

Appendix B

Biological Technical Report

Avenida Encinas Coastal Rail Trail and Pedestrian Improvements Project

Biological Technical Report

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Submitted to

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

HELIX Environmental Planning, Inc. (HELIX) completed this biological resources technical report for the Avenida Encinas Coastal Rail Trail and Pedestrian Improvements Project (project) in the City of Carlsbad (City), San Diego County, California. The purpose of this report is to document the existing biological conditions within the approximately 9.85-acre project site (site) and provide an analysis of potential impacts on sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act (CEQA) by the City.

1.2 PROJECT LOCATION AND DESCRIPTION

1.2.1 Project Location

The project site is generally located north of the Batiquitos Lagoon in the southwestern portion of the City of Carlsbad, San Diego County, California (Figure 1, *Regional Location*). Specifically, the site occurs along Avenida Encinas west of Interstate (I-) 5, between Palomar Airport Road southward until terminating just east of Embarcadero Lane (Figure 2a, *Aerial Vicinity*). The site is located in Section 20 and unsectioned lands in Township 12 South, Range 4 West of the Encinitas U.S. Geological Survey (USGS) 7.5-minute topographic map (Figure 2b, *USGS Topography*).

The site is bounded by existing commercial development to the north, east, and south and the Los Angeles-San Diego-San Luis Obispo (LOSSAN) railroad corridor to the west. The project occurs within the boundaries of the adopted Carlsbad Habitat Management Plan (HMP), primarily within Local Facilities Management Zone (LFMZ) 3 and LFMZ 22, but occurring outside and immediately north of Existing Hardline Preserve between the Poinsettia Coaster Station and Water's End Homeowners Association (Figure 3, *Regional Planning Context*).

1.2.2 Project Description

The City proposes to construct roadway, bikeway, and pedestrian improvements along an approximately one-mile segment of Avenida Encinas between Palomar Airport Road and a point just south of the Poinsettia Coaster Station driveway in the western portion of the City (Figures 4a-4c, *Site Plan*). The project alignment is situated in the Coastal Zone between Interstate 5 and the LOSSAN rail corridor.

Proposed improvements would entail the implementation of Reach 5 of the City's portion of the Coastal Rail Trail (CRT), a planned regional bicycle route, running approximately 42 miles between Oceanside and Santa Fe Depot in Downtown San Diego. Various segments of the CRT have been constructed in Oceanside, Carlsbad, and Encinitas, including Reach 1 (along Carlsbad Boulevard from State Street to the northern city boundary over Buena Vista Lagoon) and Reach 2 (between Tamarack Avenue and Oak Avenue) in Carlsbad. In addition, in 2024, the City completed another portion of the CRT south of the project and along Avenida Encinas between Poinsettia Lane and Windrose Circle. This portion of the CRT proposed by the project, Reach 5 (from Palomar Airport Road to a point just south of the Poinsettia Coaster Station Driveway), would include a Class II bike lane along both sides of Avenida Encinas, consisting of a six-foot-wide striped bike lane within the roadway. Other improvements would include

roadway widening, new pavement, new sidewalks, curb ramps, center landscaped medians, landscaping, bio-filtration swales, lighting, fencing, and retaining walls. Proposed improvements would occur within the existing road right-of-way or property owned by the City.

The project alignment occurs within a developed area comprised of commercial, industrial, transportation, and residential land uses. The majority of the project site is composed of developed land and disturbed habitat, with small areas of wetland and native upland habitats. Surrounding land uses include Palomar Airport Road to the north; North County Transit District railroad right-of-way to the west; the Poinsettia Coaster Station to the south; and a gas station, business parks, car dealership, a wastewater treatment plant, and undeveloped land to the east.

