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Subject: Biological Resources Letter Report for the Live Oak Springs Water System Improvements Project

Summary

At the request of the County of San Diego (County), Department of Public Works (DPW), Harris & Associates (Harris) has completed a biological resources letter report for the proposed Live Oak Springs Water System Improvements Project (project) on an approximately 75.6-acre property (project site) in the subcommunity of Live Oak Springs, in the Boulevard Community Planning Area of unincorporated southeastern San Diego County, California (Attachment 1, Figures; Figures 1, Regional Location, and 2, Project Location). The project consists of upgrades to an existing water system to improve service reliability, bring the system up to the current public water systems standards, and increase the system's distribution capacity. The project site is composed of two areas, the eastern and western areas, which differ in vegetation community composition (Figure 2). The eastern area is mostly developed with the rural residential subcommunity of Live Oak Springs, which contains fragmented patches of both disturbed and high-quality native vegetation. The western area is mostly undeveloped with contiguous areas of both disturbed and high-quality native vegetation, including the Campo Creek riparian corridor, along with some areas of disturbed habitat and developed land. The project site is surrounded by mostly undeveloped, natural open space. The Campo Band of Diegueño Mission Indians Reservation is to the north and west of the project site. The site is relatively flat with slight undulations in some northern portions of the project site. The project site currently consists of open space and developed land (Figure 2). The project site is within the Boulevard Community Planning Area boundary of the East County Plan area of the County Multiple Species Conservation Program (MSCP) Plan (County of San Diego 1998). The East County Plan is in a preliminary draft form and not yet approved, and therefore the project site is not within a Habitat Conservation Plan (HCP) and is not subject to the County MSCP Plan.

The project site supports 13 vegetation communities and land cover types, 11 of which are designated as sensitive vegetation communities. The project site also includes wetland and non-wetland waters and the associated riparian zones that are potentially subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

A total of 137 plant species were observed on the project site, with one sensitive plant species observed during the rare plant surveys conducted in May and August 2021 and one determined to have a high potential to occur on the project site.

A total of 71 wildlife species were observed on the project site, with seven sensitive wildlife species observed during the biological resources surveys conducted in April 2021. No sensitive wildlife species were determined to have a high potential to occur on the project site. An active red-tailed hawk (*Buteo jamaicensis*) nest was observed in a cottonwood in the southwestern portion of the project site. No critical habitat for sensitive plant or wildlife species occurs on the project site. The project site is likely to be used as a movement corridor for both sensitive and common wildlife species because of the presence of the Campo Creek riparian corridor and native vegetation

communities, and because it is surrounded by natural, open space. However, development to the north and east likely limit large-scale east–west and north–south wildlife movement in the surrounding area.

The project has been designed to avoid direct impacts to sensitive biological resources on the project site to the greatest extent feasible. Potentially significant direct impacts would occur to sensitive plant and wildlife species, sensitive vegetation communities, and potentially federal and state jurisdictional waters and wetlands. The project has been designed to avoid impacts to sensitive resources, including the Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*) populations and other sensitive vegetation communities that could support other sensitive plants on the project site. Implementation of standard construction best management practices (BMPs), including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free erosion control products, noise suppression measures, trash containment methods, and preparation and implementation of a Stormwater Pollution Prevention Plan, would prevent potential indirect impacts to sensitive plant and wildlife species, sensitive vegetation communities, and potentially jurisdictional aquatic resources, and no mitigation would be required.

With the installation of protective fencing around the limits of construction, direct impacts to sensitive plant species would be less than significant, and no mitigation would be required.

Permanent direct impacts to live-in, nesting, and foraging habitat that supports the sensitive wildlife species, including nesting raptor and bird species on and surrounding the project site, could occur from grading and vegetation removal during construction of the project and would require mitigation. If construction is conducted during the raptor and bird breeding season (January 15 through August 31), temporary direct impacts from disturbance and displacement of sensitive wildlife and nesting raptors and birds during vegetation removal could result in significant direct impacts to sensitive wildlife species and raptor and bird species protected under the Migratory Bird Treaty Act (MBTA).

The project would result in direct temporary impacts to sensitive vegetation communities, including approximately 0.009 acre of non-vegetated channel, approximately 0.001 acre of southern arroyo willow riparian forest, approximately 0.008 acre of big sagebrush scrub, and approximately 1.44 acres of non-native grassland, requiring mitigation. Permanent impacts are limited to 0.009 acre of non-native grassland. The coastal and valley freshwater marsh, fresh water (Ponds 1 through 3), coast live oak woodland (and disturbed), buck brush chaparral, chamise chaparral, and scrub oak chaparral on the project site would be avoided during construction, no direct permanent or temporary impacts would occur, and no mitigation would be required.

No direct permanent or temporary impacts would occur to the potentially jurisdictional coastal and valley freshwater marsh and fresh water (Ponds 1 through 3), and no mitigation would be required. Although the majority of the 0.75 acre of potentially jurisdictional non-vegetated channel and 1.70-acre southern arroyo willow riparian forest would be avoided by project construction, direct temporary impacts to 0.009 acre of the Campo Creek potentially jurisdictional non-vegetated channel and 0.001 acre of southern arroyo willow riparian forest in the western portion of the project site would result during construction, and mitigation would be required.

Mitigation measures related to the following topics are proposed by the project to fully mitigate potential impacts from implementation of the project: qualified biologist, general nest surveys, direct temporary and permanent sensitive vegetation community impacts, and potentially jurisdictional aquatic resources permitting. Successful implementation of these mitigation measures would mitigate potential project and cumulative impacts to less than significant.

Introduction, Project Description, and Location

The purpose of this report is to document the biological resources identified as present or potentially present on the project site and within the vicinity; identify potential biological resources impacts resulting from the project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state, and local rules and regulations, including the California Environmental Quality Act (CEQA), County MSCP Subarea Plan (County of San Diego 1998), and Biological Mitigation Ordinance.

The County DPW proposes the project, which includes potable water distribution system upgrades and improvements. The project site is in Live Oak Springs, at 37820 Old Highway 80, Boulevard, California 91905, in the subcommunity of Live Oak Springs, in the Boulevard Community Planning Area of unincorporated southeastern San Diego County.

The goals of the project are to bring the existing water system up to the State Water Resources Control Board's current standards and to upgrade the system to provide a reliable source of water for the community. Project components include construction of a new well, upgrade and replacement of existing water system components, installation of a backup generator for the water system, and an increase in water distribution capacity by 25 percent. These improvements would provide a reliable source of fire suppression and redundant infrastructure to ensure the continued availability of water to the community and accommodate the additional forecasted demand for water.

Phase I of the project is currently designed and funded and would consist of improvements to convert a pilot well to a secondary well and associated infrastructure to ensure a reliable source of water for the community. The conversion of an existing pilot well to a secondary well would create a backup for the existing primary well. This would involve additional drilling to widen the existing well hole from 6 to 8 inches in diameter to make the secondary well operational. No additional depth drilling would occur. Phase I would also include installation of up to 50 feet of underground piping to connect the secondary well to the existing water system, installation of electrical and control upgrades and connections, installation of a diesel emergency generator within the existing water system's footprint as backup power to the water system, and placement of gravel, fencing, and a gate around the new well site. Phase I improvements would occur within the existing County-owned parcel, and construction is anticipated to last approximately 4 months.

A number of potential future phases of the project have been identified at the concept level but have not yet been designed or funded. They may include construction of two new aboveground 100,000-gallon water storage tanks and associated new water piping, undergrounding or structural support of an existing aerial water line, replacement of an existing underground potable water distribution system piping on the project site and throughout the residential Live Oak Springs, paving of an existing driveway, culvert replacement, and buildout of an additional well. These proposed components are described in subsequent paragraphs, and potential impacts from these later phases are considered throughout this environmental document.

Water Tanks and Booster Pump Station

Construction of two aboveground 100,000-gallon water storage tanks and a booster pump station is anticipated. The new vertical water tanks would replace two existing horizontal 20,000-gallon water tanks on the western end of the site. The new tanks would either replace the current tanks within the same footprint or be built nearby and at similar elevation. To transition from the existing tanks to new ones, temporary aboveground water tanks may be used, if needed. Construction of the water tanks and the pump station would also require installation of an underground pipeline system to connect various water system components. Sensitive vegetation would be avoided.

Water Distribution Piping

- Other potential future improvements to meet the anticipated demand for potable water and fire suppression include installation of 1,200 linear feet of new piping and realignment or replacement of 400 linear feet of existing underground potable water piping throughout the County-owned parcel. The existing 4-inch water system piping would be replaced with 6-inch lines. The water distribution piping improvements on the County parcel may also include installation of a new water line that would extend south to create a loop within the water system. This would allow distribution of potable water to the adjacent residential community from either the north or the south and would reduce the number of water service interruptions when repairs are needed. These improvements would require excavation to install the new water lines.
- Additional improvements may involve replacement of 50 linear feet of an existing aerial water line that crosses Campo Creek through a suspended support system. Current pipeline may be replaced in the same location with a more stable and secure utility bridge supported by concrete pier structure, or the waterline may be

undergrounded. The undergrounding could potentially result in temporary impacts to Campo Creek if an open-trench method is used. This could result in temporary loss of vegetation and possible dewatering of Campo Creek for the duration of construction.

- Other long-term proposed work includes replacement of existing underground potable water distribution system piping throughout the Live Oak Springs residential community to increase capacity for fire suppression and potable water distribution flows. This work would consist of excavation and replacement of up to 10,000 linear feet of underground water lines.

Driveway Entrance Off Old Highway 80

To formalize a portion of the existing dirt driveway and access road from the main, northern entrance from Old Highway 80 to the current well site, a concrete driveway is proposed within the existing footprint.

Culvert Crossing Royal Drive

Other associated improvements include replacement of an existing culvert under Royal Drive, located in the southeastern corner of the County-owned parcel. The Campo Creek crossing in this area currently functions as an Arizona crossing because the culvert is almost completely blocked with sediment and the pipe is undersized and, thus, unable to handle an expected 100-year storm event. Therefore, the culvert would be replaced within approximately 20 feet of its current location and designed to convey low flows from Campo Creek with a stabilized road surface to ensure that the road does not wash out during larger rain events. Culvert replacement work could result in temporary impacts to Campo Creek due to excavation and temporary loss of vegetation; however, it is anticipated that no net increase of fill would occur in the creek; therefore, no permanent impacts are expected to occur.

Additional Water Well

Finally, other improvements may include buildout of an additional well to replace the current secondary well, at which time the secondary redundant well would become primary and the present primary well may be decommissioned.

General Construction

Standard construction BMPs, including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free erosion control products, noise suppression measures, trash containment methods, and preparation and implementation of a Stormwater Pollution Prevention Plan, would be implemented during construction of project components. Upon completion of each project phase, excavated areas would be backfilled with native soil, restored to the original contours, and hydroseeded using an appropriate native plant seed mix as approved by the County.

Construction duration of future phases would vary; however, collectively, phases are anticipated to last approximately 12 to 18 months. Construction of the project phases would largely occur either on the County-owned parcel or within the existing County water line easements. If needed, temporary construction access would be coordinated with the surrounding property owners.

Setting

The following subsections serve to describe the existing conditions on the project site.

Land Use

The project site is in a rural subcommunity in the County, primarily surrounded by undeveloped open space (Figure 2). The project site consists of sensitive and non-sensitive upland and wetland vegetation communities, Campo Creek, six unnamed channels (Channels 1 through 6), and developed areas (rural residential and water infrastructure yards). The project site is composed of two areas, the eastern and western areas, which differ in vegetation community and land use composition (Figure 2). The eastern area is mostly developed with rural residential buildings and roads, as well as some fragmented patches of both disturbed and high-quality native vegetation. The western area of the project site is mostly undeveloped with contiguous areas of both disturbed and

high-quality native vegetation, including the Campo Creek riparian corridor, along with some areas of disturbed habitat and developed land. Attachment 2, Project Site Photographs, provides representative photographs of the project site.

Topography and Soils

The project site is primarily flat, with moderately sloping hills in the northern portions of the project site. The on-site elevation ranges from approximately 3,815 feet to 3,953 feet above mean sea level. The topographical lines presented on Figure 3, USGS Topographic Map, represent the project elevations.

The project site is underlain by Mottsville loamy coarse sand, loamy alluvial, La Posta loamy coarse sand soils, and Tollhouse rocky coarse sandy loam. The soil units on the project site are presented on Figure 4, Soils. Mottsville loamy coarse sand (2 to 9 percent slopes) occurs along the edge of the western portion of the project site and the majority of the eastern portion of the project site. Loamy alluvial soils (0 to 5 percent slopes) occurs in the central and northwestern portions of the project site. La Posta loamy coarse sand (5 to 30 percent slopes) occurs in the central and northern areas of the western portion of the project site. A small area of Tollhouse rocky coarse sandy loam (30 to 65 percent slopes) occurs in the southeastern portion of the project site. All four of these soils are defined as well-drained (USDA 2019).

Hydrology

The project site is in the Tijuana River Watershed, specifically the Campo Hydrologic Area (Hydrologic Unit 911.8) (Project Clean Water 2022). The Tijuana River Watershed encompasses a region of approximately 1,750 square miles on both sides of the US-Mexico border and is the southernmost watershed in the San Diego region. It lies in the southeastern portion of the County and neighbors San Diego Bay, Otay River, and Sweetwater River watersheds to the north and Mexico to the south.

The National Wetlands Inventory (NWI) mapping results show Campo Creek, one tributary connecting to Campo Creek from the northeast, and one freshwater pond connected to Campo Creek as aquatic resources on the project site (Figure 5, National Wetlands Inventory Results). Campo Creek and one freshwater pond connected to Campo Creek identified on the NWI mapping results were observed on the project site. The tributary connecting to Campo Creek from the northeast shown on the NWI mapping results was not observed during the aquatic resources delineation investigation on the project site. This tributary could have occurred historically on the project site prior to the development of the rural residential community in the eastern portion of the project site. The non-wetland Channels 1 through 6 and Ponds 2 and 3 observed on the project site were not identified on the NWI map.

The Tijuana River Estuary is defined by the USACE as a traditionally navigable water (TNW) (USACE 2022). Campo Creek, a portion of which crosses the project site, is an intermittent tributary of the Tijuana River Estuary and is discussed in detail in Attachment 3, Aquatic Resources Delineation Report, and summarized in the Results section under Jurisdictional Aquatic Resources.

Drainage patterns on and adjacent to the project site show evidence of drainage conveyance alteration due to recent and historical on-site activities. The historical disturbances include changes to the limits of Campo Creek and its tributary channels that likely resulted during the construction of the rural residential development in the eastern portion of the project site. The recent mechanical disturbances include evidence of vehicles driving across portions of Campo Creek (mostly in the north) and the use of heavy equipment to remove trash that had been dumped in the creek. While historical and recent disturbance is evident, the drainage patterns appear to continue to be natural.

Climate

On a regional level, San Diego County has a Mediterranean climate, which is characterized by wet winters and dry summers. This is largely because of a semi-permanent high-pressure zone that sits over the Pacific Ocean during much of the year and forms a fog belt (marine layer). The survey area is generally within the Peninsular Range of Southern California. Generalized climate in the region is regarded as dry, subhumid mesothermal, with warm dry

summers and cold moist winters, which pushes the growing season to the wet months of the year (late winter to early spring). Vegetation often goes dormant (senescent) during the later summer months until initial rains start in the fall. The rainy season in San Diego County typically lasts from October through March.

The closest weather station to the project site is in Campo, California, approximately 9.5 miles southwest of the project site. Between 2019 and 2021, the average maximum temperature was 77 degrees Fahrenheit, and the minimum temperature was 41 degrees Fahrenheit. The average annual precipitation between 2010 and 2020 was approximately 17.5 inches. In 2020, the total rainfall was 10.30 inches, approximately 15.15 inches less than the previous year (NRCS 2022). As of October 2021, the total precipitation in the area is 8.41 inches, approximately 1.89 inches less than the previous year.

Regional Context

Natural Community Conservation Planning Act of 1991

The primary objective of the Natural Community Conservation Planning (NCCP) program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listing by focusing on the long-term suitability of wildlife and plant communities and including key interests in the process. The project site is not within an adopted HCP and is, therefore, not subject to the NCCP program.

County of San Diego Multiple Species Conservation Program

The project site is within the Boulevard Community Planning Area boundary of the East County Plan area of the County MSCP Plan (County of San Diego 1998). The East County Plan is in a preliminary draft form and not yet approved, and therefore, the project site is not within an HCP and is not subject to the County MSCP Plan.

The MSCP Plan is a multijurisdictional habitat conservation planning program that involves the U.S. Fish and Wildlife Service (USFWS), the CDFW, the County, the Cities of San Diego and Chula Vista, and other local jurisdictions and special districts. Local jurisdictions and special districts implement the MSCP Plan for their respective portions through subarea plans. The combination of the MSCP Plan and subarea plans serve as an HCP pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act and as an NCCP pursuant to the California NCCP Act of 1991 (County of San Diego 1998).

The MSCP Plan study area encompasses 582,243 acres within the southwestern portion of the County. As stated in the MSCP Plan, an objective of the MSCP is to conserve a connected system of biologically viable habitat lands in a manner that maximizes the protection of sensitive species and precludes the need for future listings of species as threatened or endangered. The MSCP Plan identifies a Multi-Habitat Planning Area (MHPA), which is the area within which the permanent MSCP Preserve will be assembled and managed for its biological resources. The MHPA is defined in many areas by mapped boundaries in figures in the MSCP Plan and is also defined by quantitative targets for conservation of vegetation communities and goals and criteria for preserve design. The MSCP Plan targets 171,917 acres within the MHPA for conservation (County of San Diego 1998).

Federal and State Jurisdictional Aquatic Resources

Clean Water Act (CWA), Section 401 (40 CFR 121). Section 401 of the CWA gives the state authority to grant, deny, or waive certification of proposed federally licensed or permitted activities resulting in discharge to waters of the United States. Aquatic resources that are under state jurisdiction occur on the project site and would be subject to Section 401 of the CWA.

The State Water Resources Control Board (State Water Board) directly regulates multi-regional projects and supports the Section 401 certification and wetlands program statewide. The RWQCB regulates activities pursuant to Section 401(a)(1) of the federal CWA, which specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to the construction or operation of facilities that may result in any discharge into navigable waters. The certification shall originate from the State or appropriate interstate water pollution control agency in/where the discharge

originates or will originate. Any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA.

CWA, Section 404 (33 CFR 328.3[a]). These provisions regulate the discharge of dredged or fill material in waters of the United States, including wetlands. Activities that discharge dredge or fill material into waters of the United States can be authorized by the USACE. Aquatic resources that are under federal jurisdiction occur on the project site and would be subject to Section 404 of the CWA.

The USACE and the U.S. Environmental Protection Agency (USEPA) have issued a set of guidance documents detailing the process for determining CWA jurisdiction over waters of the United States following the 2008 Rapanos decision. The USEPA and USACE issued a summary memorandum of the guidance for implementing the Supreme Court's decision in Rapanos that addresses the jurisdiction over waters of the United States under the CWA. The complete set of guidance documents, summarized as key points below, were used to collect relevant data for evaluation by the USEPA and the USACE to determine CWA jurisdiction over the project and to complete the "significant nexus test" as detailed in the guidelines.

The significant nexus test includes consideration of hydrologic and ecologic factors. For circumstances such as those described in point B below, the significant nexus test would take into account physical indicators of flow (evidence of an ordinary high water mark [OHWM]), if a hydrologic connection to a TNW exists, and if the aquatic functions of the water body have a significant effect (more than speculative or insubstantial) on the chemical, physical, and biological integrity of a TNW. The USACE and USEPA will apply the significant nexus standard to assess the flow characteristics and functions of the tributary drainage to determine if it significantly affects the chemical, physical, and biological integrity of the downstream TNW.

Wetlands (including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas) are also considered waters of the United States and are defined by USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by USACE (USACE 1987).

Rapanos Guidance Key Points Summary

A. The USACE and USEPA will assert jurisdiction over the following waters:
   - TNWs
   - Wetlands adjacent to TNWs
   - Non-navigable tributaries of TNWs that are relatively permanent (flows 3 months or longer)
     - Wetlands that abut such tributaries

B. The USACE and USEPA will decide jurisdiction over the following waters based on whether they have a significant nexus with a TNW:
   - Non-navigable tributaries that are not relatively permanent
   - Wetlands adjacent to non-navigable tributaries that are not relatively permanent
   - Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

C. The USACE and USEPA will not assert jurisdiction over the following waters:
   - Swales or erosional features (gullies, small washes characterized by low volume, infrequent, or short-duration flow)
   - Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

The Navigable Waters Protection Rule, published by the USACE and USEPA on April 21, 2020, was vacated during a federal court ruling in Arizona (Pascua Yaqui Tribe v. U.S. Environmental Protection Agency) on August 30, 2021. With this ruling, the regulatory agencies have halted implementation of the Navigable Waters Protection Rule and are interpreting "waters of the United States" consistent with the pre-2015 regulatory regime (Rapanos Guidance).

Porter-Cologne Water Quality Control Act. Regulated by the RWQCB for impacts to waters of the state. The RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes all waters of the state and all waters of the United States, as mandated by Section 401 in the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne). Although water quality issues related to impacts to waterways are normally addressed during 401 Water Quality Certification, should a water of the State of California be determined by the USACE not to have CWA jurisdiction, Porter-Cologne would be addressed under a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending on the level of impact and the properties of the waterway.

Lake and Streambed Alteration Agreement (California Fish and Game Code, Section 1600). The California Fish and Game Code (CFGC) requires any person who proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or their tributaries, or use materials from a streambed, to submit a notification for a Lake and Streambed Alteration Agreement (LSAA) to the CDFW. The aquatic resources and riparian habitats that occur on the project site are subject to CFGC Section 1600.

County of San Diego General Plan

The Conservation and Open Space Element of the County's General Plan (County of San Diego 2011) provides the following goals and policies that apply to the sensitive vegetation communities, aquatic resources, and wildlife habitat on the project site:

- **Goal COS-1: Inter-Connected Preserve System.** A regionally managed, inter-connected preserve system that embodies the regional biological diversity of San Diego County.
  - **Policy COS-1.1: Coordinated Preserve System.** Identify and develop a coordinated biological preserve system that includes Pre-Approved Mitigation Areas, Biological Resource Core Areas, wildlife corridors, and linkages to allow wildlife to travel throughout their habitat ranges.
  - **Policy COS-1.2: Minimize Impacts.** Prohibit private development within established preserves. Minimize impacts within established preserves when the construction of public infrastructure is unavoidable.
  - **Policy COS-1.3: Management.** Monitor, manage, and maintain the regional preserve system facilitating the survival of native species and the preservation of healthy populations of rare, threatened, or endangered species.
  - **Policy COS-1.6: Assemblage of Preserve Systems.** Support the proactive assemblage of biological preserve systems to protect biological resources and to facilitate development through mitigation banking opportunities.
  - **Policy COS-1.8: Multiple-Resource Preservation Areas.** Support the acquisition of large tracts of land that have multiple resource preservation benefits, such as biology, hydrology, cultural, aesthetics, and community character. Establish funding mechanisms to serve as an alternative when mitigation requirements would not result in the acquisition of large tracts of land.
  - **Policy COS-1.9: Invasive Species.** Require new development adjacent to biological preserves to use non-invasive plants in landscaping. Encourage the removal of invasive plants within preserves.
- **Goal COS-2: Sustainability of the Natural Environment.** Sustainable ecosystems with long-term viability to maintain natural processes, sensitive lands, and sensitive as well as common species, coupled with sustainable growth and development.
  - **Policy COS-2.1: Protection, Restoration and Enhancement.** Protect and enhance natural wildlife habitat outside of preserves as development occurs according to the underlying land use designation. Limit the degradation of regionally important natural habitats within the Semi-Rural and Rural Lands regional categories, as well as within Village lands where appropriate.
  - **Policy COS-2.2: Habitat Protection through Site Design.** Require development to be sited in the least biologically sensitive areas and minimize the loss of natural habitat through site design.
- **Goal COS-3: Protection and Enhancement of Wetlands.** Wetlands that are restored and enhanced and protected from adverse impacts.
  - **Policy COS-3.1: Wetland Protection.** Require development to preserve existing natural wetland areas and associated transitional riparian and upland buffers and retain opportunities for enhancement.

- **Policy COS-3.2: Minimize Impacts of Development.** Require development projects to:
  - Mitigate any unavoidable losses of wetlands, including its habitat functions and values; and
  - Protect wetlands, including vernal pools, from a variety of discharges and activities, such as dredging or adding fill material, exposure to pollutants such as nutrients, hydromodification, land and vegetation clearing, and the introduction of invasive species.

Methods

This biological resources analysis includes the results of a database review, biological resources survey, protocol least Bell's vireo surveys, rare plant surveys, and aquatic resources delineation, which serve to document the existing biological conditions of the project site. The results of this review provide information on the potential constraints to project development due to the presence (or lack thereof) of sensitive biological resources.

Database Review

Review of online databases including the CDFW California Natural Diversity Database (CNDDB) (CDFW 2022a), CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2022b), County of San Diego SanBIOS database, USFWS Information for Planning and Consultation (IPaC) (USFWS 2022a), USFWS NWI Wetlands Mapper (USFWS 2022b), Consortium of California Herbaria database (CCH 2022), Calflora database (Calflora 2022), and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2022) was conducted for the project and within a 1-mile radius of the project site.

Field Reconnaissance Survey

A biological resources survey of the project site was conducted by Harris biologists on April 29, 2021, and April 30, 2021. Typically a 100-foot buffer is used for biological surveys, but due to the inaccessibility of lands surrounding the project site, including the Campo Band of Diegueño Mission Indians Reservation to the north and west and fenced, private residential properties to the east and south, the biological survey was limited to the project site boundary. Each survey was conducted by walking meandering transects throughout the project site and mapping vegetation communities, documenting plant and wildlife species, noting suitable habitat, and evaluating the potential for occurrence of sensitive, rare, threatened, and endangered plant and wildlife species (Attachment 4, Plant and Wildlife Species Observed on the Project Site). Vegetation mapping and sensitive species observations were recorded in the field using the ArcGIS Collector application with an aerial image of the project site. Harris biologists used binoculars to visually identify wildlife species and listened for vocalizations. The potential for sensitive plant and wildlife species to occur on the project site are presented in Table 2, Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site, in the Results section. Aquatic resources delineation fieldwork was conducted by Harris aquatic resources specialists on April 28, 2021, and May 7, 2021. The results of the aquatic resources delineation are presented in the Results section and Attachment 3.

Protocol Surveys

Protocol surveys were conducted for least Bell's vireo (*Vireo bellii pusillus*) following the USFWS Least Bell's Vireo Survey Guidelines (USFWS 2001). Detailed descriptions and results of the protocol surveys are included in Attachment 5, Least Bell's Vireo Survey Report.

Rare Plant Survey

Two rare plant surveys of the project site were conducted by a Harris senior botanist to maximize the detection of sensitive plant species' blooming periods. The first survey was conducted in mid-season on May 14, 2021, and the second survey was conducted in late-season on August 30, 2021. The results of the rare plant surveys are discussed in the Plant Species subsection in the Sensitive Species section and in Attachment 6, Rare Plant Survey Report.

Results

The results presented below provide data from the surveys conducted on the project site.

Vegetation Communities and Land Cover Types

The project site is within the southwestern California region of the California Floristic Province (Jepson Online 2022). Thirteen vegetation communities and land cover types were identified on the project site and include coastal and valley freshwater marsh, non-vegetated channel, fresh water, southern arroyo willow riparian forest, big sagebrush scrub (including disturbed), buck brush chaparral, chamise chaparral, montane manzanita chaparral, scrub oak chaparral, coast live oak woodland (disturbed), non-native grassland, disturbed habitat, and urban/developed land (Oberbauer et al. 2008) (Figure 6, Vegetation Communities and Land Cover Types). Table 1, Vegetation Communities and Land Cover Types on the Project Site, presents the acreages of the vegetation communities that occur on the project site. Figure 6 presents the vegetation community boundaries.

Vegetation mapping conducted on the project site in 2010 by RBF Consulting for Live Oak Springs Solar documented montane meadow, a County sensitive and potentially federal and state jurisdictional resource, in the central portion of the project site surrounding the riparian and Campo Creek corridor (RBF Consulting 2010). The areas mapped as montane meadow in 2010 by RBF Consulting were not observed during the vegetation mapping or the rare plant surveys conducted for the project in 2021. These areas were determined to instead be characteristic of the non-native grassland vegetation community. The non-native grassland mapped on the project site is described below in the Upland Vegetation Community section. The transition from montane meadow to non-native grassland and/or the expansion of the non-native grassland surrounding the montane meadow likely occurred as a result of the increasing drought conditions that have been documented in the 11 years since the 2010 RBF Consulting survey (NOAA 2022) and the aggressive nature of the species of non-native grasses and forbs. The waning of El Niño conditions over the Pacific (warm, wet climatic conditions) from 2009 into 2010 and the strengthening of La Niña conditions (cool, dry climatic conditions) in the end of 2010 through 2013 is thought to be what brought on severe and extreme drought conditions that occurred from 2013 through 2016 (NASA 2022; NOAA 2022). Abnormally dry and severe drought conditions were documented from 2016 to July 2021 when the vegetation mapping was conducted for the project (NOAA 2022). Further, historical and recent disturbance observed throughout the project site, especially surrounding the Campo Creek corridor (described previously in the Hydrology subsection in the Setting section) likely altered the drainage patterns on the project site and introduced non-native grasses, causing a transition from montane meadow to non-native grassland in the central portion of the project site.

Table 1. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community and Land Cover Type	Project Site (acres)[1]
Riparian	
Coastal and valley freshwater marsh (52410)	0.04
Non-vegetated channel (64200)	0.75
Fresh water (64140)	1.26
Southern arroyo willow riparian forest (61320)	1.70
Subtotal	*3.75*
Scrub and Chaparral	
Big sagebrush scrub (and disturbed) (35210)	0.56
Buck brush chaparral (37810)	0.16
Chamise chaparral (37200)	0.50
Montane manzanita chaparral (37520)	1.95
Scrub oak chaparral (37900)	0.10
Subtotal	*3.27*

Table 1. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community and Land Cover Type	Project Site (acres)[1]
Woodland	
Coast live oak woodland (and disturbed) (71160)	10.70
Subtotal	*10.70*
Upland	
Non-native grassland (42200)	18.40
Subtotal	*18.40*
Disturbed/Developed	
Disturbed habitat (11300)	2.30
Urban/developed land (12000)	34.40
Subtotal	*36.70*
Total	**72.82**

Sources: Holland 1986; Oberbauer et al. 2008.
Notes:

[1] Acreages rounded up to one-hundredth

The vegetation communities observed on the project site are described in the following subsections.

Riparian Vegetation Communities

Coastal and Valley Freshwater Marsh (52410)

Costal and valley freshwater marsh is dominated by perennial, emergent monocots that often form completely closed canopies (Oberbauer et al. 2008). Sedges (*Scirpus* sp.) and broadleaf cattail (*Typha* sp.) often dominate coastal and valley freshwater marsh vegetation communities.

Approximately 0.04 acre of coastal and valley freshwater marsh occurs within the southern reach of Campo Creek in the southernmost portion of the project site directly south of the fresh water pond created by the concrete dam and spillway within Campo Creek (Figure 6). On the project site, coastal and valley freshwater marsh is dominated by broadleaf cattail and cluster field sedge (*Carex praegracilis*).

Non-Vegetated Channel (64200)

Non-vegetated channel consists of predominantly sandy, gravelly, or rocky channels lacking or with reduced vegetation. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent of the total cover (Oberbauer et al. 2008).

Approximately 0.75 acre of non-vegetated channel occurs on the project site. The 0.75 acre of non-vegetated channel occurs within Campo Creek and six non-vegetated earthen-bottom channels. Campo Creek and six non-vegetated earthen-bottom channels (Channels 1 through 6) occur in the northwestern, central-western, and southwestern portions of the project site (Figure 6).

Fresh Water (64140)

Fresh water includes year-round bodies of fresh water in the form of lakes, streams, ponds, or rivers. This includes those portions of water bodies that are usually covered by water and contain less than 10 percent of vegetated cover (Oberbauer et al. 2008).

Approximately 1.26 acres of fresh water occurs on the project site. Three fresh water ponds are present in the central-western and southern portions of the project site (Figure 6). A concrete dam and spillway occurs within

Campo Creek in the southern portion of the project site. This concrete dam and spillway have formed one of the three fresh water ponds in the southern portion of the project site.

Southern Arroyo Willow Riparian Forest (61320)

Southern arroyo willow riparian forest is a winter-deciduous riparian forest dominated by broad-leafed trees and arroyo willow (*Salix lasiolepis*). Typically, it consists of a moderately tall, closed, or nearly closed canopy, with an understory of shrubby willows. Southern arroyo willow riparian forest is characterized by the presence of several species besides arroyo willow, including San Diego sagewort (*Artemisia palmeri*), mulefat (*Baccharis salicifolia*), wild cucumber (*Marah macrocarpus*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), Goodding's willow (*Salix gooddingii*), narrowleaf willow (*Salix exigua*), and yellow willow (*Salix lasiandra*). Southern arroyo willow riparian forest occurs in sub-irrigated and frequently overflowed areas along rivers and streams that are perennially wet (Oberbauer et al. 2008).

Approximately 1.70 acres of southern arroyo willow riparian forest occurs in the central and western portions of the project site (Figure 6). The southern arroyo willow riparian forest on the project site is dominated by arroyo willow with non-native weeds and grass species in the understory.

Scrub and Chaparral Vegetation Communities

Big Sagebrush Scrub (and Disturbed) (35210)

Big sagebrush scrub contains primarily soft-woody shrubs, usually with bare ground underneath and between shrubs (Oberbauer et al. 2008). Big sagebrush (*Artemisia tridentata*) is dominant. Growth of big sagebrush scrub occurs mostly in late spring and early summer, with some species flowering in late spring (blackbrush [*Coleogyne*], bitterbrush [*Purshia* sp.]) and some in early fall (sagebrushes and wormwoods [*Artemisia* sp.], rabbitbrush [*Chrysothamnus* sp.]).

Approximately 0.56 acre of big sagebrush scrub (and disturbed) occurs in the western and central portions of the project site (Figure 6).

Approximately 0.43 acre of high-quality big sagebrush scrub occurs in the northwestern and western portions of the project site (Figure 6). On the project site, high-quality big sagebrush scrub is dominated by dense big sagebrush.

Approximately 0.13 acre of disturbed big sagebrush scrub occurs in the central portion of the project site (Figure 6). On the project site, disturbed big sagebrush scrub is dominated by big sagebrush with non-native weeds and grass species in the understory.

Buck Brush Chaparral (37810)

Buck brush chaparral is a dense chaparral that is clearly dominated by buck brush (*Ceanothus cuneatus*) with some mixture of chamise (*Adenostoma fasciculatum*) (Oberbauer et al. 2008). Cover in buck brush chaparral is higher than in chamise chaparral, but is not as dense because the branches are not so interwoven.

