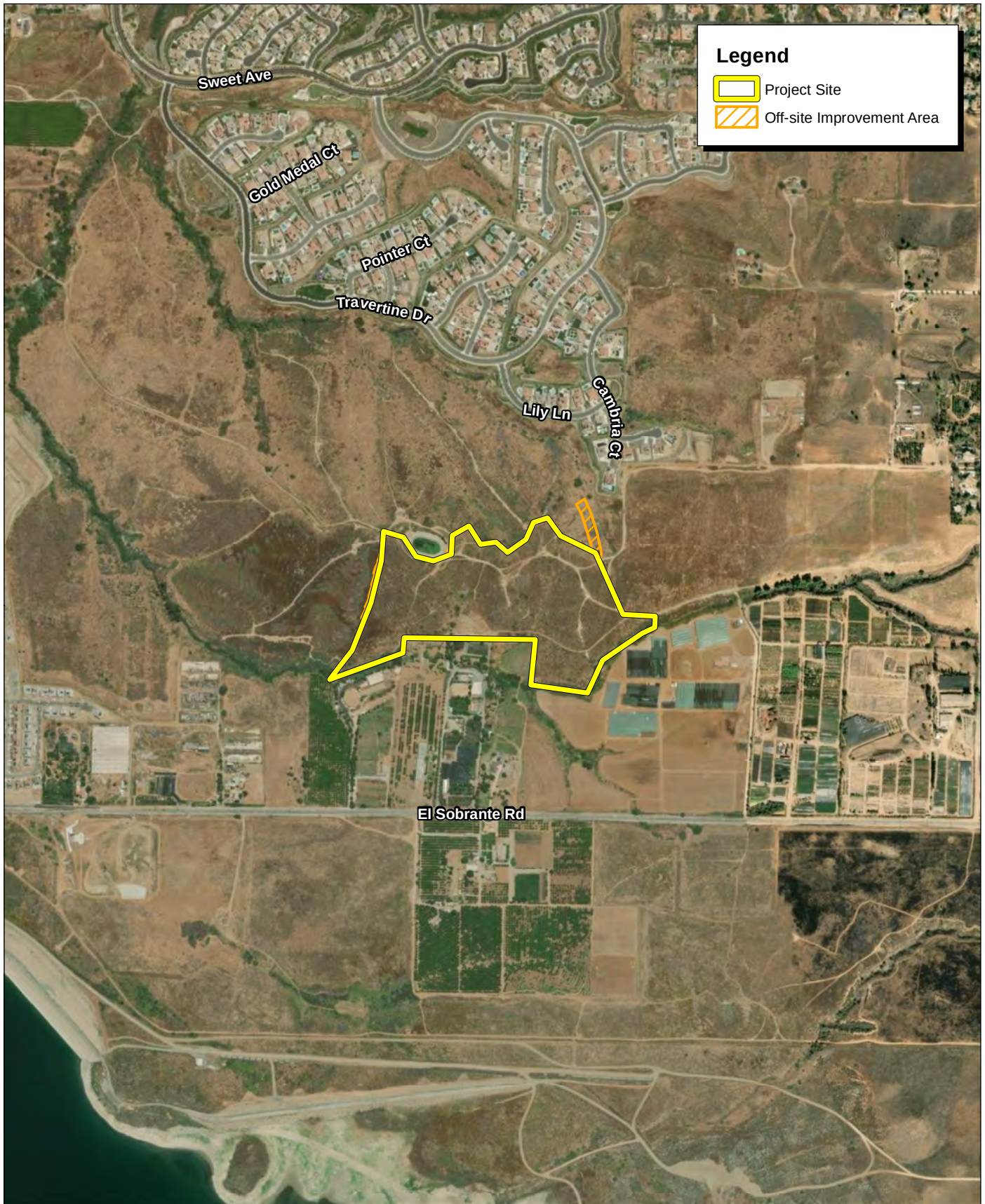
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Exhibit 2

**Local Vicinity Map
Topographic Base**

ADKAN ENGINEERS
HIGHLAND GROVE V DEVELOPMENT PROJECT
CROTCH'S BUMBLE BEE SURVEY REPORT



Source: ESRI Aerial Imagery. adkan Engineers, October 2024.



The project site and adjacent undeveloped areas functioned as a citrus operation until the early 2000s. Evidence of operational site disturbance includes compacted soils, erosional areas, debris piles, and dirt roads. There is a drainage feature along the southern boundary of the project site. Adkan Engineers (project applicant) proposes a residential subdivision on the 36.56-acre project site, located north of El Sobrante Road, east of McAllister Street, and southeast of Sweet Avenue in the Lake Mathews/Woodcrest community of unincorporated Riverside County (Exhibit 3). The proposed project consists of subdividing the 36.56-acre property to accommodate a total of 68 single-family detached lots having a minimum pad size of 8,000 square feet and lot size of 10,000 square feet. The proposed project would include a basin for water quality purposes and an open space area for a community park. The proposed project is contingent upon the development of Tract 38605 for access and utilities.

Crotch's Bumble Bee Description

Crotch's bumble bee is a bee in the family Apidae that occurs largely in California and primarily in southwestern California, including the Pacific Coast, the western Mojave Desert, and the southern San Joaquin Valley.¹ The species also ranges into southwest Nevada and Baja California, Mexico, though occurrences are rare. This species inhabits scrublands, grasslands, chaparral, and semi-urban settings in foothills and desert margins.² Crotch's bumble bee appears to tolerate a narrow range of climatic conditions in comparison to other bumble bee species and requires hotter, drier environments to survive.³ This species nests underground, often in abandoned rodent dens, or aboveground in tufts of grass, rock piles, old bird nests, or cavities in dead trees.⁴ Favored food (nectar) sources for the Crotch's bumble bee include milkweeds (*Asclepias* spp.), pincushions (*Chaenactis* spp.), lupines (*Lupinus* spp.), clovers (*Medicago* spp.), phacelias (*Phacelia* spp.), and sages (*Salvia* spp.).⁵ Crotch's bumble bees are generalist foragers and have been commonly associated with plants from the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, Hydrophyllaceae, Asclepidaceae, and Boraginaceae families.⁶

Like most bumble bees (except cuckoo bumble bees), Crotch's bumble bees are social insects that live in colonies composed of a queen, workers, and reproductives (males and new queens). The colonies have an annual cycle that begins with the emergence of a queen female from her hibernacula and her

¹ Los Padres Forest Watch. 2013. Crotch's Bumblebee. Website: <https://lpfw.org/our-region/wildlife/crotch-bumblebee/>. Accessed April 30, 2025.

² California Department of Fish and Wildlife (CDFW). 2022. CDFW Seeks Public Comment Related to Crotch's Bumble Bee, Franklin's Bumble Bee, Suckley's Cuckoo Bumble Bee and Western Bumble Bee. Website: <https://wildlife.ca.gov/News/Archive/cdfw-seeks-public-comment-related-to-crotch-bumble-bee-franklin-bumble-bee-suckleys-cuckoo-bumble-bee-and-western-bumble-bee#gsc.tab=0>. Accessed April 30, 2025.

³ NatureServe Explorer. 2025. *Bombus crotchii*. Website: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.834085/Bombus_crotchii. Accessed April 30, 2025.

⁴ Hatfield, R., S. Jepsen, R. Thorp, L. Richardson, and S. Colla. 2015. Crotch's bumble bee. IUCN Red List of Threatened Species. 2015: e.T44937582A46440211. Website: <https://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937582A46440211.en>. Accessed April 30, 2025.

⁵ Hatfield, R., S. Jepsen, R. Thorp, L. Richardson, and S. Colla. 2015. Crotch's bumble bee. IUCN Red List of Threatened Species. 2015: e.T44937582A46440211. Website: <https://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937582A46440211.en>. Accessed April 30, 2025.

⁶ California Department of Fish and Wildlife (CDFW). 2018. A Petition to the State of California Fish and Game Commission. Website: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=161902&inline>. Accessed April 30, 2025.

establishment of a nest where she collects pollen and nectar and lays eggs. The reproductive queen conducts all the foraging and care for the colony in early spring until the first workers emerge and take on these duties while the queen continues to lay eggs and rear young.⁷ Male Crotch's bumble bees emerge after the worker bees and are generally active from May to September, with peak activity in July. This species' workers are active from April to August and queen bees from March until May. The peak of worker activity is between May and June, whereas queens are most active in April.⁸ The annual colony cycle ends with the deaths of workers and males and entry to hibernation sites by the new queens. Crotch's bumble bees are not migratory, and only mated queens overwinter.^{9,10}

Crotch's bumble bee populations have experienced sharp declines over the last 10 years, particularly in northern and southern portions of the Central Valley of California.¹¹ Declines have been attributed to conversion of habitat for agricultural practices and urbanization.¹² Additionally, climate change and increased aridity have lowered suitable habitat for this species due to its narrow climatic specialization.¹³ Pollution and competition with non-native bees have also impacted Crotch's bumble bee populations.^{14,15} Because of population declines and subsequent inbreeding, genetic diversity in Crotch's bumble bee populations has also declined.^{16,17,18}

2024 Habitat Assessment

FCS Biologists conducted a field visit and habitat assessment of the project site in 2024 to assess habitat for Crotch's bumble bee and characterize the biological conditions on-site. During the habitat assessment, FCS Biologists mapped vegetation communities and land cover, compiled a list of flowering plants, and recorded observations of threats to Crotch's bumble bees. The information collected during the field visit was used to evaluate Crotch's bumble bee habitat and potential for occurrence using protocol presented

⁷ Koch, J., J. Strange, and P. William. 2012. Bumble Bees of the Western United States (PDF). Website: <https://archive.org/details/CAT31104683>. Accessed April 30, 2025.

⁸ Koch, J., J. Strange, and P. William. 2012. Bumble Bees of the Western United States (PDF). Website: <https://archive.org/details/CAT31104683>. Accessed April 30, 2025.

⁹ NatureServe Explorer. 2025. *Bombus crotchii*. Website: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.834085/Bombus_crotchii. Accessed April 30, 2025.

¹⁰ Hatfield, R., S. Jepsen, R. Thorp, L. Richardson, and S. Colla. 2015. Crotch's bumble bee. IUCN Red List of Threatened Species. 2015: e.T44937582A46440211. Website: <https://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937582A46440211.en>. Accessed April 30, 2025.

¹¹ Ibid.

¹² Ibid.

¹³ NatureServe Explorer. 2025. *Bombus crotchii*. Website: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.834085/Bombus_crotchii. Accessed April 30, 2025.

¹⁴ Williams, P.H., S.R. Colla, and Z. Xie. 2009. Bumblebee vulnerability: Common correlates of winners and losers across three continents. *Conservation Biology* 23: 931–940.

¹⁵ Williams, P.H. and J.L. Osborne. 2009. Bumble bee vulnerability and conservation worldwide. *Apidologie* 40: 367–387.

¹⁶ Goulson, D. 2010. *Bumblebees: Behaviour, Ecology, and Conservation*. Oxford, UK: Oxford University Press.

¹⁷ Cameron, S.A., J.D. Lozier, J.P. Strange, J.B. Koch, N. Cordes, L.F. Solter, and T.L. Griswold. 2011. Patterns of widespread decline in North American bumble bees. *Proceedings of the National Academy of Science (USA)* 108(2): 662–667.

¹⁸ Lozier, J.D., J.P. Strange, I.J. Steward, and S.A. Cameron. 2011. Patterns of range-wide genetic variation in six North American bumble bee (Apidae: *Bombus*) species. *Molecular Ecology* 20: 4870–4888.

in the Rusty Patched Bumble Bee Habitat Assessment Form and Guide published by the Xerces Society for Invertebrate Conservation.¹⁹ The habitat assessment is a scoring system based on regional landscape features, site features, foraging habitat, nesting and overwintering habitat, pesticide practices, and management practices. FCS Biologists developed a score for the project site and compared it to the maximum possible score to evaluate the potential for occurrence of the species on-site. The guide recommends that sites managed for rusty patched bumble bees should have a minimum score of 100. FCS Biologists determined that with a score of 107, the project site appears to support habitat that is at least marginally suitable for Crotch's bumble bee. Accordingly, FCS recommended that focused Crotch's bumble bee surveys be performed in suitable habitat on-site to assess presence or absence of the species.

Methods

Background Review

FCS reviewed existing environmental documentation pertaining to the habitat requirements of Crotch's bumble bee and survey protocols and species occurrence data provided by the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). An FCS Biologist compiled Crotch's bumble bee occurrences previously recorded within the project vicinity maintained in the California Natural Diversity Database (CNDDDB).²⁰ The CNDDDB Biogeographic Information and Observation System (BIOS 6) was used to determine the distance between the known occurrences of Crotch's bumble bee and the project site.²¹ FCS Biologists also reviewed Crotch's bumble bee mapping and occurrence data provided by iNaturalist²² and Bumble Bee Watch.²³ An FCS Biologist also reviewed aerial photographs to gain perspective of the current land uses, plant community distributions, and locations of potential bumble bee habitat in the project vicinity and reviewed United States Department of Agriculture (USDA) soil surveys²⁴ to establish if soil conditions on the project site are suitable for excavation of burrows by burrowing wildlife.

Focused Field Surveys

Per the CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species,²⁶ FCS Biologists conducted three surveys for Crotch's bumble bee on the project site during the colony active period for the species, which generally occurs from April through August.

¹⁹ Xerces Society for Invertebrate Conservation. 2017. Rusty Patched Bumble Bee Habitat Assessment Form and Guide. Website: <https://xerces.org/publications/hags/rusty-patched-bumble-bee-habitat-assessment-form-guide>. Accessed April 30, 2025.

²⁰ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed April 30, 2025.

²¹ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed April 30, 2025.

²² iNaturalist. 2024. Website: <https://www.inaturalist.org>. Accessed April 30, 2025.

²³ Bumble Bee Watch. 2024. Website: <https://www.bumblebeewatch.org/>. Accessed April 30, 2025.

²⁴ United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey (WSS). Website: <https://websoilsurvey.nrcs.usda.gov/app/>. Accessed April 30, 2025.

During the surveys, FCS Biologists walked through suitable Crotch's bumble bee habitat, recorded floral resources available within the survey area, recorded habitat conditions in field notes and with photography, searched for bees, and noted the presence of other pollinating insects. The searches for foraging bumble bees were conducted slowly; each Biologist surveyed at a rate of approximately 3 acres per hour. When a Biologist detected a bumble bee, the Biologist would carefully follow the bee as it foraged, photographing it while it visited flowers. The Biologist would follow each observed bee to collect a sufficient number of photographs from different angles to ensure that key morphological characteristics (e.g., face, cheeks, corbicula, thorax, terga) were visible in the photographs. The Biologists also attempted to follow bees from foraging areas to nest sites. No bumble bees were captured, handled, or harmed during the survey.