2.0 METHODS

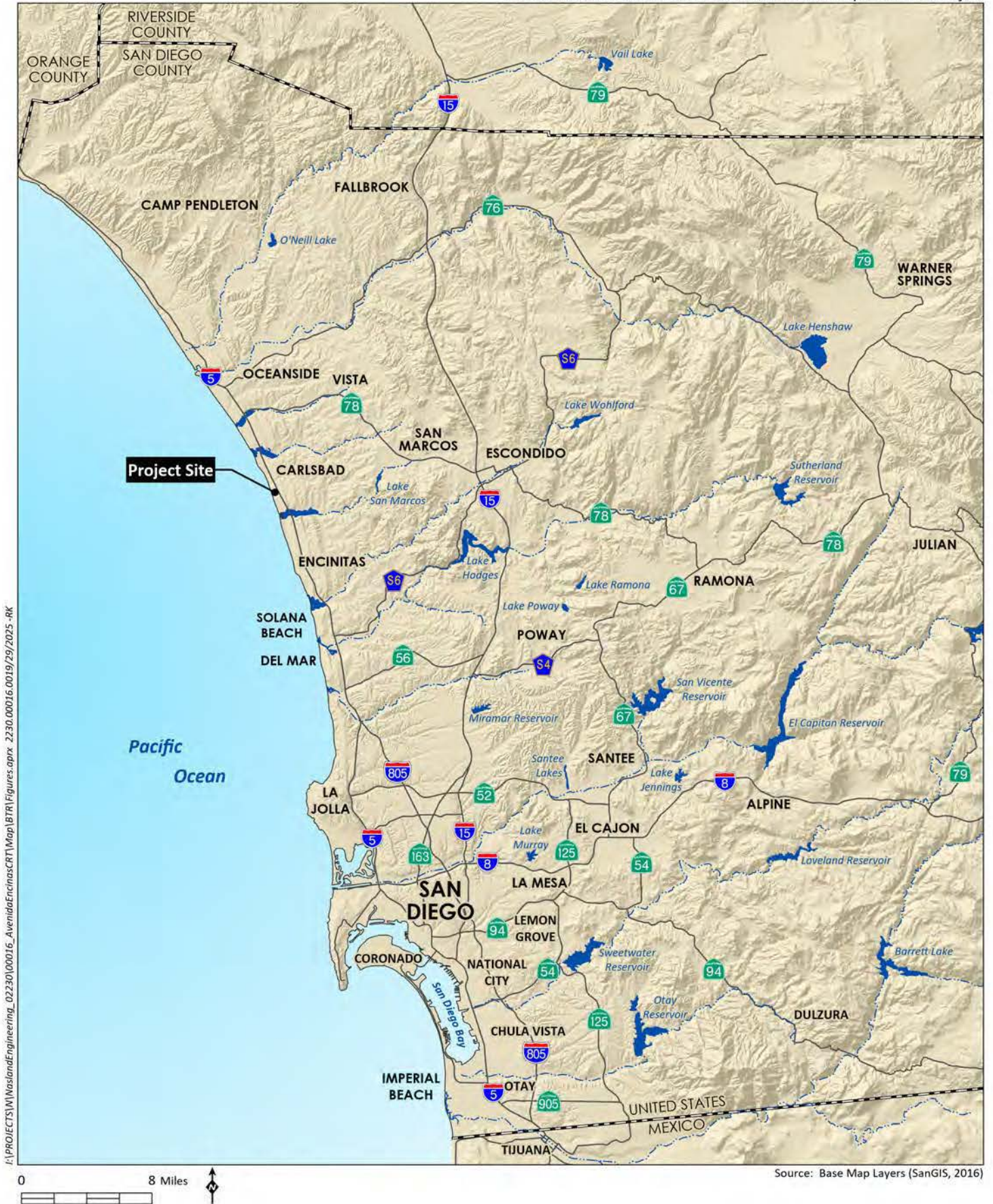
2.1 LITERATURE REVIEW

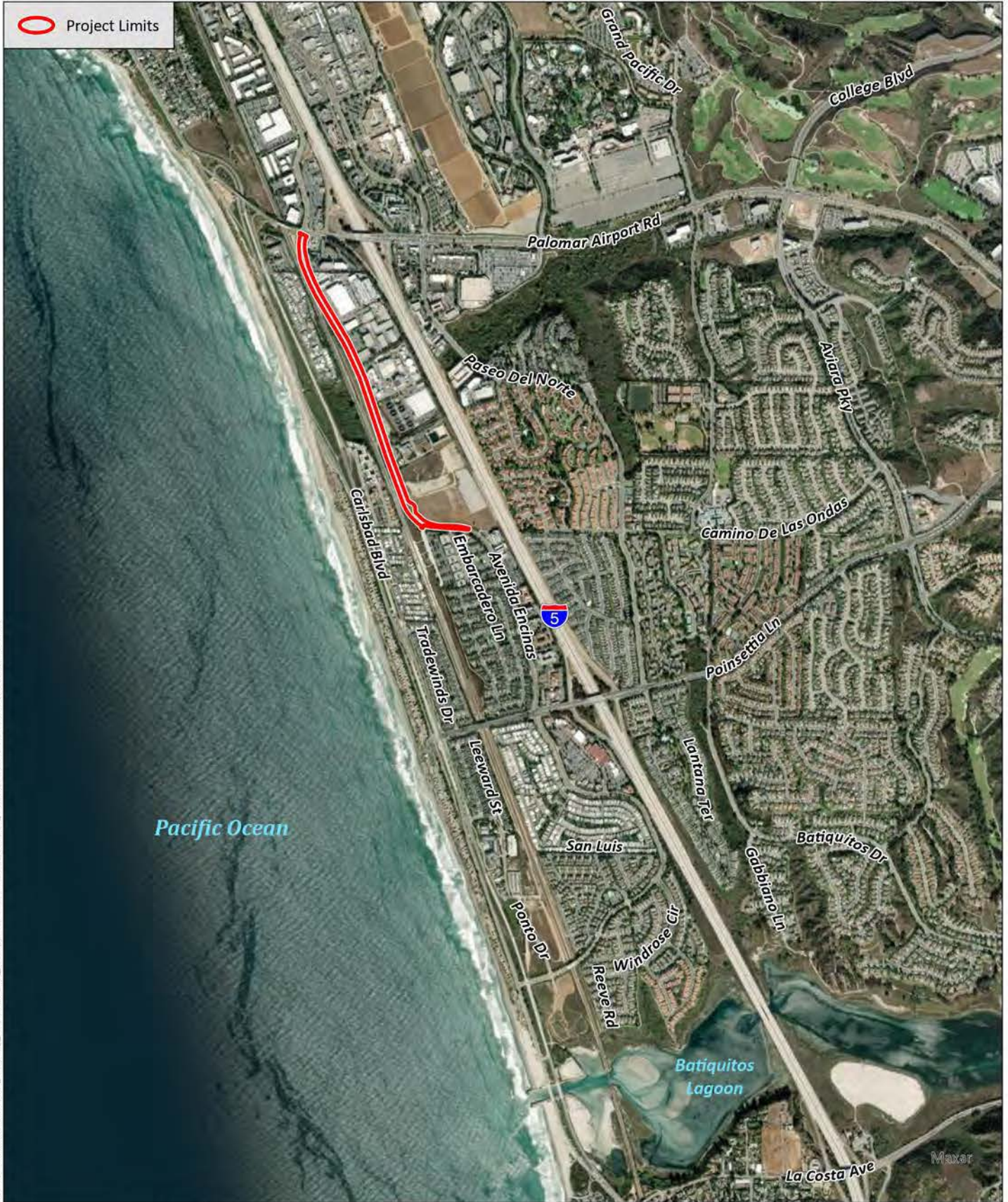
Before conducting field surveys, a thorough review of relevant maps, databases, and literature pertaining to biological resources known to occur within the project vicinity was performed. Recent and historical aerial imagery (Google 2022), topographic maps, soils maps (U.S. Department of Agriculture [USDA] 2023), vegetation maps (City of Carlsbad [City] 2011), and other maps of the project site and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting. In addition, a query of sensitive species and habitats databases was conducted, including the U.S. Fish and Wildlife Service (USFWS) species records (USFWS 2023), California Natural Diversity Database (CNDDB; California Department of Fish and Wildlife [CDFW] 2023), and the California Native Plant Society (CNPS) Electronic Inventory (California Native Plant Society [CNPS] 2024) applications. The Carlsbad HMP (City 2004) and the City's Guidelines for Biological Studies (Technology Associates 2008) were also used to obtain information on regional species and habitats of concern.

2.2 GENERAL BIOLOGICAL SURVEY

A general biological survey was conducted by HELIX principal biologist Stacy Nigro on November 15, 2022, which included the 9.85-acre project site and an approximately 50-foot radius extending outward from the project limits along most of the alignment, for a total 23.9-acre study area. A follow-up survey to detect special-status plants potentially occurring on site and to refine vegetation community mapping was conducted on May 26, 2023. The surveys were conducted on foot, with the aid of binoculars, and included 100 percent visual coverage of the study area. Private property, the LOSSAN rail right-of-way, and other areas where access was restricted were not walked during the survey. Restricted areas were visually inspected by binocular scans. The study area was evaluated in terms of project adjacency context only; the project site (project footprint) is discussed in this report.

The general biological survey included a general inventory of existing conditions, which focused primarily on mapping existing vegetation communities or habitat types, assessing suitability for sensitive plant and animal species, and identifying potential sensitive resources. The site was also evaluated for potentially jurisdictional resources, including vernal pools. Vegetation was mapped on 1"=200' scale aerial maps of the site. Plant and animal species observed or detected on site were recorded in field notebooks. Animal identifications were made in the field by direct visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with photographs and literature resources. The locations of special-status plant and