Approximately 0.16 acre of buck brush occurs in the northwestern and southeastern portions of the project site (Figure 6). On the project site, buck brush is dominated by buck brush with chamise and a sparse understory of non-native weeds and grass species.

Chamise Chaparral (37200)

Chamise chaparral is a tall chaparral overwhelmingly dominated by chamise with associated species contributing little cover in this vegetation community (Oberbauer et al. 2008). Mature stands of chamise chaparral are densely interwoven with very little herbaceous understory or litter. Chamise chaparral is adapted to repeated fires by stump sprouting.

Approximately 0.50 acre of chamise chaparral occurs in the northwestern portion of the project site (Figure 6). On the project site, chamise chaparral is dominated by chamise with a primarily open understory.

Montane Manzanita Chaparral (37520)

Montane manzanita chaparral is a dense 2- to 5-meter tall chaparral dominated by any species of manzanita (Oberbauer et al. 2008). This vegetation community may occur as a post-fire successional stage.

Approximately 1.95 acre of montane manzanita chaparral occurs in the northeastern portion of the project site (Figure 6). On the project site, montane manzanita chaparral is dominated by eastwood manzanita (*Arctostaphylos glandulosa*).

Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense, evergreen chaparral dominated by inland scrub oak (*Quercus berberidifolia*), Nuttall's scrub oak (*Quercus dumosa*) and mountain mahogany (*Cercocarpus betuloides*). Scrub oak chaparral usually occurs in small patches with a variety of other vegetation communities (Oberbauer et al. 2008).

Approximately 0.10 acre of scrub oak chaparral occurs on the western edge of the project site (Figure 6). Scrub oak chaparral on the project site is dominated by inland scrub oak.

Woodland Vegetation Community

Coast Live Oak Woodland (and Disturbed) (71160)

Coast live oak woodland is dominated by coast live oak (*Quercus agrifolia*), an evergreen, with a poorly developed shrub layer that often includes toyon (*Heteromeles arbutifolia*), currents and gooseberries (*Ribes* sp.), laurel sumac (*Malosma laurina*), or dominated by Mexican elderberry (*Sambucus mexicana*) (Oberbauer et al. 2008). The herb component of coast live oak woodland is continuous and dominated by ripgut brome and other non-native grass species.

Approximately 10.70 acres of coast live oak woodland (and disturbed) occurs across the project site (Figure 6).

Approximately 3 acres of coast live oak woodland occurs primarily in the southwestern portion of the project site, with smaller patches in the northwestern, north-central, and southeastern portions of the project site (Figure 6). On the project site, the coast live oak woodland is dominated by dense interior coast live oak.

Approximately 7.70 acres of disturbed coast live oak woodland occurs in the southwestern and south-central portions of the project site (Figure 6). On the project site, the disturbed coast live oak woodland is dominated by interior coast live oak with ripgut brome and other non-native weeds and grass species in the understory.

Upland Vegetation Community

Non-Native Grassland (42200)

Non-native grassland consists of a dense to sparse cover of flowering annual grasses measuring approximately 3 feet high. It may occur where disturbance by maintenance (e.g., mowing, scraping, disking, spraying), grazing, repetitive fire, agriculture, or other mechanical disruption has altered soils and removed native seed sources from areas formerly supporting native vegetation. Non-native grassland typically occurs adjacent to roads or other developed areas where there has been some historical disturbance. Native wildflowers are often associated with this community, especially in years of favorable rainfall. Common plant species observed in non-native grasslands within the County include smooth barley (*Hordeum murinum*), ripgut grass (*Bromus diandrus*), slender wild oat (*Avena barbata*), and foxtail chess (*Bromus madritensis*) (Oberbauer et al. 2008).

Non-native grassland is the most dominant vegetation community on the project site and occurs on approximately 18.40 acres (Figure 6). It contains over 10 species of non-native grasses and also contains three native species of grasses. Non-native grasses in the grassland area of the project site consist mainly of ripgut grass, slender wild oat, soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus rubens*), cheat grass (*Bromus tectorum*), smooth barley (*Hordeum murinum* ssp. *glaucum*), rat-tail fescue (*Festuca myuros*), and tall fescue (*Festuca arundinacea*). The native species of grass observed were California brome (*Bromus carinatus* var. *carinatus*), blue wild-rye (*Elymus glaucus* ssp. *glaucus*), and coast range melic (*Melica imperfecta*). CNPS Rank 1B.2 Jacumba milk-vetch occurs in the non-native grassland vegetation community in the western portion of the project site along the dirt entrance/access road (Figure 6).

Disturbed/Developed Lands

Disturbed Habitat (11300)

Disturbed habitat consists of previously disturbed areas that either are devoid of vegetation (dirt roads/trails) or support scattered non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance such as black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), and *Erodium* species. These species are non-native and are typically found in disturbed habitats, particularly in areas that have been graded, repeatedly cleared for fuel management purposes, and/or experienced repeated use that prevents natural revegetation (Oberbauer et al. 2008).

Disturbed habitat comprises approximately 2.30 acres on the project site (Figure 6). Disturbed habitat on the project site is dominated by bare ground and species of mustard and other non-native plant species. There are innumerable dirt roads that provide residential access to the community of Live Oak Springs, as not all roads are paved leading into and throughout the urban developed areas. There are also dirt access roads to wells maintained by the County DPW.

Urban/Developed Land (12000)

Urban/developed land represents areas that have been constructed on or otherwise physically altered to an extent that native vegetation communities are not supported (Oberbauer et al. 2008). This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated or supports a variety of ornamental plants and landscaping.

Urban/developed land on the project site comprises approximately 34.40 acres and consists of the rural residential community in the eastern portion of the project site and maintenance storage yards in the southwestern portion of the project site (Figure 6). The urban developed areas also contain pockets of leftover native habitats and tree species that exist among the homes and other structures in the community.

Sensitive Species

Sensitive species are those recognized by federal, state, or local agencies as being potentially vulnerable to impacts because of rarity, local or regional reductions in population numbers, isolation/restricted genetic flow, or other factors. Sensitive plants include those listed as threatened or endangered, proposed for listing, or candidates for listing under the federal Endangered Species Act by the USFWS (USFWS 2022c) and the California Endangered Species Act by the CDFW (CDFW 2022c); those considered species of special concern by the CDFW (CDFW 2022d); those species included in the California Rare Plant Rank (CRPR) inventory, maintained by the CNPS; and those listed in the County Sensitive Plant Lists A through D (County of San Diego 2010a). Sensitive wildlife species include those listed as threatened or endangered, proposed for listing, or candidates for listing under the federal Endangered Species Act by the USFWS (USFWS 2022c) and the California Endangered Species Act by the CDFW (CDFW 2022c); those considered species of special concern by the CDFW (CDFW 2022d); and those listed in the County Sensitive Animal Groups 1 and 2 (County of San Diego 2010a).

The County Sensitive Plant List rankings are as follows: List A plants are rare, threatened, or endangered in California and elsewhere; List B plants are rare, threatened, or endangered in California but more common elsewhere; List C plants are those that may be rare but need more information to determine their true rarity status; and List D plants are of limited distribution and are uncommon but not presently rare or endangered (County of San Diego 2010a).

The County of San Diego Sensitive Animal Groups are ranked as follows: Group 1 animals have a very high level of sensitivity either because they are listed as threatened or endangered or because they have specific natural history requirements that must be met, and Group 2 animals are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action.

As described in the Methods section, distributions of historical sensitive species observations within a 1-mile radius of the project site were reviewed in preparation of this report (Figure 7, Plant and Wildlife Species with

Potential to Occur). For the purposes of this biological resources assessment, those species that are either known to occur or have some potential to occur within 1-mile of the project site are addressed in this section. The list of sensitive plant and wildlife species observed or with a potential to occur on the project site are provided in Table 2, Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site. Listing status, habitat requirements, and observation or potential for occurrence information are provided in Table 2. The species observed on the project site are shown with bolded text in Table 2.

Table 2. Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Plants				
Astragalus douglasii* var. *perstrictus	**Jacumba milk-vetch**	**None/None/1B.2/ County List A**	**Occurs in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, and valley and foothill grassland at elevations between 2,955 and 4,495 feet above mean sea level (amsl). Blooms between April and June.**	**Present. Observed in the northwestern, northeastern, and southeastern portions of the project site during the 2021 surveys (Figures 8a and 8b, Sensitive Plant Observations). Historical locations exist approximately 0.75 mile south of the project site (Figure 7) (CDFW 2022a; CNPS 2022).**
Caulanthus simulans	Payson's jewelflower	None/None/4.2/ County List D	Occurs in chaparral and coastal scrub with granitic and sandy soils at elevations between 295 and 7,220 feet amsl. Blooms between February and June.	**Low**. Suitable chaparral habitat with sandy soil is present. Historical locations exist within 1 mile of the project site, but not within (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys conducted during the blooming period.
Delphinium parishii ssp. *subglobosum*	Colorado Desert larkspur	None/None/4.3/ County List D	Occurs in chaparral, cismontane woodland, pinyon and juniper woodland, and Sonoran desert scrub at elevations between 1,970 and 5,905 feet amsl. Blooms between March and June.	**Low**. Suitable chaparral habitat is present. Historical locations exist within 1 mile of the project site, but not within (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys conducted during the blooming period.
Deinandra (=Hemizonia) floribunda	Tecate tarplant	None/None/1B.2/ County List A	Occurs in chaparral and coastal scrub.	**High.** Suitable chaparral habitat is present. Historical locations exist in the central portion of the project site (Figure 7) (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys, the second conducted during the blooming period.

Table 2. Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Geraea viscida	Sticky geraea	None/None/2B.2/ County List B	Occurs in chaparral, often in disturbed areas at elevations between 1,475 and 5,580 feet amsl. Blooms between April and June.	**Moderate.** Suitable chaparral habitat and disturbed areas are present. Historical locations exist approximately 0.75 mile south of the project site but not within (Figure 7) (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys, the first conducted during the blooming period.
Hulsea californica	San Diego sunflower	None/None/1B.3/ County List A	Occurs in chaparral, lower montane coniferous forest, and upper montane coniferous forest at elevations between 3,000 and 9,565 feet amsl. Blooms between April and June.	**Moderate.** Suitable chaparral habitat is present. Historical locations exist in the eastern portion of the project site (Figure 7) (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys conducted during the blooming period.
Lathyrus splendens	Pride-of-California	None/None/2B.1/ County List B	Occurs in chaparral at elevations between 655 and 5,005 feet amsl. Blooms between March and June.	**Low**. Suitable chaparral habitat is present. Historical locations exist within 1 mile of the project site, but not within (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys conducted during the blooming period.
Linanthus bellus	Desert beauty	None/None/2B.1/ County List B	Occurs in chaparral with sandy soils at elevations between 3,280 and 4,595 feet amsl. Blooms between April and May.	**Low.** Suitable chaparral habitat is present. Historical locations exist approximately 0.5 mile southeast of the project site, but not within (Figure 7) (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys conducted during the blooming period.
Streptanthus campestris	Southern jewelflower	None/None/1B.3/ County List A	Occurs in sometimes alkaline habitats, in chaparral, lower montane coniferous forest, or pinyon and juniper woodlands at elevations between 2,955 and 7,545 feet amsl. Blooms between April and July.	**Low.** Suitable chaparral habitat is present on the project site. Historical locations occur within 2 miles west of the project site but not on the project site (CDFW 2022a; CNPS 2022).

Table 2. Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Quercus engelmannii	Engelmann oak	None/None/4.2/ County List D	Occurs in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland at elevations between 165 and 4,265 feet amsl. Blooms March through June.	**Low**. Suitable chaparral habitat is present. Historical locations exist within 1 mile of the project site, but not within (CDFW 2022a; CNPS 2022). Not observed during the 2021 rare plant surveys conducted during the blooming period.
Wildlife				
Invertebrates				
Euphydryas editha quino	Quino checkerspot butterfly	FE/None/None/County Group 1	Occurs in chaparral and coastal sage shrublands. Requires dot-seed plantain (*Plantago erecta*) or owl's clover (*Castilleja exserta*) as a host plant.	**Low.** Suitable nectar sources for foraging are present on the project site. No host plant, dot-seed plantain (*Plantago erecta*), occur on the project site. Historical locations exist approximately 0.25 mile east and 0.75 mile west but not on the project site (Figure 7) (CDFW 2022a). Critical habitat occurs southwest of the project site (Figure 9, Critical Habitat).
Reptiles				
Anniella stebbinsi	San Diegan legless lizard	None/SSC/None/ County Group 2	Occurs in loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodland, and riparian habitat.	**Moderate.** Suitable scrub, woodland, and riparian habitats are present on the project site. Historical locations exist in the eastern portion of the project site (Figure 7) (CDFW 2022a). Not observed during the 2021 surveys.
Birds				
Buteo lineatus	**Red-shouldered hawk**	**None/None/None/ County Group 1**	**Occurs year-round in low elevation riparian woodlands. Nests in dense riparian habitats and forages in open spaces and on the edges of mesic habitats.**	**Present. High Foraging, High Nesting. Several red-shouldered hawks were observed flying over the project site during the 2021 biological surveys, primarily surrounding the Campo Creek riparian corridor in the southwestern portion of the project site (Figure 10, Sensitive Wildlife Species Observations). Suitable nesting and foraging habitat occurs throughout the western portion of the project site. No historical locations exist within 1 mile of the project site.**

Table 2. Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Cathartes aura	**Turkey vulture**	**None/None/County Group 1**	**Occurs in a wide variety of habitats including open rangeland, agricultural land, and undeveloped areas. Nests in crevices in rock outcrops away from human development.**	**Present. High Foraging, Low Nesting. Observed flying over the project site (Figure 10). No suitable nesting habitat was observed within the survey area. No historical locations exist within 1 mile of the project site.**
Elanus leucurus	**White-tailed kite**	**None/None/None/ County Group 1**	**Occurs in open groves, river valleys, marshes, open oak and desert grasslands, farm country, and marshes with trees and open ground.**	**Present. High Foraging. High Nesting. Observed flying over the project site during the 2021 surveys (Figure 10). Suitable nesting and foraging habitat occurs throughout the western portion of the project site. No historical locations exist within 1 mile of the project site.**
Falco mexicanus	Prairie falcon	None/SSC/None/ County Group 1	Occurs in grasslands or alpine tundra that supports abundant ground squirrel or pika populations.	**Moderate Foraging. Low Nesting.** Potentially suitable foraging habitat occurs in the grassland on the project site. No cliffs occur on or nearby the project site that could be utilized for nesting by this species. Prairie falcon is unlikely to use the project site as foraging habitat due to the absence of suitable nesting habitat. Historical locations exist in the central portion of the project site (Figure 7) (CDFW 2022a). Not observed during the 2021 surveys.
Setophaga petechial	**Yellow warbler**	**BCC/SSC/None/County Group 2**	**Occurs in well-developed riparian woodlands and montane scrub, particularly along streams and wetlands.**	**Present. High Foraging, High Nesting. Observed in the southern arroyo willow riparian forest surrounding Campo Creek during the 2021 surveys (Figure 10). Riparian forest and oak woodland suitable for nesting and foraging are present. No historical locations exist within 1 mile of the project site.**

Table 2. Sensitive Plant and Wildlife Species with Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Sialia mexicana	**Western bluebird**	**None/None/None/ County Group 2**	**Occurs in woodlands, grasslands, scrub, deserts, and agricultural habitats.**	**Present. High Foraging, High Nesting. Observed in the western portion of the project site during the 2021 surveys (Figure 10). Oak woodland, non-native grassland, and scrub suitable for nesting and foraging are present. No historical locations exist within 1 mile of the project site.**
Mammals				
Lepus californicus bennettii	**San Diego black-tailed jackrabbit**	**None/SSC/None/ County Group 2**	**Occurs in chaparral, coastal sage scrub, and grassland.**	**Present. San Diego black-tailed jackrabbit was observed in the western portion of the project site during the 2021 surveys (Figure 10). Suitable scrub, chaparral, and grassland habitats occur on the project site. Historical locations exist in the southeastern portion of the project site (Figure 7) (CDFW 2022a).**
Lynx rufus	**Bobcat**	**None/SSC/None/None**	**Occur in low and mid-elevation conifer, oak, riparian, and pinyon-juniper forests, and all stages of chaparral.**	**Present. Bobcat scat and sign were observed in the western portion of the project site during the 2021 surveys (Figure 10). Suitable chaparral and riparian habitat with rocky outcroppings occurs on the project site. No historical locations exist within 1 mile of the project site.**

Notes:

BCC = bird of conservation concern; FSC = Federal Species of Concern; FC = federal candidate; FE = federally endangered; FT = federally threatened; BGEPA = Bald and Golden Eagle Protection Act; County Group = County of San Diego Sensitive Animals List; County List – County of San Diego Sensitive Plants List; SE = state endangered; ST = state threatened; SR = state rare; SP = State Protected; NE = narrow endemic; None = No status indicated for species; SCE = state candidate for listing as endangered; SE = state endangered; SSC = state species of special concern; USFWS = U.S. Fish and Wildlife Service; WL = state watch list species; WBWG: Western Bat Working Group, H: High, HM: High–Medium, M: Medium, LM: Low–Medium, L: Low

CNPS Rare Plant Ranking

1B = rare, threatened, or endangered in California and elsewhere; 2A = presumed extirpated in California but more common elsewhere; 2B = rare, threatened, or endangered in California but more common elsewhere; 3 = a watch list of species about which more information is needed; 4 = a watch list of species of limited distribution

Threat Ranks: .1 = seriously threatened; .2 = moderately threatened; .3 = not very threatened

County of San Diego Sensitive Plant List

A = Plants that are rare, threatened, or endangered in California and elsewhere; B = Plants that are rare, threatened, or endangered in California but more common elsewhere; C = Plants that may be rare but need more information to determine their true rarity status; D = Plants of limited distribution and are uncommon but no presently rare or endangered

County of San Diego Sensitive Animal List

Group 1 = Animals that have a very high level of sensitively either because they are listed as threatened or endangered or because they have specific natural history requirements that must be met; Group 2 = Animals that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action

Bold = present on the project site
[1] Under review for protection under the federal Endangered Species Act

Plant Species

Sensitive plant species that were observed or have a high potential to occur on the project site are also described in detail in the following subsections, Sensitive Plant Species Observed on the Project Site, and Sensitive Plant Species Not Observed but with a High Potential to Occur on the Project Site.

Sensitive Plant Species Observed on the Project Site

The sensitive plant species, Jacumba milk-vetch, observed on the project site is described in the following subsection.

Jacumba Milk-Vetch

Jacumba milk-vetch is a CRPR 1B.2 and County Sensitive Plant List A species. Jacumba milk-vetch is a perennial leguminous herb that is a variety of Douglas' milk-vetch (*Astragalus douglasii*). Jacumba milk-vetch occurs in rock microhabitats within chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, and valley and foothill grassland habitats (Calflora 2022). This species typically blooms April through June and is found at elevations ranging between 2,955 and 4,495 feet (above mean sea level). Flower buds are purple-pink to red when emerging and turn to yellow-tan with pink-red in the center on the petal when in full bloom. When the plant begins fruiting, the blossoms turn into inflated seed pods. This species is threatened by commercial and residential development, as well as encroachment by non-native and invasive plant species.

Jacumba milk-vetch was observed and mapped during both rare plant survey efforts (Figures 8a and 8b, Sensitive Plant Observations). Both Jacumba milk-vetch individuals and a population of individuals were observed in the northwestern area of the project site along the pump station access road in non-native grassland and buckbrush chaparral habitats and disturbed areas, north of the access road in non-native grassland, and farther south on the access road below the pump station in disturbed habitat. A total of 91 Jacumba milk-vetch individuals were observed. Two individuals were also mapped in the south-central portion of the project site within the disturbed coast live oak woodland habitat, and one was mapped in the north-northeastern portion along a dirt residential access road near montane manzanita chaparral habitat (Figure 6).

Sensitive Plant Species Not Observed but with a High Potential to Occur on the Project Site

One sensitive plant species, Tecate tarplant, has a high potential to occur on the project site and is described in the following subsection.

Tecate Tarplant

Tecate tarplant is a CRPR 1B.2 and County List A species. Tecate tarplant occurs in chaparral and coastal scrub habitats at elevations between 230 and 4,005 feet amsl (CNPS 2022). This species blooms between August and November and has 13–20 ray flowers that are deep yellow in color. Within chaparral and coastal sage scrub habitats, it prefers moist openings, streambeds, and disturbed areas (Baldwin 2012).

Suitable chamise chaparral, buck brush chaparral, and scrub oak chaparral habitats adjacent to disturbed open areas are present in the western portion of the project site (Figure 6). Historical locations for Tecate tarplant occur in the central portion of the project site, but this species was not observed during the 2021 surveys conducted during this species' blooming period (Figure 7) (CDFW 2022a; CNPS 2022).

Wildlife Species

Sensitive wildlife species that were observed on the project site are described in detail in the Sensitive Wildlife Species Observed on the Project Site subsection. No sensitive wildlife species not observed were determined to have a high potential to occur on the project site.

Sensitive Wildlife Species Observed on the Project Site

Seven sensitive wildlife species—bobcat (*Lynx rufus*), red-shouldered hawk (*Buteo lineatus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), turkey vulture (*Cathartes aura*), western bluebird (*Sialia mexicana*), white-tailed

kite (*Elanus leucurus*), and yellow warbler (*Setophaga petechial*)—were observed on the project site. These species observations are shown on Figure 10, Sensitive Wildlife Species Observations, and described in the following subsections.

Bobcat

Bobcat is a CDFW species of special concern. Bobcat occurs in low- and mid-elevation conifer, oak, riparian, and pinyon-juniper forests and all stages of chaparral.

Bobcat scat and sign were observed in the western portion of the project site during the 2021 surveys (Figure 10). Suitable chaparral and riparian habitat with rocky outcroppings occur on the project site.

Red-Shouldered Hawk

Red-shouldered hawk is a County Group 1 species. Red-shouldered hawk is a medium-sized hawk with rounded wings and medium-length fan-shaped tails. Adults have a reddish barring on their breasts with white and dark checkered wings and a thickly barred tail. Red-shouldered hawk is widespread over San Diego County's coastal slope, absent only from areas devoid of tall trees like Otay Mountain. The inland valleys of northern San Diego County have the most concentrated population, with suitable riparian woodland, scattered rural residences, orchards, and eucalyptus grove habitats (Unitt 2004). It hunts by gliding below the canopy and feeds on a wide variety of prey including small mammals, reptiles, amphibians, young or small birds, and large insects. Adults construct large stick nests about halfway up a large tree, next to main tree trunk or on top of old squirrel, hawk, or raven nests.

Red-shouldered hawks were observed flying over the project site during the 2021 biological surveys, primarily surrounding the Campo Creek riparian corridor in the southwestern portion of the project site (Figure 10). Suitable nesting and foraging habitat occurs in the oak woodland, riparian forest, non-native grassland, and scrub habitats in the western portion of the project site.

San Diego Black-Tailed Jackrabbit

San Diego black-tailed jackrabbit is a CDFW species of special concern and County Sensitive Animal List Group 1 species. San Diego black-tailed jackrabbit occurs in a wide variety of habitats including chaparral, coastal sage scrub, and grassland.

San Diego black-tailed jackrabbit was observed in the western portion of the project site during the 2021 surveys (Figure 10). Suitable scrub, chaparral, and grassland habitats occur on the project site.

Turkey Vulture

Turkey vulture is a County Group 1 species. The turkey vulture is a large raptor with a distinctive bald, red head. When soaring their wings make a V-shape when viewed head-on. It is found throughout most of California during the breeding season, with its range contracting to the central and southern coasts during the winter. Turkey vultures feed primarily on carrion and are often observed soaring many miles over open habitat. It nests in crevices in large rocky outcroppings or cliffs. Full nests are not constructed and turkey vultures feed by regurgitating and rarely visit the nest (Unitt 2004). Therefore, it is difficult to detect turkey vulture nests and their local breeding distribution is poorly understood.

Turkey vultures were observed flying over the project site during the 2021 biological surveys (Figure 10). Suitable foraging habitat occurs on the project site. However, there is no suitable nesting habitat for turkey vultures on the project site.

Western Bluebird

Western bluebird is a County Group 2 species. Western bluebird occurs in woodlands, grasslands, scrub, deserts, and agricultural habitats.

Western bluebird were observed in and surrounding the Campo Creek riparian corridor in the western and central portions of the project site (Figure 10). Suitable nesting and foraging habitat occurs in the grasslands, scrub, and riparian woodland in the western and southern portions of the project site.

White-Tailed Kite

White-tailed kite is a County Group 1 species. White-tailed kite occurs in open groves, river valleys, marshes, open oak and desert grasslands, farm country, marshes with trees for perching and nesting, and open ground with high populations of rodents.

White-tailed kites were observed flying over the project site during the 2021 biological surveys (Figure 10). Suitable nesting and foraging habitat occurs throughout the western portion of the project site.

Yellow Warbler

Yellow warbler is a federal bird of conservation concern, CDFW Species of Special Concern and County Group 2 species. Yellow warbler occurs in well-developed riparian woodlands and montane scrub, particularly along streams and wetlands.

Yellow warbler were observed in the Campo Creek riparian corridor in the central portion of the project site (Figure 10). Suitable nesting and foraging habitat for yellow warbler occurs surrounding the project site and in the Campo Creek riparian corridor in the western and southern portions of the project site.

Nesting Birds

The project site provides nesting habitat for several bird species, including raptors, which are protected under the CFGC and the MBTA.

One active red-tailed hawk nest was observed in a cottonwood in the southwestern portion of the project site.

The large willow and oak trees throughout the project site, primarily in the riparian habitat in the Campo Creek riparian corridor in western and southern portions of the project site, provide high-quality nesting habitat for many bird species. In addition, the abundance of species and overall number of birds observed during the breeding season suggests the Campo Creek riparian corridor on the project site is used as nesting habitat.

Critical Habitat

The potential presence of critical habitat on the project site was also reviewed. No critical habitat for sensitive plant or wildlife species occurs on the project site. Critical habitat for the sensitive wildlife species Quino checkerspot butterfly (*Euphydryas editha quino*) occurs southwest of the project site. Critical habitat for peninsular bighorn sheep (*Ovis canadensis nelsoni*) occurs northeast of the project site. Critical habitat for these species is displayed on Figure 9, Critical Habitat.

Jurisdictional Aquatic Resources

The aquatic resources observed on the project site include Campo Creek, tributary Channels 1 through 6, and Ponds 1 through 3 (Figure 11, Aquatic Resources). Campo Creek was determined to be an intermittent non-wetland water that is a tributary of the Tijuana River Estuary, which is defined by the USACE as a TNW (USACE 2022), and therefore, is potentially under the jurisdiction of the USACE, RWQCB, and CDFW, pursuant to Sections 404 and 401 of the CWA and the LSAA (Figure 12, Potential Waters of the U.S., and Figure 13, Potential Waters of the State). Channels 1 through 6 were determined to be ephemeral non-wetland waters, and their surface connection to Campo Creek results in the channels being tributaries to the creek. The surface connection between Channels 1 through 6 and Campo Creek creates a significant nexus to a TNW, which results in the channels being potentially under the jurisdiction of the USACE, RWQCB, and CDFW, pursuant to Sections 404 and 401 of the CWA and the LSAA (Figures 12 and 13). Similarly, Ponds 1 through 3 were determined to be wetland waters, and the surface connection to Campo Creek creates a significant nexus to a TNW, which results in the ponds being potentially under the jurisdiction of the USACE, RWQCB, and CDFW, pursuant to Sections 404 and 401 of the CWA and the LSAA (Figures 12 and 13). The in-channel emergent wetland that occurs within the southern reach of Campo Creek in the southern portion of the project site is potentially under the jurisdiction of the RWQCB and the CDFW pursuant to Section 401 of the CWA and the LSAA (Figure 13). The riparian zone surrounding Campo Creek, Channels 1 through 4, Channel 6, and Pond 3 are potentially under the jurisdiction of the RWQCB and the CDFW pursuant to Section 401 of the CWA and the LSAA (Figure 13).

The aquatic resources potentially under the jurisdiction of the USACE, RWQCB, and CDFW are summarized in Table 3, Potential Non-Wetland and Wetland Waters of the United States on the Project Site, and Table 4, Potential Non-Wetland and Wetland Waters of the State on the Project Site. The potential federal and state jurisdictions over the aquatic resources on the project site generally overlap (i.e. non-wetland waters/streambed and wetlands) with two exceptions: the in-channel emergent wetland in the southern reach of Campo Creek, and the riparian zone surrounding Campo Creek. The in-channel emergent wetland in the southern reach of Campo Creek is likely to be regulated as a wetland under the jurisdiction of the RWQCB, while the USACE would consider it part of the Campo Creek non-wetland water because the in-channel emergent wetland is within the limits of the ordinary high water mark. The riparian zone is likely to be under the jurisdiction of the state agencies (RWQCB and CDFW) while it is not under the jurisdiction of the USACE because it does not fit the definition of a water of the United States.

Table 3. Potential Non-Wetland and Wetland Waters of the United States on the Project Site

Non-Wetland Waters							
Feature	**Cowardin Type[1]**	**Acres**	**Length (ft)**	**Width (ft)**	**Cubic Yards**	**Coordinates**	**Vegetation/ Land Cover Type**
Campo Creek	R4SB	0.600	1,949	1 - 28	—	32.691758000, −116.33972800 through 32.411459000, −116.20943000	Non-vegetated channel/emergent wetland
Channel 1	R4SB	0.006	93	3	—	32.42251500, −116.20160400	Non-vegetated channel
Channel 2	R4SB	0.003	47	3	—	32.41242300, −116.20150300	Non-vegetated channel
Channel 3	R4SB	0.004	35	4	—	32.41248600, −116.20143500	Non-vegetated channel
Channel 4	R4SB	0.040	233	8	—	32.41230400, −116.20136600	Non-vegetated channel
Channel 5	R4SB	0.080	720	5	—	32.41250700, −116.20136700	Non-vegetated channel
Channel 6	R4SB	0.020	84	5	—	32.41249100, −116.20130300	Non-vegetated channel
Non-Wetland Waters Subtotal[2]		*0.75*	*3,161*	—			
Wetlands							
Pond 1	PUB	1.10	—	—	7,113	32.41160600, −116.20101500	Fresh water
Pond 2	R6	0.03	—	—	68	32.4124700, −116.20166200	Fresh water
Pond 3	R6	0.13	—	—	638	32.41232100, −116.20130900	Fresh water
Wetlands Subtotal		*1.26*	—	—	—	—	
Total[2]		**2.01**	**3,161**	**—**	**7,819**	**—**	

Notes:

[1] Cowardin Type: R4SB = Riverine Intermittent Streambed; PUB = Palustrine Unconsolidated Bottom; R6 = A wetland, spring, stream, river pond, or lake that only exists for a short period.

[2] Totals may not sum exactly due to rounding.

Table 4. Potential Non-Wetland and Wetland Waters of the State on the Project Site

Feature	Acres	Linear Feet	Cubic Yards
Non-Wetland Waters/Streambed	0.75	3,161	—
Wetlands	1.26	—	7,819
In-Channel Emergent Wetland	0.04	—	0.001
Riparian Zone	1.70	—	—
Total	**3.75**	**3,161**	**7,819.001**

The NWI report shows Campo Creek, one tributary connecting to Campo Creek from the northeast, and one freshwater pond connected to Campo Creek as aquatic resources on the project site (Figure 5). The tributary connecting to Campo Creek from the northeast shown on the NWI mapping results was not observed during the aquatic resources delineation investigation on the project site. This tributary could have occurred historically on the project site prior to the development of the rural residential community in the eastern portion of the project site. The non-wetland Channels 1 through 6 and Ponds 2 and 3 observed on the project site were not identified on the NWI map.

A detailed discussion of the aquatic resources delineation and results is included in Attachment 3.

Other Unique Features/Resources

Plant Species

Attachment 4 lists all vascular plant species observed on the project site during the 2021 biological resource surveys. A total of 137 plant species were observed on the project site, 97 (71 percent) of which were native and 40 (29 percent) of which were non-native. Of the 137 plants observed on the project site, one species, Jacumba milk-vetch, is designated as CRPR 1B.2. The sensitive plant species, Jacumba milk-vetch, observed on the project site was described previously in the Sensitive Species section.

Wildlife Species

Attachment 4 lists all wildlife species detected on the project site during the 2021 biological resource surveys. A total of 71 wildlife species were observed on the project site, 67 (94 percent) of which were native and 4 (6 percent) of which were non-native. In total, 2 reptiles, 57 birds, and 12 mammals were observed on the project site. Of the 71 wildlife species observed on the project site, seven sensitive wildlife species, Bobcat, red-shouldered hawk, San Diego black-tailed jackrabbit, turkey vulture, western bluebird, white-tailed kite, and yellow warbler, occur on the project site. The sensitive wildlife species observed on the project site were described previously in the Sensitive Species section.

Common bird species on the project site included Anna's hummingbird (*Calypte anna*), California towhee (*Melozone crissalis*), song sparrow (*Melospiza melodia*), bushtit (*Psaltriparus minimus*), house wren (*Troglodytes aedon*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), and mourning dove (*Zenaida macroura*).

Wildlife Corridors and Linkages

Wildlife corridors provide routes for local movement and also regional linkages and corridors, often following linear topographical, vegetation, or water features. These corridors can be continuous habitats, features, or "stepping stone" areas, providing critical rest and foraging areas for, for example, birds traveling along migratory routes. Local routes of movement provide constant connections to resources that include sources of water, home/cover sites, and foraging areas. Regional linkages and movement corridors provide larger patches of open space to allow relatively free movement of wildlife species along multiple paths between important resources. These areas allow for not only long-term genetic flow between subpopulations but also critical pathways of seasonal/migratory movements. Larger predatory mammals often use regional corridors for hunting and reproduction needs. Potential wildlife corridors can include streams, riparian areas, and culverts under roadways. Habitat characteristics considered included topography, habitat quality, and adjacent land uses.

The area surrounding the project site provides movement and suitable nesting, foraging, and dispersal areas of wildlife species and connections to nearby open space areas. The project site is likely to be used as a movement corridor for both sensitive and common wildlife species because of the presence of the Campo Creek riparian corridor and native vegetation communities, and because it is surrounded by natural, open space. The presence of the Live Oak Springs rural residential community directly to the east, the Golden Acorn Casino development approximately 1 mile to the north, and the I-8 freeway corridor approximately 1 mile to the north of the project site have the potential to limit large-scale east-west and north–south wildlife movement in the surrounding area. However, the open space immediately surrounding and on the project site has the potential to provide important habitat connectivity both locally and regionally.

Significance of Project Impacts and Proposed Mitigation

Significance Criteria

Direct impacts occur when biological resources are altered or destroyed during the course of or as a result of project implementation. Examples of such impacts include removing or grading vegetation, filling wetland habitats, or severing or physically restricting the width of wildlife corridors. Other direct impacts may include loss of foraging or nesting habitat and loss of individual species as a result of habitat clearing. Indirect impacts may include elevated levels of noise or lighting, change in surface water hydrology within a floodplain, and increased erosion or sedimentation. These types of indirect impacts can affect vegetation communities or their potential use by sensitive species. Permanent impacts may result in irreversible damage to biological resources. Temporary impacts are interim changes in the local environment due to construction and would not extend beyond project-associated construction, including revegetation of temporarily disturbed areas adjacent to native habitats.