Common plant species observed during the field visit were identified by visual characteristics and morphology in the field and recorded in a field notebook and on field maps. Uncommon and unfamiliar plants were identified with the use of taxonomical guides, including Jepson eFlora and Calflora.^{25,26} Taxonomic nomenclature used in this study follows The Jepson Manual: Vascular Plants of California.²⁷ Common plant names, when not available from The Jepson Manual, were taken from other regionally specific references. Vegetation community types and boundaries were noted on aerial photos, verified through field observation, and digitized using Esri ArcGIS® Field Maps. Vegetation community and land cover types used to help classify habitat types are based on the California Native Plant Society (CNPS) Manual of California Vegetation (MCV) and cross-referenced with the CDFW Natural Communities List.^{28,29,30}

2025 Habitat Assessment

The information collected during the field visit was used to evaluate Crotch's bumble bee habitat and potential for occurrence using protocol presented in the Rusty Patched Bumble Bee Habitat Assessment Form and Guide published by the Xerces Society for Invertebrate Conservation.³¹ The habitat assessment is a scoring system based on regional landscape features, site features, foraging habitat, nesting and overwintering habitat, pesticide practices, and management practices. FCS Biologists developed a score for the project site and compared it to the maximum possible score to evaluate the potential for occurrence of the species on-site. This evaluation was compared to the habitat assessment performed in 2024.

²⁵ Jepson Flora Project (eds.) 2023. Jepson eFlora. Website: <https://ucjeps.berkeley.edu/eflora/>. Accessed April 30, 2025.

²⁶ Calflora. 2020. Calflora: Information on California plants for education, research, and conservation. Website: <http://www.calflora.org/>. Accessed April 30, 2025.

²⁷ Baldwin, B.G., D. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D. Wilken (Editors). 2012. The Jepson Manual: Vascular Plants of California. Berkeley, CA: University of California Press.

²⁸ Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. Sacramento, CA: California Native Plant Society.

²⁹ California Department of Fish and Wildlife (CDFW). 2022. Natural Communities List. Website: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>. Accessed April 30, 2025.

³⁰ California Native Plant Society (CNPS). 2024. A Manual of California Vegetation Online. Website: <https://vegetation.cnps.org/>. Accessed April 30, 2025.

³¹ Xerces Society for Invertebrate Conservation. 2017. Rusty Patched Bumble Bee Habitat Assessment Form and Guide. Website: <https://xerces.org/publications/hags/rusty-patched-bumble-bee-habitat-assessment-form-guide>. Accessed April 30, 2025.

Results and Discussion

Topography and Hydrology

The project site has an elevation that ranges from approximately 1,380 feet above mean sea level (AMSL) near the south-central portion of the project site to 1,429 feet AMSL near the north central portion of the project site. The project includes one drainage feature, designated herein as Drainage A. Drainage A is an incised drainage that conveys intermittent flows in a westward direction prior to exiting the site at the western boundary of the project site. Flows that enter the project site originate from agricultural runoff from the surrounding orchards and seeps within the drainage.

Soils

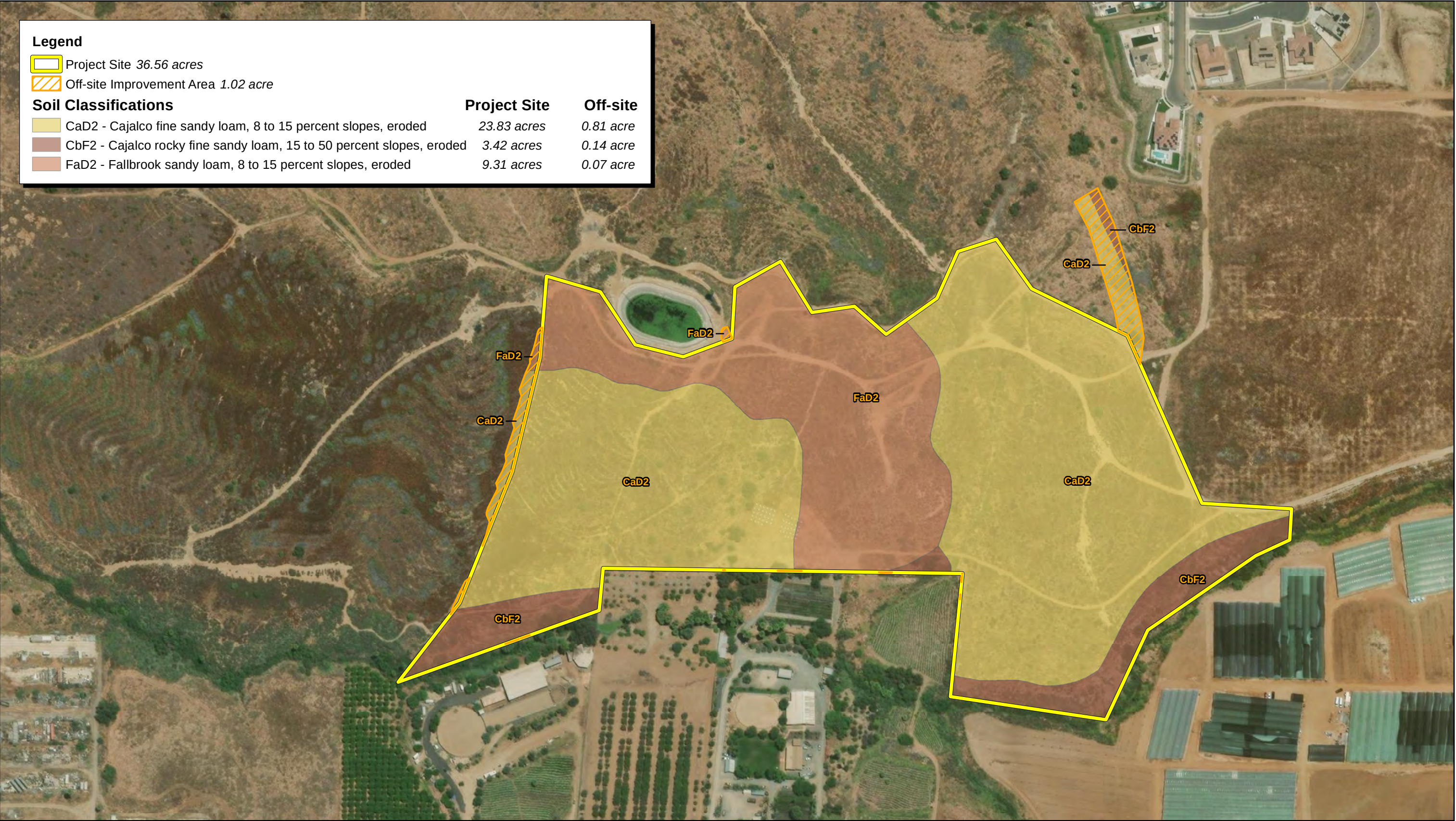
The Natural Resource Conservation Service (NRCS) Web Soil Survey (WSS) mapped three soil types on the project site, including two Cajalco soils and Fallbrook sandy loam. (See Table 1, below, and Exhibit 4).

Table 1: Soil Types Present on the Project Site

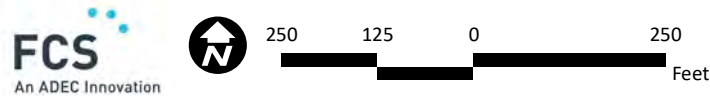
Soil Name	Symbol	Slope	Description
Cajalco find sandy loam, eroded	CaF2	15–35%	Well drained residuum weathered from gabbro on side slopes and backslope. Elevation from 900 to 3,500 feet.
Cajalco rocky fine sandy loam, eroded	CbF2	15–50%	Well drained residuum weathered from gabbro on side slopes and backslope. Elevation from 900 to 3,500 feet.
Fallbrook sandy loam, eroded	FaD2	8–15%	Well drained residuum weathered from granodiorite and/or tonalite. On hills, side slopes, and backslope. Elevation from 300 to 2,000 feet.

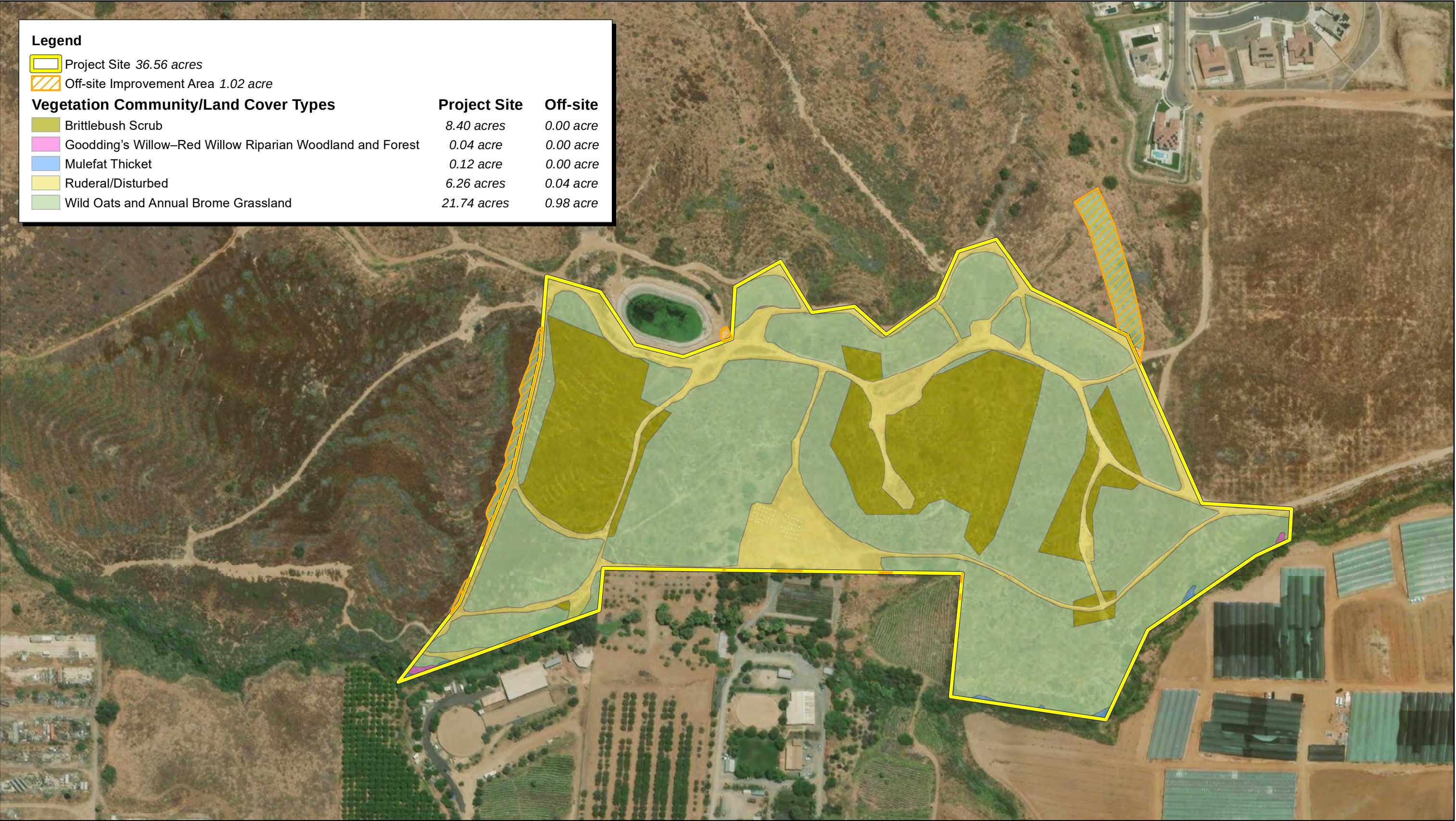
Vegetation Communities/Land Cover Types

The vegetation communities and land cover types recorded on the project site are described below. A map showing vegetation communities and land cover types is presented in Exhibit 5. A complete list of flowering plants found on the project site is presented in Appendix A. Photographs are presented in Appendix B.



Source: ESRI Aerial Imagery. adkan Engineers, October 2024. USDA Soils Data Mart, Riverside County.





Source: ESRI Aerial Imagery. adkan Engineers, October 2024.



Wild Oats and Annual Brome Grassland

The site contains non-native annual grassland that best matches wild oats and annual brome grassland as described in the CNPS MCV.²⁸ This community encompasses 21.74 acres of the project site and was evaluated as being poor habitat for Crotch's bumble bee. Species observed within this community include red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), farmer's foxtail barley (*Hordeum murinum*), black nightshade (*Solanum nigrum*), common fiddleneck (*Amsinckia intermedia*), white horehound (*Marrubium vulgare*), shortpod mustard (*Hirschfeldia incana*), black mustard (*Brassica nigra*), and Italian thistle (*Carduus pycnocephalus*). Other less abundant species present in this community include brittlebush (*Encelia farinosa*), California brittlebush (*Encelia californica*), London rocket (*Sisymbrium irio*), Bermuda buttercup (*Oxalis pes-caprae*), Coastal heron's bill (*Erodium cicutarium*), castor bean (*Ricinus communis*), and Common fiddleneck (*Amsinckia intermedia*).

Mulefat Thickets

The drainage along the southern border of the project site supports riparian vegetation best described as mulefat thickets or *Baccharis salicifolia* Shrubland Alliance as described in the CNPS MCV.²⁹ This community encompasses 0.12 acre of the project site and provides a small amount of Crotch's bumble bee foraging habitat. This community includes mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus mexicana*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*). Several emergent trees occur in scattered locations within this community, including Mexican fan palm (*Washingtonia robusta*), Canary Island date palm (*Phoenix canariensis*), and blue gum (*Eucalyptus globulus*).

Goodding's Willow–Red Willow Riparian Woodland and Forest

A portion of the drainage along the southern border of the project site supports a riparian vegetation community best described as Goodding's willow—red willow riparian woodland and forest. This community encompasses 0.04 acre of the project site and is poor habitat for Crotch's bumble bee. This community is characterized by a relatively dense canopy dominated by Goodding's black willow (*Salix gooddingii*) and red willow trees. Other species in this community include arroyo willow, mulefat, and blue elderberry.

Brittlebush Scrub

The project site includes some scrub habitat best described as brittlebush scrub or *Encelia farinosa* Shrubland Alliance as described in the CNPS MCV.³⁰ This community encompasses 8.40 acres of the project site and provides the best opportunities for foraging pollinators, including Crotch's bumble bee. This community is dominated by brittlebush (*Encelia farinosa*) with an understory of non-native grasses and herbaceous plants such as red brome, farmer's foxtail barley, common fiddleneck, Coastal heron's bill, California sagebrush (*Artemisia californica*), California cholla (*Cylindropuntia californica*), and California buckwheat (*Eriogonum fasciculatum*).