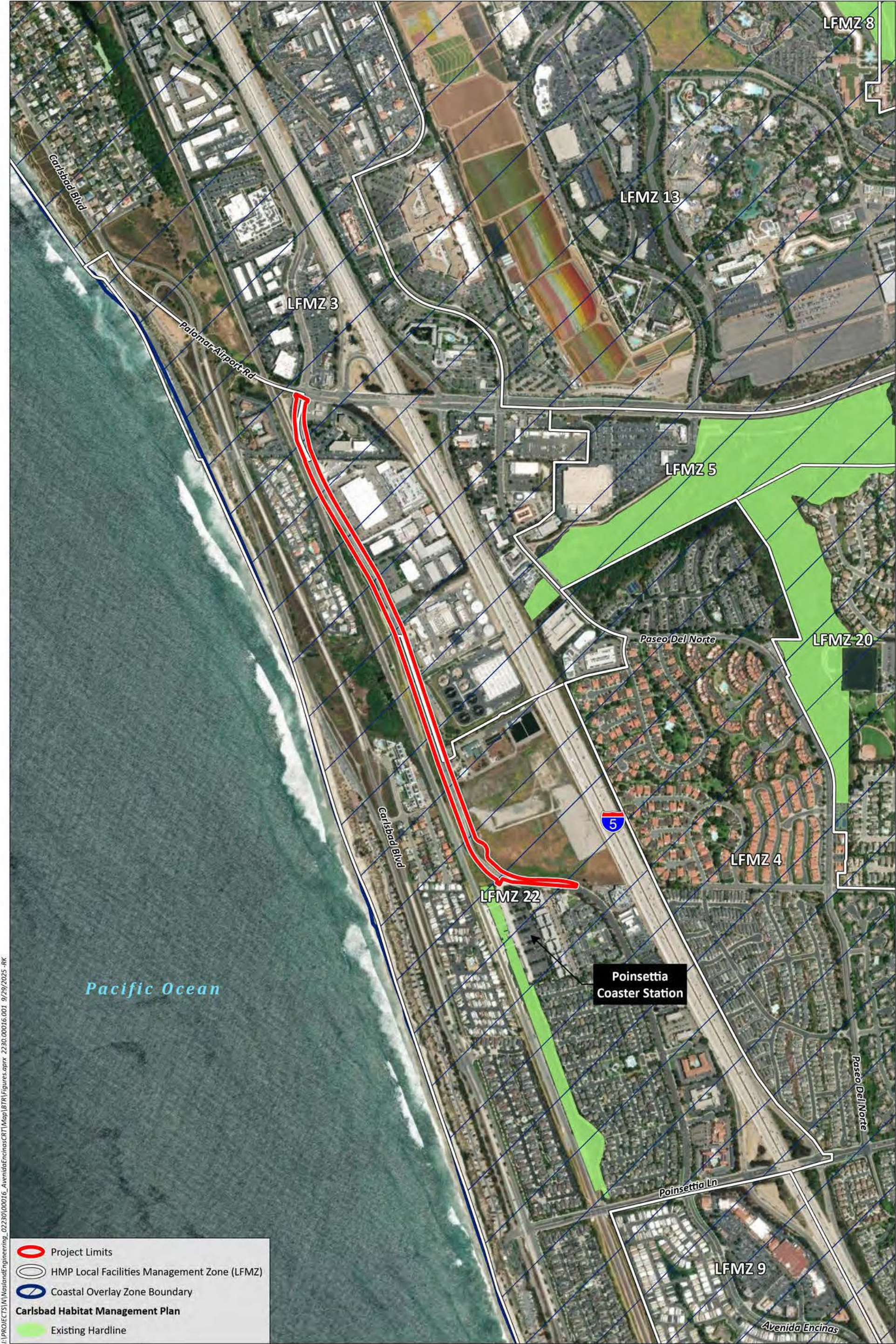




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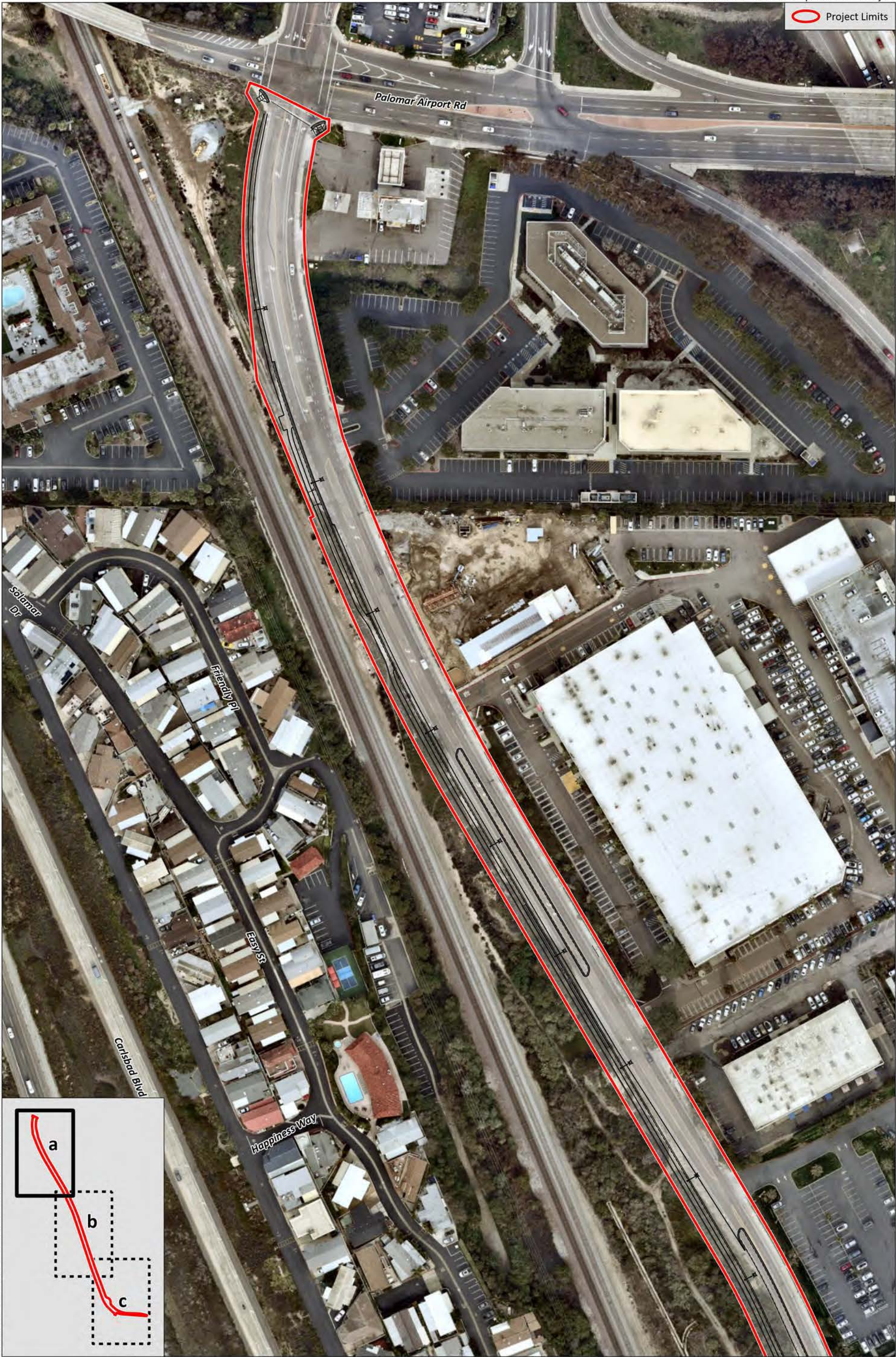