The County Guidelines for Determining Significance (County of San Diego 2010) and Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) define "significant effect on the environment" as a "substantial, or potentially substantial adverse change in the environment." The County Guidelines for Determining Significance and Appendix G of the CEQA Guidelines further indicate that there may be a significant effect on biological resources if the project would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game[1] or U.S. Fish and Wildlife Service.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d. 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.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

[1] As of January 1, 2012, the California Department of Fish and Game became the California Department of Fish and Wildlife.

Threshold A

Guidelines for Determination of Significance

A significant impact would result if the project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or sensitive species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

This guideline for significance is taken directly from the CEQA Guidelines, Appendix G, and is based on the CEQA Guidelines definition of mandatory findings of significance (Section 15065) and of endangered, rare, or threatened species (Section 15380).

Analysis

Potential direct and indirect impacts to sensitive plant and wildlife species are discussed in the following subsections.

Sensitive Plant Species

As discussed in the Results section, one sensitive plant species, Jacumba milk-vetch, was observed in the non-native grassland and at the edges of the disturbed areas in the northwestern portion the project site, in the montane manzanita chaparral in the northeastern portion of the project site, and in the disturbed coast live oak woodland in the southeastern portion of the project site during the 2021 rare plant surveys (Figures 8a and 8b). In addition, one sensitive plant species, Tecate tarplant, was not observed but was determined to have a high potential to occur in the chamise chaparral, buck brush chaparral, and scrub oak chaparral habitats that are adjacent to disturbed open areas in the western portion of the project site. The potential direct and indirect impacts to these sensitive plant species are discussed in the following subsections.

Direct Impacts

As discussed in the Introduction, Project Description, and Location section, the project has been designed to avoid impacts to sensitive resources to the maximum extent feasible, including the Jacumba milk-vetch populations and the sensitive chamise chaparral, buck brush chaparral, and scrub oak chaparral that could support sensitive Tecate tarplant potentially occurring on the project site (Figures 14a and 14b, Biological Resources Impacts). The chamise chaparral, buck brush chaparral, and scrub oak chaparral vegetation communities would also be avoided to the greatest extent feasible by project construction, thereby avoiding potential impacts to Tecate tarplant that could occur on the project site (Figures 14a and 14b). Prior to project construction, protective fencing or staking will be installed to mark the limits of construction to make the avoidance areas easily identifiable by construction crews. In addition, as shown on Figures 14a and 14b, the limits of construction would be clearly marked on the construction as-built plans, and construction activities outside of the construction limits would be prohibited.

Of the approximately 91 Jacumba milk-vetch individuals occurring on the project site, approximately four individuals are in the dirt access road in the northwestern portion of the project site. These four Jacumba milk-vetch individuals could be impacted during project construction activities associated with Phase I and potential future phases, including construction vehicle access and improvements to the access road entrance (Figures 14a and 14b). Consistent with the County of San Diego Guidelines for Determining Significance, impacts to less than 5 percent of a County List A plant species or its habitat on a project site may be considered less than significant, contingent upon the determination that the project would not have a substantial adverse effect on the long-term survival of that plant species (County of San Diego 2010a). Approximately four Jacumba milk-vetch individuals would be potentially impacted by the installation of a concrete driveway over the existing dirt access road on the northwestern edge of the project site (Figures 14a and 14b). Impacts to the four Jacumba milk-vetch individuals constitute less than 5 percent of the total population on the project site and, therefore, are considered a less than significant impact to the species. Furthermore, the potential impacts to the four Jacumba milk-vetch individuals occurring in the dirt access road would not result in an adverse impact to the larger population of Jacumba milk-vetch on the project site because most of the population is outside of the impact areas (Figures 14a and 14b). In addition, the individuals and populations not within the access road would have additional protection through the installation of protective

fencing. Therefore, potential impacts to Jacumba milk-vetch and Tecate tarplant would be less than significant, and no mitigation would be required.

Indirect Impacts

Indirect impacts to sensitive plants would primarily result from adverse edge effects during construction of the project. Edge effects could include trampling; dust, which could disrupt plant vitality in the short term; construction-related pollutant discharges; soil erosion; and runoff. Standard BMPs, including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free erosion control products, and preparation and implementation of a Stormwater Pollution Prevention Plan, would be required of the construction contractor. The Stormwater Pollution Prevention Plan would be prepared pursuant to the National Pollution Discharge Elimination System General Construction Permit (Water Quality Order 99-08-DWQ). The Stormwater Pollution Prevention Plan would address the potential sources and locations of stormwater contamination characteristics, impacts of specific contaminants, and temporary and permanent erosion-control practices and would include water sampling data, construction practices that minimize stormwater contamination, coordination of BMPs with planned construction activities, and compliance with County, state, and federal regulations. With the implementation of construction BMPs, temporary indirect impacts to sensitive plant species observed and with a high potential to occur on the project site would be less than significant, and no mitigation would be required.

Sensitive Wildlife Species

As discussed in the Results section, seven sensitive wildlife species were observed on the project site during the 2021 surveys, including bobcat, red-shouldered hawk, San Diego black-tailed jackrabbit, turkey vulture, western bluebird, white-tailed kite, and yellow warbler (Figure 10). Of the sensitive wildlife species not observed but with a potential to occur on the project site, none were determined to have a high potential to occur on the project site. Potential direct and indirect impacts to sensitive wildlife species are discussed in the following subsections.

Direct Impacts

The project would avoid or minimize direct impacts to sensitive wildlife species to the maximum extent feasible through the installation of environmentally sensitive area fencing and staking. As shown on Figures 14a and 14b, the limits of construction would be flagged or staked on the site and clearly marked on the construction as-built plans, and construction activities outside of the limits of construction would be prohibited.

The project, including Phase I and potential future phases, has the potential to directly impact the sensitive wildlife species observed on the project site through temporary construction activities, including those that could displace individual wildlife or eliminate portions of their habitat (Figures 14a and 14 b). Implementation of the project could result in both permanent and temporary direct loss of habitat, including live-in, nesting, and foraging habitat, for the majority of the seven sensitive wildlife species that occur on the project site.

The project would avoid temporary and permanent impacts to the majority of the sensitive vegetation communities on the project site, and impacts would be minimized to only those necessary for implementation of the project. Table 5, Impacts to Vegetation Communities on the Project Site, presents the permanent and temporary impact acreages of four of the sensitive vegetation communities on the project site that would result from implementation of the project (Figures 14a and 14b).

Table 5. Impacts to Sensitive Vegetation Communities on the Project Site

Vegetation Community	Project Site (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Mitigation Ratio	Mitigation Required (acres)
Riparian					
Non-vegetated channel (64200)	0.75	0.009	0.00	3:1	0.027
Southern arroyo willow riparian forest (61320)	1.70	0.001	0.00	3:1	0.003
Subtotal	*2.45*	*0.01*	*0.00*	—	*0.03*
Scrub and Chaparral					
Big sagebrush scrub (and disturbed) (35210)	0.56	0.008	0.00	2:1	0.016
Subtotal	*0.56*	*0.008*	*0.00*	2:1	*0.016*
Upland					
Non-native grassland (42200)	18.40	1.44	0.009	0.5:1	0.72
Subtotal	*18.40*	*1.44*	*0.009*	0.5:1	*0.72*
Total[1]	**21.41**	**1.46**	**0.01**	—	**0.77**

Sources: Holland 1986; Oberbauer et al. 2008.
Notes:
[1] Total acreages rounded up to one-hundredth.

No direct impacts would occur to the coast live oak woodland (and disturbed) and the majority of the southern arroyo willow riparian forest, which provide suitable nesting and foraging habitat for the sensitive raptors and other sensitive bird species that occur on the project site, including red-shouldered hawk, western bluebird, white-tailed kite, and yellow warbler (Figures 14a and 14b). No direct impacts to coast live oak woodland (and disturbed) or southern arroyo willow riparian forest would result from implementation of Phase I. Although the majority of the southern arroyo willow riparian forest would be avoided by construction activities, potential direct temporary impacts to approximately 0.001 acre of southern arroyo willow riparian forest would result from the replacement of an existing culvert under Royal Drive as a component of a potential future phase of the project (Figures 14a and 14b). Potential direct temporary impacts to southern arroyo willow riparian forest that supports sensitive raptors and birds would be significant, and mitigation would be required.

No direct impacts would occur to the buck brush chaparral, chamise chaparral, and scrub oak chaparral which provide suitable live-in and foraging habitat for the sensitive mammals and raptors that occur on the project site, including bobcat, San Diego black-tailed jackrabbit, red-shouldered hawk, and turkey vulture. Therefore, these direct impacts to sensitive wildlife species would be less than significant, and no mitigation would be required.

No direct impacts to non-vegetated channel would result from implementation of Phase I. Temporary impacts to approximately 0.009 acre of non-vegetated channel in the north- and southwestern portions of the project site would result from construction of potential future phase components, including the replacement of an existing culvert under Royal Drive (southwestern area) and the replacement of 50 linear feet of an existing aerial water line that crosses Campo Creek (northwestern area) through either a suspended support system or undergrounding using an open-trench method (Figures 14a and 14b). No sensitive aquatic wildlife species were observed or determined to have a high potential to occur on the project site. Direct temporary impacts to the 0.009 acre of non-vegetated channel would not result in habitat loss to sensitive wildlife species on the project site. Therefore, impacts to sensitive wildlife species would be less than significant, and no mitigation would be required.

No direct impacts to big sagebrush scrub would result from implementation of Phase I. Temporary impacts to approximately 0.008 acre of big sagebrush scrub in the northwestern portion of the project site would result from

construction of a potential future phase component, which includes the replacement of 50 linear feet of an existing aerial water line that crosses Campo Creek (Figures 14a and 14b). Big sagebrush scrub (and disturbed) on the project site provides suitable live-in and foraging habitat for sensitive raptors and other sensitive bird species that occur on the project site, including red-shouldered hawk and western bluebird. Temporary impacts to these sensitive raptors and bird species from direct habitat loss during construction would be significant, and mitigation would be required.

Direct impacts to non-native grassland in the northwestern portion of the project site, including approximately 1.44 acres of temporary direct impacts and approximately 0.009 acre of permanent direct impacts, would result from implementation of Phase I and potential future phase components. Temporary direct impacts to 1.44 acres of non-native grassland would result from Phase I general construction activities, including equipment storage and staging and stockpiling areas, and potential future phase components, including the construction of two aboveground water storage tanks and a booster pump station, construction of new and replacement of old underground pipeline system, and replacement of 50 linear feet of an existing aerial water line that crosses Campo Creek (Figures 14a and 14b). Permanent direct impacts to 0.009 acre of non-native grassland would result from construction of the Phase I components, including grading and vegetation removal, a secondary well, generator concrete pads, and other associated aboveground components (Figures 14a and 14b). Non-native grassland on the project site provides suitable foraging habitat for sensitive wildlife species that occur on the project site, including San Diego black-tailed jackrabbit, red-shouldered hawk, turkey vulture, western bluebird, and white-tailed kite. Temporary and permanent impacts to these sensitive mammal, raptors, and other sensitive bird species from direct habitat loss during construction would be significant, and mitigation would be required.

Implementation of Phase I and potential future phase components would result in approximately 0.52 acre of temporary direct impacts and 0.001 acre of permanent direct impacts to disturbed habitat (Figures 14a and 14b). Temporary direct impacts to approximately 0.52 acre of disturbed habitat would result from Phase I general construction activities and construction of potential future phase components, including construction of the two aboveground water storage tanks and booster pump station and construction of new and replacement of old underground pipeline system. Phase I permanent direct impacts to 0.001 acre of disturbed habitat would result from construction of a thrust block that connects to the secondary well (Figures 14a and 14b). The approximately 2.30 acres of the disturbed habitat on the project site includes dirt roads and bare ground with sparse non-native grasses and weeds that provide minimal foraging and nesting habitat for sensitive mammals, raptors, and other sensitive bird species. The higher quality vegetation communities surrounding the disturbed habitat on the project site provide higher quality foraging and nesting habitat for sensitive mammals, raptors, and other sensitive bird species than the disturbed habitat. The project is designed to use the disturbed habitat areas (primarily the existing dirt roads) for project impacts to avoid temporary and permanent impacts to the majority of the higher quality vegetation communities on the project site. Therefore, because the disturbed habitats are unlikely to support the sensitive wildlife species that occur on the project site, impacts to the disturbed habitats during project construction would be less than significant, and no mitigation would be required.

Because the potable water distribution system being improved and upgraded by the project would operate passively and similarly to current conditions, project operation would not result in permanent development-related direct impacts to sensitive wildlife species. Therefore, permanent direct operational impacts to sensitive wildlife species would be less than significant, and no mitigation would be required.

Indirect Impacts

Indirect temporary impacts to sensitive wildlife species during project construction could include noise, dust deposition, increased soil erosion, increased human activity, introduction of non-native species, increased presence of predators (coyotes, ravens, and other mesocarnivores) from trash, and increased potential of exotic species invasion due to human activity and soil disturbance. Implementation of Phase I and potential future phases of the project has the potential to drive sensitive wildlife species from the construction area, riparian corridor in

the central portion of the project site, and upland habitat in the western and central portions of the project site because of noise, equipment operation, and human activity. Disturbance of this potential nesting and foraging habitat would result in potentially significant indirect impacts to sensitive wildlife species. As previously discussed in the Sensitive Plant Species Indirect Impacts discussion, standard construction BMPs, including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free erosion control products, and preparation and implementation of a Stormwater Pollution Prevention Plan, would be required of the construction contractor during Phase I and potential future phases. Additional BMPs that would be required during construction include noise suppression measures and trash containment methods. With the implementation of construction BMPs, indirect impacts to sensitive wildlife species during construction would be less than significant, and no mitigation would be required.

Because the potable water distribution system being improved and upgraded by the project would operate passively and similarly to current conditions, project operation would not result in permanent development-related indirect impacts to sensitive wildlife species. Therefore, permanent indirect operational impacts to sensitive wildlife species are less than significant and mitigation is not required.

Nesting Birds

Project implementation has the potential to impact raptor and bird species that are protected under the MBTA and the CFGC Section 3504. If construction is conducted during the raptor and bird breeding season (January 15 through August 31), temporary disturbance and displacement of nesting birds during vegetation removal could result in significant direct impacts to bird species protected under the MBTA and mitigation is required.

Indirect impacts from construction noise and vibration during the clearing, grubbing, and trenching activities under Phase I and potential future phases, if conducted during the bird breeding season, could result in significant temporary impacts to raptor and bird species protected under the MBTA. These potential direct and indirect impacts to raptor and bird species protected under the MBTA are significant and mitigation is required.

The native and non-native trees and shrubs that occur throughout the project site provide nesting habitat for sensitive raptor and bird species (Figure 10). These native and non-native trees and shrubs would be avoided to the maximum extent feasible. In the event one of the trees on the project site are removed, it is the County's policy to replace any mature trees that are removed during project construction. If tree removal and replacement is required as part of Phase I or potential future phases and conducted during the raptor and bird breeding season, this could result in significant temporary direct and indirect impacts to raptor and bird species protected under the MBTA. These potential direct and indirect impacts to raptor and bird species protected under the MBTA are significant and mitigation is required.

Threshold B

Guidelines for Determination of Significance

A significant impact would result if the project would have a substantial adverse effect to any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Direct Impacts

As previously discussed under Threshold A, direct temporary and permanent impacts to approximately 1.47 acres of sensitive vegetation communities would occur on the project site (Table 5, Figures 14a and 14b). The sensitive vegetation communities that would be temporarily and permanently impacted on the project site include non-vegetated channel, southern arroyo willow riparian forest, big sagebrush scrub (and disturbed), and non-native grassland. The permanent direct impacts, limited to the 0.009 acre of non-native grassland, would result from implementation of Phase I components, including grading and vegetation removal, a secondary well, generator concrete pads, and other associated aboveground components (Figures 14a and 14b). The temporary direct impacts to approximately 0.009 acre of non-vegetated channel, approximately 0.001 acre of southern arroyo willow riparian forest, approximately 0.008 acre of big sagebrush scrub, and approximately 1.44 acres of non-native grassland would result from construction activities associated with the implementation of Phase I and

potential future phase components in the northwestern portion of the project site. All temporary impact areas would be revegetated to pre-construction conditions following construction. Potential direct impacts to sensitive vegetation communities, including non-vegetated channel, southern arroyo willow riparian forest, big sagebrush scrub (and disturbed), and non-native grassland, would be significant, and mitigation would be required.

The coastal and valley freshwater marsh, fresh water (Ponds 1 through 3), coast live oak woodland (and disturbed), buck brush chaparral, chamise chaparral, and scrub oak chaparral on the project site would be avoided during construction of the project, no direct permanent or temporary impacts would occur, and no mitigation would be required.

Indirect Impacts

Most of the indirect impacts to sensitive plant species described in Threshold A also result in potentially significant indirect impacts to sensitive vegetation communities. Indirect impacts to sensitive vegetation communities could result from invasion by exotic species, exposure to construction-related pollutant discharges, and trampling by humans. As previously discussed in Threshold A, standard construction BMPs, including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free erosion control products, and preparation and implementation of a Stormwater Pollution Prevention Plan, would be required of the construction contractor during Phase I and potential future phases. With the implementation of construction BMPs, indirect impacts to the sensitive vegetation communities on the project site would be less than significant, and no mitigation would be required.

Threshold C

Guidelines for Determination of Significance

A significant impact would result if the project would have a substantial adverse impact on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means. Impacts to state or federally jurisdictional aquatic resources would be considered significant and would require permits from the USACE and the RWQCB. Aquatic resources delineations would be required for any impacts to potentially jurisdictional aquatic resources.

Direct Impacts

Tables 3 and 4 and Figures 12 and 13 show the aquatic resources mapped on the project site potentially under the jurisdiction of USACE, RWQCB, and CDFW. The potentially federal and state jurisdictional aquatic resources mapped on the project site include Campo Creek, tributary Channels 1 through 6, and Ponds 1 through 3 (Figure 11). The riparian vegetation communities that occur within the potentially federal and state jurisdictional aquatic resources areas on the project site include the approximately 0.04-acre coastal and valley freshwater marsh within the southern extent of Campo Creek, approximately 0.75 acre of non-vegetated channels in Campo Creek and Channels 1 through 6, approximately 1.26 acre of fresh water within Ponds 1 through 3, and approximately 1.70 acre of southern arroyo willow riparian forest.

As discussed under Threshold B, the project has been designed to avoid direct impacts to potentially jurisdictional aquatic resources on the project site to the greatest extent feasible, which include coastal and valley freshwater marsh, fresh water Ponds 1 through 3, and the majority of the southern arroyo willow riparian forest. No direct impacts to potentially jurisdictional aquatic resources would result from implementation of Phase I. No direct permanent or temporary impacts would occur to the potentially jurisdictional coastal and valley freshwater marsh and fresh water Ponds 1 through 3, and no mitigation would be required. The majority of the 0.75 acre of potentially jurisdictional non-vegetated channel and 1.70 acre southern arroyo willow riparian forest are being avoided by project construction. However, direct temporary impacts to 0.009 acre of the Campo Creek potentially jurisdictional non-vegetated channel and 0.001 acre of southern arroyo willow riparian forest in the western portion of the project site would result from construction of potential future phase components, including the replacement of an existing culvert under Royal Drive (southwestern area) and the replacement of 50 linear feet of an existing aerial water line that crosses Campo Creek (northwestern area) through either a suspended support system or undergrounding using an open-trench method (Figures 14a and 14b). The Campo Creek non-vegetated channel and the southern arroyo willow riparian forest are potentially under the jurisdiction of the USACE,

RWQCB, and CDFW, pursuant to Sections 404 and 401 of the CWA and the LSAA. The temporary impacts to the aquatic resources potentially under federal and state jurisdiction are summarized in Table 6, Impacts to Potential Non-Wetland Waters of the United States and State on the Project Site.

Table 6. Impacts to Potential Non-Wetland Waters of the United States and State on the Project Site

Feature	Temporary Impacts (acres)	Jurisdiction	
		Federal (USACE)	State (RWQCB and CDFW)
Non-vegetated channel/streambed	0.009	✓	✓
Riparian zone (southern arroyo willow riparian forest)	0.001	NA	✓
Total	**0.01**	—	—

These direct temporary impacts to potentially jurisdictional non-vegetated channel and southern arroyo willow riparian forest would be significant, and mitigation would be required.

Indirect Impacts

Most of the indirect impacts to sensitive plant species and sensitive vegetation communities described under Thresholds A and B would also result in potentially significant indirect impacts to the potentially jurisdictional aquatic resources on the project site, including coastal and valley freshwater marsh, non-vegetated channel, fresh water (Ponds 1 through 3), and southern arroyo willow riparian forest. Indirect impacts to potentially jurisdictional aquatic resources can result from generation of fugitive dust, changes in hydrology resulting from construction (including sedimentation and erosion), and exposure to construction-related pollutant discharges. As previously discussed in Thresholds A and B, standard construction BMPs, including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free erosion control products, and preparation and implementation of a Stormwater Pollution Prevention Plan, would be required of the construction contractor during Phase I and potential future phases. With the implementation of construction BMPs, indirect impacts to the potentially jurisdictional aquatic resources on the project site would be less than significant, and no mitigation would be required.

Threshold D

Guidelines for Determination of Significance

The project would have a significant impact on wildlife movement and nursery sites if its development interferes 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.

The area surrounding the project site provides movement and suitable nesting, foraging, and dispersal areas of wildlife species and connections to nearby open space areas. The project site is likely to be used as a movement corridor for both sensitive and common wildlife species because of the presence of the Campo Creek riparian corridor and native vegetation communities, and because it is surrounded by natural, open space. The presence of the Live Oak Springs rural residential community directly to the east, the Golden Acorn Casino development approximately 1 mile to the north, and the I-8 freeway corridor approximately 1 mile to the north of the project site have the potential to limit large-scale east-west and north–south wildlife movement in the surrounding area. However, the open space immediately surrounding and on the project site has the potential to provide important habitat connectivity both locally and regionally.

The project would not permanently impact the majority of the project site, including the Campo Creek riparian corridor, and would not impede the north–south wildlife movement that the corridor provides. General wildlife movement routes would remain after implementation of the project. Implementation of the project would not substantially interfere with the movement or established migratory corridors of native resident or migratory fish

or wildlife species, including the use of native wildlife nursery sites. Therefore, impacts to wildlife movement corridors would be less than significant, and no mitigation would be required.

Threshold E

Guidelines for Determination of Significance

A significant impact would result if the project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The project would comply with the local policies or ordinances protecting biological resources identified in the County's General Plan. Therefore, no impacts to local policies or ordinances would occur from implementation of the project, and no mitigation would be required.

Threshold F

Guidelines for Determination of Significance

A significant impact would result if the project would conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or state HCP.

The project site is within the Boulevard Community Planning Area boundary of the East County Plan area of the County MSCP Plan, which is in a preliminary draft form and not yet approved, and therefore not within an HCP and not subject to the County MSCP Plan (County of San Diego 1998). Although the project is not subject to the County MSCP, the project adheres to the mitigation ratios for sensitive vegetation communities designated for non-MSCP County lands (County of San Diego 2010a). Therefore, no impacts to local conservation plans would occur from implementation of the project, and no mitigation would be required.

Proposed Mitigation

The following biological resources mitigation measures will be implemented during construction.

Direct Impacts

Sensitive Wildlife

BIO-MIT-1: Qualified Biologist. A qualified biologist provided by the County of San Diego Department of Public Works (or their designee) shall be on site periodically during construction activities that require implementation of specific measures. The qualified biologist shall be responsible for implementing the following measures:

1. Prior to the start of construction, the qualified biologist shall be present to oversee the installation of fencing or staking along the limits of construction for all phases. All areas near but outside of the limits of construction that contain sensitive biological resources shall be designated as environmentally sensitive areas and shall be avoided. To ensure avoidance, the construction limits shall be fenced off using snow fencing or other high-visibility fencing or staking material and clearly marked on construction as-built plans. The qualified biologist shall check the protective fencing approximately weekly to ensure it remains in place through the end of the construction period, and the fencing around the limits of construction shall be maintained throughout construction.
2. The qualified biologist shall flush sensitive species (i.e., avian or other mobile species) from occupied habitat areas immediately before brush clearing and earthmoving activities. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the project mitigation measures.
3. The qualified biologist shall instruct the contractor's personnel in providing daily cover and/or adequate escape ramps/routes for wildlife from excavated areas and oversee compliance by visiting the construction site approximately weekly. All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges shall be covered with soils and plastic sheeting such that small wildlife cannot access them. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down

by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected to monitor for wildlife entrapment by the contractor's personnel daily and by an approved biologist during site visits. Excavations shall provide an earthen ramp to allow for a wildlife escape route.

Nesting Birds

BIO-MIT-2: General Nest Surveys. No grubbing, trimming, or clearing of vegetation, primarily non-native grassland species and a small area of shrubs, from the project site shall occur during the raptor and bird breeding season (January 15 through August 31). If grubbing, trimming, or clearing of vegetation cannot feasibly occur outside of the general bird breeding season, the qualified biologist, as approved by the County of San Diego, shall perform a pre-construction nesting bird survey no more than 1 week prior to the start of vegetation grubbing, trimming, or clearing to determine if active bird nests are present in the affected areas. Should an active bird nest be located, the qualified biologists shall establish a buffer and direct vegetation clearing away from the nest until the project biologist has determined that the young have fledged or the nest has failed. If no nesting birds (including nest building or other breeding or nesting behavior) are on the project site, grubbing, trimming, or clearing shall proceed.

In the event that grubbing, trimming, or clearing of vegetation for future phases cannot feasibly occur outside of the general bird breeding season, and are greater than 500 feet away from the previous construction activity, a qualified biologist shall perform a pre-construction nesting bird survey no more than 1 week prior to the start of construction.

Sensitive Vegetation Communities

BIO-MIT-3: Direct Temporary and Permanent Sensitive Vegetation Community Impacts. Direct temporary impacts to approximately 0.008 acre of big sagebrush scrub shall require in-kind revegetation in place at a 1:1 ratio once construction is complete (County of San Diego 2010b). Temporary impacts to approximately 0.009 acre of non-vegetated channel and approximately 0.001 acre of southern arroyo willow riparian forest (both potentially under the jurisdiction of USACE, RWQCB, and CDFW) shall be restored on-site at the ratio required by the USACE, RWQCB, and CDFW through the aquatic resources permitting process (BIO-MIT-4). Temporary impacts to approximately 1.44 acres of non-native grassland shall require revegetation using native grass seed at a 0.5:1 ratio once construction is complete.

Direct permanent impacts to 0.009 acre of non-native grassland shall be mitigated at a ratio of 0.5:1 through on-site revegetation of the temporary non-native grassland areas using native grass seed once construction is complete.

Potentially Jurisdictional Aquatic Resources

BIO-MIT-4: Potentially Jurisdictional Aquatic Resources Permitting. Temporary impacts to the 0.009 acre non-vegetated channel and 0.001 acre of southern arroyo willow riparian forest, both potentially under the jurisdiction of the USACE, RWQCB, and CDFW, shall be authorized by the USACE through the Section 404 Permit Program, by the RWQCB through a 401 State Water Quality Certification, and by the CDFW through a 1602 Streambed Alteration Agreement. Approved temporary impacts to the potentially federal and state jurisdictional non-vegetated channel and southern arroyo willow riparian forest require compensatory mitigation through proposed on-site habitat restoration, creation, and enhancement to the satisfaction of the USACE, RWQCB, and CDFW to achieve a no-net loss of federal and state jurisdictional non-wetland waters and wetlands.

Level of Significance After Mitigation

As discussed in Threshold A, project construction would avoid direct impacts to Jacumba milk-vetch and potentially occurring Tecate tarplant through avoidance and designation of the limits of construction outside of sensitive biological resources areas. Implementation of Mitigation Measure BIO-MIT-1, Qualified Biologist, would ensure the limits of construction would be installed prior to the start of construction and monitored throughout the construction period. Implementation of standard construction BMPs, including dust suppression measures, erosion and sediment control measures (sand and gravel bags, fiber rolls, and silt fencing), use of weed-free

erosion control products, and preparation and implementation of a Stormwater Pollution Prevention Plan, would prevent potential indirect impacts to Jacumba milk-vetch and Tecate tarplant. With implementation of Mitigation Measure BIO-MIT-1, permanent and temporary direct impacts to sensitive plant species from project construction would be reduced to less than significant.

As discussed in Threshold A, project construction would result in potentially significant temporary and permanent direct impacts to sensitive wildlife species, including nesting birds and raptors. Implementation of standard construction BMPs, including dust suppression measures, erosion and sediment control measures, use of weed-free erosion control products, noise suppression measures, trash containment methods, and preparation and implementation of a Stormwater Pollution Prevention Plan, would prevent potential indirect impacts to sensitive wildlife species. With implementation of Mitigation Measures BIO-MIT-1, Qualified Biologist, and BIO-MIT-2, General Nest Surveys, temporary and permanent direct impacts to sensitive wildlife species and nesting birds and raptors from project construction would be reduced to less than significant.

As discussed in Threshold B, project construction would result in potentially significant temporary and permanent direct impacts to sensitive vegetation communities. Implementation of standard construction BMPs, including dust suppression measures, erosion and sediment control measures, the use of weed-free erosion control products, and the preparation and implementation of a Stormwater Pollution Prevention Plan, would prevent potential indirect impacts to sensitive vegetation communities. With implementation of Mitigation Measures BIO-MIT-1, Qualified Biologist, and BIO-MIT-3, Direct Temporary and Permanent Sensitive Vegetation Community Impacts, temporary and permanent direct impacts to sensitive vegetation communities from project construction would be reduced to less than significant.

As discussed in Threshold C, project construction would result in potentially significant temporary direct impacts to potentially federal and state jurisdictional aquatic resources. Implementation of standard construction BMPs, including dust suppression measures, erosion and sediment control measures, use of weed-free erosion control products, and preparation and implementation of a Stormwater Pollution Prevention Plan, would prevent potential indirect impacts to potentially federal and state jurisdictional aquatic resources. With implementation of Mitigation Measures BIO-MIT-1, Qualified Biologist, and BIO-MIT-4, Potentially Jurisdictional Aquatic Resources Permitting, temporary direct impacts to potentially federal and state jurisdictional aquatic resources would be reduced to less than significant.

As discussed in Thresholds D through F, the project would not result in significant impacts to wildlife corridors and linkages, conflicts with local policies and ordinances, or regional conservation planning, and no mitigation would be required.

Cumulative Impacts

The project, and other cumulative projects, would be required to conform to County Guidelines and provide mitigation as appropriate. Mitigation Measures BIO-MIT-1, Qualified Biologist; BIO-MIT-2, General Nest Surveys; BIO-MIT-3, Direct Temporary and Permanent Sensitive Vegetation Community Impacts; and BIO-MIT-4, Potentially Jurisdictional Aquatic Resources Permitting, are proposed to reduce project-level direct impacts on sensitive plants and wildlife, migratory birds and raptors, sensitive vegetation communities, and potentially federal and state jurisdictional aquatic resources. Implementation of these mitigation measures would reduce project-level impacts to a less than significant level and ensure that the project would not contribute to cumulatively significant impacts to biological resources. Thus, no significant cumulative impacts would occur from implementation of the project.

Conformance with MSCP Findings

The project is within the Boulevard Community Planning Area boundary of the Draft East County Plan area of the MSCP Plan. The Draft East County Plan is currently in development and has not yet been adopted; therefore, the project site is not within an HCP and is not subject to the County MSCP Plan.

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Sincerely,

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Biologist/CEQA Analyst

Attachments

1, Figures

2, Project Site Photographs

3, Aquatic Resources Delineation Report

4, Plant and Wildlife Species Observed on the Project Site

5, Least Bell's Vireo Survey Report

6, Rare Plant Survey Report

Attachment 1. Figures

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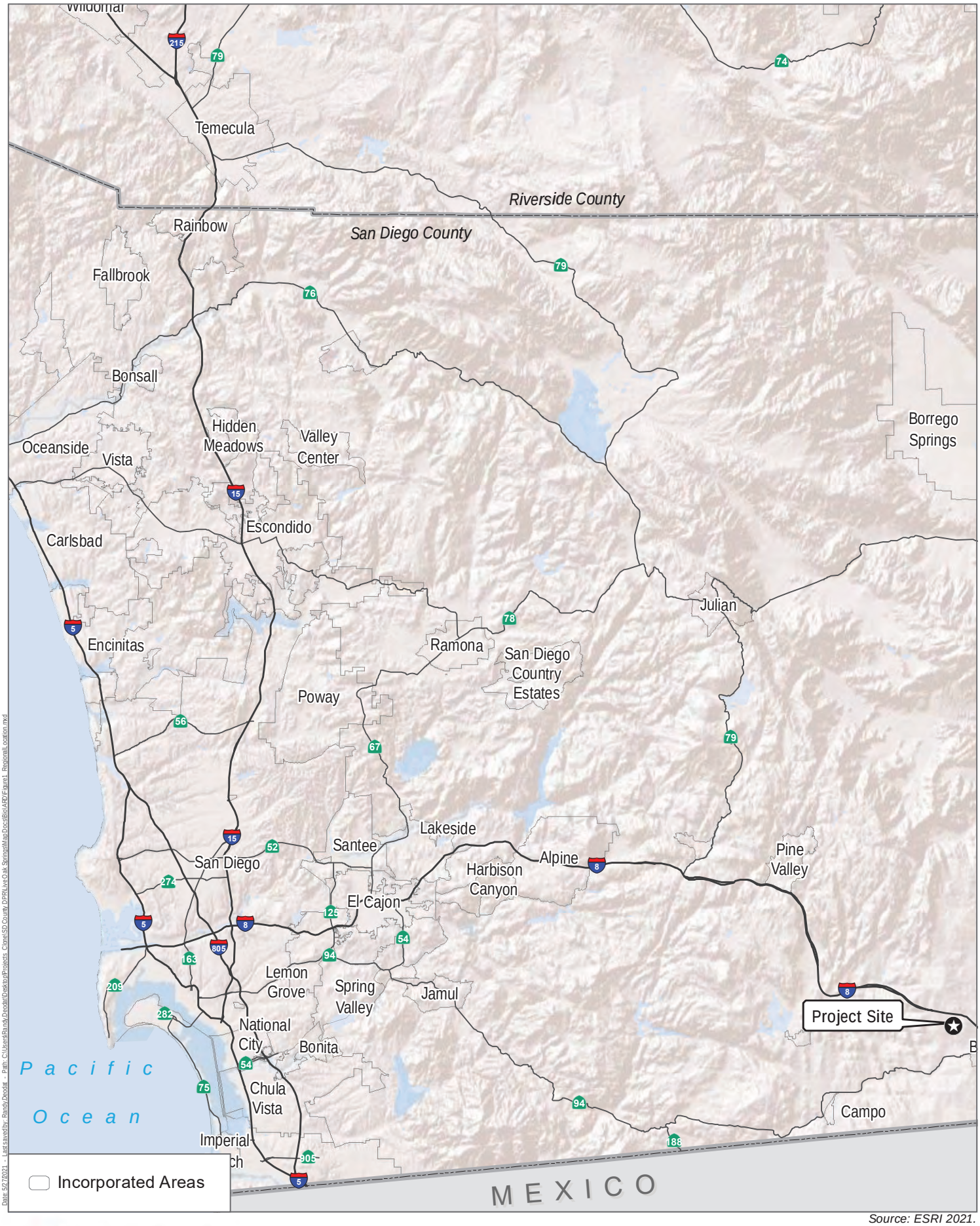

Source: ESRI 2021.