Ruderal/Disturbed

Ruderal/disturbed habitat is present throughout the project site. This land cover type is characterized by disturbed, cleared, grubbed and/or bare ground. This land cover type encompasses 6.26 acres of the project

site and provides poor habitat for Crotch's bumble bee. Plants in ruderal areas are composed of native and non-native species. Ruderal/disturbed lands are found along a bare dirt road that traverses the site.

Database Records for Crotch's Bumble Bee

According to the CNDDDB, there is one historical record (1951) for Crotch's bumble bee within 5 miles of the project site. There are seven CNDDDB records within 10 miles of the project site, and six of the recorded occurrences range from 1933 to 2020 (Exhibit 6). The most recent record is from June 2024 and is approximately 9.5 miles northwest of the project site. A review of occurrence data for Crotch's bumble bee on the iNaturalist website determined that 13 recent observations were recorded within approximately 10 miles of the project site, including two observations approximately 9 miles northeast of the project site in March and April 2025 (Exhibit 7); one observation approximately 6 miles northwest of project site recorded in 2023; one observation approximately 9 miles northeast of project site recorded in 2021; two observations approximately 8 miles northeast of project site, in the Riverside East area, recorded in 2020 and 2024; one observation approximately 9 miles southwest; and five observations approximately 9 miles east of the project site recorded between 2017 and 2025. A review of the Bumble Bee Watch website found one record from 2024 for a Crotch's bumble bee approximately 3 miles northeast of the project site.³²

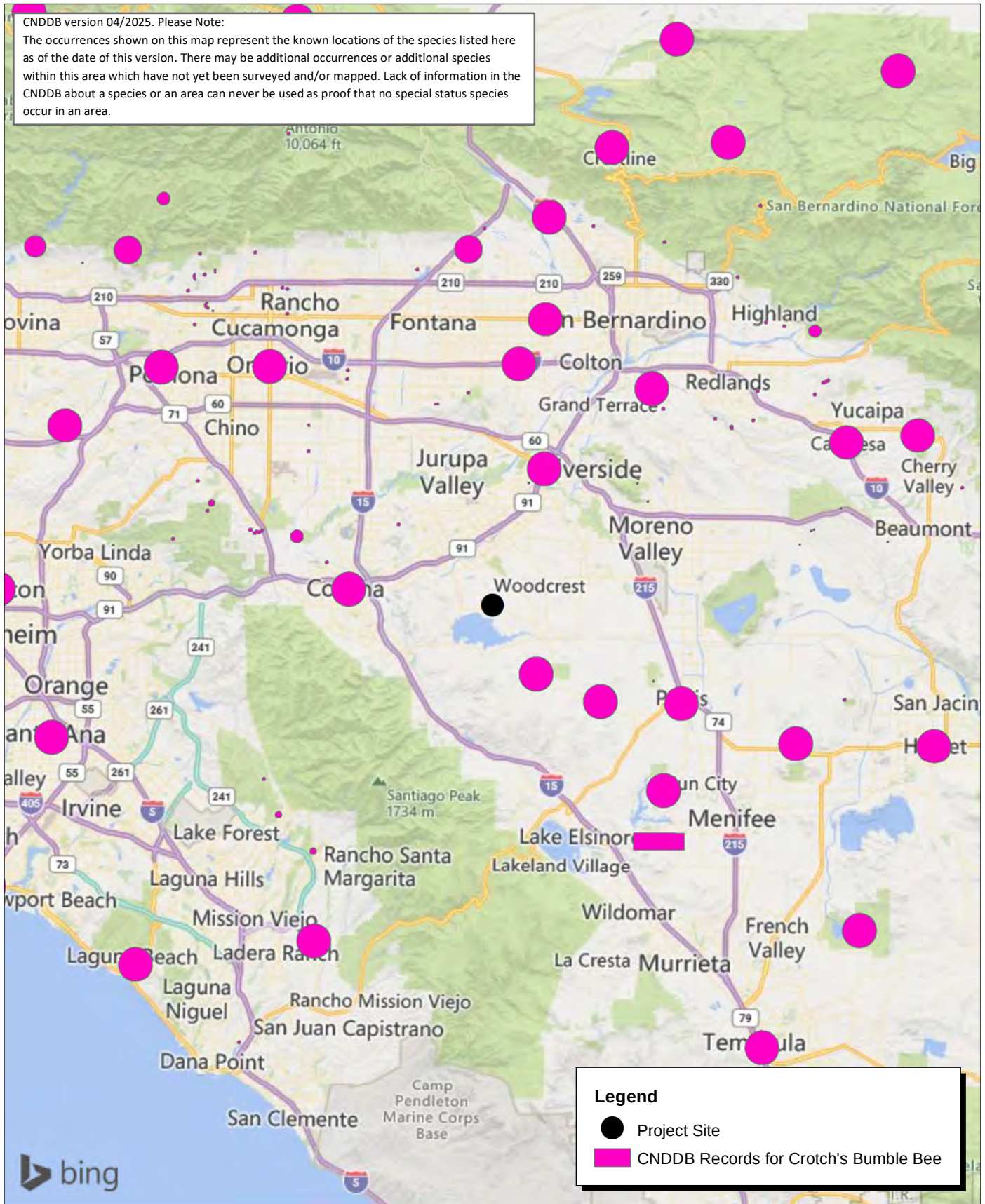
Crotch's Bumble Bee Surveys

FCS Biologists performed searches for Crotch's bumble bees on the project site on April 1, April 23, and May 9, 2025. Table 2 provides a summary of the survey dates, personnel, times, and weather conditions during the surveys.

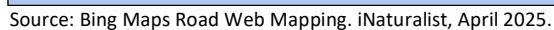
Table 2: Dates, Surveyors, and Conditions During the Crotch's Bumble Bee Surveys Conducted on the Project Site in 2024

Date	Survey Type	Surveyor(s)	Time	Weather Conditions
04/01/2025	Crotch's bumble bee survey	Kayla Belanger, Gina Culver	9:15 a.m.–12:30 p.m.	Partly cloudy Temp: 52–58°F Wind: 7–13 mph
4/23/2025	Crotch's bumble bee survey	Kayla Belanger, Gina Culver	12:00 p.m.–2:30 p.m.	Mostly cloudy Temp: 65–72°F Wind: 5–7 mph
5/09/2025	Crotch's bumble bee survey	Kayla Belanger, Gina Culver	9:30 a.m.–12:00 p.m.	Clear, sunny Temp: 80–90°F Wind: 2–7 mph
Notes: °F = degrees Fahrenheit				

³² Bumble Bee Watch. 2025. Website: <https://www.bumblebeewatch.org/>. Accessed April 30, 2025.



Source: Bing Maps Road Web Mapping. California Natural Diversity Database (CNDDDB), April 2025.



Crotch's Bumble Bee Occurrence Map (iNaturalist Data)

No Crotch's bumble bees were observed during the surveys conducted on the project site. Other bee species observed during the surveys included European honeybee (*Apis mellifera*). Other pollinator species observed included *Copestylum marginatum*, a species of syrphid fly, seven-spot ladybird (*Coccinella septempunctata*), weevil sp. (*Curculionoidea*), and common damselflies (*Enallagma cyathigerum*).

2025 Habitat Assessment

Field Assessment

Field surveys in 2025 included new habitat assessments to evaluate any changes to prior 2024 Crotch's bumble bee habitat assessments. The project site has historically been subjected to chronic disturbances and non-native, annual species (e.g., shortpod mustard, ripgut brome, and wild oats) appear to comprise the bulk (>50 percent) of the biomass on-site. Some Crotch's bumble bee forage species occur on-site, including blue elderberry, mule fat, brittlebush, and common fiddleneck. Most of these species occur in low densities and in scattered locations within the wild oats and annual brome grassland, the vegetation community that covers most (~60 percent) of the project site. Brittlebush is present in higher densities (>30 percent) throughout the annual brome grassland. Moreover, the wild oats and annual brome grassland exhibits low species diversity and dense stands of non-native species, rendering this community unsuitable as Crotch's bumble bee foraging habitat. The brittlebush scrub community on-site is somewhat less disturbed and supports greater diversity of annual plant species, providing foraging habitat that is marginally suitable for Crotch's bumble bees. This vegetation community occurs over 8.4 acres (~23 percent) of the project site.

Soils on the project site are friable and provide good burrowing opportunities for wildlife and potential nest sites for Crotch's bumble bees. Rodent burrows were recorded in scattered locations across the project site that could provide potential overwintering and nesting sites.

Anthropogenic threats recorded on-site include dirt roads with compacted soils that provide human access for recreational activities, agricultural grubbing, and debris and trash piles associated with illegal dumping.

Xerces Society Habitat Assessment Form and Guide

According to the Xerces Society for Invertebrate Conservation Rusty Patched Bumble Bee Habitat Assessment Form and Guide,³³ the project site scored 97, representing 45.1 percent of the maximum possible score of 215 (Appendix C). The guide recommends that sites managed for rusty patched bumble bees should have a minimum score of 100. With a score of 97, the project site does not appear to support habitat suitable for Crotch's bumble bee occurrence. The score in 2025 is down from a score of 113 in 2024. During the 2025 surveys, FCS Biologists detected a large honeybee operation adjacent to the project site as well as feral honeybee hives on the project site. The honeybees likely outcompete bumble bees and other native pollinators on the project site. FCS Biologists also collected additional data on the

³³ Xerces Society for Invertebrate Conservation. 2017. Rusty Patched Bumble Bee Habitat Assessment Form and Guide. Website: <https://xerces.org/publications/hags/rusty-patched-bumble-bee-habitat-assessment-form-guide>. Accessed April 30, 2025.

agricultural operations adjacent to the project site and concluded that pesticide, fungicide, and/or insecticide are likely used there. These factors combined to depress the habitat score in 2025.

Conclusions and Recommendations

The majority of the project site, approximately 60 percent, is vegetated in a wild oats and annual brome grassland community that exhibits low native species diversity and high densities of non-native annual species that are not Crotch's bumble bee forage species and, thus, is considered unsuitable habitat for Crotch's bumble bees. Approximately 23 percent of the project site is vegetated in a brittlebush scrub community that supports a greater diversity of native plant species, and this community was determined to provide marginally suitable foraging habitat for Crotch's bumble bees. Rodent burrows on-site could potentially provide nesting and overwintering opportunities. The project site has historically been subjected to chronic anthropogenic disturbances and is surrounded by disturbed lands, which likely reduces the habitat suitability of the area. In addition, the project site is directly adjacent to active agricultural operations that include honeybee farming on the property south of the project site. Also, FCS Biologists detected several feral honeybee hives in elderberry trees on the project site. Honeybees were detected in high abundance during surveys and are known to compete with native bumble bees and potentially spread disease to them. These factors led to a decrease in the habitat assessment score for the project site. Scoring the project site using the Xerces criteria for rusty patched bumble bees, a system that considers on-site conditions and its context within a wider landscape, FCS Biologists determined that the project site likely does not contain suitable habitat for Crotch's bumble bee.

Focused surveys for the species did not detect any bumble bee species. FCS concludes that Crotch's bumble bees are not present on the project site. It is likely that anthropogenic disturbances observed on-site, including active grubbing, trash from illegal dumping, density of invasive plants, dirt roads, presence of potential competition with honeybees from an adjacent farm, and likely use of pesticides, fungicides, and/or insecticides, has degraded the habitat in a manner that makes it unfavorable for Crotch's bumble bee occupancy.

If we can be of any further assistance, or if you have any questions concerning this report, please contact me at 714.508.4100.

Sincerely,



Michael W. Tuma, PhD
Principal Biologist

FirstCarbon Solutions

967 Kendall Drive, #A-537
San Bernardino, CA 92407

Enc:

Attachment A: Plants Observed On-site

Attachment B: Site Photographs

Attachment C: Habitat Assessment Scoring

Attachment A:

Plants Observed On-site

Table 1: Plant Species Observed on the Project Site

Family	Scientific Name	Common Name	Native/ Blooming Period	Potential Crotch's Bumble Bee Forage Species?
Monocots				
Arecaceae	<i>Phoenix canariensis</i>	Canary Island date palm	Non-native/ Oct-Apr	no
Arecaceae	<i>Washingtonia robusta</i>	Mexican fan palm	Non-native/ Apr-Jun	no
Poaceae	<i>Bromus diandrus</i>	ripgut brome	Non-native Invasive/ Apr-Jun	no
Poaceae	<i>Bromus rubens</i>	red brome	Non-native/Feb-Jun	no
Poaceae	<i>Hordeum murinum</i>	farmer's foxtail barley	Non-native/ Apr-May	no
Dicots				
Anacardiaceae	<i>Schinus molle</i>	Peruvian pepper tree	Non-native/ Mar-Jun	no
Anacardiaceae	<i>Malosma laurina</i>	laurel sumac	Native/ Feb-May	yes
Asteraceae	<i>Artemisia californica</i>	California sagebrush	Native/ Apr-Oct	yes
Asteraceae	<i>Baccharis salicifolia</i>	mule fat	Native/ Jan-Dec	yes
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	Non-Native/ Feb-Jul	no
Asteraceae	<i>Centaurea melitensis</i>	toalote	Non-native/ Apr-Aug	yes
Asteraceae	<i>Corethrogyne filaginifolia</i> var. <i>filaginifolia</i>	common sandaster	Native/ May-Aug	yes
Asteraceae	<i>Deinandra paniculata</i>	paniculate tarplant	Native/ Apr-Nov	yes
Asteraceae	<i>Encelia californica</i>	California brittlebush	Native/ Feb-Jun	yes
Asteraceae	<i>Encelia farinosa</i>	brittlebush	Native/ Jan-May	yes
Asteraceae	<i>Ericameria pinifolia</i>	pinebush	Native/ Apr-Jul	yes
Asteraceae	<i>Erigeron canadensis</i>	Canada horseweed	Native/ Jun-Sep	yes