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Project Limits



Source: Aerial (SanGIS 2023)

Project Limits



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0 125 Feet

HELIX
Environmental Planning

Site Plan

Figure 4b



animal species incidentally observed or otherwise detected were mapped and recorded on ArcGIS Collector software. Table 1, *Biological Surveys*, provides a summary of biological surveys conducted to date for the project.

Table 1
BIOLOGICAL SURVEYS

Survey Type	Date	Personnel
General Biological Survey, Vegetation Mapping, Habitat Assessment, Aquatic Resources Mapping	November 15, 2022	Stacy Nigro
Vegetation Mapping, Rare Plant Survey	May 23, 2023	Stacy Nigro
Jurisdictional Delineation	August 20, 2024	Stacy Nigro

2.3 RARE PLANT SURVEY

HELIX conducted a rare plant survey on and immediately adjacent to the project site on May 26, 2023 (Table 1). Special-status plant species include species that are (1) listed as threatened or endangered by the USFWS or the CDFW; (2) those with a California Rare Plant Rank (CRPR) 1 through 4 designated by the CNPS; and (3) those covered by the City's HMP. The surveys were conducted on foot and included 100 percent visual coverage of the project site. Special-status plant species encountered were mapped using a hand-held Global Positioning System (GPS) unit and/or on an aerial photograph. Special-status plant species were also searched for opportunistically during other surveys.

2.4 AQUATIC RESOURCES MAPPING AND DELINEATION

HELIX mapped potentially jurisdictional aquatic resources within the study area as part of the general biological survey conducted on November 15, 2022, followed by a formal jurisdictional delineation within the project site on August 20, 2024. Aquatic resources were preliminarily mapped based on vegetation community type or the presence of stream features. Before beginning fieldwork, aerial photographs (1"=200' scale), topographic maps (1"=200' scale), and National Wetland Inventory (NWI) maps were reviewed to assist in determining the location of potential jurisdictional areas in the project site during the general biological survey. The jurisdictional delineation conducted in 2024 utilized 1"=60' scale aerial and topographic maps with two-foot contours. The site was surveyed on foot, and potential jurisdictional resources were either plotted into the GPS receiver or mapped directly in the field onto the photographic maps. Features with the potential to be jurisdictional to the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or CDFW, or potentially considered coastal wetlands by the California Coastal Commission (CCC), were mapped.

2.4.1 U.S. Army Corps of Engineers

Potential wetland waters of the U.S. boundaries were delineated using the three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Supplement (USACE 2008). Boundaries of potential non-wetland waters of the U.S. within the project site were delineated by their relation to an ordinary high water mark (OHWM).

The USACE asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the U.S. pursuant to Section 404 of the Federal Clean Water Act (CWA). The current definition of waters of the U.S. under the 2023 Sackett Ruling clarifies that the CWA extends only to traditional navigable waters and relatively permanent bodies of water (tributaries such as streams and rivers) connected to traditional navigable waters, the territorial seas, or interstate waters, and wetlands that have a continuous surface connection with those waters.

2.4.2 Regional Water Quality Control Board

Potential RWQCB wetland waters of the state within the project site were delineated based on the State Water Resources Control Board's (SWRCB's) State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), adopted on April 2, 2019 (SWRCB 2019), and implemented as of May 28, 2020. Boundaries of potential non-wetland waters of the State were delineated based on the presence of stream bed and bank and/or the presence of an OHWM.