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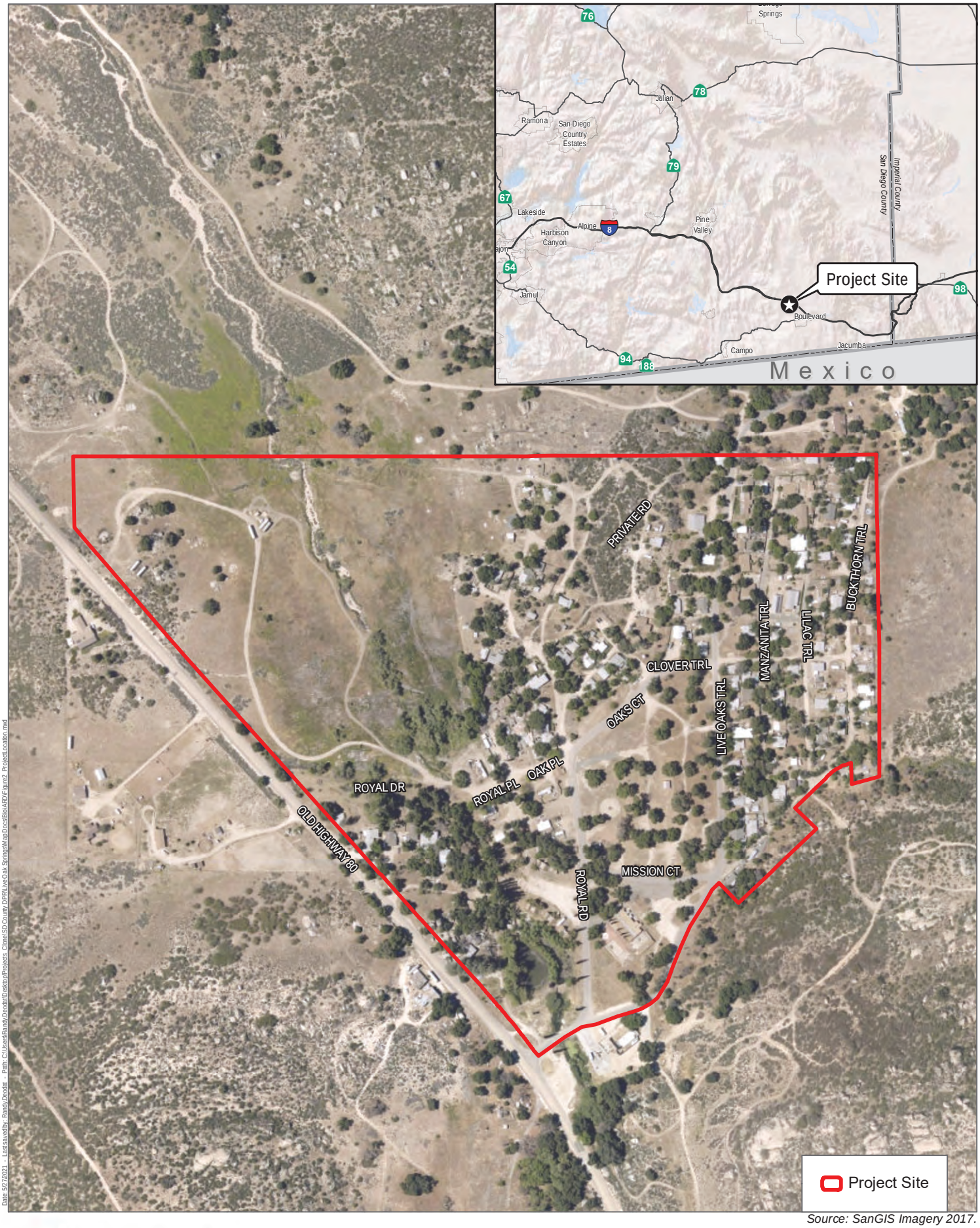
Figure 1

Regional Location

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

Harris & Associates

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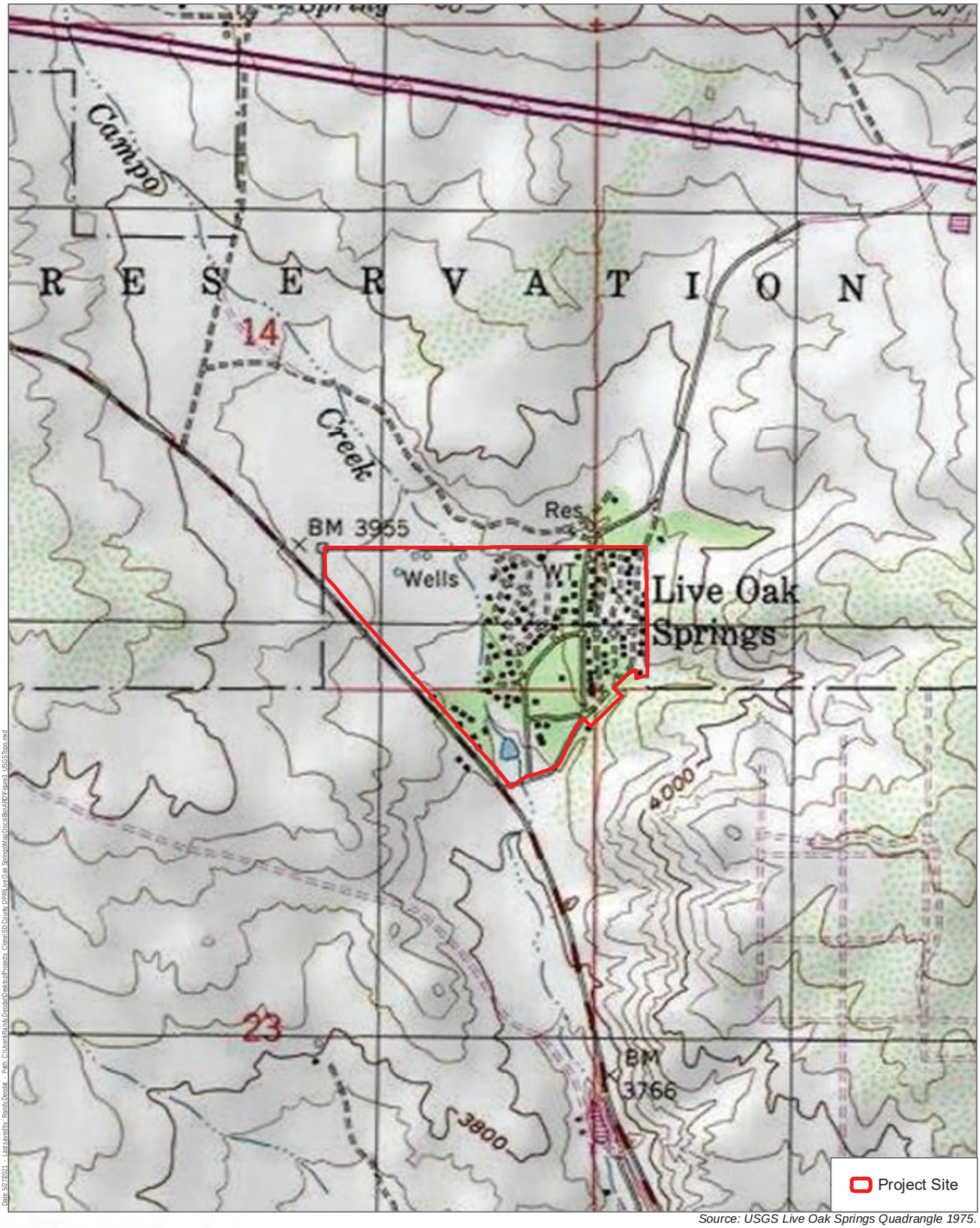
Figure 2

Project Location

Live Oak Springs Water System Improvements Project



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Source: USGS Live Oak Springs Quadrangle 1975.

Harris & Associates

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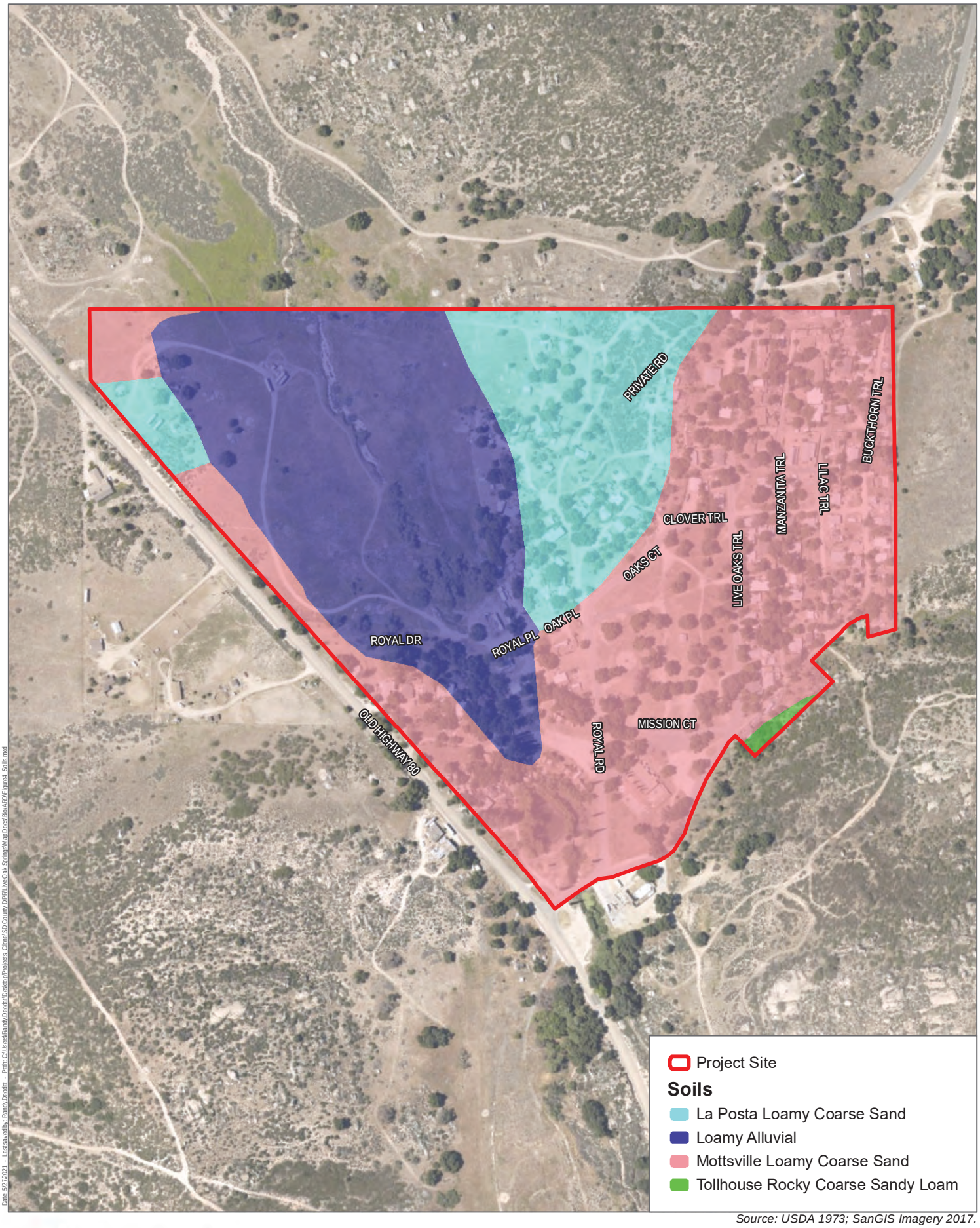
Figure 3

USGS Topographic Map

Live Oak Springs Water System Improvements Project



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Source: USDA 1973; SanGIS Imagery 2017.

Harris & Associates

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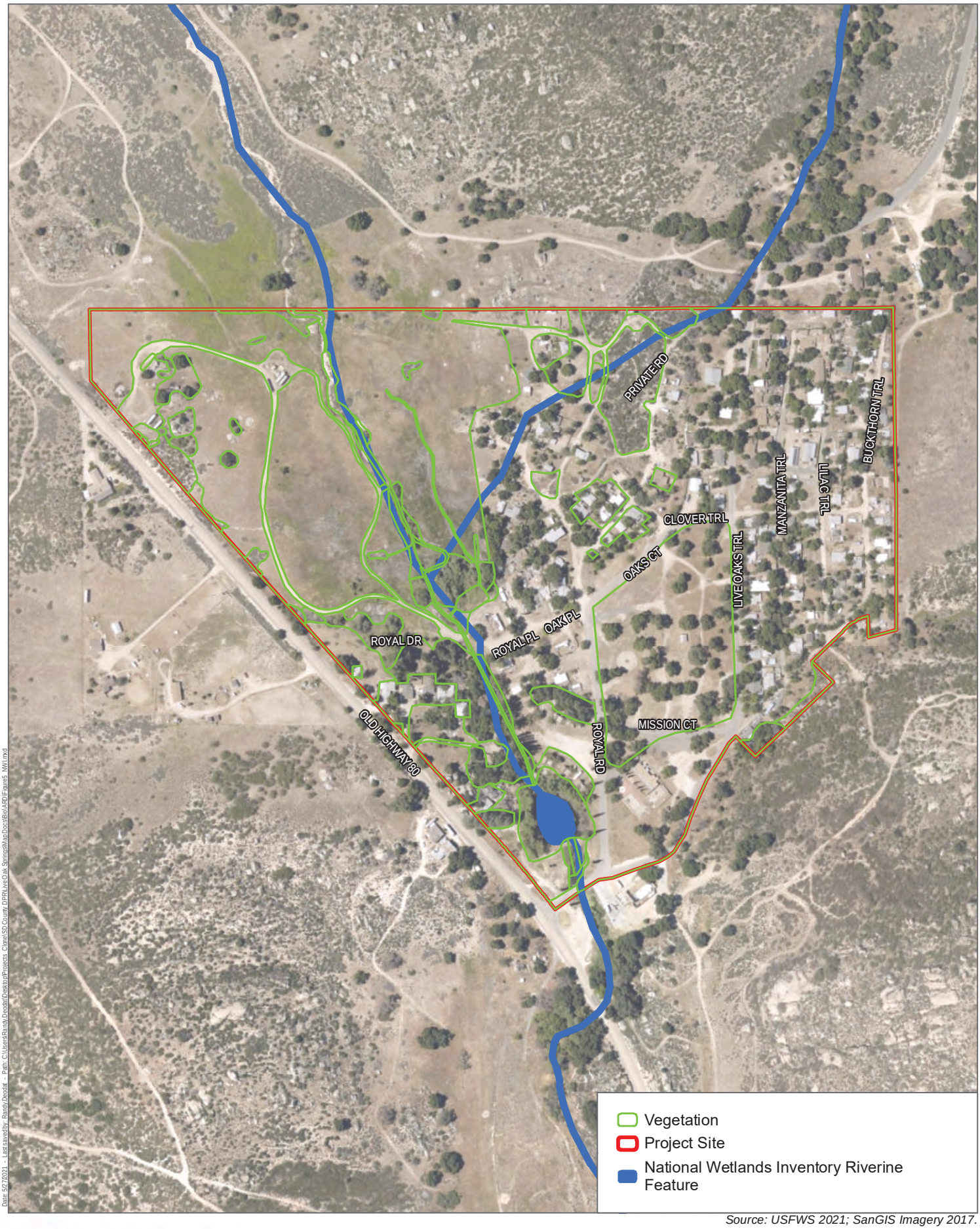
Figure 4

Soils

Live Oak Springs Water System Improvements Project



Source: USFWS 2021; SanGIS Imagery 2017.

Harris & Associates

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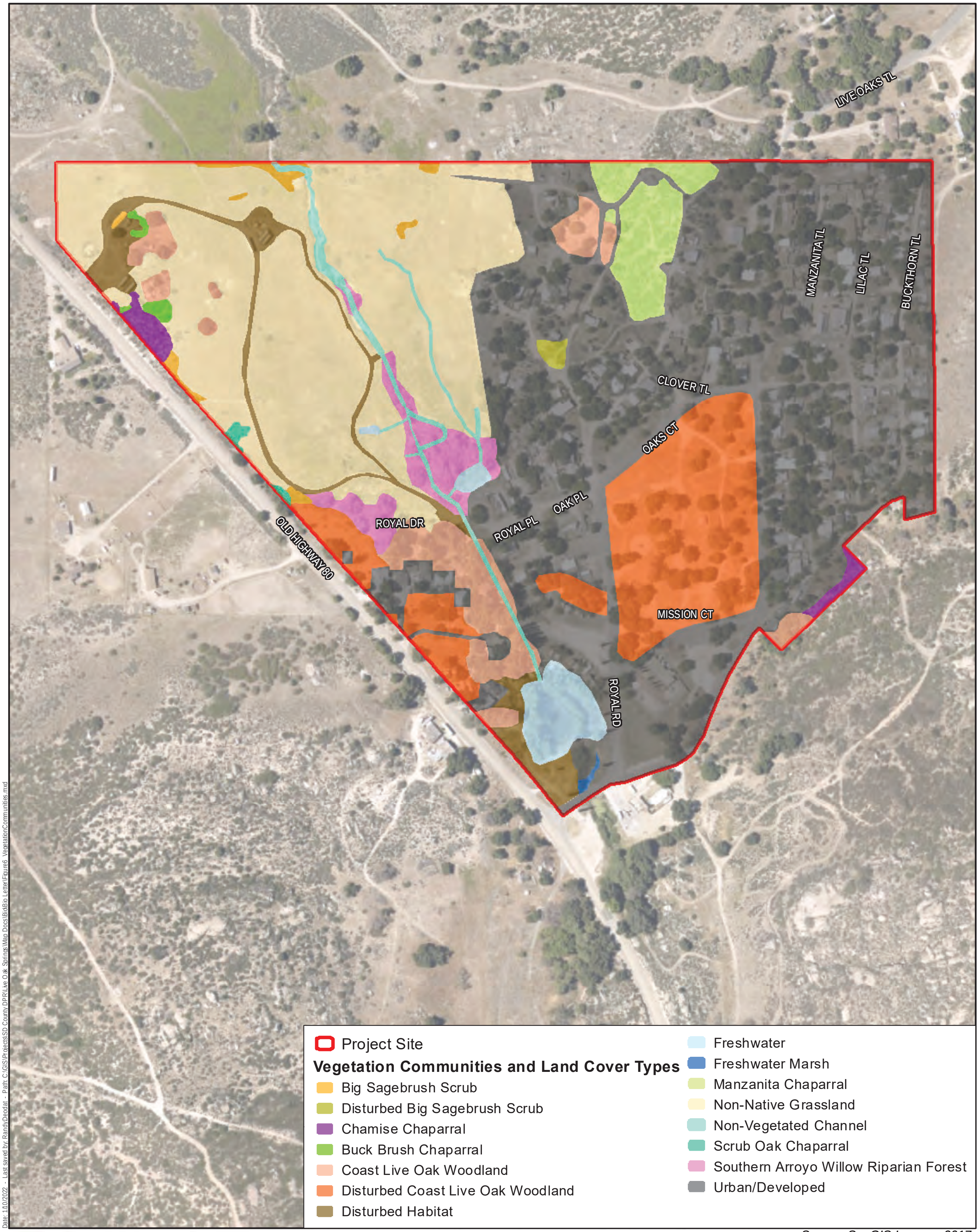
Figure 5

National Wetlands Inventory Results

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

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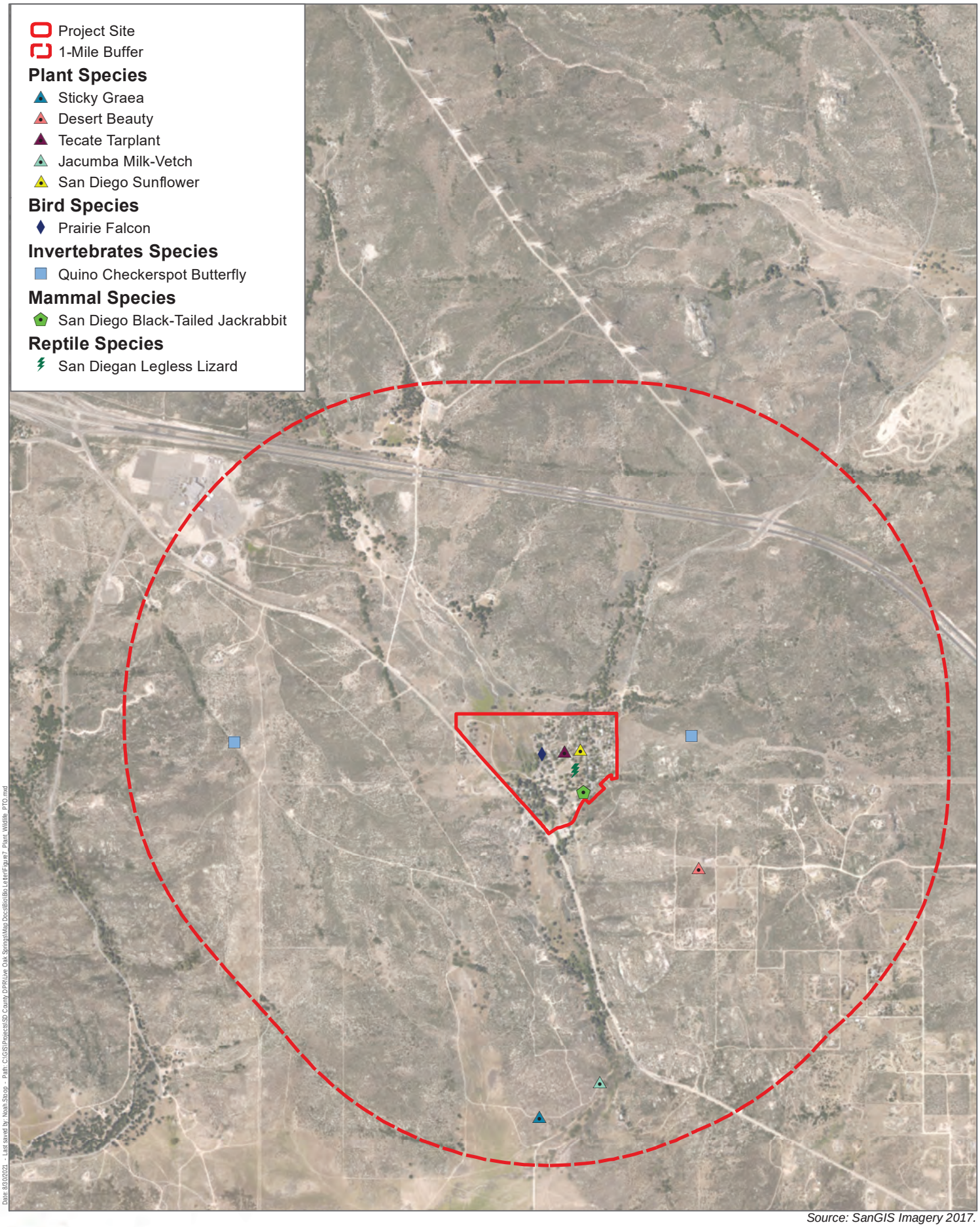
Figure 6

Vegetation Communities and Land Cover Types

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

Harris & Associates

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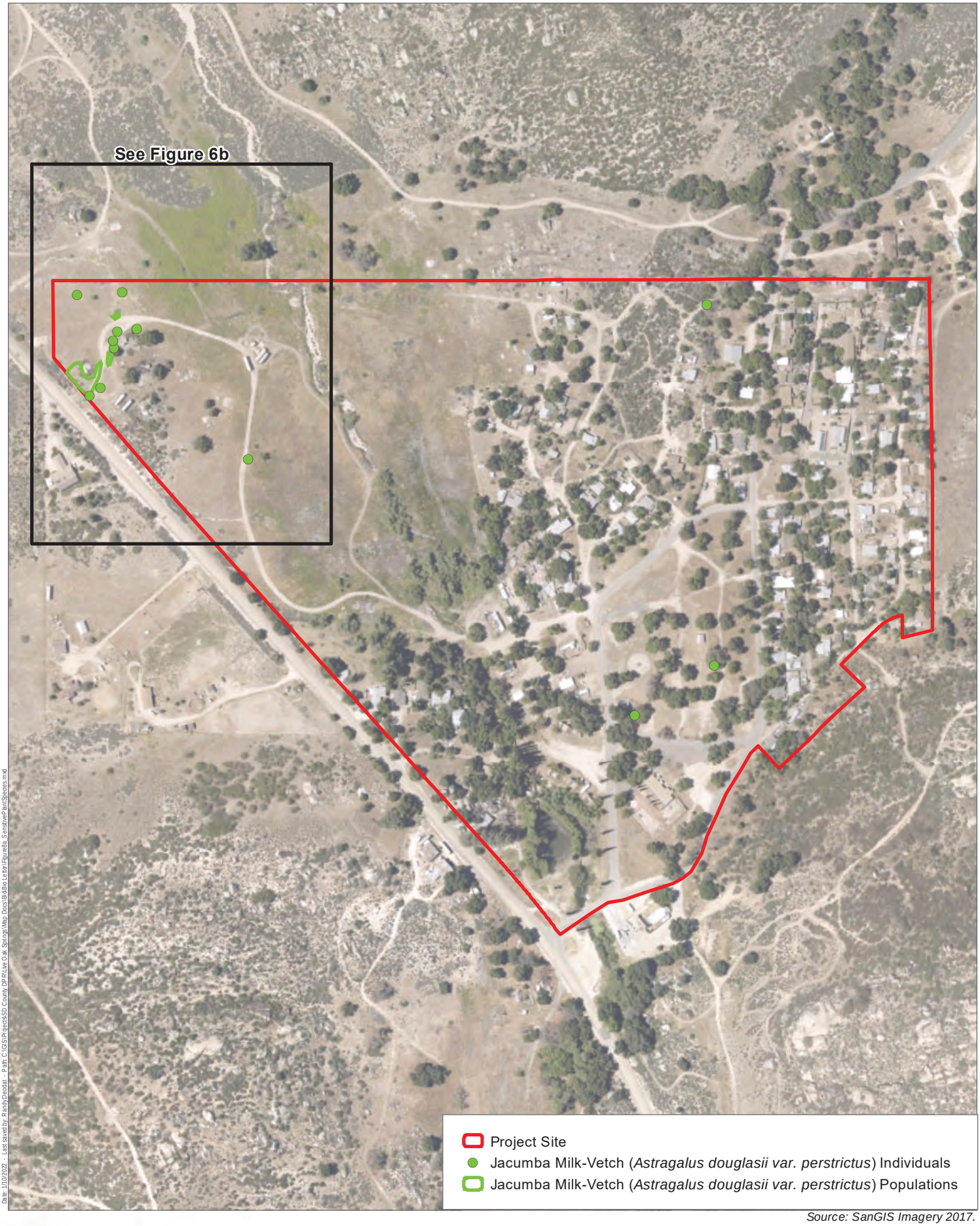
Figure 7

Plant and Wildlife Species with Potential to Occur

Live Oak Springs Water System Improvements Project



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Source: SanGIS Imagery 2017.

Harris & Associates

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Figure 8a

Sensitive Plant Observations

Live Oak Springs Water System Improvements Project

Date: 1/10/2022 - Last saved by: RandyDaodat - - Path: C:\GIS\Projects\SD County DPR\Live Oak Springs\Map Docs\BA\Bio Letter\Figure8b_SensitivePlantSpecies.mxd

Source: SanGIS Imagery 2017.

Harris & Associates

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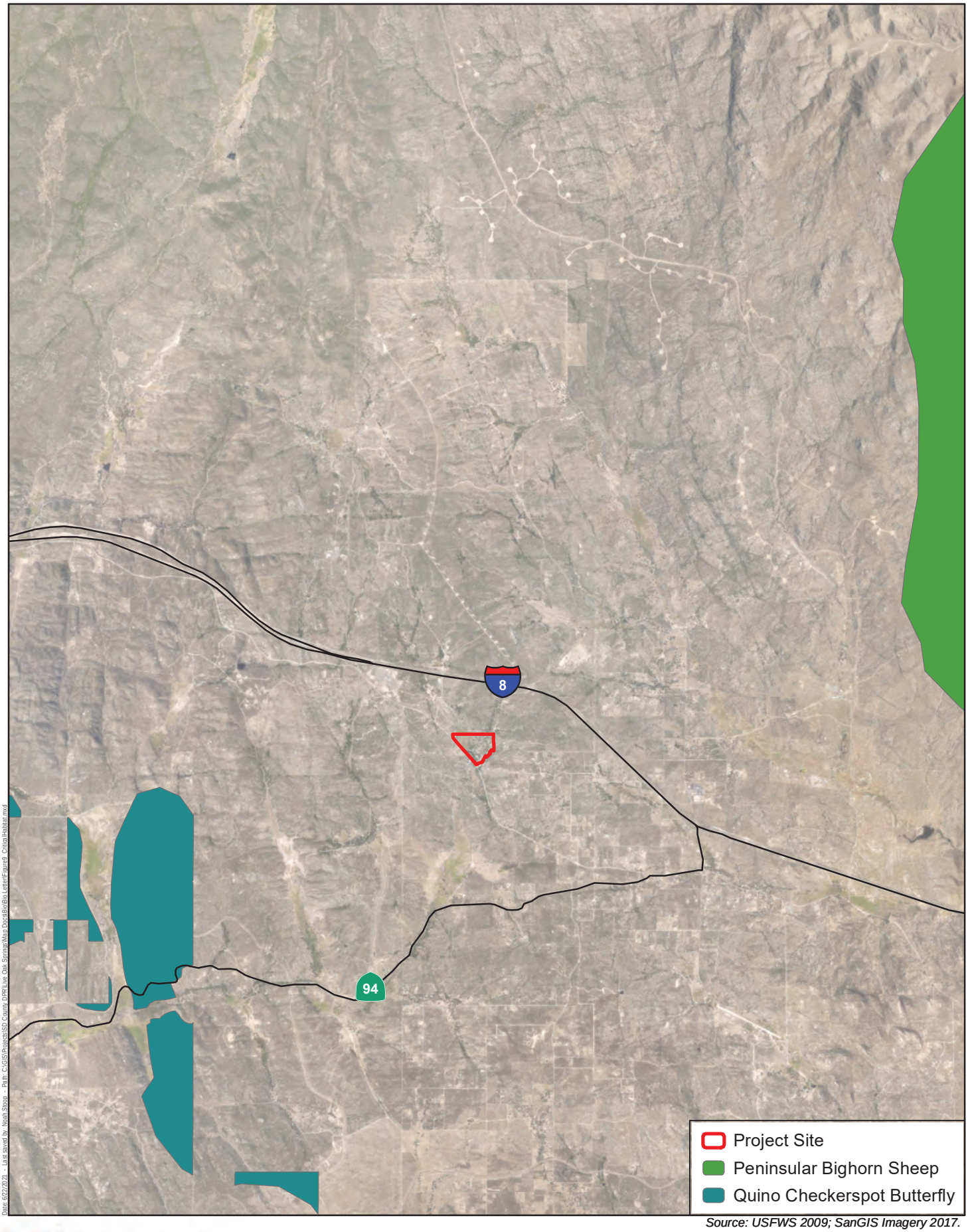
Figure 8b

Sensitive Plant Observations

Live Oak Springs Water System Improvements Project



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Source: USFWS 2009; SanGIS Imagery 2017.

Harris & Associates

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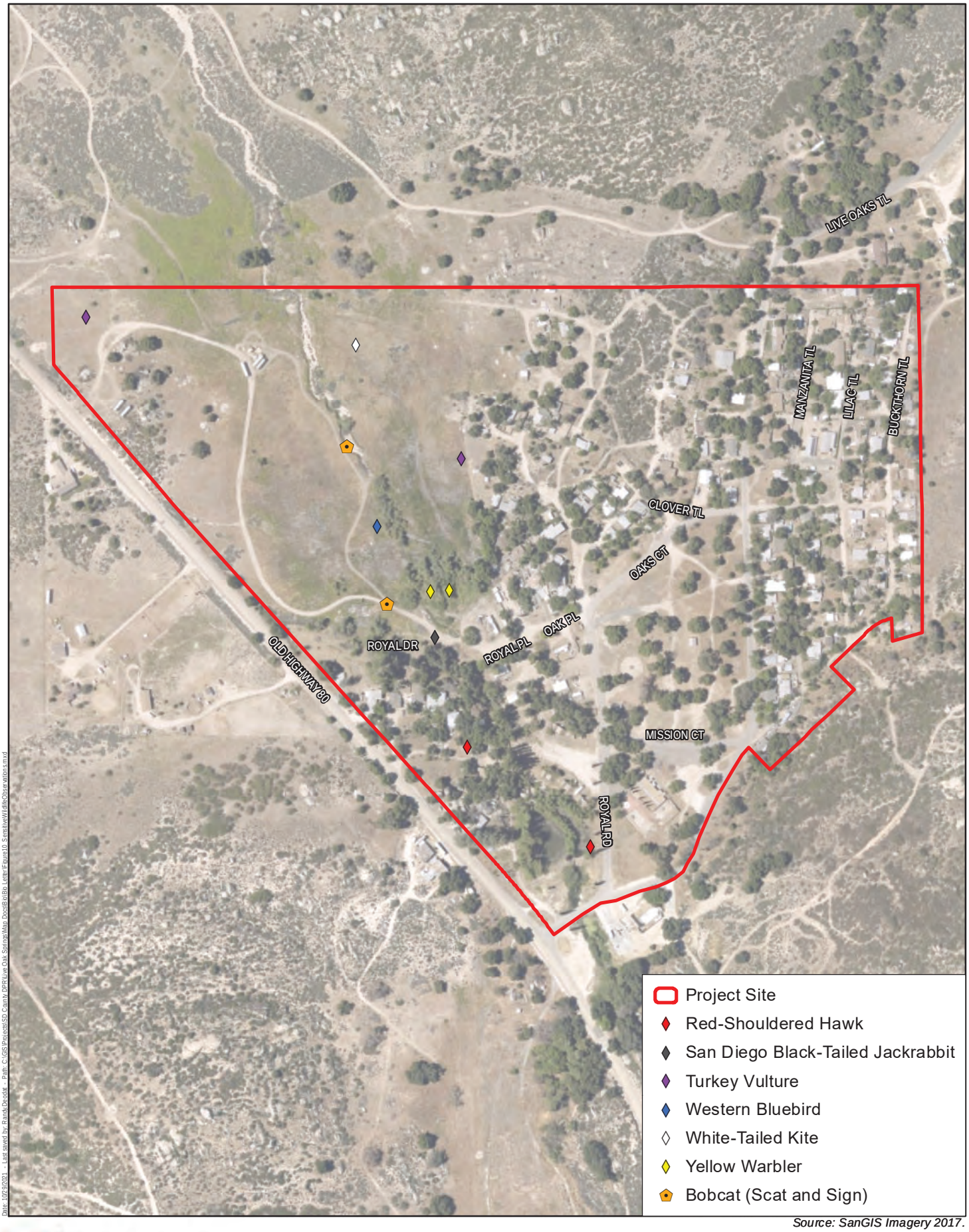
Figure 9

Critical Habitat

Live Oak Springs Water System Improvements Project



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Source: SanGIS Imagery 2017.