Family	Scientific Name	Common Name	Native/ Blooming Period	Potential Crotch's Bumble Bee Forage Species?
Asteraceae	<i>Heterotheca grandiflora</i>	telegraph weed	Native/ Jan-Dec	yes
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	Non-native/ May-Sep	no
Asteraceae	<i>Oncosiphon piluliferum</i>	stinknet	Non-native Invasive/ Mar-Jul	yes
Asteraceae	<i>Stephanomeria virgata</i>	twiggy wreath plant	Native/ Jul-Oct	yes
Boraginaceae	<i>Amsinckia intermedia</i>	common fiddleneck	Native/ Feb-Jun	yes*
Brassicaceae	<i>Brassica nigra</i>	black mustard	Non-native Invasive/ Apr-Jul	no
Brassicaceae	<i>Hirschfeldia incana</i>	shortpod mustard	Non-native/ Jan-Dec	no
Brassicaceae	<i>Sisymbrium irio</i>	London rocket	Non-native/ Jan-Apr	no
Cactaceae	<i>Cylindropuntia californica</i>	California cholla	Native/Apr- July	no
Cactaceae	<i>Opuntia littoralis</i>	coast prickly pear	Native/ May-Jun	no
Chenopodiaceae	<i>Atriplex canescens</i>	fourwing saltbush	Native/ May-Jun	yes
Cupressaceae	<i>Juniperus californicus</i>	California juniper	Native/ Not Applicable	no
Euphorbiaceae	<i>Croton setiger</i>	turkey-mullein	Native/ May-Oct	no
Euphorbiaceae	<i>Ricinus communis</i>	castor bean	Non-native Invasive/ Jan-Dec	no
Fabaceae	<i>Astragalus sp.</i>	milkvetch	—	—
Geraniaceae	<i>Erodium cicutarium</i>	redstem filaree	Non-native Invasive/ Feb-Jun	no
Lamiaceae	<i>Marrubium vulgare</i>	white horehound	Non-native/ May-Aug	yes
Oxalidaceae	<i>Oxalis pes-caprae</i>	Bermuda buttercup	Non-native/ Dec-Jun	no
Polygonaceae	<i>Eriogonum fasciculatum</i>	California buckwheat	Native/ Apr-Sep	yes*
Salicaceae	<i>Salix gooddingii</i>	Goodding's black willow	Native/ Feb-Mar	no
Salicaceae	<i>Salix laevigata</i>	red willow	Native/ Feb-May	no

Family	Scientific Name	Common Name	Native/ Blooming Period	Potential Crotch's Bumble Bee Forage Species?
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	Native/ Feb-May	no
Solanaceae	<i>Nicotiana glauca</i>	tree tobacco	Non-native Invasive/ Mar-Sep	no
Solanaceae	<i>Solanum nigrum</i>	black nightshade	Non-native/ Mar-Oct	no
Tamaricaceae	<i>Tamarix aphylla</i>	athel tree	Non-native/ May-Nov	no
Urticaceae	<i>Urtica dioica</i>	stinging nettle	Native/ May-Sep	no
Viburnaceae	<i>Sambucus mexicana</i>	blue elderberry	Native/ Mar-May	yes
*known preferred forage species				

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Attachment B:

Site Photographs



Photograph 1: View of the dried thickets of mustard that dominate the wild oats and annual brome grassland. Some brittlebush can be seen scattered throughout.



Photograph 2: View of encelia scrub, ruderal vegetation, and trash along dirt roads in the center of project site, facing west.



Photograph 3: View of the southeastern portion of project site, showing freshly grubbed area and dirt road.



Photograph 4: Representative photograph of annual brome grassland areas with newly installed silt fence.



Photograph 5: Overview photograph of the project site, facing southeast.



Photograph 6: View of a bee hive observed in an elderberry tree in the center of the project site.

Attachment C:

Habitat Assessment Scoring

Habitat Assessment Scoring for Crotch's Bumble Bee¹

Scoring Criteria

Section 1: Regional and Landscape Features

- 1a. Percentage of the grid cell that is natural habitat: >30% (score=10)
- 1b. Dominant vegetation/land cover within 0.5 mile of assessment area: Mix of native, naturalized, and weedy/invasive species (score=3)

Section 2: Site Features

- 2a. Percentage of site that is in natural or semi-natural habitat: 50-75% (score=7)
- 2b. Additional site features that are present: permanent meadows or open areas with diverse native wildflowers allowed to bloom (score = 5), 1 point for every 20% of area that is grass (2) (total score= 7)

Section 3: Foraging Habitat

- 3a. Percentage of vegetative cover that is comprised of forbs, flowering shrubs, or pollinator friendly trees on site: 30-50% cover (score=7)
- 3b. Number of species of forbs, flowering shrubs, or pollinator-friendly trees on site that bloom in spring and support bees: 10+ species (score=10)
- 3c. Number of species of forbs, flowering shrubs, or pollinator-friendly trees on site that bloom in summer and support bees: 10-17 species (score=7)
- 3d. Number of species of forbs, flowering shrubs, or pollinator-friendly trees on site that bloom in fall and support bees: 5-9 species (score=7)
- 3e. Crotch's bumble bee superfoods (species most commonly used by the species): 1–4 species (score=2)
- 3f. Crotch's bumble bee forage species that are known to help build bumble bee immune systems: Score one point, up to 3 for each species present (score=2).

¹ Based on Xerces Invertebrate Conservation Society. 2017. Rusty Patched Bumble Bee Habitat Assessment Form and Guide. Website: <https://xerces.org/publications/hags/rusty-patched-bumble-beehabitat-assessment-form-guide>. Accessed April 30, 2025.

Section 4: Nesting and Overwintering Habitat

- 4a. Nesting and overwintering habitat: <5% bunch grasses (score=1); <5% rodent activity (score=1); ~10% unmowed, ungrazed (score=5); <5% woody, rocky cover (score=1); 0 leaf litter (score=3). (Total score = 11).

Section 5: Management and Pesticide Practices

- 5a. Management and pesticides practices: no herbicide use (score=5); no pesticide use on-site, but adjacent agricultural operations probably use pesticides (score=15); no fungicide use on-site, but adjacent agricultural operations probably use fungicides (score=2); no insecticide use on-site, but adjacent agricultural operations probably use insecticides (score=2); no buffers from adjacent insecticide applications (score=0); spray control (score=0). Total score=24
- 5b. Land management techniques: mowing (N; score=0); grazing (N; score=N/A); burning (N; score=N/A); honeybees (N; score=0)

Scoring Summary

Section 1: Regional and Landscape Features (max score 20): **13**

Section 2: Site Features (max score 35): **14**

Section 3: Foraging Habitat (max score 50): **35**

Section 4: Nesting and Overwintering Habitat (max score 30): **11**

Section 5a: Pesticide Practices (max score 40): **24**

Section 5b: Management Practices (max score 40): **0**

Total: 97 of 215 (45.1%)

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Appendix D:
Jurisdictional Delineation Report (FirstCarbon Solutions)

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Aquatic Resources Delineation Report Highland Grove V Development Project Unincorporated Riverside County, California

Prepared for:

Adkan Engineers

6879 Airport Drive
Riverside, CA 92504

Contact: Mitch Adkison

Prepared by:

FirstCarbon Solutions

967 Kendall Drive, #A-537
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714.508.4100

Contact: Cecilia So, Senior Project Manager
Joseph Vu, Senior Biologist

Date: October 17, 2024

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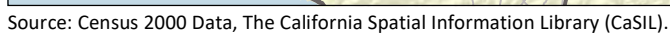
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SECTION 1: INTRODUCTION

At the request of Adkan Engineers, FirstCarbon Solutions (FCS) completed a delineation of aquatic resources and proposes a jurisdictional determination for the approximate 36.56-acre Highland Grove V Development Project site and off-site improvement area, collectively referred to as the Study Area, as depicted on Exhibit 1 and Exhibit 2. The purpose of this report is to support jurisdictional determinations by the United States Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB); to support California Department of Fish and Wildlife (CDFW) evaluation pursuant to Fish and Game Code Sections 1602, *et seq.* (Streambed Alteration Program); to support jurisdictional determinations pursuant to Multiple Species Habitat Conservation Plan (MSHCP) Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools; and to support the project applicant's planning and permitting efforts for a proposed development project.

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CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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Source: ESRI Aerial Imagery. adkan Engineers, June 2024.



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SECTION 2: ENVIRONMENTAL SETTING

2.1 - Location

The approximately 36.56-acre Study Area is located in Unincorporated Riverside County, southeast of the census-designated El Sobrante and south of the Citrus Heights neighborhood in the City of Riverside. Local access to the site is provided via Cambria Court in the adjacent Citrus Heights neighborhood. The Study Area is centered around 33.862417° latitude and -117.421563° longitude. The location of the Study Area within the Riverside region is shown on Exhibit 1, and the Study Area boundaries on a recent high-resolution aerial image are shown on Exhibit 2.

2.2 - Vegetation and Land Cover Types

The Study Area is surrounded by undeveloped lands to the north and west and agricultural operations to the east and south. The Study Area is vacant and undeveloped and has been used for citrus and hay production. Undeveloped lands directly north and west of and adjacent to the project site have been previously used for agricultural production. The Study Area and adjacent undeveloped areas functioned as a citrus operation until the early 2000s. Evidence of operational site disturbance includes compacted soils, erosional areas, debris piles, and various dirt roads.

The vegetation of the Study Area is dominantly non-native annual grassland with ruderal/disturbed areas throughout the Study Area. The drainage feature that flows along the southern boundary of the Study Area supports sparse riparian and wetland vegetation.

Vegetation of the Study Area is predominantly wild oats and annual brome grassland, mulefat thickets, and riparian woodland found within the drainages. The mulefat thickets community is dominated by mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*). Common forb species include red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), black nightshade (*Solanum nigrum*), common fiddleneck (*Amsinckia intermedia*), white horehound (*Marrubium vulgare*), black mustard (*Brassica nigra*), and Italian thistle (*Carduus pycnocephalus*).

Riparian woodland present in the drainages is predominantly Goodding's black willow (*Salix gooddingii*) and red willow (*Salix laevigata*) trees. Other species in this community include arroyo willow (*Salix lasiolepis*), mulefat, and blue elderberry. Vegetation associated with the drainage channels is described for each feature in more detail below.

2.3 - Topography and Hydrogeomorphology

Elevation within the Study Area ranges from approximately 1,400 feet above mean sea level (AMSL) along the northern boundary to 1,360 feet AMSL along the southern boundary. Elevation on the western boundary is 1,350 feet AMSL and elevation along the eastern boundary is 1,430 feet AMSL. One intermittent drainage is located along the southern boundary of the Study Area. This drainage flows in a general east/west direction before exiting the Study Area. This feature conveys flows from the neighboring citrus and agricultural operations in the area. Flows associated with the drainage do

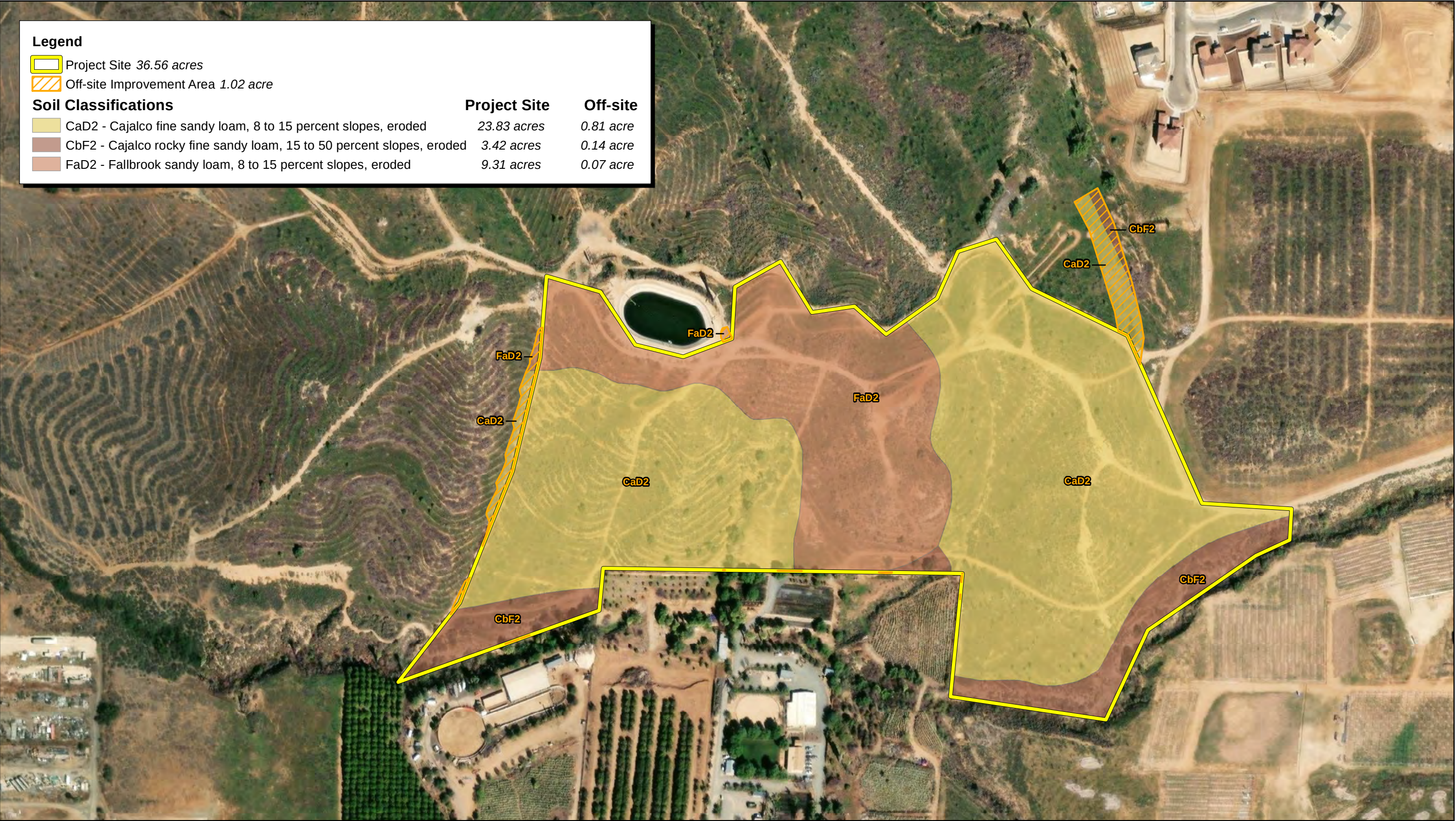
not contain a continuous surface connection with a navigable water of the United States. Flows associated with the drainage leave the Study Area and terminate approximately 2.5 miles northwest within a concrete pipe culvert at an agricultural field south of the intersection of Cleveland Avenue and Harrison Street. Subsurface flow continues in the storm drain indefinitely and does not appear to reemerge as surface flow.

2.4 - Soils

The Natural Resources Conservation Service (NRCS) has mapped the following soil types as occurring in the Study Area (Exhibit 3). None of the soil types mapped or observed are classified as hydric soils.¹

- Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded
- Cajalco Rocky Fine Sandy Loam, 15 to 50 Percent Slopes, Eroded
- Fallbrook Sandy Loam, 8 to 15 Percent Slopes, Eroded

¹ United States Department of Agriculture (USDA), Natural Resources Conservation Service. 2023. Web Soil Survey 3.3.2. Website: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed June 12, 2024.