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the state pursuant to Section 401 of the CWA. Additionally, the RWQCB regulates isolated waters features under the authority of the State Porter-Cologne Water Quality Control Act.

2.4.3 California Department of Fish and Wildlife

CDFW jurisdictional boundaries were determined based on the presence of regular surface flow associated with a stream, the presence of a lake, or the presence of riparian vegetation along a stream or lake. The limits of jurisdictional streambed can extend up to the tops of the associated banks. CDFW also regulates all riparian habitat that may extend beyond the banks of a stream.

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code (CFG Code), the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

2.4.4 California Coastal Commission

Boundaries of wetlands in the coastal zone (i.e., "coastal wetlands") were determined based on the CCC's "one-parameter" definition, which only requires evidence of a single parameter to establish wetland conditions: "Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate" (CCR Title 14, Section 13577).

2.5 SURVEY LIMITATIONS

Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the lists of species identified are not necessarily comprehensive accounts of all species that utilize the project site, as species that are nocturnal, secretive, or seasonally restricted may not have been observed. Those species that are of special status and have the potential to occur in the project site, however, are still addressed in this report.

2.6 NOMENCLATURE

Nomenclature for this report is taken from Oberbauer et al. (2008) and the Carlsbad HMP (City 2004) for vegetation communities; Jepson eFlora (2023) and Calflora (2023) for plants, Society for the Study of Amphibians and Reptiles (2023) for amphibians and reptiles, American Ornithological Society (2023) for birds, and Bradley et al. (2014) and Tremor et al. (2017) for mammals. Plant species status is from the CNPS (2024), and animal species status is from the CDFW (2023a-c). Soils information for the site was obtained from the Natural Resources Conservation Service Web Soil Survey (USDA 2023).

3.0 REGIONAL CONTEXT

The proposed project occurs in the western portion of the City, which is located along the Pacific Coast in northern San Diego County. The bioregion that generally defines the area is influenced by a coastal Mediterranean climate. The area's climate, coupled with coastal geological formations and land features, gives rise to an array of habitat types and species that are unique to coastal southern California. Although past agricultural practices and urbanization have resulted in the conversion of land within much of the region, habitat blocks and linkages of undeveloped land occur among existing developments that provide important habitat for plant and animal species that reside and migrate to and from the area. Larger habitat blocks exist on steep-sloping land and in and around the three coastal lagoons that occur within Carlsbad: Agua Hedionda Lagoon, Batiquitos Lagoon, and Buena Vista Lagoon. Additional undeveloped areas occur on some of the higher-elevation inland portions of Carlsbad that have not been subjected to intense agricultural practices or development. Grasslands, coastal sage scrub, chaparral, riparian woodlands and forests, and riverine, palustrine, and estuarine habitats all contribute to the overall biological value and aesthetic appeal of the region.

3.1 CARLSBAD HABITAT MANAGEMENT PLAN

The proposed project is located within the boundaries of the Carlsbad HMP. Based on the existing distribution of vegetation communities and sensitive species, Focused Planning Areas (FPAs) were developed and identified throughout the Carlsbad HMP areas. The FPAs were further broken down into HMP cores and linkages. Eight core FPAs have been identified that are connected to one another and to adjoining habitat areas outside Carlsbad by biological linkages and corridors. The FPAs and HMP cores and linkages serve as essential components of a citywide preserve system, which protects the high-priority and sensitive biological resources that occur within Carlsbad and is intended to offset the loss of habitat from lower-priority areas approved for development. In addition, several Special Resource Areas (SRAs) have been designated for portions of the Carlsbad that support important habitat but are too small, isolated, and exposed to an urban/wildlands interface to be considered HMP core or linkage areas.

The following terms and definitions are used in this report and correspond to specific resources addressed under the Carlsbad HMP:

- **HMP Permit** – The local permit required to be obtained when a development project impacts, either directly or indirectly, habitat in Carlsbad.
- **Covered Species** – Species for which take authorization is provided under the Carlsbad HMP because long-term viability has been determined to be adequately maintained under the

Carlsbad HMP as identified in Lists 1, 2, and 3, Exhibit "A" to the Implementing Agreement. The HMP addresses the species identified as List 1 in a manner sufficient to meet all of the criteria for issuing an incidental take permit (ITP). Take authorization for species of Lists 2 and 3 is contingent on other Multiple Habitat Conservation Program (MHCP) subarea plans being permitted and/or funding for enhanced management of preserved areas.