Harris & Associates

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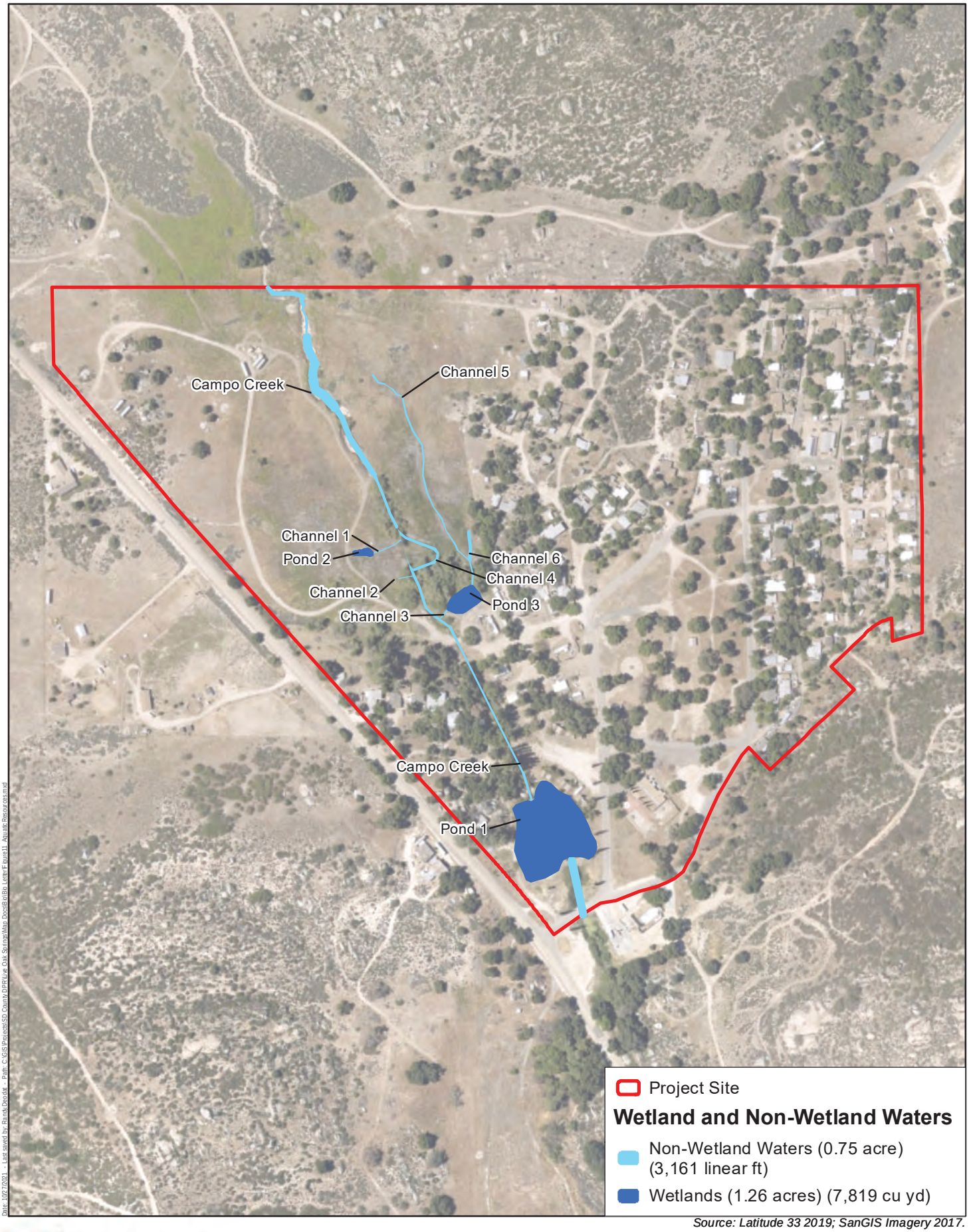
Figure 10

Sensitive Wildlife Species Observations

Live Oak Springs Water System Improvements Project



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Source: Latitude 33 2019; SanGIS Imagery 2017.

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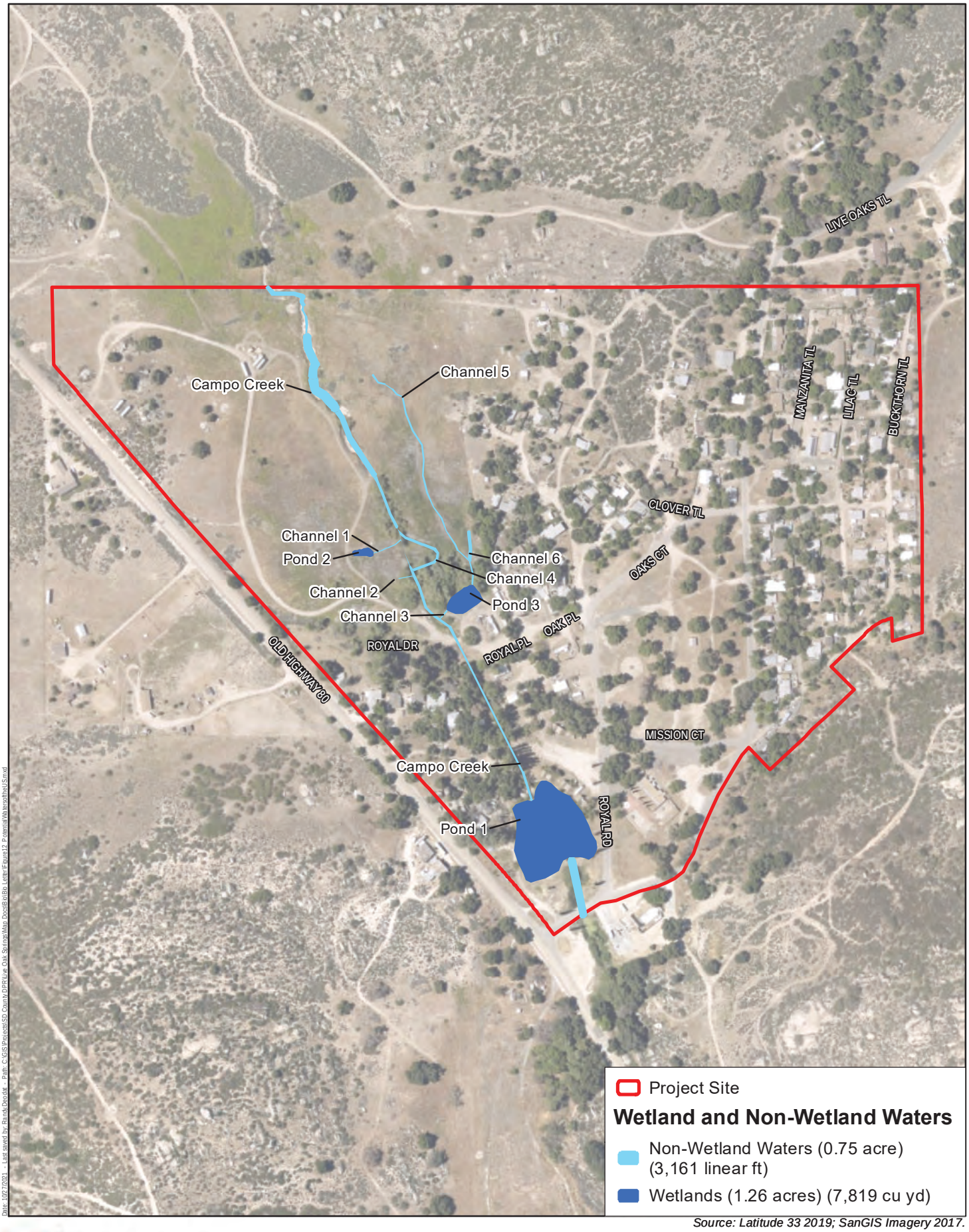
Figure 11

Aquatic Resources

Live Oak Springs Water System Improvements Project



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Source: Latitude 33 2019; SanGIS Imagery 2017.

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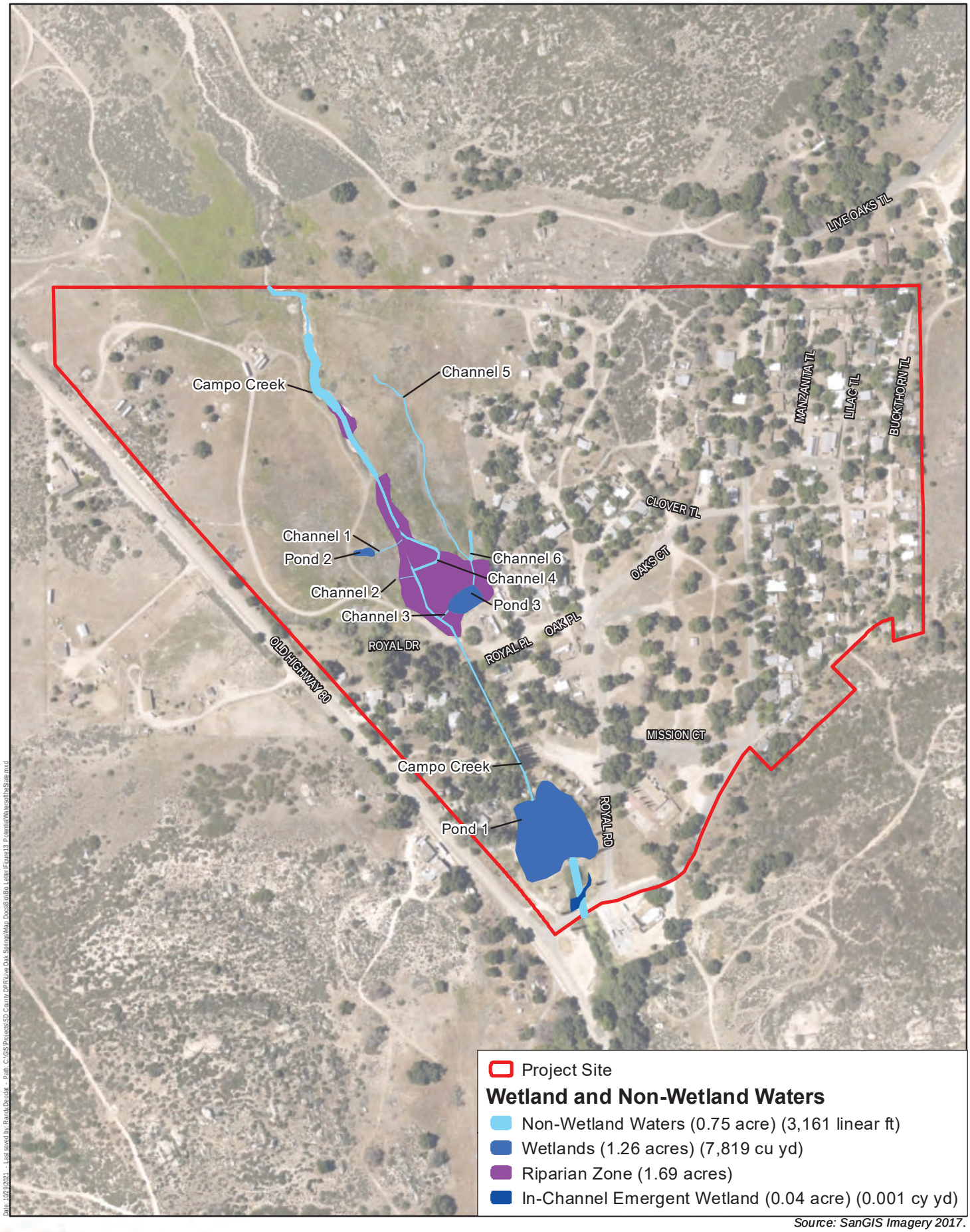
Figure 12

Potential Waters of the U.S.

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

Harris & Associates

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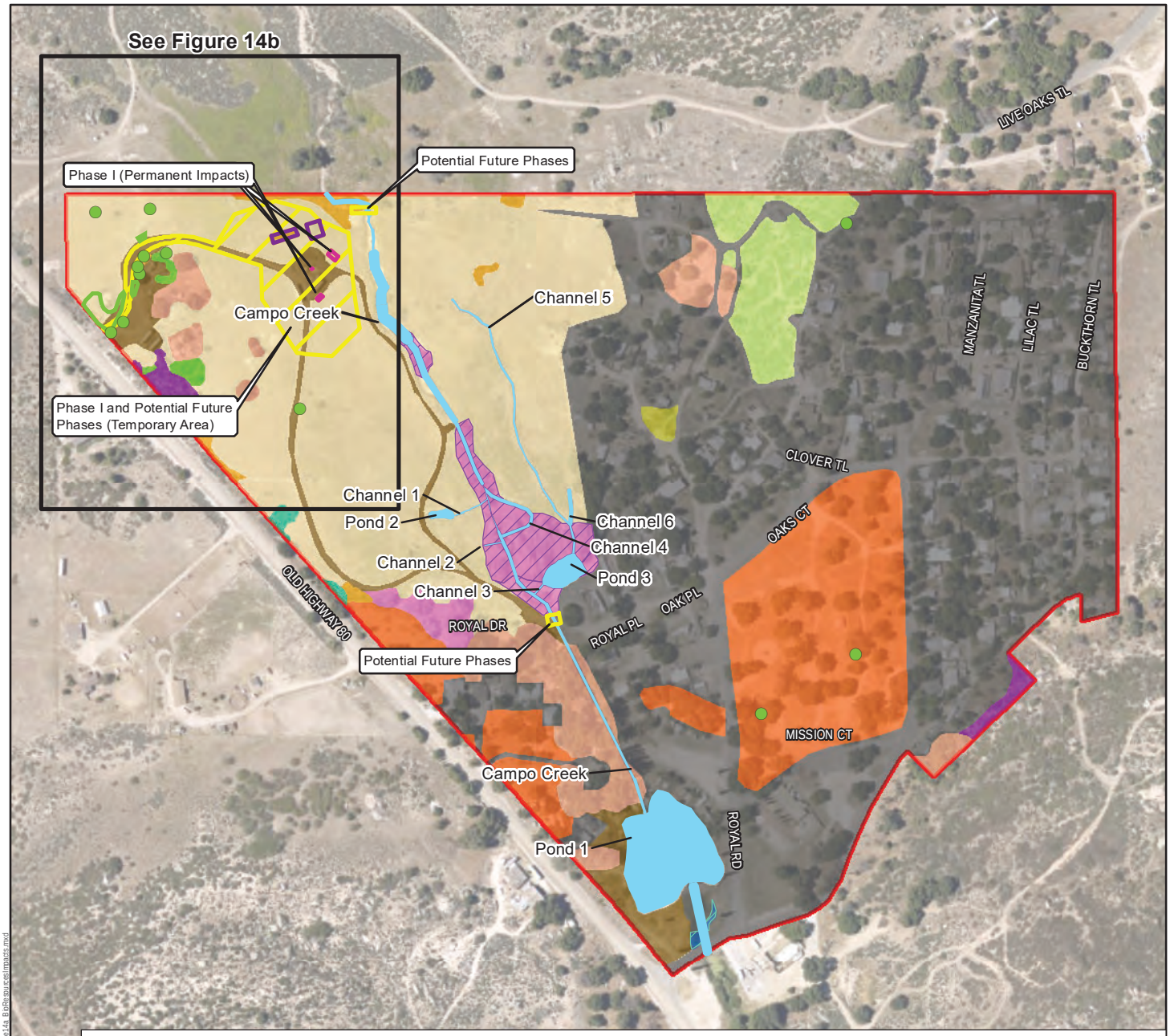
Figure 13

Potential Waters of the State

Live Oak Springs Water System Improvements Project



Project Site

Impact Type

- Permanent Impacts
- Temporary Impacts (Limits of Construction)
- Avoidance Area

Sensitive Plants

- Jacumba Milk-Vetch (*Astragalus douglasii var. perstrictus*) Individuals
- Jacumba Milk-Vetch (*Astragalus douglasii var. perstrictus*) Populations

Potential Jurisdictional Aquatic

- Riparian Zone
- Freshwater Marsh
- Potentially Jurisdictional Non-Wetland Waters and Wetlands of the U.S./State

Vegetation Communities and Land Cover Types

- Big Sagebrush Scrub
- Disturbed Big Sagebrush Scrub
- Chamise Chaparral
- Buck Brush Chaparral
- Coast Live Oak Woodland
- Disturbed Coast Live Oak Woodland
- Disturbed Habitat
- Freshwater Marsh
- Manzanita Chaparral
- Non-Native Grassland
- Scrub Oak Chaparral
- Southern Arroyo Willow Riparian
- Urban/Developed

Date: 1/10/22 - Last saved by: RandyDecoteau - Path: C:\GIS\Projects\SD County DPR\Live Oak Springs\Map Docs\Bio\Bio Letter\Figure14a BioResources Impacts.mxd

Source: SanGIS Imagery 2017.

Harris & Associates

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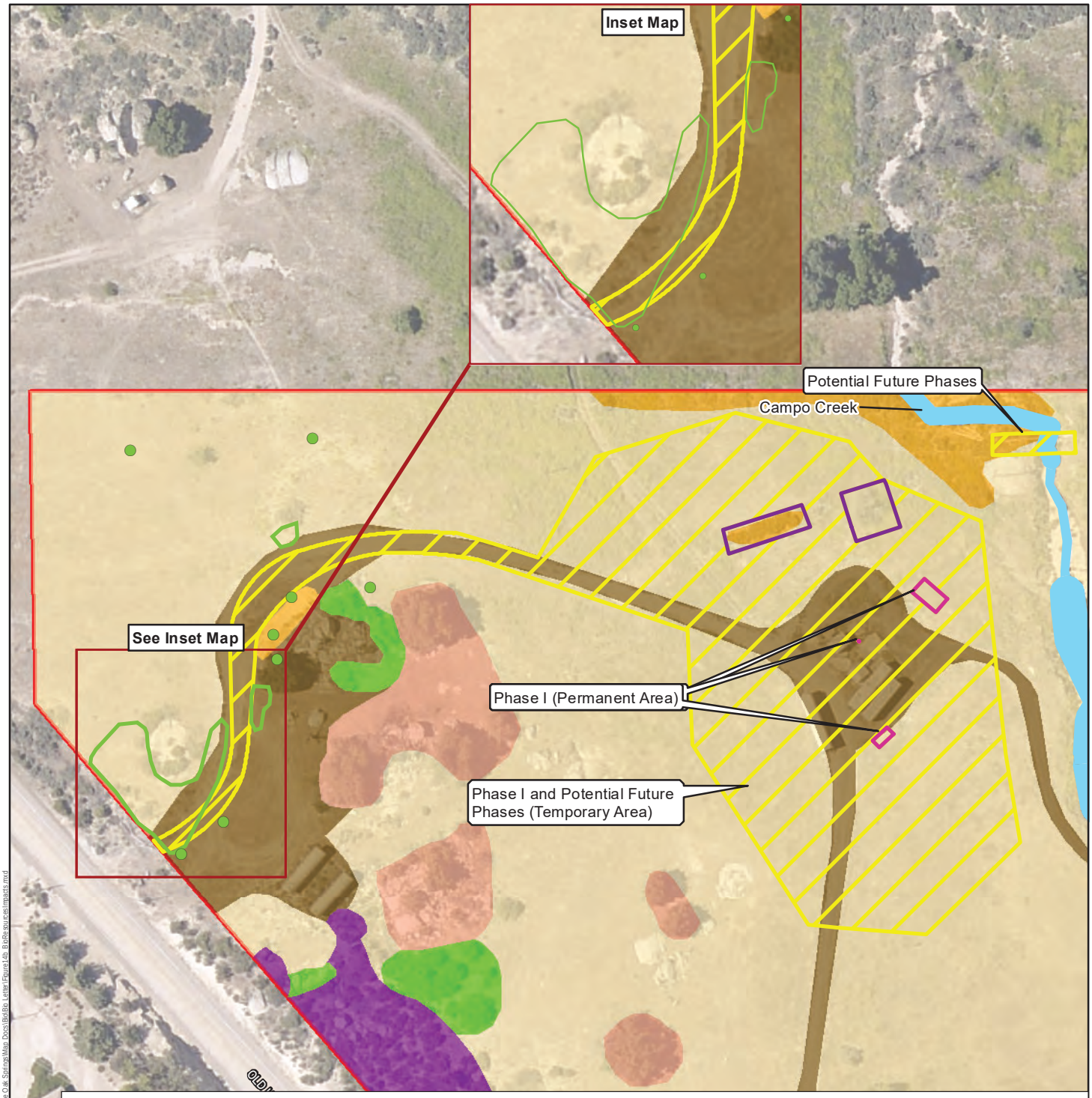
Figure 14a

Biological Resources Impacts

Live Oak Springs Water System Improvements Project



Project Site

Impact Type

- Permanent Impacts
- Temporary Impacts (Limits of Construction)
- Avoidance Area

Sensitive Plants

- Jacumba Milk-Vetch (*Astragalus douglasii var. perstrictus*) Individuals
- Jacumba Milk-Vetch (*Astragalus douglasii var. perstrictus*) Populations

Potential Jurisdictional Aquatic Resources

- Potentially Jurisdictional Non-Wetland Waters and Wetlands of the U.S./State

Vegetation Communities and Land Cover Types

- Big Sagebrush Scrub
- Chamise Chaparral
- Buck Brush Chaparral
- Coast Live Oak Woodland
- Disturbed Habitat
- Non-Native Grassland

Source: SanGIS Imagery 2017.

Harris & Associates

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Feet

Figure 14b

Biological Resources Impacts

Live Oak Springs Water System Improvements Project

Attachment 2. Project Site Photographs

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Project Site Photographs – Western Portion

Photograph 1: South-facing view of the chamise chaparral and buck brush scrub on the northwestern edge of the project site.

Photograph 2: North-facing view of the northern reach of Campo Creek that crosses the western portion of the project site. Evidence of vehicle tracks and ruts is shown in the center of the photograph and a water conveyance pipe spanning Campo Creek channel is shown in the background.

Photograph 3: Jacumba milk vetch (*Astragalus douglasii* var. *perstrictus*) growing along the dirt access road in the northwestern corner of the project site.

Photograph 4: Close-up view of the Jacumba milk vetch growing along the dirt access road in the northwestern corner of the project site.

Photograph 5: Southwestern-facing view of the non-native grassland (in the foreground) and southern arroyo willow riparian forest adjacent to rural residential properties (in the background) in the west-central portion of the project site.

Photograph 6: Southwestern-facing view of a portion of the Campo Creek channel in the west-central portion of the project site. This photograph shows the evidence of mechanical disturbance on the western Campo Creek channel bank observed during the fieldwork on April 28, 2021.

Photograph 7: Southwestern-facing view of the non-native grassland (in the foreground) and coast live oak woodland (in the background) in the southwestern portion of the project site.

Photograph 8: Southeast-facing view of the southern arroyo willow riparian forest surrounding Campo Creek in the west-central portion of the project site.

Photograph 9: Southwest-facing view of the freshwater pond (Pond 1) that has formed within and is fed by Campo Creek in the southern portion of the project site.

Photograph 10: Northwest-facing view of the concrete dam and spillway at the southern end of freshwater Pond 1 in the southern portion of the project site. The concrete dam has formed Pond 1 within Campo Creek and has contributed to the formation of the freshwater marsh within the southern extent of Campo Creek (due to the ponding of water).

Project Site Photographs – Eastern Portion

Photograph 11: East-facing view of the non-native grassland adjacent to the rural residential properties in the northeastern portion of the project site.

Photograph 12: Southeast-facing view of the manzanita chaparral and coast live oak woodland surrounded by rural residential properties in the northeastern portion of the project site.

Photograph 13: East-facing view of the disturbed coast live oak woodland in the east-central portion of the project site.

Photograph 14: South-facing view of the of the disturbed coast live oak woodland surrounded by rural residential development in the southeastern portion of the project site.

Photograph 15: South-facing view of the rural residential properties on either side of Live Oak Trail that runs north to south in the northeastern portion of the project site.

Photograph 16: North-facing view into the rural residential community of Live Oak Springs. The disturbed coast live oak woodland surrounded by the rural residential properties is shown in the background of the photograph.

Attachment 3. Aquatic Resources Delineation Report

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Attachment 4. Plant and Wildlife Species Observed on the Project Site

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Plant Species Observed

Scientific Name	Common Name
Dicots	
Adoxaceae	Muskroot Family
Sambucus nigra ssp. *caerulea*	Blue elderberry
Amaranthaceae	Amaranth Family
Amaranthus albus[1]	Tumbleweed
Anacaridaceae	Cashew or Sumac Family
Rhus aromatica var. *aromatica*	Skunkbrush
Apiaceae	Carrot, Celery, or Parsley Family
Lomatium dasycarpum subsp. *dasycarpum*	Woolly-fruit lomatium
Apocynaceae	Dogbane Family
Vinca major[1]	Common periwinkle
Asteraceae	Sunflower Family
Ambrosia acanthicarpa	Annual bur-sage
Ambrosia psilostachya	Western ragweed
Artemisia dracunculus	Tarragon
Artemisia tridentata subsp. *tridentata*	Big sagebrush
Centaurea benedicta[1]	Blessed thistle
Cirsium vulgare[1]	Bull thistle
Corethrogyne filaginifolia var. *filaginifolia*	California sand-aster
Ericameria pinifolia	Pine goldenbush
Erigeron canadensis	Horseweed
Erigeron foliosus var. *foliosus*	Leafy daisy
Eriophyllum confertiflorum var. *confertiflorum*	Long-Stem golden-yarrow
Gutierrezia sarothrae	Broom matchweed/snakeweed
Hypochaeris glabra[1]	Smooth cat's ear
Lactuca serriola[1]	Prickly lettuce
Matricaria discoidea[1]	Common pineapple-weed
Pseudognaphalium beneolens	Fragrant everlasting
Sonchus asper subsp. *asper*[1]	Prickly sow-thistle
Stephanomeria exigua subsp. *deanei*	Deane's small wreath-plant
Uropappus lindleyi	Silver puffs
Azollaceae	Fern Family
Azolla filiculoides	Pacific mosquito fern
Boraginaceae	Borage Family
Amsinckia intermedia	Rancher's fiddleneck
Amsinckia menziesii	Rigid fiddleneck
Cryptantha intermedia var. *intermedia*	Nievitas cryptantha
Pectocarya penicillata	Winged combseed

Plant Species Observed

Scientific Name	Common Name
Plagiobothrys arizonicus	Arizona popcornflower
Plagiobothrys collinus var. *fulvescens*	Rough popcornflower
Brassicaceae	Mustard Family
Hirschfeldia incana[1]	Shortpod mustard
Sisymbrium irio[1]	London rocket
Sisymbrium orientale[1]	Hare's-ear cabbage
Cactaceae	Cactus Family
Cylindropuntia californica var. *parkeri*	Cane/valley cholla
Caprifoliaceae	Honeysuckle Family
Lonicera subspicata var. *denudata*	Johnston's honeysuckle
Caryophyllaceae	Carnation Family
Spergularia rubra[1]	Ruby sand-spurrey
Chenopodiacaceae	Chenopod Family
Chenopodium californicum	California goosefoot
Crassulaceae	Stonecrop Family
Crassula connata	Pygmyweed
Cucurbitaceae	Gourd Family
Cucurbita foetidissima	Calabazilla
Ericaceae	Heath Family
Arctostaphylos glandulosa subsp. *leucophylla*	White-leaf manzanita
Arctostaphylos pungens	Point-leaf manzanita
Euphorbiaceae	Spurge Family
Euphorbia lathyris[1]	Caper spurge, gopher plant
Euphorbia serpyllifolia	Thyme-leaf spurge
Fabaceae	Legume Family
Acmispon glaber var. *brevialatus*	Short-wing deerweed
Acmispon heermannii var. *heermannii*	Heermann's lotus
Acmispon strigosus	Bishop's/strigose lotus
Astragalus douglasii var. *perstrictus*[1B.2]	Jacumba milkvetch
Lupinus bicolor	Miniature lupine
Medicago polymorpha[1]	California burclover
Melilotus indicus[1]	Indian sweetclover
Robinia pseudoacacia[1]	Black locust
Fagaceae	Oak Family
Quercus agrifolia var. *oxyadenia*	Interior coast live oak
Geraniaceae	Geranium Family
Erodium botrys[1]	Long-beak filaree/storksbill
Erodium cicutarium[1]	Red-stem filaree/storksbill
Heliotropiaceae	Heliotrope Family
Heliotropium curassavicum var. *oculatum*	Salt heliotrope

Plant Species Observed

Scientific Name	Common Name
Hydrophyllaceae	Phacelia Family
Phacelia imbricata var. *patula*	Rock phacelia
Phacelia ramosissima var. *latifolia*	Branching phacelia
Juncaceae	Rush Family
Juncus bufonius var. *bufonius*	Toad rush
Juncus mexicanus	Mexican rush
Lamiaceae	Mint Family
Lamium amplexicaule[1]	Henbit
Trichostema parishii	Mountain bluecurls
Lythraceae	Loosestrife Family
Lythrum hyssopifolia	Grass poly
Malvaceae	Mallow Family
Malva parviflora[1]	Cheeseweed
Montiaceae	Caladrine Family
Claytonia parviflora subsp. *parviflora*	Narrow-leaf miner's-lettuce
Claytonia perfoliata subsp. *perfoliata*	Miner's-lettuce
Nyctaginaceae	**Four O'Clock** Family
Mirabilis multiflora var. *pubescens*	Froebell's four o'clock
Onagraceae	Evening Primrose Family
Camissonia strigulosa	Sandysoil sun cup
Camissoniopsis confusa	San Bernardino sun cup
Clarkia rhomboidea	Diamond clarkia
Epilobium brachycarpum	Summer cotton weed
Oenothera californica subsp. *avita*	Pinnate california evening-primrose
Oenothera elata subsp. *hirsutissima*	Hairy evening-primrose
Orobanchaceae	Broomrape Family
Castilleja foliolosa	Woolly indian paintbrush
Cordylanthus rigidus subsp. *setigerus*	Dark-tip bird's beak
Orobanche californica subsp. *feudgei*	Sagebrush broom-rape
Paeoniaceae	Peony Family
Paeonia californica	California peony
Papaveraceae	Poppy Family
Eschscholzia californica	California poppy
Phrymaceae	Lopseed Family
Erythranthe guttata	Seep monkey flower
Pinaceae	Pine Family
Pinus coulteri	Coulter pine

Plant Species Observed

Scientific Name	Common Name
Plantaginaceae	Plantain Family
Keckiella ternata var. *ternata*	Summer bush penstemon
Penstemon centranthifolius	Scarlet bugler
Penstemon spectabilis var. *spectabilis*[1]	Showy penstemon
Plantago major[1]	Common plantain
Polemoniaceae	Phlox Family
Microsteris gracilis	Slender phlox
Polygonaceae	Buckwheat Family
Chorizanthe fimbriata var. *laciniata*	Laciniate spineflower
Eriogonum elongatum var. *elongatum*	Tall buckwheat
Eriogonum fasciculatum var. *polifolium*	Mountain California buckwheat
Eriogonum thurberi	Thurber's buckwheat
Polygonum aviculare subsp. *neglectum*[1]	Prostrate knotweed
Rumex crispus[1]	Curly dock
Pteridaceae	Fern Family
Myriopteris covillei	Coville's lip fern
Ranunculaceae	Buttercup or Crowfoot Family
Clematis pauciflora	Ropevine clematis
Rhamnaceae	Buckthorn Family
Ceanothus cuneatus var. *cuneatus*	Buck brush
Ceanothus leucodermis	Chaparral whitethorn
Frangula californica subsp. *tomentella*	Chaparral coffeeberry
Rhamnus ilicifolia	Holly-leaf redberry
Rosaceae	Rose Family
Adenostoma fasciculatum var. *obtusifolium*	San Diego chamise
Adenostoma sparsifolium	Red shank
Cercocarpus betuloides var. *betuloides*	Birch-leaf mountain-mahogany
Prunus ilicifolia subsp. *ilicifolia*	Islay, holly-leaf cherry
Rosa californica	California rose
Rubus armeniacus[1]	Himalayan blackberry
Rubiaceae	Madder Family
Galium andrewsii subsp. *andrewsii*	Moss/phlox-leaf bedstraw
Galium angustifolium subsp. *angustifolium*	Narrow-leaf bedstraw
Salicaceae	Willow Family
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sapindaceae	Soapberry Family
Acer negundo var. *californicum*	California box-elder

Plant Species Observed

Scientific Name	Common Name
Saururaceae	**Lizard's Tail Family**
Anemopsis californica	Yerba mansa
Scrophulariaceae	Figwort Family
Scrophularia californica	California bee plant/Figwort
Simaroubaceae	Quassia Family
Ailanthus altissima[1]	Tree-of-heaven
Solanaceae	Nightshade Family
Datura wrightii	Western jimson weed
Nicotiana attenuata	Coyote tobacco
Solanum xanti	Chaparral nightshade
Typhaceae	Cattail Family
Typha latifolia	Broad-leaf cattail
Urticaceae	Grape Family
Urtica dioica subsp. *holosericea*	Hoary nettle
Vitaceae	Grape Family
Parthenocissus vitacea[1]	Woodbine
Zygophyllaceae	Caltrop Family
Tribulus terrestris[1]	Puncture vine
Monocots	
Agavaceae	Agave Family
Yucca schidigera	Mohave yucca
Cyperaceae	Sedge Family
Carex praegracilis	Cluster field sedge
Eleocharis montevidensis	Sand spike-rush
Schoenoplectus acutus var. *occidentalis*	Viscid bulrush
Poaceae	Grass Family
Avena barbata[1]	Slender wild oat
Bromus carinatus var. *carinatus*	California brome
Bromus diandrus[1]	Ripgut grass
Bromus hordeaceus[1]	Soft chess
Bromus rubens[1]	Foxtail chess, red brome
Bromus sterilis[1]	Poverty brome
Bromus tectorum[1]	Cheat grass, downy brome
Elymus glaucus subsp. *glaucus*	Blue wild-rye
Festuca arundinacea[1]	Tall fescue
Festuca myuros[1]	Rat-tail fescue
Hordeum murinum subsp. *glaucum*[1]	Glaucous barley
Melica imperfecta	Coast range melic
Poa annua[1]	Annual blue grass