Source: ESRI Aerial Imagery. adkan Engineers, June 2024. USDA Soils Data Mart, Riverside County.

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SECTION 3: REGULATORY SETTING

3.1 - Federal

3.1.1 - Clean Water Act

Section 404

The agencies are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. In light of this decision, the agencies will interpret the phrase "waters of the United States" consistent with the Supreme Court's decision in the *Sackett* case. In *Sackett*, the Supreme Court adopted the Rapanos plurality's test for adjacent wetlands: only those wetlands with a continuous surface connection to other regulated waters, such that the two are indistinguishable.

USACE administers Section 404 of the federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. The term "waters of the United States" is defined in accordance with the USACE regulations at 33 Code of Federal Regulations Part 328.3(a) as:

1. Waters which are:
 - a. Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - b. The territorial seas; or
 - c. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
3. Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
 - a. Waters identified in paragraph (a)(1) of this section; or
 - b. Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

The following are not "waters of the United States":

1. Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

2. Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the United States Environmental Protection Agency (EPA);
3. Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
4. Artificially irrigated areas that would revert to dry land if the irrigation ceased;
5. Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
7. Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA and/or USACE.

"Wetland" refers to areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and seasonal wetlands. Wetlands are considered jurisdictional if they fall under one of the categories of waters of the United States defined above. The USACE jurisdiction typically extends up to the ordinary high water mark (OHWM).

In general, a USACE permit must be obtained before placing fill in wetlands or other waters of the United States. The type of permit depends on the impacted acreage, the purpose of the proposed fill, and other factors.

Section 401

Section 401 of the CWA states that "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act." Therefore, before the USACE will issue a

Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the RWQCB.

3.2 - State

3.2.1 - California Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State” (Water Code § 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. “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)).

In 2019, the California State Water Resources Control Board (State Water Board) published the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) to guide wetland waters of the State determinations and the permitting process.² The State Board Wetland Definition and Procedures define an area as wetland as follows: An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.

The following wetlands are waters of the State:

1. Natural wetlands;
2. Wetlands created by modification of a surface water of the State;
3. Artificial wetlands that meet any of the following criteria:
 - a. Approved by an agency as compensatory mitigation for impacts to other waters of the State, except where the approving agency explicitly identifies the mitigation as being of limited duration;
 - b. Specifically identified in a water quality control plan as a wetland or other water of the State;
 - c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
 - d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the State unless they also satisfy the criteria set forth in 2, 3a, or 3b):
 - i. Industrial or municipal wastewater treatment or disposal,
 - ii. Settling of sediment,

² California State Water Resources Control Board (State Water Board). 2024. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Website: https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html. Accessed June 12, 2024.

- iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
- iv. Treatment of surface waters,
- v. Agricultural crop irrigation or stock watering,
- vi. Fire suppression,
- vii. Industrial processing or cooling,
- viii. Active surface mining—even if the site is managed for interim wetlands functions and values,
- ix. Log storage,
- x. Treatment, storage, or distribution of recycled water, or
- xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits), or
- xii. Fields flooded for rice growing.

3.2.2 - California Fish and Game Code

Sections 1600–1617 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration be submitted to the 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 defines a stream including creeks and rivers as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life.” CDFW’s definition of “lake” includes “natural lakes or manmade reservoirs.” The CDFW reviews the proposed actions in the Notification and, if necessary, prepares a Lake or Streambed Agreement that includes measures to protect fish and wildlife resources.

SECTION 4: METHODS

FCS Senior Biologist Joseph Vu delineated jurisdictional resources in the Study Area on July 9, 2024, as described in the following section.

4.1 - Wetlands

The presence/absence of wetlands was determined based on the requirements of the Corps of Engineers Wetlands Delineation Manual and revised procedures in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.^{3,4} These procedures include standards that define wetlands, including specific saturation and/or ponding regimes, and evaluate hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland indicator status of vegetation follows the 2022 National Wetland Plant List for the Arid West Region.⁵

4.2 - Drainage Channels and Tributaries

Drainage channels were characterized through presence/absence of bed, bank, and OHWM; hydrology; and hydrological connectivity. The OHWM is determined and characterized using definitions and guidance of A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States.⁶ A discussion of what constitutes a potentially jurisdictional “tributary” pursuant to *Sackett v. EPA* and which features, such as ditches or ephemeral drainages, may be excluded from the definition of waters of the United States is provided in Section 5, below.

Culverted drainage sections, where applicable, were examined for evidence of concentrated flow, including presence of water stains, mineral or sediment deposits, and biofilm.

4.2.1 - Definitions of Hydrological Regimes

An ephemeral stream is defined as a watercourse that carries only surface runoff and flows during and immediately after periods of precipitation. An intermittent stream is defined as a watercourse that is temporally intermittent or seasonal and that flows during the wet season, continues to flow after the period of precipitation, and ceases surface flow during at least part of the dry season. A perennial stream is a watercourse that flows throughout the year. Riparian vegetation is defined as vegetation associated with a watercourse and relying on the higher level of water provided by the watercourse. Riparian vegetation can include trees, shrubs, and/or herbaceous plants.

4.3 - Additional Background Information Review

Additional relevant information about the Study Area was reviewed, including current and historical aerial imagery, the Watershed Assessment, Tracking and Environmental Results System (WATERS),

³ Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1.

⁴ United States Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28.

⁵ The National Wetland Plant List—Arid West Version 3. 2022. United States Army Corps of Engineers.

⁶ Lichvar, R.W. and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.

the EPA's National Hydrography Data Set Plus (NHDPlus Version 2), the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI),⁷ and the NRCS Web Soil Survey and the Antecedent Precipitation Tool (APT).^{8,9,10} The APT is an automation tool that the USACE developed to facilitate the comparison of antecedent or recent precipitation conditions for a given location to the range of normal precipitation conditions that occurred during the preceding 30 years. To determine what constitutes a "typical year," USACE developed the APT. In addition to providing a standardized methodology to evaluate normal precipitation conditions ("precipitation normalcy"), the APT can assess the presence of drought conditions and the approximate dates of the wet and dry seasons for a given location.

⁷ United States Fish and Wildlife Service (USFWS). National Wetland Inventory. Website: <https://www.fws.gov/wetlands/data/mapper.html>. Accessed June 12, 2024

⁸ United States Environmental Protection Agency (EPA). Watershed Assessment, Tracking and Environmental Results System (WATERS) Website: <https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system>. Accessed June 12, 2024.

⁹ United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2020. Web Soil Survey 3.3.2. Website: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed June 12, 2024.

¹⁰ United States Army Corps of Engineers (USACE). 2024. Antecedent Precipitation Tool (APT) – v2.0. Website: <https://github.com/erdc/Antecedent-Precipitation-Tool/releases/tag/v2.0.0>. Accessed June 12, 2024.

SECTION 5: RESULTS

The following section describes the results of both the background research and analysis and the results of the protocol-level delineation field work. Representative photographs of current site conditions are included in Appendix A.

5.1 - Climatic Conditions

Results of the USACE APT analysis (Appendix B) indicate that conditions during the delineation survey were normal conditions for the 3-month period prior the delineation. The last rain event prior to the delineation occurred on May 5, 2024, with an accumulated precipitation volume of 0.12-inch for the month, based on data of the nearest publicly available weather station located in Riverside.

5.2 - Aquatic Resources

Aquatic resources occurring within the Study Area boundary are described in more detail below.

5.2.1 - Open Drainage Channel

Drainage A

The Study Area includes one drainage feature, designated herein as Drainage A. Drainage A is an incised drainage that convey intermittent flows in a westward direction prior to exiting the site at the western boundary of the Study Area. Flows that enter the Study Area originate from agricultural runoff from the surrounding orchards and seeps within the drainage. The active channels have loam and sandy substrate and vegetation including riparian species, such as mulefat Facultative [FAC]), Gooding's black willow (*Salix goodingii*, Facultative Wetland [FACW]), and arroyo willow (FACW); and obligate wetland species, such as southern cattail (*Typha domingensis*, OBL) and watercress (*Nasturtium officinale*, Obligate Wetland [OBL]). Other species found in Drainage A include Mexican fan palm (*Washingtonia robusta*, FACW), castor bean (*Ricinus communis*, Facultative Upland [FACU]), blue elderberry (FACU), California buckwheat (*Eriogonum fasciculatum*, Upland [UPL]), black mustard (UPL), perennial pepperweed (*Lepidium latifolium*, FAC), and several non-native grasses. Drainage A has an OHWM of approximately 8-feet wide and includes OHWM indicators/evidence such as break in bank slopes, destruction of terrestrial vegetation, vegetation wracking, sediment sorting and deposition, and presence of bed and bank. Photos of Drainage A is included is Appendix A – Site Photographs. A soils map is included as Exhibit 3.

5.3 - United States Fish and Wildlife Service National Wetland Inventory

The USFWS NWI did depict one wetland in the Study Area.¹¹ Per the NWI, determinations are only made based on high altitude imagery, and according to the NWI Data Limitations information, “a margin of error is inherent in the use of imagery; thus, detailed on the ground inspection of any particular site may result in revision of the wetland boundaries or classification established through

¹¹ United States Fish and Wildlife Service (USFWS). National Wetland Inventory (NWI). Website: <https://www.fws.gov/wetlands/data/mapper.html>. Accessed June 12, 2024.

image analysis.” Additionally, the USFWS clarifies that NWI mapping is not adequate to be used to establish regulatory boundaries or jurisdiction.

FCS established three wetland sample points within the NWI-mapped wetland that showed evidence of hydrophytic vegetation, such as Gooding’s black willow, arroyo willow, southern cattail, and watercress. Wetland data sheets are attached as Appendix C. The presence of wetland indicators may be influenced by recent weather, as conditions in the 3 months prior to the delineation survey were much wetter than normal, as demonstrated by the USACE APT analysis (see Section 5.1 and Appendix B).

5.4 - Proposed Jurisdictional Determination

5.4.1 - Proposed United States Army Corps of Engineers Jurisdiction

As of the preparation of this report, the final “Revised Definition of Waters of the United States” rule was published in the Federal Register on January 18, 2023, and became effective March 20, 2023. On May 25, 2023, the U.S. Supreme Court issued a decision in the case of *Sackett v. Environmental Protection Agency*. This decision determined that areas of federal jurisdiction under Section 404 of the CWA must have a “continuous surface connection” with navigable waters of the United States or relatively permanent tributaries to navigable waters. This report proposes preliminary conclusions regarding the jurisdictional status of non-wetland waters, based on the *Sackett* decision.

On August 29, 2023, the USACE and the EPA issued a release noting that a revised definition of waters of the United States would be issued in conformance with *Sackett*. On September 8, 2023, the USACE and EPA issued the final rule updating the definition of waters of the United States in conformance with *Sackett* in the Federal Register. The final rule is not currently operative in certain states and for certain parties due to litigation. California is excluded from this litigation and is currently operating under the guidance issued in the Federal Register on September 8, 2023.

5.4.2 - Features Proposed to be Exempt from United States Army Corps of Engineers Jurisdiction

Per the guidance outlined above, flows associated with Drainage A do not contain a continuous surface connection with a navigable water of the United States. As noted in Section 2.3 above, flows associated with Drainage A leave the Study Area and terminate approximately 2.5 miles northwest within a concrete pipe culvert at an agricultural field south of the intersection of Cleveland Avenue and Harrison Street. Subsurface flow continues in the storm drain indefinitely and does not appear to reemerge as surface flow. Therefore, Drainage A does not contain a continuous surface connection to a navigable water of the United States and would likely not be classified as waters of the United States under the jurisdiction of the USACE. Note that a final jurisdictional determination can only be made by the USACE following verification.

5.4.3 - Proposed Regional Water Quality Control Board Jurisdiction

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)) and are under the jurisdiction of the RWQCB. Since Drainage A is not subject to USACE jurisdiction pursuant to Section 404 of the CWA, this

feature is also not subject to RWQCB pursuant to Section 401 of the CWA. However, since Drainage A conveys surface flow with the potential to support beneficial uses and includes State wetlands, they are considered to be waters of the State that would be regulated by the Regional Board pursuant to the Porter-Cologne Act and would require a Waste Discharge Requirement for impacts to Drainage A.

RWQCB jurisdiction is shown in Exhibit 4. Dimensions of all RWQCB jurisdiction occurring within and adjacent to the Study Area boundary are presented in Table 1.

Table 1: Proposed Regional Water Quality Control Board Jurisdiction Within and Adjacent to the Study Area

Type	Regional Board Non-Wetland Waters (acres)	Regional Board Jurisdictional Wetlands (acres)	Total Regional Board Jurisdiction (acres)	Length (linear feet)
Drainage A	0.35	0.26	0.61	1,914
Total	0.35	0.26	0.61	1,914

5.4.4 - California Department of Fish and Wildlife Streambed Alteration Program Considerations

Drainage A exhibited defined stream flow indicators as evidenced by changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, and incised channel bank. Because of the presence of drainage beds and banks and the presence of riparian and wetland habitat, it is expected that the CDFW will assert regulatory oversight over potential impacts on Drainage A pursuant to California Fish and Game Code Section 1602, *et seq.* (Streambed Alteration Program) and would require a Notification of Streambed Alteration and subsequent Streambed Alteration Agreement for any work that could adversely affect the Drainage A and associated riparian/wetland vegetation.

CDFW jurisdiction is shown in Exhibit 5. Dimensions of all CDFW jurisdiction occurring within and adjacent to the Study Area boundary are presented in Table 2.

Table 2: Proposed California Department of Fish and Wildlife Jurisdiction Within and Adjacent to the Study Area

Type	CDFW Non-Riparian Stream (acres)	CDFW Riparian Stream (acres)	Total CDFW Jurisdiction (acres)	Length (linear feet)
Drainage A	1.41	0.26	1.67	1,914
Total	1.41	0.26	1.67	1,914

5.4.5 - Proposed Western Riverside Multiple Species Habitat Conservation Plan Jurisdiction

The MSHCP defines Riparian areas as “lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source. In the absence of riparian habitat, the MSHCP defines Riverine areas as areas with fresh water flow during all or a portion of the year.” The MSHCP defines “vernal pools as seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetland indicators of hydrology and/or vegetation during the drier portion of the growing season.”

MSHCP Riparian/Riverine areas within and adjacent to the Study Area is shown in Exhibit 6 are comprised entirely of Drainage A and are identical to that of CDFW jurisdiction. No vernal pools were observed during field surveys. Dimensions of all MSHCP jurisdiction occurring within and adjacent the Study Area boundary are presented in Table 3.