- **Development Project** – Any use of a property, including grading, clearing, and grubbing, construction, alteration of any magnitude or activities incidental thereto which requires a discretionary or ministerial permit, entitlement, or approval issued under Titles 15, 18, 20, or 21 of the Carlsbad Municipal Code.
- **Narrow Endemic Species** – Native species with restricted geographic distributions, soil affinities and/or habitats, and for purposes of the Carlsbad HMP, species that, in addition, have important populations within the plan area, such that substantial loss of these populations or their habitat within the Carlsbad HMP area might jeopardize the continued existence or recovery of that species and therefore special conservation standards are required.
- **Existing Hardline Conservation Areas** – Also referred to as existing hardline preserve areas, these include properties that have already been conserved for their habitat value due to permitting actions occurring in the past before approval of the Carlsbad HMP.
- **Proposed Hardline Conservation Areas** – Also referred to as proposed hardline preserve areas, properties whose preservation and development areas have been planned as part of the Carlsbad HMP, as agreed upon in coordination with the landowners, City, USFWS, and CDFW. If the area proposed for development and proposed for conservation is in conformance with the Carlsbad HMP, the development will be allowed under the Carlsbad HMP.
- **Standards Areas** – Properties whose preservation and development areas have not yet been planned as part of the Carlsbad HMP. Instead, preservation and conservation standards have been developed for these properties, which must be complied with when a development project is submitted for the property.

Conservation of land within the City is generally implemented as either a (1) Existing Hardline Preserve area, (2) Proposed Hardline Preserve area, or (3) Standards Areas. The Existing Hardline Preserve areas include both publicly-owned land and privately-owned land that has been committed to habitat conservation as a result of existing open space regulations, past development approvals, or other actions. The Proposed Hardline Preserve represents a number of proposed public and private projects that have submitted proposed hardline conservation designs for inclusion in the HMP and the preserve system. Since the approval of the HMP, these proposals have obtained, or will obtain, the same conservation status as Existing Hardline Preserve areas. Take of habitat will be authorized for the remaining portions of the projects.

Developments and associated hardline preserve designs have not yet been proposed for some properties within the City, which may provide an important contribution to the Carlsbad HMP preserve system. These properties are identified as Standards Areas in the Carlsbad HMP. The Carlsbad HMP includes conservation goals and standards arranged according to the LFMZ, which will apply to future development proposals in the standards areas.

Regarding the proposed project, the site is located within LFMZ 3 and 22. The project site is not located within a Standards Area, designated Linkage, or Special Resource Area, as prescribed by the HMP. An Existing Hardline Conservation Area is off-site, located immediately south of the project site, between the Poinsettia Lane Coaster Station and Water's End Homeowners Association (Figure 3). The Hardline Preserve Area is entirely outside of the project limits (Figure 3).

3.2 HABITAT PRESERVATION AND MANAGEMENT REQUIREMENTS

Chapter 21.210 of the Carlsbad Municipal Code requires development to comply with the Carlsbad HMP as well as the implementing agreement, permit conditions, MHCP, Natural Community Conservation Planning (NCCP) program and 10(a)(1)(B) permit conditions, and the requirements contained in the Habitat Preservation and Management Requirements Ordinance. No grading is allowed to occur for projects in Carlsbad until the processing and permitting requirements of this chapter are fulfilled. The purpose and intent of the Habitat Preservation and Management Requirements Ordinance are to:

- Implement the goals and objectives of the land use and the open space/conservation elements of the Carlsbad General Plan;
- Implement the Carlsbad HMP, the implementing agreement and conditions, the North County MHCP, and the California NCCP and 10(a)(1)(B) permit conditions;
- Preserve the diversity of natural habitats in Carlsbad and protect the rare and unique biological resources located within those habitats;
- Assure that development projects comply with the habitat preservation and conservation standards contained in the Carlsbad HMP;
- Provide a process for permitting limited, incidental impacts to occur to natural habitat areas and the species located therein; and
- Provide a process for allowing a minor amendment from the habitat preservation and conservation standards under limited, specified circumstances.

An HMP Permit is required to be obtained from the City for any development project that directly or indirectly impacts natural habitat within the Carlsbad HMP boundaries. Further, developments proposed within a Standards Area of the HMP require a Minor Amendment to the HMP. Habitat conservation planning is processed as a Consistency Finding and requires concurrence from the USFWS and CDFW (wildlife agencies).

Although the proposed project is within the boundaries of the City-wide HMP, proposed improvements are entirely within the City's existing road right-of-way (ROW) or property owned by the City. Existing City road ROWs were not incorporated as native habitats in the City's habitat conservation estimates for the HMP and are intended to allow for planned roadway/mobility/infrastructure improvements on existing public roads. These areas were not intended to be included in the HMP requirements for the development of a "Property." Thus, Property development requirements imposed by the HMP are generally considered not applicable to City public road/infrastructure improvements within existing ROWs where no such deed/title that would legally identify a "Property" has been recorded by the

County Assessor. Regardless of applicability, the project considered the HMP and has attempted to adhere to the requirements to the maximum extent possible.

3.3 ZONE LEVEL RECOMMENDATIONS

The project site is situated within LFMZ 3 (Zone 3) and LFMZ 22 (Zone 22). There are no zone-specific preserve management guidelines for Zone 3. HMP Conservation Goals and Planning Standards for Zone 22 include the following:

- Manage vernal pool habitat to minimize adverse edge effects and maintain/enhance the water quality of the pools.
- Stabilize sensitive species populations by removing impacts or potential impacts, including trampling, vehicular traffic, illegal dumping, collecting, and invasion of non-native plants.
- Use fencing and signs to restrict human intrusion and educate the public about vernal pool resources.
- Implement runoff or erosion control measures on adjacent properties, as necessary, to maintain appropriate amounts of water runoff into pool watersheds while protecting water quality against potential pollutants.
- Monitor the status of preserved populations to ensure they remain viable.