Plant Species Observed

Scientific Name	Common Name
Poa pratensis subsp. *pratensis*[1]	Kentucky blue grass
Schismus barbatus[1]	Mediterranean schismus

Notes:

[1] = Non-native

Wildlife Species Observed

Family	Common Name	Scientific Name
Reptiles		
Squamata (Lizards and Snakes)		
Iguanidae American Arboreal Lizards, Chuckwallas, and Iguanas	Great basin fence lizard	*Sceloporus occidentalis longipes*
Colubridae Bullsnakes, Gophersnakes, and Pinesnakes	San Diego gophersnake	*Pituophis catenifer annectens*
Birds		
Accipitriformes (Hawks, Kites, Eagles, and Allies)		
Accipitridae Hawk, Eagle, Kite, and Allies	Red-shouldered hawk[1]	*Buteo lineatus*
	Red-tailed hawk	*Buteo jamaicensis*
	White-tailed kite[1]	*Elanus leucurus*
Cathartidae New World Vultures	Turkey vulture[1]	*Cathartes aura*
Anseriformes (Ducks, Geese, Swans, and Relatives)		
Anatidae *Ducks, Geese, and Swans*	Mallard	*Anas platyrhynchos*
Caprimulgiformes (Nightjars)		
Trochilidae Hummingbirds	Allen's hummingbird	*Selasphorus sasin*
	Anna's hummingbird	*Calypte anna*
	Black-chinned hummingbird	*Archilochus alexandri*
	Costa's hummingbird	*Calypte costae*
Falconiformes (Falconiformes)		
Falconidae Falcons and Caracaras	American kestrel	*Falco sparverius*
Galliformes (Fowls)		
Odontophoridae New World Quails	California quail	*Callipepla californica*
Passeriformes (Perching Birds)		
Columbiformidae Doves	Band-tailed pigeon	*Patagioenas fasciata*
	Eurasian collared-dove[2]	*Streptopelia decaocto*
	Mourning dove	*Zenaida macroura*
Corvidae Jays, Magpies, and Crows	American crow	*Corvus brachyrhynchos*
	California scrub-jay	*Aphelocoma californica*
	Common raven	*Corvus corax*
Cardinalidae Cardinals and Grosbeaks	Black-headed grosbeak	*Pheucticus melanocephalus*
	Western tanager	*Piranga ludoviciana*
Fringillidae Finches	House finch	*Haemorhous mexicanus*
	Lawrence's goldfinch	*Carduelis lawrencei*

Wildlife Species Observed

Family	Common Name	Scientific Name
	Lesser goldfinch	*Spinus psaltria*
Hirundinidae Swallows, Martins, and Saw-Wings	Northern rough-winged swallow	*Stelgidopteryx serripennis*
Mimidae Mimids	California thrasher	*Toxostoma redivivum*
	Northern mockingbird	*Mimus polyglottos*
Odontophoridae New World Quails	California quail	*Callipepla californica*
Passerellidae New World Sparrows	California towhee	*Melozone crissalis*
	House sparrow	*Passer domesticus*
	Song sparrow	*Melospiza melodia*
	Spotted towhee	*Pipilo maculatus*
Tyrannidae Tyrant Flycatcher	Ash-throated flycatcher	*Myiarchus cinerascens*
	Black phoebe	*Sayornis nigricans*
	Pacific-slope flycatcher	*Empidonax difficilis*
	Western kingbird	*Tyrannus verticalis*
Vireonidae Vireos	Warbling vireo	*Vireo gilvus*
Icteridae American Blackbirds, Orioles, and New World Blackbirds	Bullock's oriole	*Icterus bullockii*
	Brewer's blackbird	*Euphagus cyanocephalus*
	Brown-headed cowbird[2]	*Molothrus ater*
	Red-winged blackbird	*Agelaius phoeniceus*
	Hooded oriole	*Icterus cucullatus*
Parulidae Wood Warblers	Black-throated gray warbler	*Setophaga nigrescens*
	Common yellowthroat	*Geothlypis trichas*
	Nashville warbler	*Leiothlypis ruficapilla*
	Oak titmouse	*Baeolophus inornatus*
	Yellow warbler[3]	*Setophaga petechia*
Sittidae Nuthatches	White-breasted nuthatch	*Sitta carolinensis*
Sturnidae Starlings and Mynas	European starling[2]	*Sturnus vulgaris*
Sylviidae Sylviid Warblers	Wrentit	*Chamaea fasciata*
Aegithalidae Bushtits	Bushtit	*Psaltriparus minimus*
Troglodytidae Wrens	Bewick's wren	*Thryomanes bewickii*
	House wren	*Troglodytes aedon*
Turdidae Thrushes	American robin	*Turdus migratorius*
	Western bluebird[1]	*Sialia mexicana*

Wildlife Species Observed

Family	Common Name	Scientific Name
Pelicaniformes (Pelicans, Ibises, and Herons)		
Ardeidae Bitterns, Egrets, and Herons	Great blue heron	*Ardea herodias*
Piciformes (Woodpeckers)		
Picidae Woodpeckers	Acorn woodpecker	*Melanerpes formicivorus*
	Northern flicker	*Colaptes auratus*
	Nuttall's woodpecker	*Dryobates nuttallii*
Mammals		
Lagomorpha (Rabbits, Hares, and Pika)		
Leporidae Rabbits and Hares	Botta's pocket gopher	*Thomomys bottae*
	San Diego black-tailed jackrabbit[1]	*Lepus californicus bennettii*
	Desert cottontail rabbit	*Sylvilagus audubonii*
Rodentia (Rodents)		
Cricetidae New World Rats and Mice, Voles, Hamsters, and Relatives	Big-eared woodrat	*Neotoma macrotis*
	Bryant's woodrat[3]	*Neotoma bryanti*
	California mouse	*Peromyscus californicus*
Sciuridae Squirrels, Chipmunks, and Marmots	California ground squirrel	*Spermophilus beecheyi*
Carnivora (Carnivores)		
Canidae Foxes, Wolves, and Relatives	Coyote	*Canis latrans*
	Domestic dog[2]	*Canis familiaris*
Felidae Cats	Bobcat[3]	*Lynx rufus*
Procyonidae Raccoons, Ringtails, and Relatives	Northern raccoon	*Procyon lotor*
Eulipotyphla (Moles, Hedgehogs, and Shrews)		
Talpidae Moles and Relatives	Broad-footed mole	*Scapanus latimanus*

Notes:

[1] County of San Diego Sensitive Animals List

[2] Non-native

[3] California Department of Fish and Wildlife species of special concern

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Attachment 5. Least Bell's Vireo Survey Report

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FINAL

Least Bell's Vireo Survey Report

Live Oak Springs Water System Improvements Project

August 2021

Prepared for:

County of San Diego
Department of Public Works
Environmental Services Unit
5510 Overland Avenue, Suite 410
San Diego, California 92123

Prepared by:

Harris & Associates

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Emily Mastrelli, Senior Biologist/Project Manager

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Table of Contents

Tables

Appendices

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Acronyms and Abbreviations

APN	Assessor's Parcel Number
County	County of San Diego
DPW	Department of Public Works
Harris	Harris & Associates
primary well	primary potable water production well
project	Live Oak Springs Water System Improvements Project
pump station	booster pump station
USFWS	U.S. Fish and Wildlife Service
water system	potable water distribution system
water tanks	water storage tanks for water detention

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Section 1 Introduction

Harris & Associates (Harris) was contracted by the County of San Diego (County) Department of Public Works (DPW) to conduct protocol least Bell's vireo (*Vireo bellii pusillus*) surveys in support of the Live Oak Springs Water System Improvements Project (project). Construction activities could potentially result in permanent and temporary impacts on sensitive riparian woodland habitat that may support least Bell's vireo. In accordance with the U.S. Fish and Wildlife Service (USFWS), this report serves as a summary of the results of the least Bell's vireo protocol surveys conducted during the 2021 breeding season.

1.1 Project Description

The County DPW is proposing improvements and upgrades to the potable water distribution system (water system) on approximately 75.6 acres in the community of Boulevard, California (Appendix A, Figures; Figure 1, Regional Location, and Figure 2, Project Location). The project includes water system upgrades and improvements in a phased approach. The project will bring an existing water system up to the State Water Resources Control Board's standards and provide a reliable source of fire suppression to the community. On January 1, 2021, the County acquired the property and the water system on which it is located. The water system is now owned and operated by the County DPW and serves the community of Live Oak Springs. The County seeks to update and upgrade the water system to benefit the community of Live Oak Springs. Multiple water system evaluations and pipeline surveys were conducted, with the most recent completed in February 2021. Based on the evaluation and survey results data, the goals of the project are as follows:

- Bring the existing water system to the public water system standards
- Prevent future water service interruptions and water loss due to previous frequent water main breaks
- Develop a redundant water source by constructing a new well
- Upgrade and replace failing and deteriorating water system components
- Construct a backup generator for the entire water system
- Provide a reliable source of fire suppression to the community
- Increase water distribution capacity by 25 percent to accommodate forecasted demand for water by this community

The water system is classified as a treated, small community public water system consisting of a primary potable water production well (primary well), booster pump, hydropneumatic tank, two water storage tanks, and an underground potable water pipeline distribution system. The underground potable water pipeline distribution system is approximately 12,500 linear feet and composed of over 90 service connections and water pipes ranging from 2 to 6 inches in diameter. These pipes are composed of various piping material, including steel, asbestos cement, and

polyvinyl chloride, and are generally buried an average depth of 2 feet below grade. Currently, the system operates using a single 60-gallons-per-minute capacity booster pump, a 119-gallon hydropneumatic tank, and two active 20,000-gallon water storage tanks, along with other smaller elements. An additional 20,000-gallon vertical water storage tank is on a separate parcel, which is currently physically disconnected from the water system and may be demolished in the future.

The project proposes improvements based on a phased approach summarized below:

1. Pilot water well testing (completed April 2020)
2. Phase I
    a. Conversion of the pilot well into a secondary production well, the latter of which would serve as a backup to the existing primary well in the instance of the primary well's potential operational issues in the future. Further, Phase I proposes potential installation of approximately 400 feet of fencing along the southeastern corner of a County-owned Assessor's Parcel Number (APN) to secure the water system's equipment stored by the County on this parcel and to prevent illegal trash and debris dumping in this area. This proposed project element is trenchless and requires very little soil disturbance.
    b. Installation of a diesel emergency generator, as backup for the entire water system, in instances of power outages.
3. Phase II
    a. Construction of two water storage tanks for water detention (water tanks) and a booster pump station (pump station). The two 100,000-gallon water tanks would replace the existing two 20,000-gallon water tanks and be built in the same location. Before the demolition of the existing tanks, temporary water tanks would be constructed and connected to the distribution system and then disconnected and removed after the new tanks are constructed, tested, and commissioned. The construction of the water tanks and the pump station would also require installation of a 4-inch pipeline, connection of the feed skid to the water tanks, and installation of 6-inch pipeline from the water tanks to the pump station.
    b. Undergrounding of an existing aerial utility water line, which currently crosses Campo Creek through a suspended support system.
    c. Replacement of an existing underground potable water distribution system piping throughout the County-owned water system parcel (Parcel 1), as the current distribution piping has degraded and is not adequately sized to handle the necessary fire flow requirements.
    d. Formalizing of an existing dirt driveway by turning it into a paved access and maintenance road to the proposed project site, fencing, and gate installation.

The proposed project's phased improvements would be designed to preclude permanent impacts on Campo Creek and its tributaries to the extent feasible, with the potential for temporary impacts on the nearest tributary east of the project site, as a result of undergrounding of an aerial utility water line.

The previously described water infrastructure improvements and upgrades for all phases of the proposed project would create long-term potable water reliability, improve water quality, create a reliable source of fire suppression, and increase the existing water system's distribution capacity by 25 percent for the residents of Live Oak Springs. Construction of the phases could occur either on County-owned parcels or within the existing County water line easements. If needed, temporary construction access to the water lines would be coordinated with surrounding property owners, and temporarily disturbed areas would be restored. If applicable, to help avoid impacts on sensitive vegetation communities within the project footprint during construction, temporary environmental fencing may be installed before construction activities. Temporary traffic control measures may be in place during construction, if needed, for mobilization of equipment and safety of workers and residents.

1.2 Project Location

The water system is located in Live Oak Springs at 37820 Old Highway 80, Boulevard, California 91905. The project site is northeast of Old Highway 80, south of Interstate 8, and west of Live Oak Trail; includes the rural residential community of Boulevard; and is surrounded by mostly undeveloped, natural open space. The Campo Band of Diegueño Mission Indians Reservation is north and west of the project site. The site is relatively flat, with slight undulations in some northern portions, and currently consists of open space and developed land (Figure 2). It is in the 7.5-minute Live Oak Springs quadrangle in Township 17 South Range 6 East (Figure 3, USGS Topographic Map).

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Section 2 Regulatory Settings

2.1 Federal

2.1.1 Federal Listing

The USFWS designated least Bell's vireo as federally endangered under the federal Endangered Species Act on May 2, 1986, because of population decline due to riparian habitat loss and nest parasitism by brown-headed cowbird (*Molothrus ater*) (USFWS 1986).

2.1.2 Critical Habitat

The USFWS designates critical habitat for federally endangered and threatened species. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. The USFWS designated critical habitat for least Bell's vireo on February 2, 1994, within its range in California (USFWS 1994).

2.2 State

Least Bell's vireo was listed under the California Endangered Species Act in 1980 as endangered.

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Section 3 Natural History

Least Bell's vireo is the westernmost of four subspecies of Bell's vireo recognized by the American Ornithological Society, breeding entirely within California and northern Baja California. Least Bell's vireo is a small bird, approximately 4–5 inches long. It has short, rounded wings and a short, straight bill and is mostly gray above and pale below with a distinct white wing bar and broken eye ring. Least Bell's vireo is an insectivore, preying on a variety of insects, including caterpillars, moths, beetles, grasshoppers, and bugs. The subspecies primarily obtains food by foliage gleaning (picking insects from leaf or bark substrates) and hovering (removing insects from vegetation surfaces while in the air). Foraging occurs at all levels of the canopy but is concentrated in the lower to mid-canopy when individuals have nests.

Least Bell's vireo uses early to mid-successional riparian habitat for breeding because it usually consists of dense shrub cover required for nest concealment and a diverse canopy needed for foraging. Suitable nesting habitat vegetation characteristics include riparian stands between 5 and 10 years of age or, if they are adjacent to established riparian areas, 3 to 5 years of age. On the coastal slope, upper tree canopy cover itself is usually dominated by willows (*Salix* spp.) and sometimes willows mixed with cottonwoods (*Populus* spp.). Dominant shrub cover includes mugwort (*Artemisia douglasiana*), mulefat (*Baccharis salicifolia*), tamarix (*Tamarix* spp.), and willow shrubs (*Salix* spp.) (Kus 2002; Unitt 2004). In the Anza-Borrego Desert in the County, willow and mesquite (*Prosopis* spp.) predominate breeding sites (Unitt 2004). Although least Bell's vireo is a riparian species, it is known to regularly use upland scrub adjacent to riparian woodland, foraging up to 200 feet from the riparian edge and occasionally nesting in non-riparian habitat.

The majority of the population of least Bell's vireo is concentrated in the coastal lowlands along the Santa Margarita River on Marine Corps Base Camp Pendleton (and other creeks on the base), San Luis Rey River upstream to Pala, and Windmill and Pilgrim Creeks. These areas account for approximately 70 percent of the population. The other approximately 30 percent are scattered throughout the County to the south, north-central, and east along rivers, creeks, and other riparian corridors (Unitt 2004). Least Bell's vireos return to Southern California breeding sites in mid- to late-March and to Northern California sites in early April. In the County specifically, least Bell's vireos arrive in the third week of March. This subspecies is highly tenacious and will usually return in successive years to the same drainage basin, with males nearly always returning to the same territory (Unitt 2004). Males arrive first, followed by females, who are usually several days behind. Banded bird observation data shows returning breeding adults arriving before first year birds by several weeks.

Males will establish and defend territories in riparian habitats through counter-singing, chasing, and occasionally physical combat with competing neighboring males. Pairs are monogamous, and some birds may switch mates between successive nesting attempts within the same season and

between years, engaging in serial monogamy. Territories range in size from 0.5 to 7.5 acres (Kus 2002). Nests are usually an open cup placed in the horizontal fork of a tree or shrub branch and bound with grasses at the rim. Cup materials include plants shreds and strips, leaf fragments, small pieces of bark, spider silk, and other materials; cups are lined with plant down or hair (Kus 2002). Nest building begins soon after pairs arrive unless inclement weather occurs. Nest initiations peak in April and continue through the first week of July. Clutch sizes are usually three to four eggs, occasionally two eggs, and rarely five eggs. Both parents will incubate for approximately 2 weeks and feed nestlings, who will fledge approximately 10–12 days after hatching. Fledglings are cared for by both parents, if at all, and mainly by the male once the female re-lays.

Fall departures take place from mid-August to late September, with stragglers in October being very rare (Kus 2002). Sweetwater Reservoir in the County has the latest date of a straggler on record (September 16, 1998) (Unitt 2004). Least Bell's vireo vacates the United States for the winter, but less than 15 individuals have been documented staying on the County coast during that time.

Nest failures or abandonments can be caused by human disturbance not only by vegetation clearing but also nest trampling (USFWS 1998). However, vegetation clearing and brood parasitism are the main causes of failure and subsequent decline in the subspecies. In the early 1900s, least Bell's vireo was abundant until the mid- to late-century when clearing of its riparian woodland habitat and parasitism by brown-headed cowbird decimated its populations. By the early 1980s, the population dropped to 300 pairs, with half of those being in the County, and as a result, the subspecies was listed as endangered by the California Department of Fish and Game in 1986 (Unitt 2004). The USFWS also listed least Bell's vireo as endangered in 1986. Stopping and reversing riparian woodland loss was and still is critical to arresting and reversing the subspecies' and other sensitive riparian bird's decline. In addition, brood parasitism by brown-headed cowbird is also responsible for the severe decline in this subspecies. Once trapping of brown-headed cowbirds was instituted in the late 1900s, the rate of parasitism dropped. Therefore, the role of brown-headed cowbird trapping in enabling least Bell's vireo's recovery is clear (Unitt 2004; Kus 2002).

Section 4 Existing Conditions

4.1 Vegetation Communities and Land Cover Types

Thirteen vegetation communities and land cover types were identified by Harris biologists on the project site: freshwater marsh, non-vegetated channel, open water, southern arroyo willow riparian forest, big sagebrush scrub (including disturbed), buck brush chaparral, chamise chaparral, manzanita chaparral, scrub oak chaparral, coast live oak woodland (disturbed), non-native grassland, disturbed habitat, and urban/developed (Oberbauer et al. 2008). Table 1, Vegetation Communities and Land Cover Types on the Project Site, presents the acreages of the vegetation communities and land cover types that occur on the project site. Figure 4, Vegetation Communities and Land Cover Types, presents the vegetation community and land cover type boundaries.

Table 1. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community and Land Cover Type	Project Site (acres)[1]
Riparian	
Freshwater Marsh	0.04
Non-Vegetated Channel	0.75
Open Water	1.30
Southern Arroyo Willow Riparian Forest	1.70
Subtotal	*3.79*
Scrub and Chaparral	
Big Sagebrush Scrub (and Disturbed)	0.56
Buck Brush Chaparral	0.16
Chamise Chaparral	0.50
Manzanita Chaparral	1.95
Scrub Oak Chaparral	0.10
Subtotal	*3.27*
Woodland	
Coast Live Oak Woodland (and Disturbed)	10.70
Subtotal	*10.70*
Upland	
Non-Native Grassland	18.40
Subtotal	*18.40*
Disturbed/Developed	
Disturbed Habitat	2.30
Urban/Developed	34.40
Subtotal	*36.70*
Total	72.86

Sources: Holland 1986; Oberbauer et al. 2008.

Notes:

[1] Acreages rounded up to one hundredth.

The highest quality habitat considered suitable for least Bell's vireo in the survey area consists of southern arroyo willow riparian forest. The largest patch of southern arroyo willow riparian forest occurs in the central-western portion of the survey area along Campo Creek.

Section 5 Methodology

The least Bell's vireo surveys performed in 2021 followed the USFWS Least Bell's Vireo Survey Guidelines (USFWS 2001). Before surveys were conducted, a 15-day notification letter was submitted via email to the USFWS stating Harris' intent to conduct least Bell's vireo surveys. All eight surveys for the presence of least Bell's vireo occurred within suitable habitat (1.7 acres of southern arroyo willow riparian forest along Campo Creek) mapped in the survey area. No surveys occurred in any other portions of the project area.

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Section 6 Results

No critical habitat occurs in the survey area; however, suitable habitat for least Bell's vireo occurs within the survey area. Brown-headed cowbird adults were observed within the riparian area along Campo Creek to the south, near the Live Oak Trail.

Protocol least Bell's vireo surveys were conducted from May 6 through July 29, 2021, by Monica Alfaro (TE Permit No. 051242) and Travis Cooper (TE Permit No. 170389). Table 2, Least Bell's Vireo Survey Conditions, provides the survey dates and environmental conditions for the eight surveys.

Table 2. Least Bell's Vireo Survey Conditions

Survey	Date (2021)	Surveyor	Survey Start Time (a.m.)	Survey Stop Time (a.m.)	Temp. (°F)	Cloud Cover % (Start–Finish)	Wind Speed (mph)	Valid Survey
1	May 6	Monica Alfaro	0850	1040	76–77	0–0	2–3	Yes
2	May 20	Monica Alfaro	0835	0945	56–58	0–0	10–12	Yes
3	June 6	Monica Alfaro	0845	0950	78–81	0–0	1–2	Yes
4	June 16	Travis Cooper	0630	1000	80–93	10–0	0–3	Yes
5	June 29	Travis Cooper	0620	1000	75–89	0–0	0–2	Yes
6	July 9	Travis Cooper	0600	0930	70–88	0–0	0–2	Yes
7	July 19	Travis Cooper	0600	0900	67–78	0–0	0–2	Yes
8	July 29	Travis Cooper	0600	1000	67–90	0–5	0–2	Yes

Appendix B, Avian Species Observed, lists the bird species detected during the protocol surveys. No federally listed avian species were observed during the protocol surveys. A total of 57 species of birds were observed during the surveys. Dominant species in the southern arroyo willow riparian forest included lesser goldfinch (*Spinus psaltria*), ash-throated flycatcher (*Myiarchus cinerascens*), common yellowthroat (*Geothlypis trichas*), yellow warbler (*Setophaga petechia*), and song sparrow (*Melospiza melodia*).

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Section 7 Conclusion

No least Bell's vireo were detected during the 2021 protocol surveys.

The riparian habitat available along Campo Creek and the surrounding area on the project site is limited, with portions of disturbance that have segmented some of the habitat. The riparian habitat on the project site is also somewhat isolated from other riparian habitat, which may preclude breeding in this area. Least Bell's vireo may be found using this habitat for a short-term during migration to forage or rest.

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Section 8 Certification

I certify that the information in this report and enclosed appendices fully and accurately represents my work.

Travis Cooper
TE No. 170389

Monica Alfaro
TE No. 051242

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Section 9 References

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Appendix A. Figures

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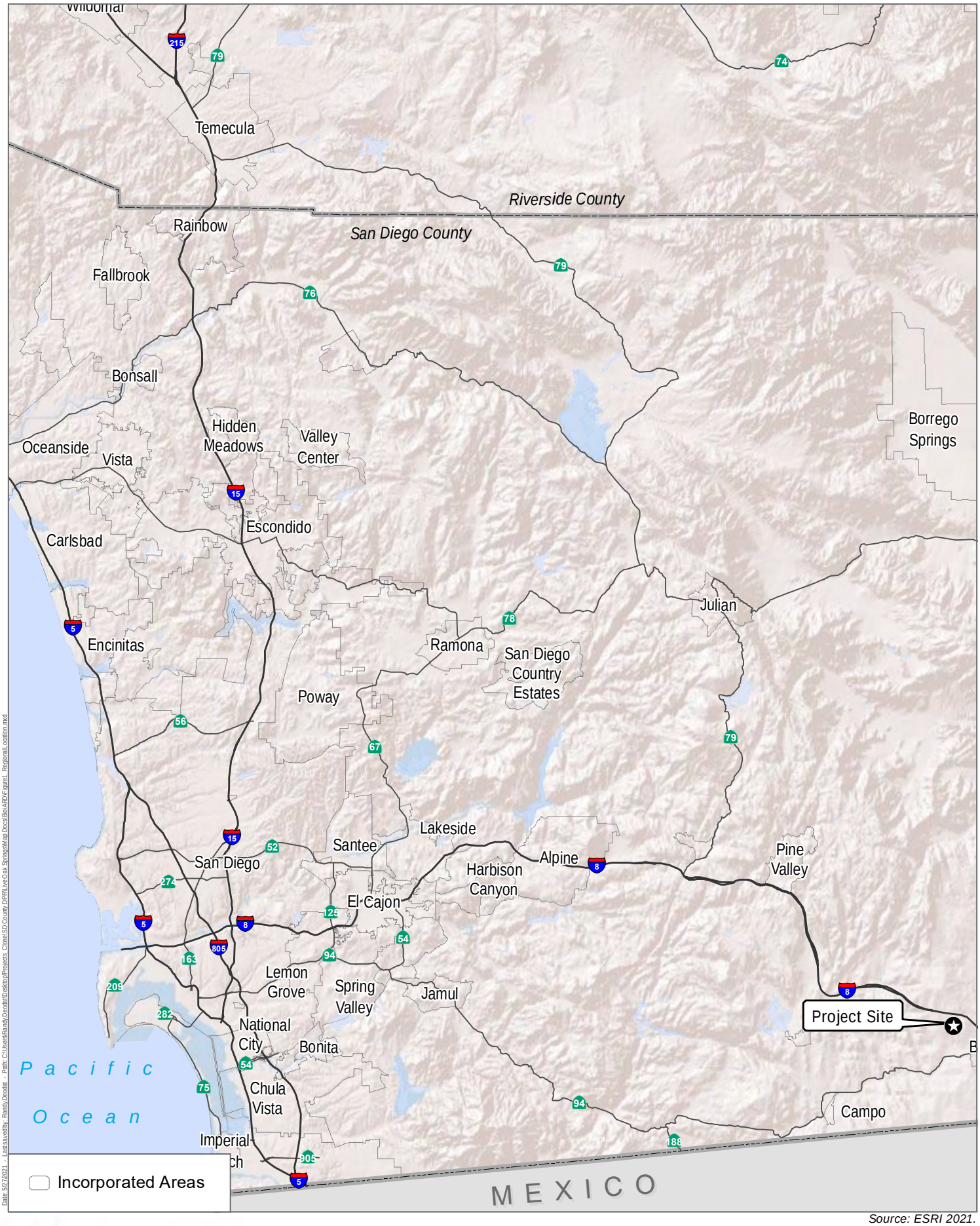
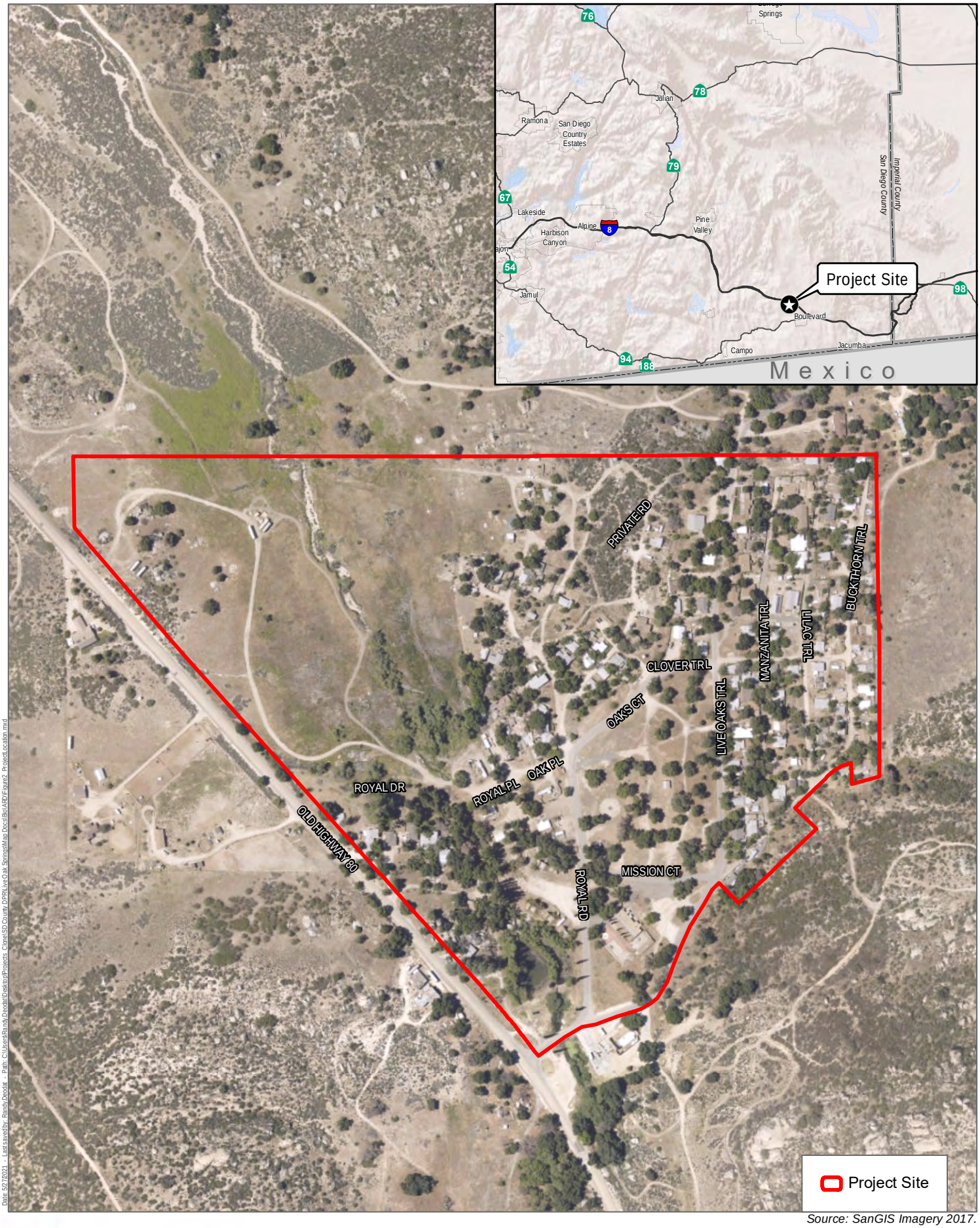


Harris & Associates

Figure 1

Regional Location

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

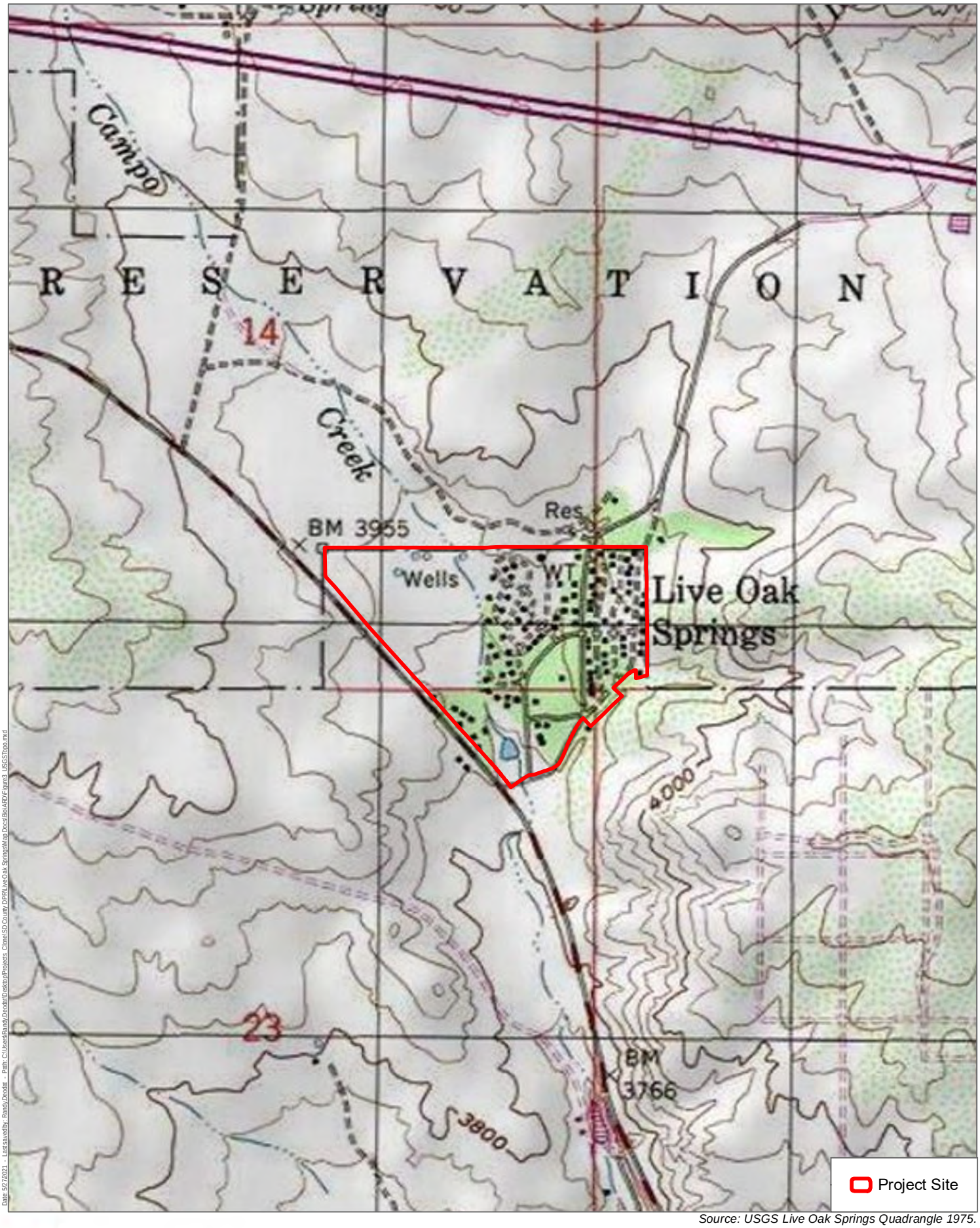
Harris & Associates

N 0 200 400 Feet

Figure 2

Project Location

Live Oak Springs Water System Improvements Project



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Source: USGS Live Oak Springs Quadrangle 1975.