Table 3: Proposed MSHCP Jurisdiction Within and Adjacent to the Study Area

Type	MSHCP Riparian (acres)	MSHCP Riverine (acres)	Total MSHCP Jurisdiction (acres)	Length (linear feet)
Drainage A	1.41	0.26	1.67	1,914
Total	1.41	0.26	1.67	1,914



Source: ESRI Aerial Imagery. adkan Engineers, June 2024.



24340006 • 10/2024 | 4_RWQCB_JD.mxd

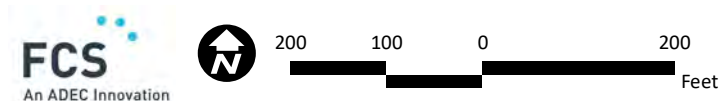
Exhibit 4
RWQCB Jurisdictional Map

CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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Source: ESRI Aerial Imagery. adkan Engineers, June 2024.



24340006 • 10/2024 | 5_CDFW_JD.mxd

Exhibit 5 CDFW Jurisdictional Map

CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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Source: ESRI Aerial Imagery. adkan Engineers, June 2024.



24340006 • 10/2024 | 6_MSHCP_JD.mxd

Exhibit 6 MSHCP Jurisdictional Map

CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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SECTION 6: CONCLUSION

The Study Area contains one drainage (Drainage A) and includes approximately 0.61 acres of potential waters of the State (including 0.26 acres of State wetlands) regulated by the RWQCB under Section 13260 of the California Water Code; approximately 1.67 acres and 1,914 linear feet of aquatic features regulated pursuant to the CDFW Streambed Alteration Program; and 1.41 acre of Riparian habitat and 0.26 acre of Riverine features as defined under the MSHCP.

The Study Area does not contain potential water of the United States regulated by the USACE under Section 404 of the Clean Water Act.

The findings and conclusions presented in this report, including the location and extent of waters subject to regulatory jurisdiction, represent the professional opinion of FCS. These findings and conclusions should be considered preliminary until confirmed by the USACE, RWQCB, and CDFW.

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Appendix A: Site Photographs

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Photograph 1: Representative photograph of Drainage A, looking south towards wetland/riparian habitat.



Photograph 2: Representative photograph of Drainage A and the OHWM in the drainage. Note the flowing water.



Photograph 3: Representative photograph of downstream portion of Drainage A, looking southeast.

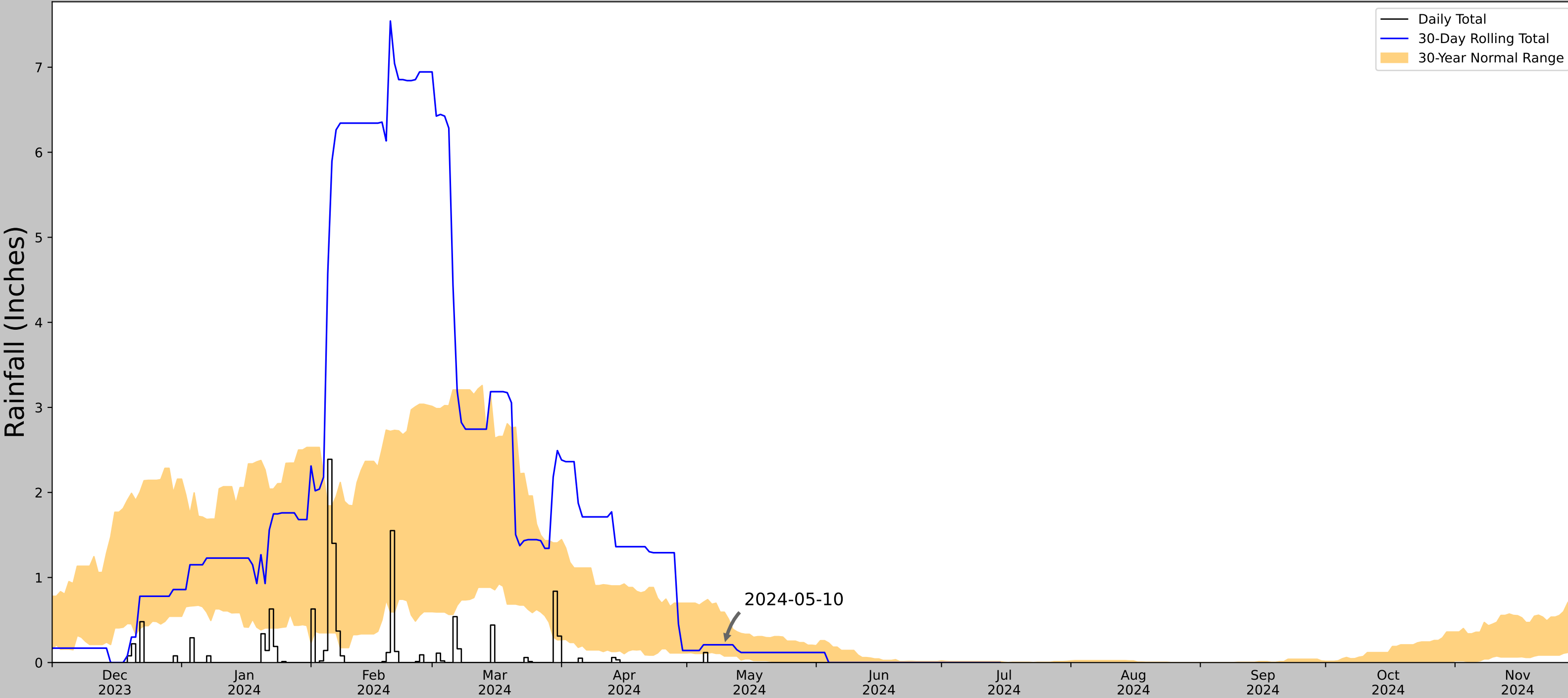


Photograph 4: Representative photograph of upstream portion of Drainage A, looking south.

Appendix B: **Antecedent Precipitation Tool Analysis**

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Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.862417, -117.421563
Observation Date	2024-07-09
Elevation (ft)	1411.314
Drought Index (PDSI)	Moderate wetness (2024-06)
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-07-09	0.0	0.011811	0.0	Normal	2	3	6
2024-06-09	0.0	0.142913	0.0	Normal	2	2	4
2024-05-10	0.075984	0.59252	0.208661	Normal	2	1	2
Result							Normal Conditions - 12



**US Army Corps
of Engineers®**

Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



ERDC
U.S. Army Corps of Engineers Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RIVERSIDE MUNI AP	33.9528, -117.4353	845.144	6.294	566.17	6.396	8844	90
RIVERSIDE 3.8 NW	33.9793, -117.4541	840.879	2.124	4.265	0.965	7	0
RIVERSIDE FIRE STN 3	33.9511, -117.3881	839.895	2.708	5.249	1.233	2449	0
RIVERSIDE CITRUS EXP	33.9669, -117.3614	985.892	4.346	140.748	2.567	52	0

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Appendix C: Arid West Wetland Data Forms

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Highland Grove 5 Development Project City/County: Unincorporated Riverside Co Sampling Date: July 9, 2024
 Applicant/Owner: Adkan Engineers State: CA Sampling Point: 1
 Investigator(s): Joseph Vu Section, Township, Range: Unsectioned, T3S, R5W
 Landform (hillslope, terrace, etc.): Channel bed Local relief (concave, convex, none): _____ Slope (%): 0-2
 Subregion (LRR): C Lat: 33.862018 Long: -117.417635 Datum: NAD 83
 Soil Map Unit Name: Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2) NWI classification: riverine
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Salix goodingii</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>35</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>5</u> x 3 = _____ FACU species _____ x 4 = <u>15</u> UPL species _____ x 5 = _____ Column Totals: <u>55</u> (A) <u>100</u> (B) Prevalence Index = B/A = <u>1.82</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Nasturtium officinale</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Urtica Dioca</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____
<u>20</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	see comment							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Smell of hydrogen sulfide was detected at the soil pit/sampling point.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| ☒ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 8

Water Table Present? Yes ☐ No ☐ Depth (inches): _____

Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Surface water was present during the delineation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Highland Grove 5 Development Project City/County: Unincorporated Riverside Co Sampling Date: July 9, 2024
 Applicant/Owner: Adkan Engineers State: CA Sampling Point: 2
 Investigator(s): Joseph Vu Section, Township, Range: Unsectioned, T3S, R5W
 Landform (hillslope, terrace, etc.): Channel bed Local relief (concave, convex, none): _____ Slope (%): 0-5
 Subregion (LRR): C Lat: 33.860961 Long: -117.425340 Datum: NAD 83
 Soil Map Unit Name: Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2) NWI classification: riverine
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland?	Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____		
Wetland Hydrology Present?	Yes ☒ No _____		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Salix goodingii</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>4</u> (A)
2. <u>Washingtonia robusta</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
<u>70</u> = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:	
1. <u>Typha domingensis</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species <u>60</u>	x 1 = <u>60</u>
3. _____	_____	_____	_____	FACW species <u>70</u>	x 2 = <u>140</u>
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
<u>50</u> = Total Cover				UPL species _____	x 5 = _____
				Column Totals:	<u>130</u> (A) <u>200</u> (B)
				Prevalence Index = B/A = <u>1.42</u>	
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators:	
1. <u>Nasturtium officinale</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	☒ Dominance Test is >50%	
2. _____	_____	_____	_____	☒ Prevalence Index is ≤3.0 ¹	
3. _____	_____	_____	_____	☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. _____	_____	_____	_____	☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
<u>10</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
<u>_____</u> = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____	
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____					
Remarks:					

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	see comment							

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

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Smell of hydrogen sulfide was detected at the soil pit/sampling point.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| ☒ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 12

Water Table Present? Yes ☐ No ☐ Depth (inches): _____

Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Surface water was present during the delineation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Highland Grove 5 Development Project City/County: Unincorporated Riverside Co Sampling Date: July 9, 2024
 Applicant/Owner: Adkan Engineers State: CA Sampling Point: 3
 Investigator(s): Joseph Vu Section, Township, Range: Unsectioned, T3S, R5W
 Landform (hillslope, terrace, etc.): Channel bed Local relief (concave, convex, none): _____ Slope (%): 0-2
 Subregion (LRR): C Lat: 33.861288 Long: -117.424068 Datum: NAD 83
 Soil Map Unit Name: Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2) NWI classification: riverine
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
1. <u>Ulmus parvifolia</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Salix goodingii</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>30</u> x 5 = <u>150</u> Column Totals: <u>75</u> (A) _____ (B) Prevalence Index = B/A = <u>3.67</u>
<u>45</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Baccharis salicifolia</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% _____ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>20</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Urtica Dioca</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Marrubium vulgare</u>	<u>5</u>	<u>y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____
8. _____	_____	_____	_____	
<u>10</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1	100		0				sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No redox indicators in the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| ☒ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☒ No _____ Depth (inches): 14

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

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

Remarks:

Surface water was present during the delineation.

Appendix E: Special-status Species Evaluation Tables

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Table 1: Special-status Plant Species Habitat Value Evaluation

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Abronia villosa</i> var. <i>aurita</i> Chaparral (hairy) sand-verbena	—	—	1B.1	Annual herb found in sandy soils in chaparral, coastal scrub, and desert dune communities. Bloom period: March–September Elevation: 75–1,600 m	None: The project site does not contain suitable habitat to support occurrence of this species.
<i>Allium marvinii</i> Yucaipa onion	MSHCP	—	1B.2	Perennial, bulbiferous herb found in clay soils and openings in chaparral. Bloom period: April–May Elevation: 760–1,065 m	None: The project site is outside of the known elevation range of this species and does not contain suitable habitat to support this species.
<i>Allium munzii</i> Munz’s onion	FE MSHCP	CT	1B.1	Perennial, bulbiferous herb found in clay and mesic soils in chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland. Bloom period: March–May Elevation: 297–1,070 m	None: The project site does not contain suitable habitat to support occurrence of this species such as clay soils or juniper woodland. There is one historic occurrence of the species within 5 miles and 10 sightings withing 5 to 10 miles of the project site.
<i>Ambrosia pumila</i> San Diego ambrosia	MSHCP	—	1B.1	Perennial, rhizomatous herb found in chaparral, coastal scrub, valley and foothill grassland, and vernal pool communities. Bloom period: April–October Elevation: 20–415 m	None: The project site does not contain suitable habitat to support occurrence of this species. There are no occurrences of the species within five miles of the project site.
<i>Arenaria paludicola</i> marsh sandwort	FE	SE	1B.1	Annual herb found in freshwater marshes and wetlands, and wetland-riparian habitat. Bloom Period: May-August Elevation: 0-300 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Arctostaphylos rainbowensis</i> Rainbow manzanita	MSHCP	—	1B.1	Perennial evergreen shrub found in chaparral. Bloom period: December–March Elevation: 205–670 m	Low: The project site contains marginally suitable habitat to support occurrence of this species. However, no occurrences of this species have been recorded within 5 miles of the project site.
<i>Atriplex coronata</i> var. <i>notatior</i> San Jacinto Valley crownscale	FE MSHCP	—	1B.1	Annual herb found in alkaline soils in playas, in mesic, alkaline soils in valley and foothill grassland, and in vernal pools. Bloom period: April–August Elevation: 139–500 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Berberis nevinii</i> Nevin's barberry	FE MSHCP	SE	1B.1	Perennial, evergreen shrub found on steep, north-facing slopes or in low-grade sandy washes in coastal scrub, chaparral, cismontane woodland, and riparian scrub communities. Blooming period: March–June Elevation: 290–1,575 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Brodiaea filifolia</i> thread-leaved brodiaea	FT MSHCP	CE	1B.1	Perennial, bulbiferous herb found in clay soils in chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, and vernal pools. Bloom period: March–June Elevation: 25–1,120 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	MSHCP	—	4.2	Perennial, bulbiferous herb found in granitic and rocky soils in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland communities. Bloom period: May–July Elevation: 100–1,700 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Calochortus weedii</i> var. <i>intermedius</i> intermediate mariposa-lily	MSHCP	—	1B.2	Perennial, bulbiferous herb that occurs on calcareous soils on rocky sites in coastal scrub, chaparral, and valley and foothill grassland habitats. Bloom period: May–July Elevation: 105–855 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Centromadia pungens</i> ssp. <i>laevis</i> smooth tarplant	MSHCP	—	1B.1	Annual herb found in alkali meadow and alkali scrub communities, and disturbed places in valley and foothill grassland, chenopod scrub, meadows, playas, and riparian woodland communities. Bloom period: April–September Elevation: 0–640 m	None: The project site does not contain suitable habitat or soils to support occurrence of this species such as alkali meadows or scrub. There are two occurrences within 5 miles and 8 historical occurrences between five to ten miles of the project site.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> salt marsh bird's-beak	FE	SE	1B.2	Hemiparasitic annual herb found in coastal strand, coastal salt marsh, and wetland-riparian communities. Blooming Period: May–October(November) Elevation: 0–10 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	MSHCP	—	1B.1	Annual herb found in chaparral, coastal scrub, cismontane woodland, and valley and foothill grassland communities. Bloom period: April–June Elevation: 275–1,220 m	None: The project site does not contain habitat to support occurrence of this species. There are four occurrences recorded within 5 miles And 13 occurrences of the species within five to ten miles of the project site.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i> long-spined spineflower	MSHCP	—	1B.2	Annual herb that occurs in valley and foothill grassland, coastal scrub, chaparral, meadows and seeps, and vernal pools. Bloom period: April–July Elevation: 30–1,530 m	Low: The project site does not contain suitable habitat to support occurrence of this species. There are 12 occurrences recorded within 5 miles And 19 occurrences of the species within five to ten miles of the project site.
<i>Clinopodium chandleri</i> San Miguel savory	MSHCP	—	1B.2	Perennial shrub found in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Sometimes in gabbroic and rocky soils. Bloom period: March–July Elevation: 120–1,075 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> summer holly	—	—	1B.2	Annual herb found in chaparral habitat. Bloom Period: April–June Elevation: 4 – 89 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Deinandra paniculata</i> paniculate tarplant	—	—	4.2	Annual herb found in sandy soils (sometimes) and in vernal mesic soils (usually) in coastal scrub, valley and foothill grassland, vernal pool communities. Bloom period: April–November Elevation: 25–940 m	Present: The species is present on the Project site.
<i>Dodecahema leptoceras</i> slender-horned spineflower	FE MSHCP	SE	1B.1	Annual herb found in sandy soils in chaparral, coastal scrub and cismontane woodland communities. Bloom period: April–June Elevation: 200–760 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i> Santa Monica mountains dudleya	FT	—	1B.1	Perennial rhizomatous herb found in coastal sage scrub and chaparral communities. Bloom Period: March–June Elevation: 150–1675 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Dudleya multicaulis</i> many-stemmed dudleya	MSHCP	—	1B.2	Perennial herb found in clay soils (usually) in chaparral, coastal scrub, and valley and foothill grassland communities. Bloom Period: April–July Elevation: 15–790 m	None: The project site does not contain suitable habitat to support occurrence of this species. There are four occurrences within 5 miles and 12 historical occurrences of the species within five to ten miles of the project site.
<i>Dudleya viscida</i> sticky dudleya	—	—	1B.2	Perennial herb found in coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub. Grows in rocky soils. Bloom Period: May-June Elevation: 10-550 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woollystar	FE	SE	1B.1	Perennial herb found in chaparral and alluvial fan coastal scrub. Sometimes grows in gravelly or sandy soils. Bloom Period: April-September Elevation: 91-610 m.	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Harpagonella palmeri</i> Palmer's grapplinghook	MSHCP	—	4.2	Annual herb found in clay soils and openings in chaparral, coastal scrub, and valley and foothill grassland communities. Bloom period: March–May Elevation: 20–955 m	None: The project site does not contain suitable habitat to support occurrence of this species. There is one historical record within 5 miles from the project site, recorded in 1990. There are 6 historic occurrences within 5 and 10 miles of the site.
<i>Hesperocyparis forbesii</i> Tecate cypress	—	—	1B.1	Perennial, evergreen tree found in clay and gabbroic (sometimes) soils in closed-cone coniferous forest and chaparral communities. Elevation: 80–1,500 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Hordeum intercedens</i> vernal barley	MSHCP	—	3.2	Annual herb found in coastal dunes, coastal scrub, valley and foothill grassland in depressions and saline flats, and vernal pools. Bloom period: March–June Elevation: 5–1,000 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Horkelia cuneata</i> var. <i>puberula</i> mesa horkelia	—	—	1B.1	Perennial herb found in maritime chaparral, cismontane woodland, and coastal scrub. Sometimes grows in gravelly and sandy soils. Bloom Period: February-July(September) Elevation: 70-810 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	MSHCP	—	1B.1	Annual herb found in marshes and swamps, playas, and vernal pools. Bloom period: February–June Elevation: 1–1,220 m	None: The project site does not contain suitable habitat to support occurrence of this species. There is 1 occurrence of the species within five miles of the project site.
<i>Lepechinia cardiophylla</i> heart-leaved pitcher sage	—	—	1B.2	Perennial shrub found in closed-cone coniferous forest, chaparral, and cismontane woodland. Bloom Period: April–July Elevation: 520–1370 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	—	—	4.3	Dicot annual herb found in dry soils in chaparral and coastal scrub communities. Bloom period: January–July Elevation: 1–855 m	None: The project site does not contain suitable habitat to support occurrence of this species. There is 1 occurrence recorded within 5 miles and 7 occurrences within five to ten miles of the project site.
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> ocellated Humboldt lily	MSHCP	—	4.2	Perennial, bulbiferous herb found in openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland communities. Bloom period: March–July Elevation: 30–1,800 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Microseris douglasii</i> ssp. <i>platycarpa</i> small-flowered microseris	MSHCP	—	4.2	Annual herb found in clay soils in cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pool communities. Bloom period: March–May Elevation: 15–1,070 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Monardella hypoleuca</i> ssp. <i>intermedia</i> intermediate monardella	—	—	1B.3	Perennial rhizomatous herb that occurs in chaparral, cismontane woodland, and lower montane coniferous forest communities. Bloom period: April–September Elevation: 400–1,250 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	—	—	1B.3	Perennial rhizomatous herb found in broadleaf upland forest, valley and foothill grassland, cismontane woodland, and lower montane coniferous forest habitat. Bloom Period: June–October Elevation: 730–2195 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Myosurus minimus</i> ssp. <i>apus</i> little mouse-tail	MSHCP	—	3.1	Annual herb found in alkaline soils in valley and foothill grassland and vernal pools. Bloom period: March – June Elevation: 20–640 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Nolina cismontana</i> chaparral nolina	—	—	1B.2	Perennial evergreen shrub found in chaparral and coastal scrub habitat. Sometimes grows in gabbroic or sandstone soils. Bloom Period: (March) May–July Elevation: 140–1275 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Orcuttia californica</i> California Orcutt grass	MSHCP	—	1B.1	Annual herb found in vernal pools. Bloom period: April–August Elevation: 15–660 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Phacelia keckii</i> Santiago Peak phacelia	—	—	1B.3	Annual herb found in closed-cone coniferous forest, and chaparral habitat. Bloom Period: May–July Elevation: 545–1600 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Phacelia stellaris</i> Brand's star phacelia	—	—	1B.1	Annual herb found in coastal scrub and dunes. Bloom Period: March–June Elevation: 1–400 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	—	—	2B.2	Perennial herb found in gravelly and sandy soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland communities. Bloom period: August–November Elevation: 0–2,100 m	None: The project site does not contain suitable habitat to support occurrence of this species. There are three occurrences recorded within 5 miles of the project, the most recent in 2014 and is presumed extant.
<i>Senecio aphanactis</i> chaparral ragwort	—	—	2B.2	Annual herb found in ... Bloom Period: January–April(May) Elevation: 15–800 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
<i>Sidalcea neomexicana</i> salt spring checkerbloom	—	—	2B.2	Perennial herb found in alkaline and mesic soils in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Blooming period: March–June Elevation: 15–1,530 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
<i>Sphenopholis obtusata</i> prairie wedge grass	—	—	2B.2	Perennial herb found in mesic soils in cismontane woodland and meadows and seeps. Bloom period: April–July Elevation: 300–2,000 m	None: The project site does not contain suitable habitat to support occurrence of this species. There is one historical record between five and ten miles from the project site.
<i>Symphotrichum defoliatum</i> San Bernardino aster	—	—	1B.2	Perennial, rhizomatous herb found in banks of ditches, streams, and springs in cismontane woodlands, coastal scrub, lower montane coniferous forests, meadows and seeps, marshes and swamps, and vernally mesic valley and foothill grassland communities. Bloom period: July–November Elevation: 2–2,040 m	None: The project site does not contain suitable habitat to support occurrence of this species. There are no occurrences of the species within five miles of the project site.
<i>Texosporium sancti-jacobi</i> woven-spored lichen	—	—	3	Crustose lichen found in chaparral in openings. On soil, small mammal pellets, dead twigs, and on <i>Selaginella</i> spp. Elevation: 60–660 m	None: The project site does not contain suitable habitat to support occurrence of this species. There is one historical record between five and ten miles from the project site.
<i>Tortula californica</i> California screw moss	—	—	1B.2	Moss found in sandy soils in chenopod scrub and valley and foothill grassland. Bloom period: NA Elevation: 10 –1,460 m	None: The project site does not contain suitable habitat to support occurrence of this species. No occurrences of this species have been recorded within 5 miles of the project site.
Code Designations					
¹ Federal Status: 2024 USFWS Listing				² State Status: 2024 CDFW Listing	
FE = Listed as endangered under Federal Endangered Species Act. FT = Listed as threatened under the Endangered Species Act. FC = Candidate for listing (threatened or endangered) under the Endangered Species Act. FD = Delisted in accordance with the Endangered Species Act. FPD = Federally Proposed to be Delisted. MSHCP = Covered under the Western Riverside County MSHCP — = Not federally listed				SE = Listed as endangered under California Endangered Species Act (CESA). ST = Listed as threatened under CESA. SC = Candidate for listing (endangered or threatened) under CESA. CR = Rare in California. — = Not State-listed	
Notes: ⁴ Habitat Description: Habitat description adapted from CNDDDB and CNPS online inventory or other specified source. ⁵ Potential to Occur and Rationale: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source. Sources:					

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale
	USFWS ¹	CDFW ²	CNPS ³		
California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx . Accessed June 12, 2024. California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/ . Accessed June 12, 2024. California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/ . Accessed June 12, 2024.					