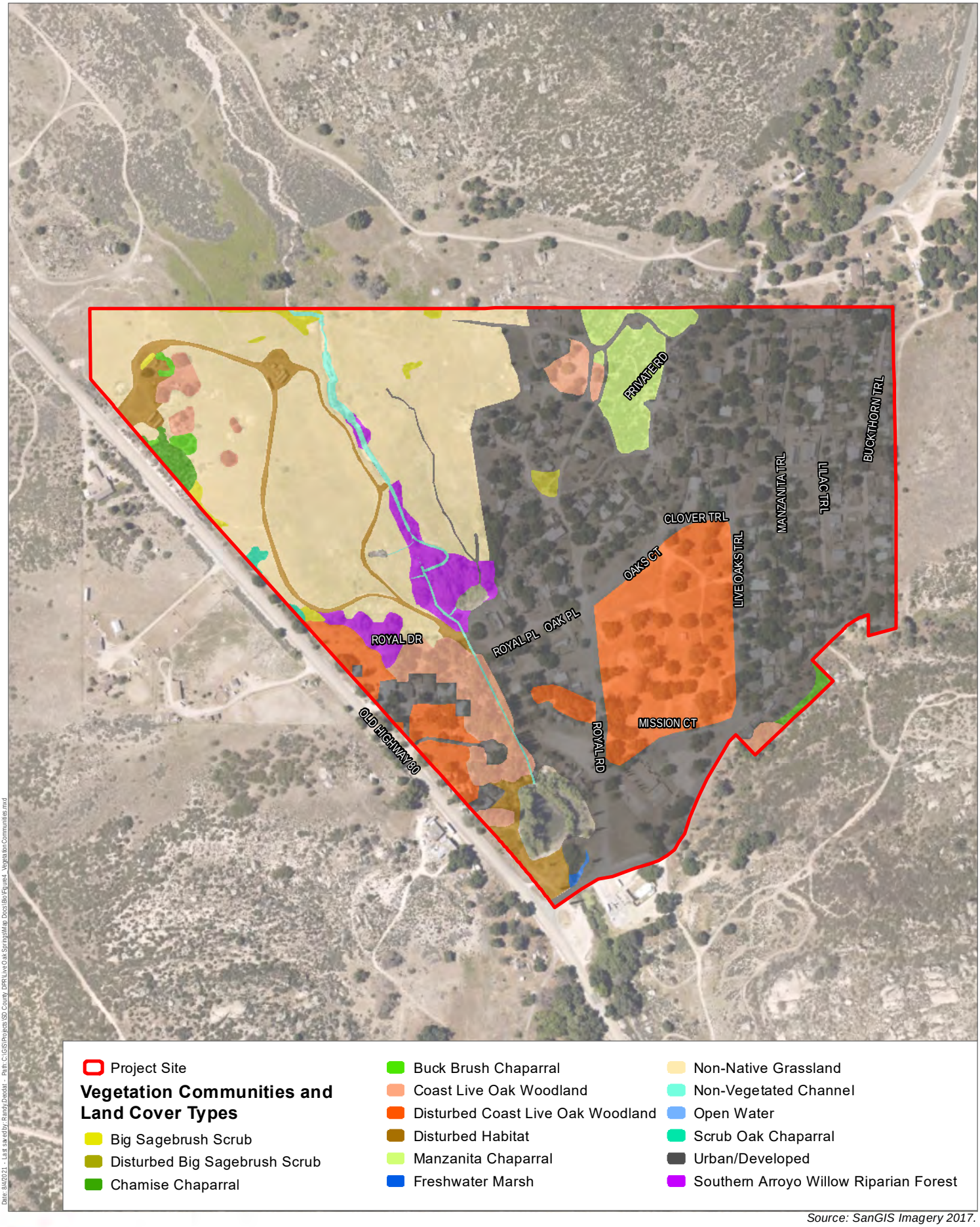
Harris & Associates

N 0 500 1,000 Feet

Figure 3

USGS Topographic Map

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

Harris & Associates

N

0 200 400

Feet

Figure 4

Vegetation Communities and Land Cover Types

Live Oak Springs Water System Improvements Project

Appendix B. Avian Species Observed

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Avian Species Observed

Family	Common Name	Scientific Name
Accipitriformes (Hawks, Kites, Eagles, and Allies)		
Accipitridae Hawk, Eagle, Kite, and Allies	Red-shouldered hawk	*Buteo lineatus*
	Red-tailed hawk	*Buteo jamaicensis*
	White-tailed kite	*Elanus leucurus*
Cathartidae New World Vultures	Turkey vulture	*Cathartes aura*
Anseriformes (Ducks, Geese, Swans, and Relatives)		
Anatidae Ducks, Geese, and Swans	Mallard	*Anas platyrhynchos*
Caprimulgiformes (Nightjars)		
Trochilidae Hummingbirds	Allen's hummingbird	*Selasphorus sasin*
	Anna's hummingbird	*Calypte anna*
	Black-chinned hummingbird	*Archilochus alexandri*
	Costa's hummingbird	*Calypte costae*
Falconiformes (Falconiformes)		
Falconidae Falcons and Caracaras	American kestrel	*Falco sparverius*
Galliformes (Fowls)		
Odontophoridae New World Quails	California quail	*Callipepla californica*
Passeriformes (Perching Birds)		
Columbiformidae Doves	Band-tailed pigeon	*Patagioenas fasciata*
	Eurasian collared-dove[1]	*Streptopelia decaocto*
	Mourning dove	*Zenaida macroura*
Corvidae Jays, Magpies, and Crows	American crow	*Corvus brachyrhynchos*
	California scrub-jay	*Aphelocoma californica*
	Common raven	*Corvus corax*
Cardinalidae Cardinals and Grosbeaks	Black-headed grosbeak	*Pheucticus melanocephalus*
	Western tanager	*Piranga ludoviciana*
Fringillidae Finches	House finch	*Haemorhous mexicanus*
	Lawrence's goldfinch	*Carduelis lawrencei*
	Lesser goldfinch	*Spinus psaltria*
Hirundinidae Swallows, Martins, and Saw-Wings	Northern rough-winged swallow	*Stelgidopteryx serripennis*
Mimidae Mimids	California thrasher	*Toxostoma redivivum*
	Northern mockingbird	*Mimus polyglottos*
Odontophoridae New World Quails	California quail	*Callipepla californica*

Avian Species Observed

Family	Common Name	Scientific Name
Passerellidae New World Sparrows	California towhee	*Melozone crissalis*
	House sparrow	*Passer domesticus*
	Song sparrow	*Melospiza melodia*
	Spotted towhee	*Pipilo maculatus*
Tyrannidae Tyrant Flycatchers	Ash-throated flycatcher	*Myiarchus cinerascens*
	Black phoebe	*Sayornis nigricans*
	Pacific-slope flycatcher	*Empidonax difficilis*
	Western kingbird	*Tyrannus verticalis*
Vireonidae Vireos	Warbling vireo	*Vireo gilvus*
Icteridae American Blackbirds, Orioles, and New World Blackbirds	Bullock's oriole	*Icterus bullockii*
	Brewer's blackbird	*Euphagus cyanocephalus*
	Brown-headed cowbird[1]	*Molothrus ater*
	Red-winged blackbird	*Agelaius phoeniceus*
	Hooded oriole	*Icterus cucullatus*
Parulidae Wood Warblers	Black-throated gray warbler	*Setophaga nigrescens*
	Common yellowthroat	*Geothlypis trichas*
	Nashville warbler	*Leiothlypis ruficapilla*
	Oak titmouse	*Baeolophus inornatus*
	Yellow warbler	*Setophaga petechia*
Sittidae Nuthatches	White-breasted nuthatch	*Sitta carolinensis*
Sturnidae Starlings and Mynas	European starling[1]	*Sturnus vulgaris*
Sylviidae Sylviid Warblers	Wrentit	*Chamaea fasciata*
Aegithalidae Bushtits	Bushtit	*Psaltriparus minimus*
Troglodytidae Wrens	Bewick's wren	*Thryomanes bewickii*
	House wren	*Troglodytes aedon*
Turdidae Thrushes	American robin	*Turdus migratorius*
	Western bluebird	*Sialia mexicana*
Pelicaniformes (Pelicans, Ibises, and Herons)		
Ardeidae Bitterns, Egrets, and Herons	Great blue heron	*Ardea herodias*

Avian Species Observed

Family	Common Name	Scientific Name
Piciformes (Woodpeckers)		
Picidae Woodpeckers	Acorn woodpecker	*Melanerpes formicivorus*
	Northern flicker	*Colaptes auratus*
	Nuttall's woodpecker	*Dryobates nuttallii*

Notes:

[1] Non-native

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Attachment 6. Rare Plant Survey Report

Harris & Associates

January 12, 2022

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Subject: Rare Plant Survey Report for the Live Oak Springs Water System Improvements Project

Introduction

The County of San Diego (County), Department of Public Works (DPW) is proposing improvements and upgrades to the potable water distribution system (water system) on approximately 75.6 acres in the community of Boulevard, California. In support of this project, Harris & Associates was contracted to provide biological services, including rare plant surveys. The purpose of this report is to detail the premise for, methods, and results of the rare plant surveys conducted within the project site and survey area boundary.

Project Location and Description

The County DPW is proposing improvements and upgrades to the water system on approximately 75.6 acres in the community of Boulevard, California (Attachment A, Figures: Figure 1, Regional Location, and Figure 2, Project Location). The water system is in Live Oak Springs, at 37820 Old Highway 80, Boulevard, CA 91905. The Live Oak Springs Water System Improvements Project (project) site is northeast of Old Highway 80, south of Interstate 8, and west of Live Oak Trail. The site is in the 7.5-minute Live Oak Springs quadrangle in Township 17 South Range 6 East (Figure 3, USGS Topographic Map). The project site is composed of two areas, the eastern and western areas, which differ in vegetation community composition (Figure 2). The eastern area is mostly developed with the rural residential sub-community of Live Oak Springs which contains fragmented patches of both disturbed and high-quality native vegetation. The western area is mostly undeveloped with contiguous areas of both disturbed and high-quality native vegetation, including the Campo Creek riparian corridor, along with some areas of disturbed habitat and developed land. The project site (both eastern and western combined) is surrounded by mostly undeveloped, natural open space.

The goals of the project are to bring the existing water system up to the State Water Resources Control Board's current standards and to upgrade the system to provide a reliable source of water for the community. The project would be completed in phases. Project components include construction of a new well, upgrade and replacement of existing water system components, installation of a backup generator for the water system, and an increase in water distribution capacity by 25 percent. These improvements would provide a reliable source of fire suppression to the community, provide redundant infrastructure to ensure the continued availability of water to the community, and accommodate the additional forecasted demand for water.

Phase I of the project is currently designed and funded and would consist of improvements to convert a pilot well to a secondary well and associated infrastructure to ensure a reliable source of water for the community. The conversion of an existing pilot well to a secondary well would create a backup for the existing primary well. This would involve additional drilling to widen the existing well hole from 6 to 8 inches in diameter to make the secondary well operational. No additional depth drilling would occur. Phase I would also include installation of up to 50 feet of underground piping to connect the secondary well to the existing water system, installation of electrical and control upgrades and connections, installation of a diesel emergency generator within the existing water system's footprint as backup power to the water system, and placement of gravel, fencing, and a gate

around the new well site. Phase I improvements would occur within the existing County-owned parcel and construction is anticipated to last approximately 4 months.

A number of potential future phases of the project have been identified at the concept level but have not yet been designed or funded. They may include construction of two new aboveground 100,000-gallon water storage tanks and associated new water piping, undergrounding or structural support of an existing aerial water line, replacement of an existing underground potable water distribution system piping on the project site and throughout the residential Live Oak Springs, paving of an existing driveway, culvert replacement, and buildout of an additional well. These proposed components are described in subsequent paragraphs, and potential impacts from these later phases will be considered throughout this environmental document.

Water Tanks and Booster Pump Station

- Construction of two aboveground 100,000-gallon water storage tanks and a booster pump station is anticipated. The new vertical water tanks would replace two existing horizontal 20,000-gallon water tanks on the western end of the site. The new tanks would either replace the current tanks within the same footprint or be built nearby and at similar elevation. To transition from the existing tanks to new ones, temporary aboveground water tanks may be used, if needed. Construction of the water tanks and the pump station would also require installation of an underground pipeline system to connect various water system components. Sensitive vegetation would be avoided.

Water Distribution Piping

- Other potential future improvements to meet the anticipated demand for potable water and fire suppression include installation of 1,200 linear feet of new piping and realignment or replacement of 400 linear feet of existing underground potable water piping throughout the County-owned parcel. The existing 4-inch water system piping would be replaced with 6-inch lines. The water distribution piping improvements on the County parcel may also include installation of a new water line that would extend south to create a loop within the water system. This would allow distribution of potable water to the adjacent residential community from either the north or the south and would reduce the number of water service interruptions when repairs are needed. These improvements would require excavation to install the new water lines.
- Additional improvements may involve replacement of 50 linear feet of an existing aerial water line that crosses Campo Creek through a suspended support system. Current pipeline may be replaced in the same location with a more stable and secure utility bridge supported by concrete pier structure, or the waterline may be undergrounded. The undergrounding could potentially result in temporary impacts to Campo Creek if an open-trench method is used. This could result in temporary loss of vegetation and possible dewatering of Campo Creek for the duration of construction.
- Other long-term proposed work includes replacement of existing underground potable water distribution system piping throughout the Live Oak Springs residential subcommunity to increase capacity for fire suppression and potable water distribution flows. This work would consist of excavation and replacement of up to 10,000 linear feet of underground water lines.

Driveway Entrance Off Old Highway 80

- To formalize a portion of the existing dirt driveway and access road from the main, northern entrance from Old Highway 80 to the current well site, a concrete driveway is proposed within the existing footprint.

Culvert Crossing Royal Drive

- Other associated improvements include replacement of existing culvert under Royal Drive, located in the southeastern corner of the County-owned parcel. The Campo Creek crossing in this area currently functions as an Arizona crossing because the culvert is almost completely blocked with sediment and the pipe is undersized and, thus, unable to handle an expected 100-year storm event. Therefore, the culvert would be replaced within approximately 20 feet of its current location and designed to convey low flows from Campo Creek with a stabilized road surface to ensure that the road does not wash out during larger rain events.

Culvert replacement work could result in temporary impacts to Campo Creek due to excavation and temporary loss of vegetation; however, it is anticipated that no net increase of fill would occur in the creek; therefore, no permanent impacts are expected to occur.

Additional Water Well

- Finally, other improvements may include buildout of an additional well to replace the current secondary well, at which time the secondary redundant well would become primary and the present primary well may be decommissioned.

Construction duration of future phases would vary; however, collectively, they are anticipated to last approximately 12 to 18 months. Construction of the project phases would largely occur either on the County-owned parcel or within the existing County water line easements. If needed, temporary construction access would be coordinated with the surrounding property owners.

Regulatory Setting

Natural Community Conservation Planning Act of 1991

The primary objective of the Natural Community Conservation Planning (NCCP) program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listing by focusing on the long-term suitability of wildlife and plant communities and including key interests in the process.

Federal Endangered Species Act, Sections 7 and 9 (16 USC 1531 et seq.; 50 CFR Part 402)

This prohibits the "take" (i.e., harm, harass, or kill individuals, or destroy associated habitat) of species federally listed as threatened or endangered. Take incidental to otherwise lawful activities can be authorized by the U.S. Fish and Wildlife Service (USFWS) through a permit under Sections 4(d), 7, or 10(a).

California Endangered Species Act (California Fish and Game Code, Section 2050 et seq.)

Section 2050 of the California Fish and Game Code prohibits any activities that would jeopardize or take a species designated as threatened or endangered by the state.

California Native Plant Protection Act of 1977 (California Fish and Game Code, Section 1900–1913)

These provisions preserve, protect, and enhance endangered or rare native plants of the state.

County of San Diego General Plan

The Conservation and Open Space Element of the County's General Plan (County of San Diego 2011) provides the goals and policies that apply to vegetation and wildlife habitat. These goals and policies are in place to protect, restore, and enhance natural wildlife habitat and to limit the degradation of important natural habitats within the semi-rural and rural lands. By minimizing impacts and effectively and successfully managing lands and preserves, ecosystems are sustainable. They have long-term viability that will maintain natural processes, sensitive lands, and sensitive and common species and still have room for sustainable human-based needs for urban, suburban, semi-rural and rural growth, and development.

Environmental Setting

The following subsections serve to describe the project setting and the soils, topography, and vegetation communities found on the project site.

Site Setting

The project site is in a rural community of the County and consists of sensitive and non-sensitive upland and wetland vegetation communities, Campo Creek, six unnamed jurisdictional channels, and developed areas (rural residential and water infrastructure yards). The central to eastern portions of the project site contain remnant oak woodlands but have been highly disturbed by urbanization, namely an existing residential community, including roads, homes, and other structures associated with development. The western portion of the project

site is mostly undeveloped but shows disturbance in the south with home construction and in the north with the creation of access roads and other infrastructure associated with municipal activities.

Topography

The project site is primarily flat, with moderately sloping hills on the northern portions of the project site. The on-site elevation ranges from approximately 3,815 feet to 3,953 feet above mean sea level. The topographical lines presented on Figure 3 represent the project elevations.

Soils

The project site is underlain by Mottsville loamy coarse sand, loamy alluvial, La Posta loamy coarse sand soils, and Tollhouse rocky coarse sandy loam. The soil units on the project site are presented on Figure 4, Soils. Mottsville loamy coarse sand (2 to 9 percent slopes) occurs along the edge of the western portion of the project site and the majority of the eastern portion of the project site. Loamy alluvial soils (0 to 5 percent slopes) occurs on the central and northwestern portion of the project site. La Posta loamy coarse sand (5 to 30 percent slopes) occurs on the central and northern areas of the western portion of the project site. A small area of Tollhouse rocky coarse sandy loam (30 to 65 percent slopes) occurs on the southeastern portion of the project site. All four of these soils are defined as well-drained (USDA 2019).

Vegetation Communities and Land Cover Types

The project site is within the southwestern California region of the California Floristic Province (Jepson Online 2022). Vegetation communities and land cover types identified within the project site include coastal and valley freshwater marsh, non-vegetated channel, fresh water, southern arroyo willow riparian forest, big sagebrush scrub (including disturbed), buck brush chaparral, chamise chaparral, montane manzanita chaparral, scrub oak chaparral, coast live oak woodland (disturbed), non-native grassland, disturbed habitat, and urban/developed land (Oberbauer et al. 2008) (Figure 5, Vegetation Communities and Land Cover Types). Table 1, Vegetation Communities and Land Cover Types on the Project Site, presents the acreages of the vegetation communities that occur on the project site. Figure 5 presents the vegetation community boundaries.

Table 1. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community and Land Cover Type	Project Site (acres)
Riparian	
Coastal and valley freshwater marsh (52410)	0.04
Non-vegetated channel (64200)	0.75
Fresh water (64140)	1.26
Southern arroyo willow riparian forest (61320)	1.70
Subtotal	*3.75*
Scrub and Chaparral	
Big sagebrush scrub (and disturbed) (35210)	0.56
Buck brush chaparral (37810)	0.16
Chamise chaparral (37200)	0.50
Montane manzanita chaparral (37520)	1.95
Scrub oak chaparral (37900)	0.10
Subtotal	*3.27*
Woodland	
Coast live oak woodland (and disturbed) (71160)	10.70
Subtotal	*10.70*

Table 1. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community and Land Cover Type	Project Site (acres)
Upland	
Non-native grassland (42200)	18.40
Subtotal	*18.40*
Disturbed/Developed	
Disturbed habitat (11300)	2.30
Urban/developed land (12000)	34.40
Subtotal	*36.70*
Total	**72.82**

Sources: Holland 1986; Oberbauer et al. 2008.
Notes:
[1] Acreages rounded up to one-hundredth.

The vegetation communities observed on the project site are described in the following subsections.

Riparian Vegetation Communities

Coastal and Valley Freshwater Marsh (52400)

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots that often form completely closed canopies (Oberbauer et al. 2008). Sedges (*Scirpus* sp.) and broadleaf cattail (*Typha* sp.) often dominate coastal and valley freshwater marsh vegetation communities.

Approximately 0.04 acre of coastal and valley freshwater marsh occurs on the southernmost portion of the project site directly south of the fresh water pond created by the concrete dam and spillway within Campo Creek (Figure 5). On the project site, coastal and valley freshwater marsh is dominated by broadleaf cattail and cluster field sedge (*Carex praegracilis*).

Non-Vegetated Channel (64200)

Non-vegetated channel consists of predominantly sandy, gravelly, or rocky channels lacking or with reduced vegetation. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent of the total cover (Oberbauer et al. 2008).

Campo Creek and six non-vegetated earthen bottom channels (Channels 1 through 6) occur on the northwestern, central-western, and southwestern portions of the project site (Figure 5). Approximately 0.75 acre of non-vegetated channel occurs on the project site.

Fresh Water (64140)

Fresh water includes year-round bodies of fresh water in the form of lakes, streams, ponds, or rivers. This includes those portions of water bodies that are usually covered by water and contain less than 10 percent of vegetated cover (Oberbauer et al. 2008).

Approximately 1.26 acres of fresh water occurs on the project site. Three fresh water ponds are present on the central-western and southern portions of the project site (Figure 5). A concrete dam and spillway occurs within Campo Creek on the southern portion of the project site. This concrete dam and spillway have formed one of the three fresh water ponds on the southern portion of the project site.

Southern Arroyo Willow Riparian Forest (61320)

Southern arroyo willow riparian forest is a winter-deciduous riparian forest dominated by broad-leafed trees and arroyo willow (*Salix lasiolepis*). Typically, it consists of a moderately tall, closed, or nearly closed canopy, with an understory of shrubby willows (Oberbauer et al. 2008). Southern arroyo willow riparian forest is characterized by the presence of several species besides arroyo willow, including San Diego sagewort (*Artemisia palmeri*), mulefat

(*Baccharis salicifolia*), wild cucumber (*Marah macrocarpus*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), Goodding's willow (*Salix gooddingii*), narrowleaf willow (*Salix exigua*), and yellow willow (*Salix lasiandra*) (Oberbauer et al. 2008). Southern arroyo willow riparian forest occurs in sub-irrigated and frequently overflowed areas along rivers and streams that are perennially wet (Oberbauer et al. 2008).

Approximately 1.70 acres of southern arroyo willow riparian forest occurs on the central and western portions of the project site (Figure 5). The southern arroyo willow riparian forest on the project site is dominated by arroyo willow with non-native weeds and grass species in the understory.

Scrub and Chaparral Vegetation Communities

Big Sagebrush Scrub (and disturbed) (35210)

Big sagebrush scrub contains primarily soft-woody shrubs, usually with bare ground underneath and between shrubs (Oberbauer et al. 2008). Big sagebrush (*Artemisia tridentata*) is dominant. Growth of big sagebrush scrub occurs mostly in late spring and early summer, with some species flowering in late spring (blackbrush [*Coleogyne*], bitterbrush [*Purshia* sp.]) and some in early fall (sagebrushes and wormwoods [*Artemisia* sp.], rabbitbrush [*Chrysothamnus* sp.]).

Approximately 0.43 acre of big sagebrush scrub occurs on the northern portion of the project site (Figure 5). On the project site, sagebrush scrub is dominated by dense big sagebrush.

Approximately 0.13 acre of disturbed big sagebrush scrub occurs on the northern portion of the project site (Figure 5). On the project site, disturbed sagebrush scrub is dominated by big sagebrush with non-native weeds and grass species in the understory.

Buck Brush Chaparral (37810)

Buck brush chaparral is a dense chaparral that is clearly dominated by buck brush (*Ceanothus cuneatus*) with some mixture of chamise (*Adenostoma fasciculatum*) (Oberbauer et al. 2008). Cover in buck brush chaparral is higher than in Chamise Chaparral, but is not as dense because the branches are not so interwoven.

Approximately 0.16 acre of buck brush occurs on the northwestern and southeastern portions of the project site (Figure 5). On the project site, buck brush is dominated by buck brush with chamise and a sparse understory of non-native weeds and grass species.

Chamise Chaparral (37200)

Chamise chaparral is a tall chaparral overwhelmingly dominated by chamise with associated species contributing little cover in this vegetation community (Oberbauer et al. 2008). Mature stands of chamise chaparral are densely interwoven with very little herbaceous understory or litter. Chamise chaparral is adapted to repeated fires by stump sprouting.

Approximately 0.50 acre of chamise chaparral occurs on the northwestern portion of the project site (Figure 5). On the project site, chamise chaparral is dominated by chamise with a primarily open understory.

Montane Manzanita Chaparral (37520)

Montane manzanita chaparral is a dense 2- to 5-meter tall chaparral dominated by any species of manzanita (Oberbauer et al. 2008). This vegetation community may occur as a post-fire successional stage.

Approximately 1.95 acres of montane manzanita chaparral occurs on the northeastern portion of the project site (Figure 5). On the project site, montane manzanita chaparral is dominated by eastwood manzanita (*Arctostaphylos glandulosa*).

Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense, evergreen chaparral dominated by inland scrub oak (*Quercus berberidifolia*), Nuttall's scrub oak (*Quercus dumosa*) and mountain mahogany (*Cercocarpus betuloides*). Scrub oak chaparral usually occurs in small patches with a variety of other vegetation communities (Oberbauer et al. 2008).

Approximately 0.10 acre of scrub oak chaparral occurs on the western edge of the project site (Figure 5). Scrub oak chaparral on the project site is dominated by inland scrub oak.

Woodland Vegetation Community

Coast Live Oak Woodland (and disturbed) (71160)

Coast live oak woodland is dominated by coast live oak (*Quercus agrifolia*), an evergreen, with a poorly developed shrub layer that often includes toyon (*Heteromeles arbutifolia*), currents and gooseberries (*Ribes* sp.), laurel sumac (*Malosma laurina*), or dominated by Mexican elderberry (*Sambucus mexicana*) (Oberbauer et al. 2008). The herb component of coast live oak woodland is continuous and dominated by ripgut brome and other non-native grass species.

Approximately 3.0 acres of coast live oak woodland occurs on the southeastern and south-central portions of the project site (Figure 5). On the project site, the coast live oak woodland is dominated by dense interior coast live oak.

Approximately 7.70 acres of disturbed coast live oak woodland occurs on the southeastern and south-central portions of the project site (Figure 5). On the project site, the disturbed coast live oak woodland is dominated by interior coast live oak with ripgut brome and other non-native weeds and grass species in the understory.

Upland Vegetation Community

Non-Native Grassland (42200)

Non-native grassland consists of a dense to sparse cover of flowering annual grasses measuring approximately 3 feet high. It may occur where disturbance by maintenance (e.g., mowing, scraping, disking, spraying), grazing, repetitive fire, agriculture, or other mechanical disruption has altered soils and removed native seed sources from areas formerly supporting native vegetation. Non-native grassland typically occurs adjacent to roads or other developed areas where there has been some historical disturbance. Native wildflowers are often associated with this community, especially in years of favorable rainfall. Common plant species observed in non-native grasslands within the County include smooth barley (*Hordeum murinum*), ripgut grass (*Bromus diandrus*), slender wild oat (*Avena barbata*), and foxtail chess (*Bromus madritensis*) (Oberbauer et al. 2008).

Non-native grassland is the most dominant vegetation community on the project site and occurs on approximately 18.40 acres (Figure 5). It contains over ten species of non-native grasses and also contains three native species of grasses. Non-native grasses in the grassland area of the project site consist mainly of ripgut grass, slender wild oat, soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus rubens*), cheat grass (*Bromus tectorum*), smooth barley (*Hordeum murinum* ssp. g*laucum*), rat-tail fescue (*Festuca myuros),* and tall fescue (*Festuca arundinacea*). The native species of grass observed were California brome (*Bromus carinatus* var. *carinatus*), blue wild-rye (*Elymus glaucus* ssp. *glaucus*), and coast range melic (*Melica imperfecta*). California Native Plant Society (CNPS) Rank 1B.2 Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*) occurs in the non-native grassland vegetation community on the western portions of the project site along the dirt entrance/access road (Figure 5).

Disturbed/Developed Lands

Disturbed Habitat (11300)

Disturbed habitat consists of previously disturbed areas that either are devoid of vegetation (dirt roads/trails) or support scattered non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance such as black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), and *Erodium* species. These species are non-native and are typically found in disturbed habitats, particularly in areas that have been graded, repeatedly cleared for fuel management purposes, and/or experienced repeated use that prevents natural revegetation (Oberbauer et al. 2008).

Disturbed habitat comprises approximately 2.30 acres on the project site (Figure 5). Disturbed habitat on the project site is dominated by bare ground and species of mustard and other non-native plant species. There are innumerable dirt roads that provide residential access to the community of Live Oak Springs, as not all roads are paved leading into and throughout the urban developed areas. There are also dirt access roads to wells maintained by the County DPW.

Urban/Developed Land (12000)

Urban/developed land represents areas that have been constructed on or otherwise physically altered to an extent that native vegetation communities are not supported (Oberbauer et al. 2008). This land cover type

generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated or supports a variety of ornamental plants and landscaping.

Urban/developed land on the project site comprises approximately 34.40 acres and consists of the rural residential community in the eastern portion of the project site and maintenance storage yards on the southwestern portion of the project site (Figure 5). The urban developed areas also contain pockets of leftover native habitats and tree species that exist among the homes and other structures in the community.

Methods

Database Review

Prior to conducting the in-field rare plant surveys, a search of online databases was conducted. The databases include the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database, USFWS Information for Planning and Consultation, Consortium of California Herbaria database, Calflora database, and CNPS Inventory of Rare and Endangered Plants of California. Searches of databases was restricted to within 1 mile of the project site. This search provided a list of species that may have some potential to be found within the project site, as they either historically have occurred there, have potential to occur based on required macro- and micro-habitat available on the project site, or are known from the region (within 1 mile). The database review also included a search for any Critical Habitat that overlaps the project site. The results of the database reviews are provided in the Results section below.

Rare Plant Surveys

One mid-season rare plant survey occurred on May 14, 2021, and a second, late season survey occurred on August 30, 2021; both were conducted by botanist Ryan Meszaros. Two separate surveys were conducted to maximize the detection of sensitive plant species' blooming periods. Surveys were conducted by walking meandering transects throughout the project area on foot. The survey area consisted of the project area plus a 500-foot buffer (Figure 2). Almost all areas within the buffer are private residences and therefore, were not able to be surveyed on foot. Binoculars were used for areas that were not able to be surveyed on foot. All plant species detected were recorded, and locations of observed sensitive plant species were mapped using Global Position System technology and transferred into the project-specific GIS database.

Results

Database Review

Critical Habitat

The potential presence of critical habitat on the project site was reviewed. No critical habitat for sensitive plant species occurs on the project site (USFWS 2022).

Sensitive Plant Species

Sensitive species are those recognized by federal, state, or local agencies as being potentially vulnerable to impacts because of rarity, local or regional reductions in population numbers, isolation/restricted genetic flow, or other factors. Special-status plants include those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and CDFW; those considered sensitive by the CDFW; and those species included in the California Rare Plant Rank (CRPR) inventory, maintained by the CNPS.

As described in the Methods section, distributions of historical sensitive species observations within a 1-mile radius of the project site were reviewed in preparation of this report. No federally or state-listed endangered, threatened, or candidate for listing species have potential to occur or are known from the region. A list of sensitive plant species with their potential to occur (low, moderate, or high) is provided below. Sensitive plant species names that are not expected to occur within the project area but may be known from the region are not provided

in this report but can be found in the 2022 Harris & Associates Biological Resources Letter Report (Harris 2022). Ten sensitive plant species total were found during database research efforts.

Table 2. Sensitive Plant with Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/CRPR/Regional	Potential to Occur
Astragalus douglasii var. *perstrictus*	Jacumba milk-vetch	None/None/1B.2/County List A	High
Caulanthus simulans	Payson's jewelflower	None/None/4.2/County List D	Low
Delphinium parishii ssp. *subglobosum*	Colorado Desert larkspur	None/None/4.3/County List D	Low
Deinandra (=Hemizonia) floribunda	Tecate tarplant	None/None/1B.2/County List A	High
Geraea viscida	Sticky geraea	None/None/2B.2/County List B	Moderate
Hulsea californica	San Diego sunflower	None/None/1B.3/County List A	Moderate
Lathyrus splendens	Pride-of-California	None/None/2B.1/County List B	Low
Linanthus bellus	Desert beauty	None/None/2B.1/County List B	Low
Streptanthus campestris	Southern jewelflower	None/None/1B.3/County List A	Low
Quercus engelmannii	Engelmann oak	None/None/4.2/County List D	Low

CNPS Rare Plant Ranking
1B = rare, threatened, or endangered in California and elsewhere; 2B = rare, threatened, or endangered in California but more common elsewhere; 4 = a watch list of species of limited distribution
Threat Ranks: .1 = seriously threatened; .2 = moderately threatened; .3 = not very threatened

Rare Plant Surveys Results

A list of all plant species detected during the 2021 rare plant surveys is provided in Attachment B, Plant Species Observed on the Project Site. A total of 147 plant species were observed on the project site, 101 (69 percent) of which were native and 46 (31 percent) of which were non-native.

Of the 10 sensitive plant species with some potential to occur, only Jacumba milk-vetch was observed and mapped during both rare plant survey efforts (Figure 6, Sensitive Plant Observations). Both Jacumba milk-vetch individuals and a population of individuals were observed in the northwestern area of the project site along the pump station access road in non-native grassland and buckbrush chaparral habitats and disturbed areas, north of the access road in non-native grassland, and farther south on the access road below the pump station in disturbed habitat. A total of 91 Jacumba milk-vetch individuals were observed. Two individuals were also mapped within the south-central portion of the project site within the disturbed coast live oak woodland habitat, and one was mapped on the north-northeastern portion along a dirt residential access road near manzanita chaparral habitat (Figure 6).

Jacumba milk-vetch is a CRPR 1B.2 and County of San Diego Sensitive Plant List A species. Jacumba milk-vetch is a perennial leguminous herb that is a variety of Douglas' milk-vetch. Jacumba milk-vetch occurs in rock microhabitats within chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, and valley and foothill grassland habitats (Calflora 2022). This species typically blooms April through June and is found at elevations ranging between 2,955 and 4,495 feet (above mean sea level). Flower buds are purple-pink to red when emerging and turn to yellow-tan with pink-red in the center on the petal when in full bloom. When the plant begins fruiting, the blossoms turn into inflated seed pods. This species is threatened by commercial and residential development, as well as encroachment by non-native and invasive plant species.

Conclusions

According to the rare plant survey efforts in 2021, of the 10 species of sensitive plants with potential to occur on the project site, only one species was observed—Jacumba milk-vetch. A total of 91 Jacumba milk-vetch individuals were observed directly within the project area. The majority of these individuals are located directly within the footprint of the main access road from the Old Highway 80 and immediately to the west of the access road and, therefore, have potential to be impacted by project construction activities.

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Preparers

Harris & Associates

Emily Mastrelli, Senior Biologist

If you have any questions regarding this letter report, please do not hesitate to contact Emily Mastrelli at Emily.Mastrelli@WeAreHarris.com or (619) 510-5372.