Table 2: Special-status Wildlife Species Habitat Value Evaluation

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
Amphibians				
<i>Spea hammondi</i> western spadefoot	MSHCP	SSC	Occurs in open areas with sandy or gravelly soils in mixed woodlands, grasslands, coastal sage and Riversidean alluvial fan sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Breeds in ephemeral rain pools that do not contain bullfrogs, fish, or crayfish.	Low. Marginally suitable habitat for this species exists in the wild oats and annual brome grassland community present on the project site. There are 5 recent and 2 historical records within 5 miles of the project site, and there are 9 recent and 16 historical records between 5 and 10 miles from the project site.
Birds				
<i>Accipiter cooperii</i> Cooper’s hawk	MSHCP MBTA	WL FGC	Occurs and nests in deciduous and mixed forests and open woodland habitats. Year-round resident in Southern California, and tolerant of urban areas with an abundance of trees.	Moderate. Suitable foraging and nesting habitat for this species is present in trees adjacent to and within 500 feet of the project site. However, there are no recent records of this species within 5 miles of the site. There is one historic record of the species within 5 miles and one recent record of the species within 5 to 10 miles of the project site.
<i>Agelaius tricolor</i> tricolored blackbird	MSHCP MBTA	ST SSC FGC	Occurs and nests in large freshwater marshes with dense stands of hydrophytic vegetation (cattails, bulrushes, etc.). Short-distance migrant.	None. Suitable habitat for this species is not present on or adjacent to the project site. No records within 5 miles. There are four historical records between 5 and 10 miles from the project site.
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	MSHCP MBTA	WL FGC	Occurs and nests on steep, often rocky hillsides with grass and forb patches in coastal sage and Riversidean alluvial fan sage scrub and sparse mixed chaparral habitats. Year-round resident in southern California.	Low. The project site does not contain suitable steep, rocky hillsides, but vegetational features present on site may provide marginal habitat to support this species. There are 10 historic records of the species within 5 miles of the project site and 9 recent and 12 historic records within 5 to 10 miles of the project site.
<i>Artemisiospiza belli</i> Bell’s sparrow	MSHCP MBTA	WL FGC	Breeds in coastal sagebrush, chaparral, and other open, scrubby habitats in Southern California mountains, deserts and valleys.	None. Although the project site is dominated by non-native annual grassland, scattered shrubs throughout the site may provide marginal habitat for this species to disperse on-site, but there are no recent records of this species within 5 miles of the site. There are 3 historical records within 5 miles and 1 historical record between 5 and 10 miles from the project site.
<i>Asio otus</i> long-eared owl	MSHCP MBTA	SSC FGC	Occurs in riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Requires adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are no occurrences of the species within five miles of the project site. There are two historical records between 5 and 10 miles from the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Athene cunicularia</i> burrowing owl	MSHCP MBTA	SSC FGC	Occurs and nests in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel. Short-distance migrant.	Moderate. Marginally suitable habitat exists within the non-native annual grassland present on the project site. Much of the vegetation on site is too tall and dense to support burrowing and foraging activities of this species. There are no recent occurrences of the species within five miles of the project site. There are 2 historical records within 5 miles and 12 recent and 2 historical records between 5 and 10 miles from the project site.
<i>Buteo swainsoni</i> Swainson's hawk	MSHCP MBTA	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one historical record within 5 miles of the project site and two historical records between 5 and 10 miles from the project site.
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	FT MSHCP MBTA	SE	Inhabits wooded riparian habitats with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland and dense thickets along streams and marshes. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites.	None. There are no records of this species within 5 miles of the site and the site does not contain habitat to support this species such as woodland or overgrown orchards. There are two historical records between 5 and 10 miles from the project site. This species is believed to be locally extirpated.
<i>Coturnicops noveboracensis</i> yellow rail	MBTA	SSC	Summer resident in eastern Sierra Nevada in Mono County. Inhabits freshwater marshlands.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one historical record within 5 miles of the project site.
<i>Elanus leucurus</i> white-tailed kite	MSHCP MBTA	FP FGC	Grasslands and open coastal scrub in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous, open stages of most habitats mostly in cismontane California. Year-round resident in southern California.	Moderate. Suitable foraging habitat exists within the non-native annual grassland present on the project site. There are no occurrences of the species within five miles of the project site. There is one historical record between 5 and 10 miles from the project site.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE MSHCP MBTA	SE FGC	Occurs and nests in dense riparian woodlands. Long-distance migrant.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are no occurrences of the species within ten miles of the project site.
<i>Eremophila alpestris actia</i> California horned lark	MSHCP MBTA	WL FGC	Occurs and nests in open areas with sparse vegetation. Year-round resident in southern California.	None. Ruderal and disturbed areas of the project site may provide foraging habitat for this species, but there are no recent records of this species within 5 miles of the site. There are three historical records between 5 and 10 miles from the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Haliaeetus leucocephalus</i> bald eagle	FD BGEPA MSHCP MBTA	SE FP FGC	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water.	None. Though individuals have been observed at Lake Mathews nearby to the south, suitable foraging or nesting habitat for this species is not present within the project site. There are five historical records within 5 miles of the project site.
<i>Icteria virens</i> yellow-breasted chat	MSHCP MBTA	SSC FGC	Occurs and nests in riparian thickets of willow and other bushy tangles near watercourses. Long-distance migrant.	Low. Scattered willows present within the riparian drainage on the northeastern border of the project site may provide marginal habitat for this species. There are no occurrences of the species within five miles of the project site. There are one recent and three historical records between 5 and 10 miles from the project site.
<i>Lanius ludovicianus</i> loggerhead shrike	MSHCP MBTA	SSC	Occurs and nests in broken woodlands, savanna, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Moderate. Suitable foraging habitat exists within the non-native annual grassland present on the project site, but there are no recent records of this species within 5 miles of the site. There is one historical record between 5 and 10 miles from the project site.
<i>Laterallus jamaicensis coturniculus</i> California black rail	FP	ST	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one historical record between 5 and 10 miles from the project site.
<i>Pandion haliaetus</i> osprey	MBTA MSHCP	WL	Occurs in ocean shore, bays, freshwater lakes, and larger streams.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one recent record between 5 and 10 miles from the project site.
<i>Poliioptila californica californica</i> coastal California gnatcatcher	FT MSHCP MBTA	SSC FGC	Occurs and nests in arid washes, on mesas, and slopes in coastal sage scrub below 2500 ft. Year-round resident in California.	Moderate. Suitable coastal sage scrub habitat is present on the project site. There are 29 historical records within 5 miles and 2 recent and 51 historical records between 5 and 10 miles from the project site.
<i>Setophaga petechia</i> yellow warbler	—	SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Moderate. Marginally suitable habitat for this species exists within the riparian areas within and adjacent to the project site. There are no occurrences of the species within five miles of the project site. There is one recent record between 5 and 10 miles from the project site.
<i>Spinus lawrencei</i> Lawrence's goldfinch	MBTA	—	Occurs and nests in arid, open woodlands and oak trees in chaparral.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one recent record between 5 and 10 miles from the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Vireo bellii pusillus</i> Least Bell's vireo	FE MSHCP	SE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Present: Species was observed during focused surveys on adjacent site. Because the species was detected in riparian habitat similar to that found on the current project site, it is assumed to occupy riparian habitat in the drainage along the southern project site boundary.
Insects/Invertebrates				
<i>Bombus crotchii</i> Crotch's bumble bee	—	SC	This species occurs primarily in California, including coastal habitats, western Mojave Desert, San Joaquin Valley, and adjacent foothills through most of southwestern California. It inhabits arid grasslands and shrublands, and its food sources including milkweeds, pincushions, lupines, clovers, phacelias, sages, clarkias, poppies, and buckwheats.	Moderate. There is grassland habitat and flowering plants on the project site could potentially support this species. There is 1 historical record within 5 miles and there is 1 recent and 4 historical records between 5 and 10 miles from the project site.
<i>Bombus pensylvanicus</i> American bumble bee	—	—	Occurs in coastal prairie, Great Basin grassland, and valley & foothill grassland communities. Nests above ground under long grass or underground.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record within 5 miles of the project site and one historical record between 5 and 10 miles from the project site.
<i>Ceratochrysis longimala</i> Desert cuckoo wasp	—	—	Unknown habitat requirements but prefer dry desert habitats and sandy soils.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between 5 and 10 miles from the project site. This species may be locally extirpated.
<i>Cicindela tranquebarica viridissima</i> greenest tiger beetle	—	—	Inhabits the woodlands adjacent to the Santa Ana River basin and usually is found in open spots between trees in riparian woodlands.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between 5 and 10 miles from the project site.
<i>Eugnosta busckana</i> Busck's gallmoth	—	—	Occurs in a variety of grassland, dunes, and scrub habitats.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between 5 and 10 miles from the project site.
<i>Euphydryas editha quino</i> quino checkerspot butterfly	FE MSHCP	—	Occurs in grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodland, and semi-desert scrub habitats. Larval host plants are native species of plantain.	None. Although there is potential habitat for this species exists within the non-native annual grassland present on site, there are no recent occurrences within 5 miles of the site. There are 5 historical records within 5 miles and there are 2 historical records between 5 and 10 miles from the project site.
<i>Neolarra alba</i> white cuckoo bee	—	—	Unknown habitat requirements, but probably inhabits a variety of grassland and scrub habitats. Parasitizes nests of other bees.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within 5 miles of the project site. This species may be locally extirpated.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Rhaphiomidas terminatus abdominalis</i> Delhi Sands flower-loving fly	FE MSHCP	—	Occurs on fine sandy soils of the Delhi series (primarily Delhi fine sand), often on wholly or partly sand dunes stabilized by sparse native vegetation.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There are fifteen recent and 21 historical records between 5 and 10 miles from the project site.
<i>Streptocephalus woottoni</i> Riverside fairy shrimp	FE	—	Vernal pools on the Santa Rosa Plateau on Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There is no recent record of this species within five miles of the project site. There are two historical occurrences of the species between 5 and 10 miles from the project site. This species may be locally extirpated.
Fish				
<i>Catostomus santaanae</i> Santa Ana sucker	—	—	Endemic to Los Angeles basin south coastal streams. Are habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	None. No suitable habitat is present within the project site such as south coastal streams. There are no records of the species within 5 miles of the project site. There are two recent and three historic occurrences of the species between 5 and 10 miles of the project site.
<i>Gila orcuttii</i> arroyo chub	—	SSC	Occurs in streams and rivers of the Los Angeles plain in Southern California. Inhabits streams that fluctuate between large winter storm flows and low summer flows. Tolerates low dissolved oxygen and wide temperature fluctuations. Feeds on plants such as algae and water fern, as well as insects and mollusks.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species such as streams or rivers. There are three historical occurrences of the species between 5 and 10 miles from the project site.
<i>Oncorhynchus mykiss irideus</i> pop. 10 steelhead - southern California DPS	FE	SC	Occurs in Pacific coast streams, including the Santa Ana River.	None: The project site does not contain suitable habitat that would support occurrence of this species such as river or coast streams. There is one historical record within 5 miles of the project site. This species may be locally extirpated.
<i>Rhinichthys osculus</i> ssp. 8 <i>Santa Ana speckled dace</i>	—	SSC	Occurs in small springs, streams, large rivers, and deep lakes, including headwaters of the Santa Ana and San Gabriel Rivers.	None: The project site does not contain suitable habitat(s) that would support occurrence of this species. There are no occurrences of the species within 5 miles of the project site. There is one historical record between five and ten miles from the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
Mammals				
<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	MSHCP	SSC	Occurs in sandy, herbaceous areas, usually in association with rocks or coarse gravel, in coastal sage and Riversidean alluvial fan sage scrub, chaparral, and grasslands.	None. Although there is marginally suitable habitat exists within the non-native annual grassland on the project site there are no recent occurrences of this species within 5 miles of the site. There are 9 historical records within 5 miles of the project site and 5 historical records between 5 and 10 miles from the project site.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	FE MSHCP	CE SSC	Occurs on sandy loam substrates on first terraces and floodplains of washes in Riversidean alluvial fan sage scrub habitat.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is 1 historical record within 5 miles of the project site and 1 historical record between 5 and 10 miles from the project site.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	FT MSHCP	ST	Occurs primarily annual and perennial grasslands, but also occurs in coastal scrub and sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass and filaree. Will burrow into firm soil.	Moderate. Suitable habitat for this species exists within the non-native annual grassland on the project site. There is 1 recent and 25 historical records within 5 miles of the project site, and there are 45 historical records between 5 and 10 miles from the project site.
<i>Eumops perotis californicus</i> western mastiff bat	—	SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	None. Trees within the project site may provide roosting habitat, and this species may forage within the site's annual grassland. However, there are no recent records of this species within 5 miles of the site. There are 2 historical records within 5 miles of the project site and 2 historical records between 5 and 10 miles from the project site
<i>Lasiurus xanthinus</i> western yellow bat	—	SSC	Occurs in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in skirts of dead fronds in both native and non-native palm trees.	Moderate. There are palms present on the project site that may provide potential roosting habitat. There is 1 historical record within 5 miles and there are 2 historical records between 5 and 10 miles from the project site.
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	MSHCP	—	Occurs primarily in arid regions with short grass including open grasslands, agricultural fields, and sparse coastal scrub. Nests under bushes or shrubs that have shallow depressions.	Moderate. The annual grassland and ruderal areas within the project site provide adequate habitat for this species. There are 2 historical records within 5 miles of the site, and there are 3 historical records between 5 and 10 miles from the project site.
<i>Myotis yumanensis</i> Yuma myotis	—	—	Occurs in open forests and woodlands with sources of water over which to feed. Maternity colonies in caves, mines, buildings or crevices.	None. Trees within the project site may provide roosting habitat, and this species may forage within the site's annual grassland. However, there are no recent records of this species within 5 miles of the site. There is one historical record within 5 miles of the project site.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	—	SSC	Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one historical record within 5 miles of the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	—	SSC	Occurs in a variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Inhabits rocky areas with high cliffs.	Moderate. Suitable habitat for this species is present on or adjacent to the project site. There are 2 historical records within 5 miles of the project site and 2 historical records between 5 and 10 miles from the project site.
<i>Onychomys torridus ramona</i> southern grasshopper mouse	—	SSC	Occurs in desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	None. Suitable desert habitat to support this species is not present on or adjacent to the project site. There are no occurrences of the species within five miles of the project site. There is 1 historical record between 5 and 10 miles from the project site.
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	MSHCP	SSC	Occurs in open areas with fine, sandy soils in lower elevation grasslands and coastal sage and Riversidean alluvial fan sage scrub habitats.	None. Marginally suitable habitat exists within the annual grassland present within the project site. However, there are no recent records of this species within 5 miles of the project site. There are 2 historical records between 5 and 10 miles from the project site.
Reptiles				
<i>Anniella stebbinsi</i> southern California legless lizard	—	SSC	Occurs in moist, loose soil in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. Tolerant of disturbances.	Low. Potentially suitable habitat for this species exists within soils on site, especially those adjacent to the drainage on the northeastern edge of the project site. There are 4 recent and 1 historical occurrences of the species within 5 miles and 12 recent and 8 historical occurrences between 5 and 10 miles of the project site.
<i>Arizona elegans occidentalis</i> California glossy snake	—	SSC	Occurs in areas of rocky washes and loose, sandy soils and for burrowing in desert scrub grassland, coastal sage and Riversidean alluvial fan sage scrub, and chaparral habitats. Prefer open sandy areas with scattered brush, but also found in rocky areas.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is 1 recent and 2 historical records between 5 and 10 miles from the project site.
<i>Aspidoscelis hyperythra</i> orange-throated whiptail	MSHCP	WL	Occurs primarily on coarse soils in open coastal sage and Riversidean alluvial fan sage scrub habitat.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are 1 recent and 9 historic records within 5 miles and 25 historical records between 5 and 10 miles from the project site.
<i>Aspidoscelis tigris stejnegeri</i> San Diegan (coastal) tiger whiptail	—	SSC	Occurs in dry, open areas with sparse foliage in coastal sage and Riversidean alluvial fan sage scrub, chaparral, woodland, and riparian habitats.	None. Potentially suitable habitat for this species is present within the riparian areas of the project site. However, there are no recent records of this species within 5 miles of the site. There are 2 historical records within 5 miles, and there are 2 recent and 2 historic occurrences of the species within five to ten miles of the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	MSHCP	SSC	Prefers rocky areas in coastal sage and chaparral.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are no occurrences of the species within five miles of the project site. There is 1 historical record between 5 and 10 miles from the project site.
<i>Crotalus ruber</i> red-diamond rattlesnake	MSHCP	SSC	Occurs in arid, rocky areas in creosote scrub, coastal sage and Riversidean alluvial fan sage scrub, chaparral, oak and pine woodlands, grasslands, on cultivated areas.	Moderate. Suitable habitat for this species exists within the non-native annual grassland present on the project site. There are 12 recent and 12 historical records within 5 miles of the project site, and there are 10 recent and 15 historical records between 5 and 10 miles from the project site.
<i>Diadophis punctatus modestus</i> San Bernardino ringneck snake	—	—	Occurs in open, relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams.	None. Suitable habitat for this species is not present on or adjacent to the project site. There is one historical record between 5 and 10 miles from the project site.
<i>Emys marmorata</i> western pond turtle	MSHCP PT	SSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are no records of this species within 10 miles of the project site.
<i>Phrynosoma blainvillii</i> coast horned lizard	MSHCP	SSC	Occurs in open areas with sandy soil and low vegetation in grasslands, coniferous forests, woodlands, and chaparral.	None. There is 1 recent and 4 historical records within 5 miles of the project site, and there are 2 recent and 13 historical records between 5 and 10 miles from the project site. There is no coniferous forest or woodland onsite.
<i>Salvadora hexalepis virgulata</i> coast patch-nosed snake	—	SSC	Occurs in coastal chaparral, desert scrub, washes, sandy flats and rocky areas. Requires small mammal burrows for refuge and overwintering sites.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are no occurrences of the species within five miles of the project site. There is one historical record between 5 and 10 miles from the project site.
<i>Thamnophis sirtalis</i> pop. 1 south coast gartersnake	—	SSC	Occurs in marsh and upland habitats near permanent water with good strips of riparian vegetation.	None. Suitable habitat for this species is not present on or adjacent to the project site. There are no occurrences of the species within five miles of the project site. There are five recent records between 5 and 10 miles from the project site.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴	
	USFWS ¹	CDFW ²			
Code Designations					
¹ Federal Status: 2024 Endangered Species Act (ESA) Listing					² State Status: 2024 California Endangered Species Act (CESA) Listing
ESU = Evolutionary Significant Unit is a distinctive population.					SE = Listed as endangered under CESA.
FE = Listed as endangered under the Endangered Species Act.					ST = Listed as threatened under CESA.
FT = Listed as threatened under the Endangered Species Act.			SSC = Species of Special Concern as identified by the CDFW.		
FC = Candidate for listing (threatened or endangered) under the Endangered Species Act.			FP = Listed as fully protected under the Fish and Game Code.		
FD = Delisted in accordance with the Endangered Species Act.			CFG = FGC = protected by Fish and Game Code 3503.5		
FPD = Federally Proposed to be Delisted.			CR = Rare in California.		
MBTA = protected by the Migratory Bird Treaty Act			— = Not State-listed		
— = Not federally listed					
Notes:					
³ Habitat Description: Habitat description adapted from CNDDDB or other specified source.					
⁴ Potential to Occur and Rationale: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source.					
Sources:					
California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx . Accessed June 12, 2024.					
California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/ . Accessed June 12, 2024.					
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