Sincerely,

Emily Mastrelli (Senior Review)
Senior Biologist/Project Manager
Emily.Mastrelli@WeAreHarris.com
(619) 510-5372

Attachments

A, Figures
B, Plant Species Observed on the Project Site

Attachment A. Figures

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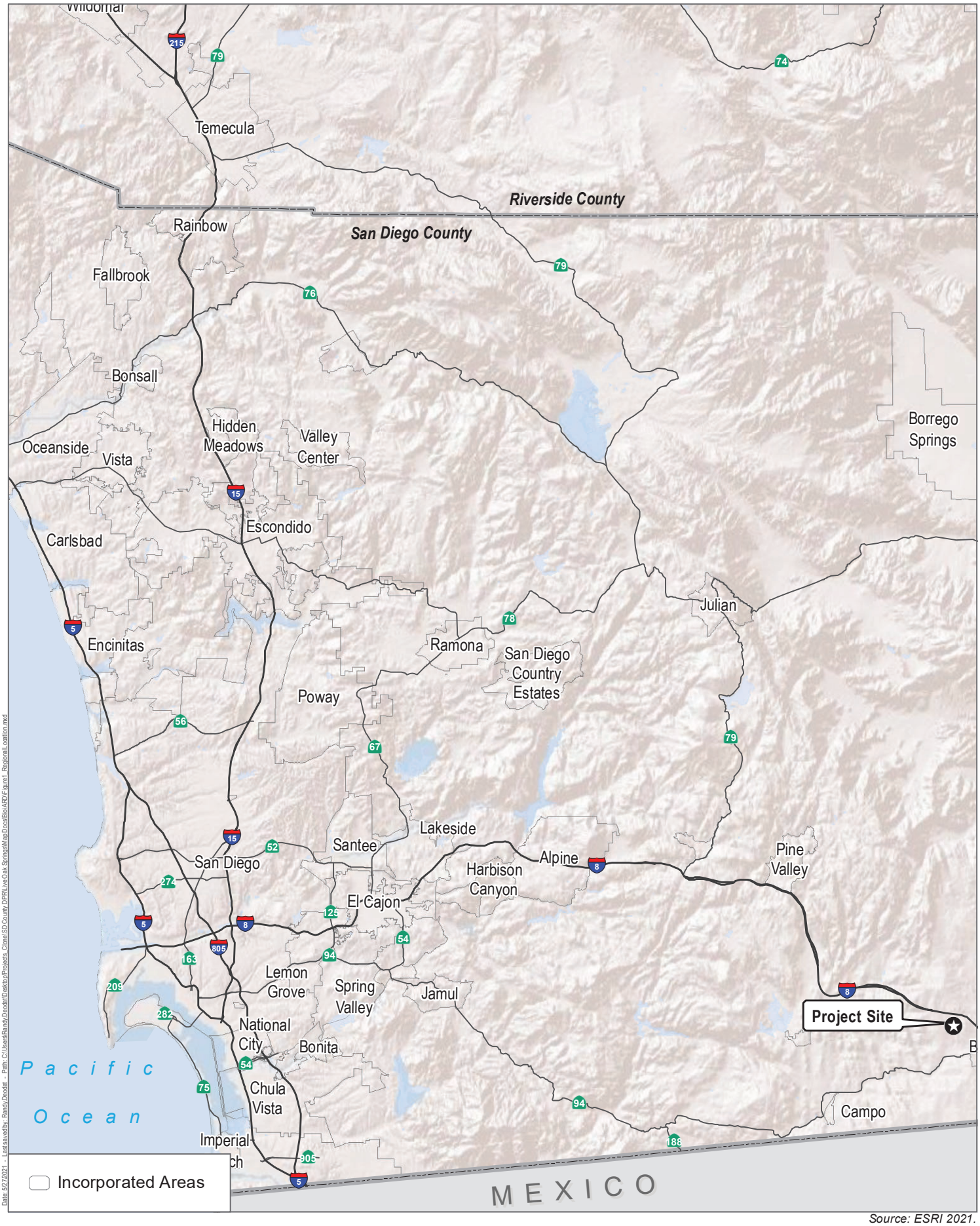

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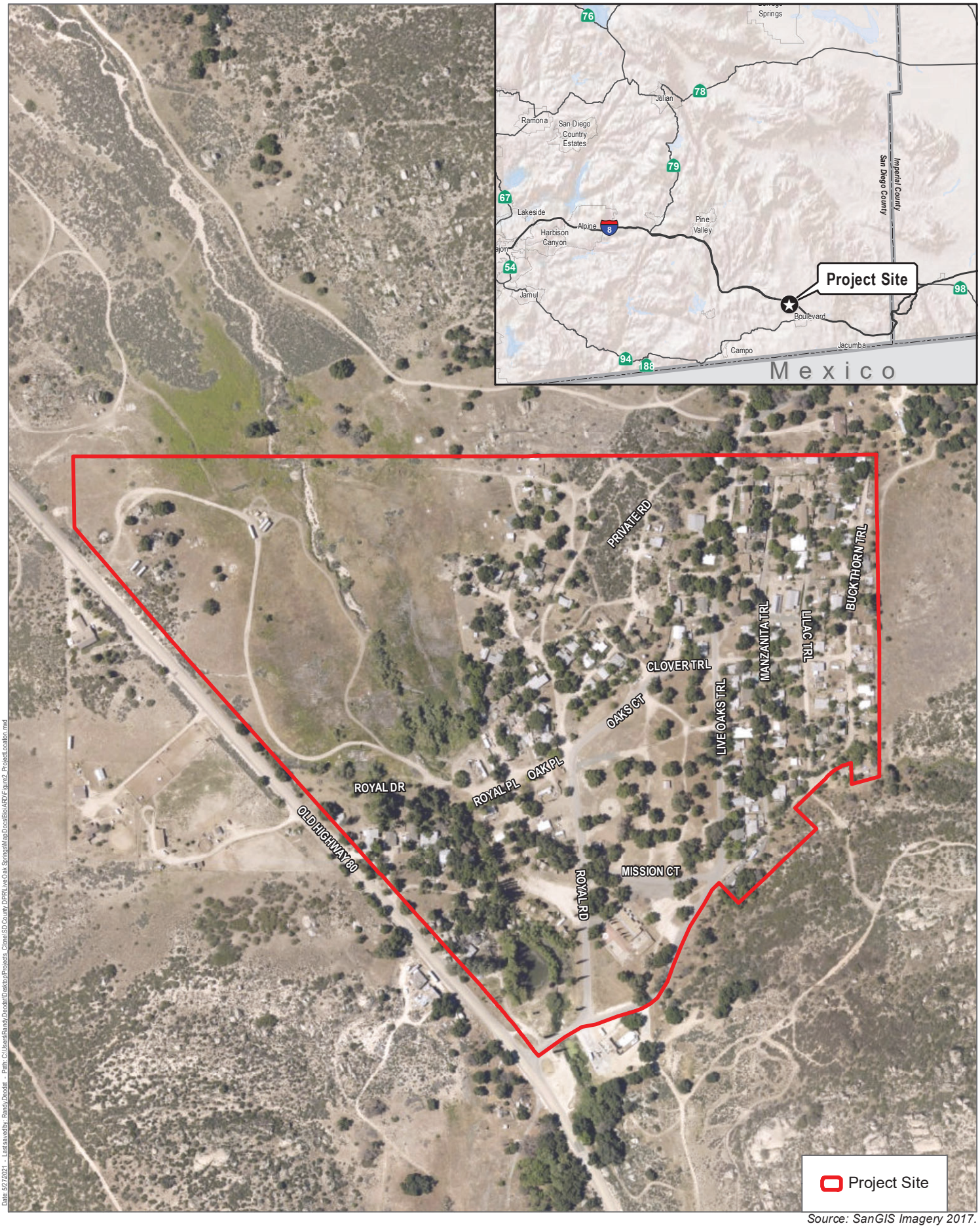
Figure 1

Regional Location

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

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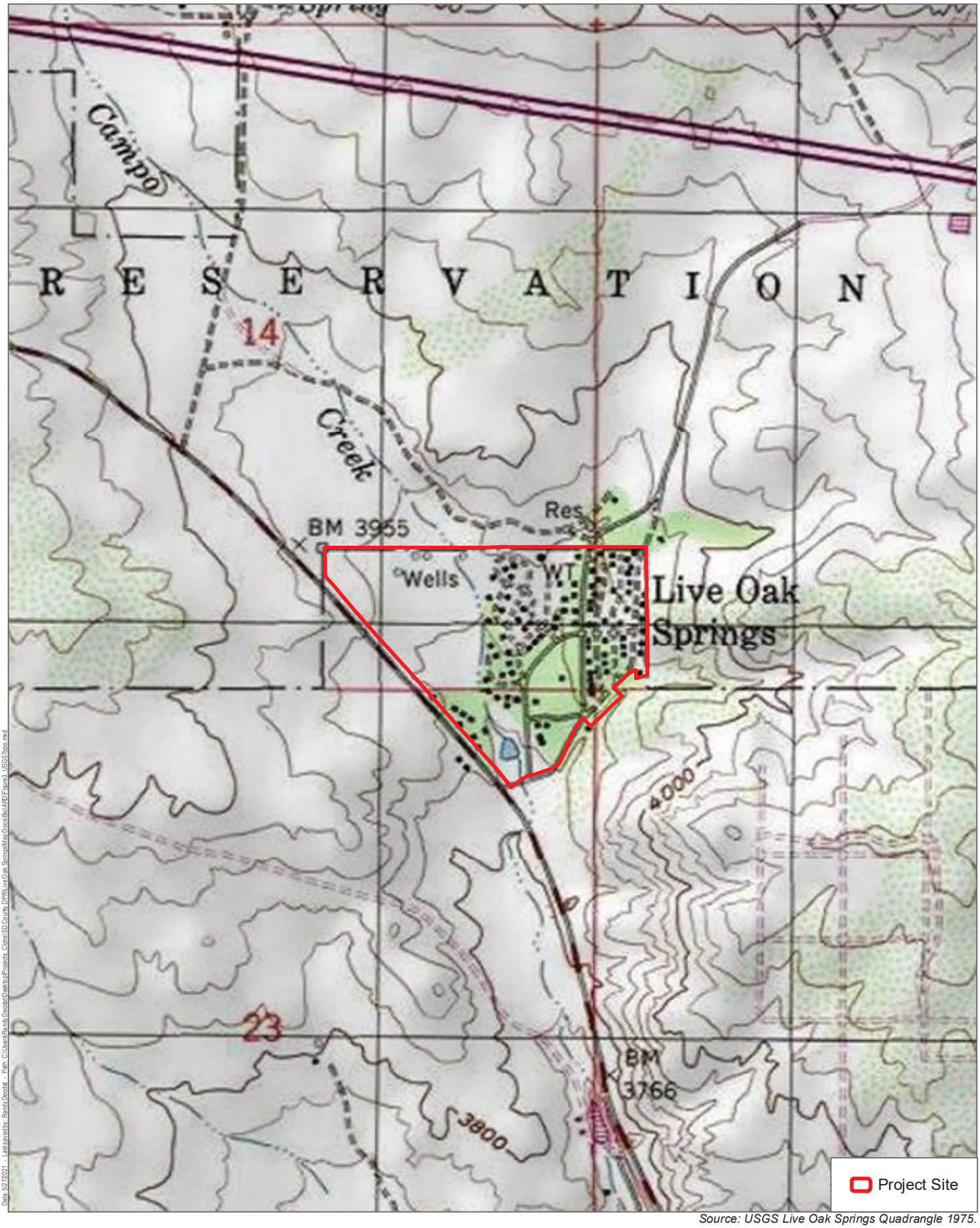
Figure 2

Project Location

Live Oak Springs Water System Improvements Project



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Source: USGS Live Oak Springs Quadrangle 1975.

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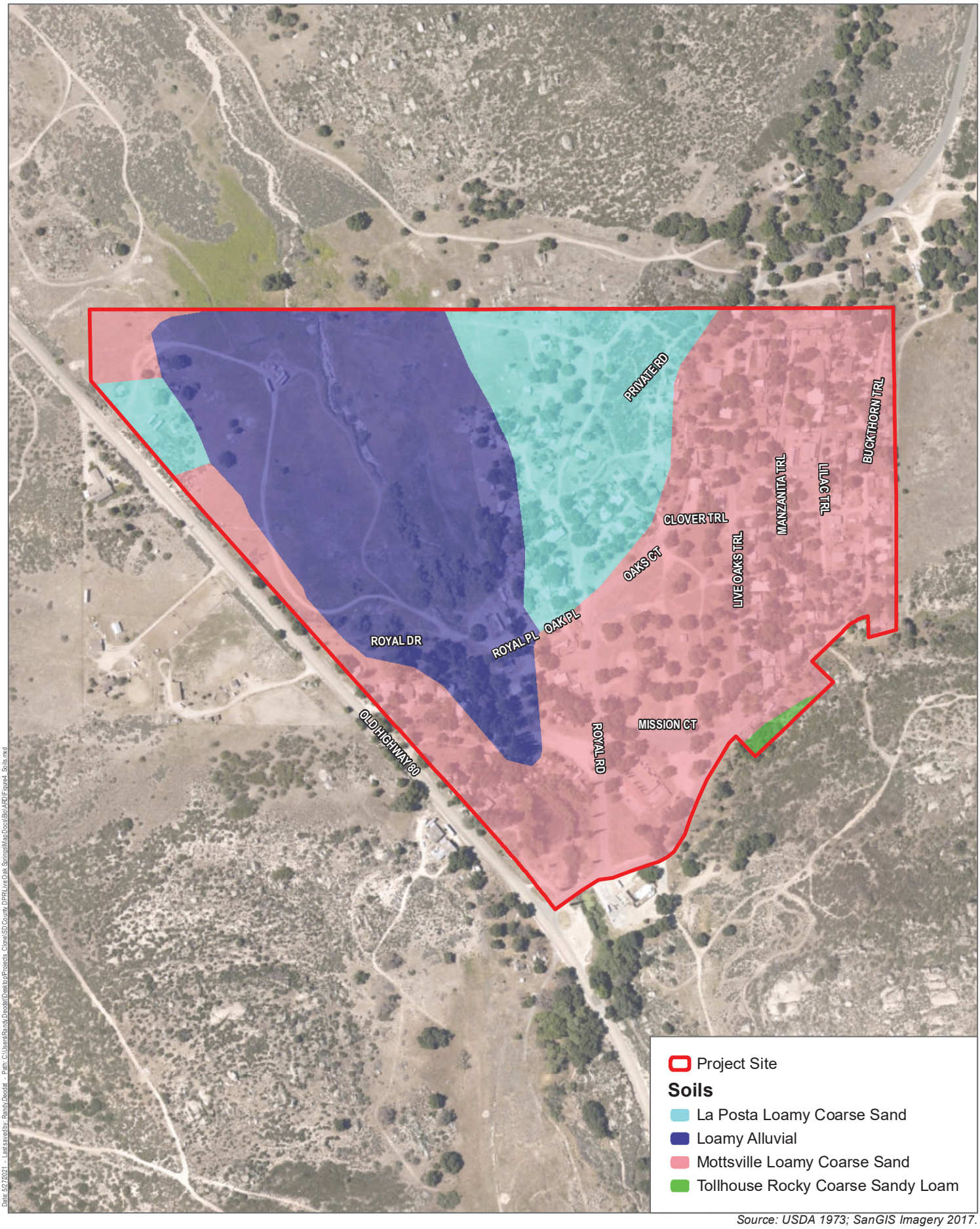
Figure 3

USGS Topographic Map

Live Oak Springs Water System Improvements Project



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Source: USDA 1973; SanGIS Imagery 2017.

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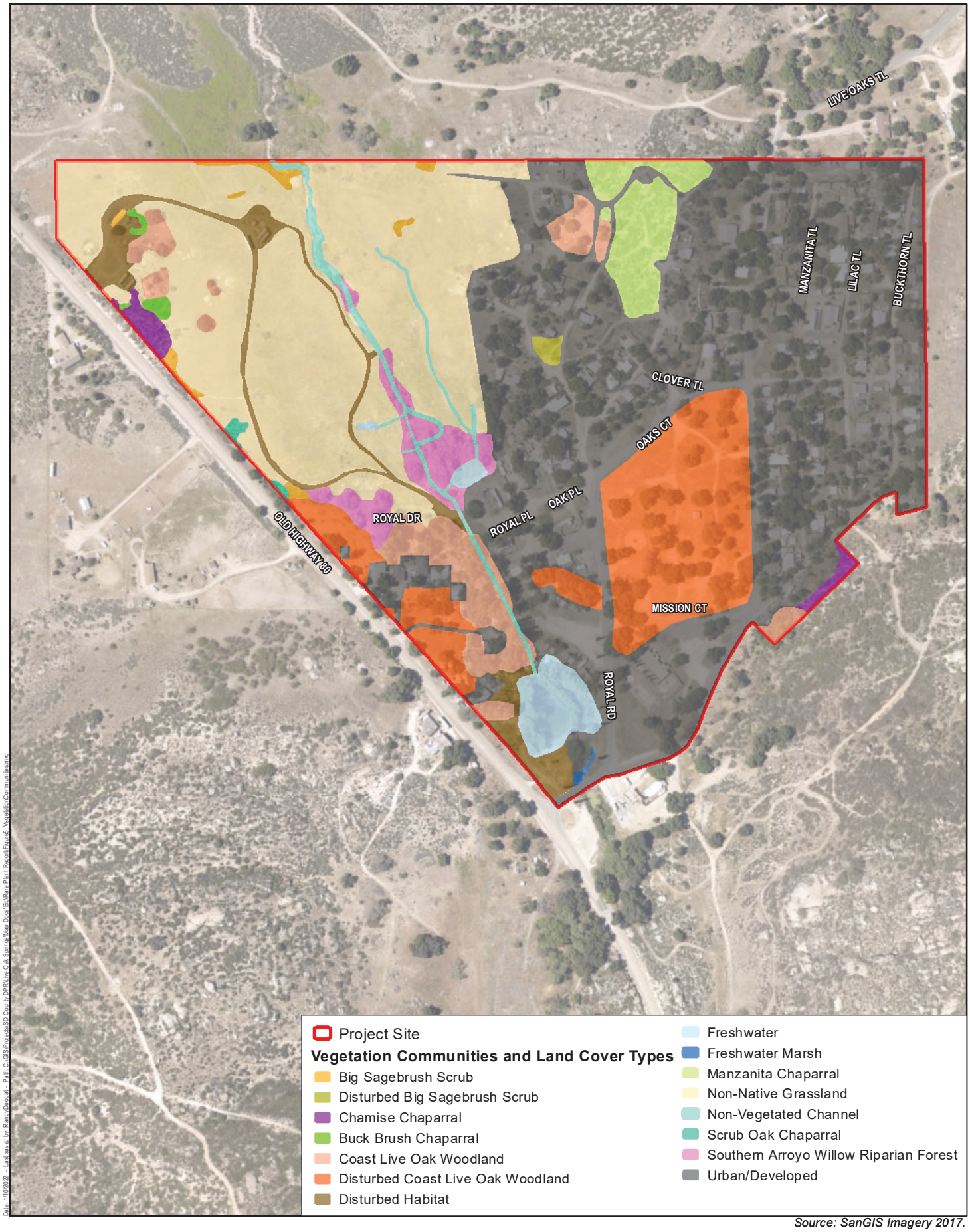
Figure 4

Soils

Live Oak Springs Water System Improvements Project



Source: SanGIS Imagery 2017.

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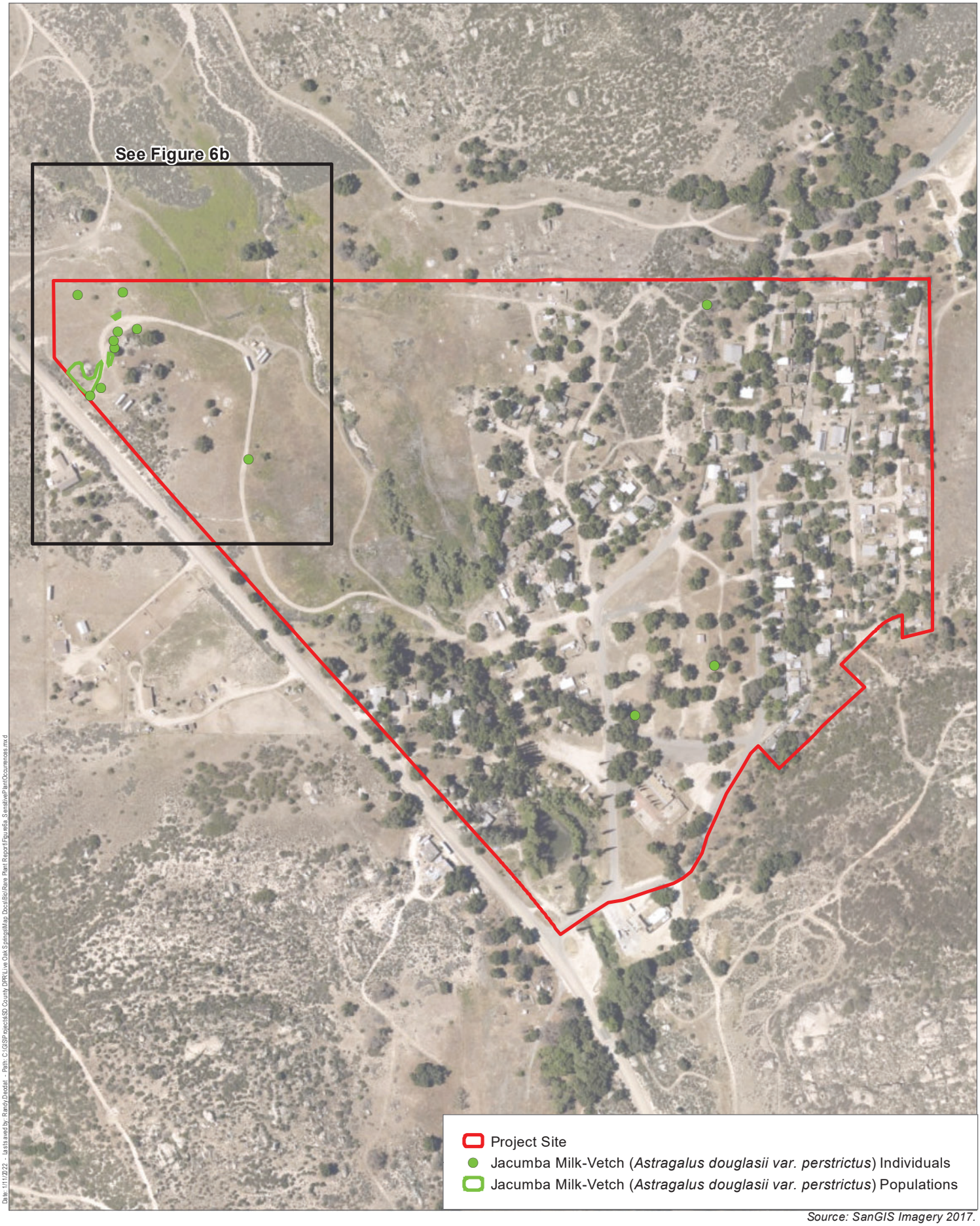
Figure 5

Vegetation Communities and Land Cover Types

Live Oak Springs Water System Improvements Project



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Source: SanGIS Imagery 2017.

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Figure 6a

Sensitive Plant Observations

Live Oak Springs Water System Improvements Project

Date: 1/11/2022 - last saved by: RandyDiedat - Path: C:\GIS\Projects\SD County DPR\Live Oak Springs\Map Docs\Bio\Rare Plant Report\Figure6b_SensitivePlantOccurrences.mxd

Source: SanGIS Imagery 2017.

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Figure 6b

Sensitive Plant Observations

Live Oak Springs Water System Improvements Project

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Attachment B. Plant Species Observed on the Project Site

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Plant Species Observed on the Project Site

Scientific Name	Common Name	Special Status
Ferns		
Azollaceae – Mosquito Fern Family		
Azolla filiculoides	Pacific mosquitofern	
Pteridaceae – Brake Family		
Myriopteris covillei	Coville's lip fern	
Gymnosperms		
Pinaceae – Pine Family		
Pinus coulteri	Coulter pine	
Magnoliids		
Saururaceae – Lizard's-tail Family		
Anemopsis californica	Yerba mansa	
Eudicots		
Adoxaceae – Muskroot Family		
Sambucus nigra ssp. *caerulea*	Blue elderberry	
Amaranthaceae – Amaranth Family		
**Amaranthus albus*	Tumbleweed	
Anacardiaceae – Sumac Family		
Rhus aromatica var. *aromatica*	Skunkbrush	
Apocynaceae – Dogbane Family		
**Vinca major*	Greater periwinkle	
Asteraceae – Sunflower Family		
Ambrosia acanthicarpa	Annual bur-sage	
Ambrosia psilostachya	Western ragweed	
Artemisia dracunculus	Tarragon sagebrush	
Artemisia tridentata ssp. *tridentata*	Big sagebrush	
**Centaurea benedicta*	Blessed starthistle	
**Cirsium vulgare*	Bull thistle	
Corethrogyne filaginifolia var. *filaginifolia*	California sand aster	
Ericameria pinifolia	Pine goldenbush	
Erigeron canadensis	Horseweed	
Erigeron foliosus var. *foliosus*	Leafy daisy	
Eriophyllum confertiflorum var. *confertiflorum*	Golden woolly sunflower	
Euthamia occidentalis	Western goldenrod	
Gutierrezia sarothrae	Matchweed	
**Hypochaeris glabra*	Smooth cat's-ear	
**Lactuca serriola*	Prickly lettuce	
**Matricaria discoidea*	Pineapple weed	
Pseudognaphalium beneolens	Fragrant everlasting	

Plant Species Observed on the Project Site

Scientific Name	Common Name	Special Status
**Sonchus asper* ssp. *asper*	Prickly sow thistle	
Stephanomeria exigua ssp. *deanei*	Deane's wire-lettuce	
Uropappus lindleyi	Silver puffs	
Boraginaceae – Borage Family		
Amsinckia intermedia	Common fiddleneck	
Amsinckia menziesii	Menzies's fiddleneck	
Cryptantha intermedia var. *intermedia*	Nievitas cryptantha	
Heliotropium curassavicum var. *oculatum*	Salt heliotrope	
Pectocarya penicillata	Northern pectocarya	
Phacelia imbricata var. *patula*	Spreading imbricate phacelia	
Phacelia ramosissima var. *latifolia*	Branching phacelia	
Plagiobothrys arizonicus	Arizona popcornflower	
Plagiobothrys collinus var. *fulvescens*	Rough stem hill popcornflower	
Brassicaceae – Mustard Family		
**Hirschfeldia incana*	Shortpod mustard	
**Lobularia maritima*	Sweet alyssum	
**Sisymbrium irio*	London rocket	
**Sisymbrium orientale*	Indian hedgemustard	
Cactaceae – Cactus Family		
Cylindropuntia californica var. *parkeri*	Cane cholla	
Caprifoliaceae – Honeysuckle Family		
Lonicera subspicata var. *denudata*	Johnston's honeysuckle	
Caryophyllaceae – Pink Family		
**Spergularia rubra*	Red sand-spurrey	
Chenopodiaceae – Goosefoot Family		
Atriplex suberecta	Sprawling saltbush	
Chenopodium californicum	California goosefoot	
Crassulaceae – Stonecrop Family		
Crassula connata	Pygmyweed	
Cucurbitaceae – Gourd Family		
Cucurbita foetidissima	Calabazilla	
Cucurbita palmata	Coyote melon	
Ericaceae – Heath Family		
Arctostaphylos glandulosa ssp. *leucophylla*	White leaf glandular manzanita	
Arctostaphylos pungens	Pointleaf manzanita	
Euphorbiaceae – Spurge Family		
**Euphorbia lathyris*	Caper spurge	
Euphorbia serpyllifolia	Thyme-leafed spurge	

Plant Species Observed on the Project Site

Scientific Name	Common Name	Special Status
Fabaceae – Legume Family		
Acmispon glaber var. *brevialatus*	Long keeled deerweed	
Acmispon heermannii var. *heermannii*	Heermann's lotus	
Acmispon strigosus	Strigose lotus	
Astragalus douglasii var. *perstrictus*	Jacumba milkvetch	CRPR 1B.2
Lupinus bicolor	Miniature lupine	
**Medicago polymorpha*	California burclover	
**Melilotus indicus*	Indian sweetclover	
**Robinia pseudoacacia*	Black locust	
Fagaceae – Oak Family		
Quercus agrifolia var. *oxyadenia*	Interior coast live oak	
Geraniaceae – Geranium Family		
**Erodium botrys*	Longbeak filaree	
**Erodium cicutarium*	Redstem filaree	
Lamiaceae – Mint Family		
**Lamium amplexicaule*	Henbit	
Trichostema parishii	Parish's bluecurls	
Lythraceae – Loosestrife Family		
**Lythrum hyssopifolia*	Grass poly	
Malvaceae – Mallow Family		
**Malva parviflora*	Cheeseweed	
Montiaceae – Purslane Family		
Claytonia parviflora ssp. *parviflora*	Small flowered miner's-lettuce	
Claytonia perfoliata ssp. *perfoliata*	Round leaf miner's lettuce	
Nyctaginaceae – Four O'Clock Family		
**Mirabilis jalapa* var. *jalapa*	Jalapa four o'clock	
Mirabilis multiflora var. *pubescens*	Hairy many flower four o'clock	
Onagraceae – Evening Primrose Family		
Camissonia strigulosa	Sandysoil suncup	
Camissoniopsis confusa	San Bernardino suncup	
Clarkia rhomboidea	Diamond clarkia	
Epilobium brachycarpum	Tall annual willowherb	
Oenothera californica ssp. *avita*	Grandfathers' California evening primrose	
Oenothera elata ssp. *hirsutissima*	Great marsh evening primrose	
Orobanchaceae – Broom-Rape Family		
Castilleja foliolosa	Woolly Indian paintbrush	
Cordylanthus rigidus ssp. *setigerus*	Stiffbranch bird's-beak	
Orobanche californica ssp. *feudgei*	Feudge's California broom-rape	

Plant Species Observed on the Project Site

Scientific Name	Common Name	Special Status
Paeoniaceae – Peony Family		
Paeonia californica	California peony	
Papaveraceae – Poppy Family		
Eschscholzia californica	California poppy	
Phrymaceae – Lopseed Family		
Erythranthe guttata	Seep monkeyflower	
Plantaginaceae – Plantain Family		
Keckiella ternata var. *ternata*	Scarlet bush penstemon	
Penstemon centranthifolius	Scarlet bugler	
Penstemon spectabilis var. *spectabilis*	Showy beardtongue	
**Plantago major*	Common plantain	
Polemoniaceae – Phlox Family		
Microsteris gracilis	Slender phlox	
Polygonaceae – Buckwheat Family		
Chorizanthe fimbriata var. *laciniata*	Laciniate spineflower	
Eriogonum elongatum var. *elongatum*	Longstem buckwheat	
Eriogonum fasciculatum var. *polifolium*	Mojave Desert California buckwheat	
Eriogonum gracile var. *gracile*	Slender woolly buckwheat	
Eriogonum thurberi	Thurber's buckwheat	
Eriogonum wrightii var. *membranaceum*	Ringstem Wright's buckwheat	
**Polygonum aviculare* ssp. *neglectum*	Left oval leaf knotweed	
**Rumex crispus*	Curly dock	
Portulacaceae – Purslane Family		
**Portulaca oleracea*	Purslane	
Ranunculaceae – Buttercup Family		
Clematis pauciflora	Few flowered virgin's bower	
Rhamnaceae – Buckthorn Family		
Ceanothus cuneatus var. *cuneatus*	Buckbrush	
Ceanothus leucodermis	Whitebark ceanothus	
Frangula californica ssp. *tomentella*	Dense haired California coffeeberry	
Rhamnus ilicifolia	Hollyleaf redberry	
Rosaceae – Rose Family		
Adenostoma fasciculatum var. *obtusifolium*	Wide leaf chamise	
Adenostoma sparsifolium	Red shank	
Cercocarpus betuloides var. *betuloides*	Birchleaf mountain mahogany	
Prunus ilicifolia	Holly leaf cherry	
Rosa californica	California rose	
**Rubus armeniacus*	Himalayan blackberry	

Plant Species Observed on the Project Site

Scientific Name	Common Name	Special Status
Rubiaceae – Madder Family		
Galium andrewsii ssp. *andrewsii*	Phlox-leaved bedstraw	
Galium angustifolium ssp. *angustifolium*	Narrow leaved bedstraw	
Salicaceae – Willow Family		
Salix laevigata	Red willow	
Salix lasiolepis	Arroyo willow	
Sapindaceae – Soapberry Family		
Acer negundo var. *californicum*	California box elder	
Scrophulariaceae – Figwort Family		
Scrophularia californica	California figwort	
Simaroubaceae – Quassia Family		
**Ailanthus altissima*	Tree of heaven	
Solanaceae – Nightshade Family		
Datura wrightii	Wright's jimsonweed	
Nicotiana attenuata	Coyote tobacco	
Solanum xanti	Chaparral nightshade	
Tamaricaceae – Tamarisk Family		
**Tamarix ramosissima*	Hairy tamarix	
Ulmaceae – Elm Family		
**Ulmus parvifolia*	Chinese elm	
Urticaceae – Nettle Family		
Urtica dioica ssp. *holosericea*	Hoary stinging nettle	
Zygophyllaceae – Caltrop Family		
**Tribulus terrestris*	Puncturevine	
Monocots		
Agavaceae – Century Plant Family		
Yucca schidigera	Mojave yucca	
Cyperaceae – Sedge Family		
Carex praegracilis	Slender sedge	
Eleocharis montevidensis	Sand spikerush	
Schoenoplectus acutus var. *occidentalis*	Viscid bulrush	
Juncaceae – Rush Family		
Juncus bufonius var. *bufonius*	Toad rush	
Juncus mexicanus	Mexican rush	
Poaceae – Grass Family		
**Avena barbata*	Slender wild oat	
Bromus carinatus var. *carinatus*	California brome	
**Bromus diandrus*	Ripgut brome	
**Bromus hordeaceus*	Soft brome	

Plant Species Observed on the Project Site

Scientific Name	Common Name	Special Status
**Bromus rubens*	Red brome	
**Bromus sterilis*	Poverty brome	
**Bromus tectorum*	Cheat grass	
Elymus glaucus ssp. *glaucus*	Western wildrye	
**Festuca arundinacea*	Tall fescue	
**Festuca myuros*	Rattail fescue	
**Hordeum murinum*	Wall barley	
Melica imperfecta	Coast range melic	
**Poa annua*	Annual blue grass	
**Poa pratensis* ssp. *pratensis*	Kentucky blue grass	
**Schismus barbatus*	Mediterranean schismus	
Typhaceae – Cattail Family		
Typha latifolia	Broad-leaved cattail	

Notes:

* = Non-native or invasive species

Special Status

Federal

FE = Endangered

FT = Threatened

State

SE = Endangered

ST =Threatened

CRPR – California Rare Plant Rank

1A = Presumed extinct in California and elsewhere

1B = Rare or Endangered in California and elsewhere

2A = Presumed extinct in California, more common elsewhere

2B = Rare or Endangered in California, more common elsewhere

3 = Plants for which we need more information – Review list

4 = Plants of limited distribution – Watch list

Threat Ranks

.1 = Seriously endangered in California

.2 = Fairly endangered in California

.3 = Not very endangered in California