As described earlier, HMP development requirements (including Zone Level recommendations) apply to properties and are considered not applicable to existing City ROWs, which are specifically in-place for allowing roadway, mobility, and other planned infrastructure improvements to occur. Regardless of applicability, the project considered the HMP Zone Level recommendations and has attempted to adhere to the maximum extent possible (see Section 10.3.2 below).

3.4 COASTAL RESOURCE PROTECTION OVERLAY ZONE ORDINANCE

The project site is located within the coastal zone, and the project must demonstrate consistency with the approved Carlsbad Local Coastal Program (LCP) and obtain a Coastal Development Permit (CDP). The Carlsbad LCP includes two main components: a land use plan and related implementing measures, including a zoning map and zoning ordinance. In particular, the local coastal land use plans include measures specifically intended to protect natural open space resources, scenic resources, agricultural lands, and public access rights.

The project site is subject to the Mello II Segment of the LCP. Portions of the proposed project are located within the California Coastal Commission's (CCC's) Appeal Jurisdiction, which means the project can be appealed to the CCC.

3.5 COASTAL ZONE STANDARDS

As prescribed in Section D.7 of the HMP, additional conservation standards are to be applied to properties in the coastal zone (City 2004). These include:

- Environmentally sensitive areas, as defined in Section 30107.5 of the Coastal Act, shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed in those areas. “Environmentally sensitive habitat areas” (ESHA) are any areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and that could be easily disturbed or degraded by human activities and developments.
- There shall be the conservation of 67 percent of the Diegan coastal sage scrub on-site.
- There shall be no net loss of upland habitat, such as Diegan coastal sage scrub.
- Development buffers are required as follows: 100 feet for wetlands, 50 feet for riparian, and 20 feet for other native vegetation. Fuel modification zone 3 and public trails/pathways may be allowed with approval.
- Grading is prohibited during the rainy season (October 1 to April 1, annually). Grading during the rainy season may be allowed with approval.
- Mitigation for impacts to Diegan coastal sage scrub, when permitted, shall include a creation component that achieves the no net loss standard. On-site preservation is not eligible for mitigation credit in the coastal zone. Furthermore, impacts to coastal sage scrub shall be mitigated at an overall 2:1 ratio, with a creation component satisfying half of the total mitigation obligation.
- Mitigation areas, either on-site or off-site, shall be protected in perpetuity by a conservation easement in favor of the wildlife agencies. A preservation management plan shall be prepared for the mitigation areas to the satisfaction of the City, Wildlife Agencies, and CCC.

4.0 RESULTS

4.1 SITE DESCRIPTION AND GENERAL LAND USES

The project site is primarily developed City roadways, adjacent to commercial, residential, and industrial development, and confined by the existing road ROW. Land uses located within and/or adjacent to the project to the east include a variety of commercial and industrial buildings, the Carlsbad Water Recycling Facility, and the Encina Wastewater Authority. Land uses along the western side include residential homes, hotels, the Carlsbad Poinsettia Coaster Station, and the North County Transit District railroad right-of-way. A narrow, linear area of natural open space associated with the HMP hardline preserve and USFWS critical habitat for San Diego fairy shrimp (*Branchinecta sandiegonensis*) and spreading navarretia (*Navarretia fossalis*) occurs off-site near the southern portion of the project site outside the project limits (Figure 5, *Critical Habitat*).

4.2 TOPOGRAPHY AND SOILS

Elevations in the project site are relatively flat and range from approximately 35 feet above mean sea level (AMSL) to 80 feet AMSL. Elevation is lowest near the center of the project site and starts to gradually increase along Avenida Encinas, with the highest elevation occurring at the intersection of Avenida Encinas and Palomar Airport Road.

Five soil types are shown in the soil survey for the project site, with Huerhuero loam, 2 to 9 percent slopes, mapped across most of the project site, followed by Marina loamy coarse sand, 2 to 9 percent slopes (USDA 2023). Other soil types shown in the soil survey include Salinas clay loam, 0 to 2 percent slopes, Chesterton fine sandy loam, 2 to 5 percent slopes, and tidal flats. However, the soils shown in the soil survey are not representative of the current conditions across most of the site, which consists primarily of developed land and areas of previous land disturbance associated with the roadway, rail line, and commercial development.

4.3 VEGETATION COMMUNITIES/HABITAT TYPES

Vegetation communities or habitat types are classified in this report according to the Carlsbad HMP (City 2004), with further guidance from Oberbauer et al. (2008). The Carlsbad HMP divides vegetation communities into six Habitat Groups (A through F), as shown in Table 2, *Carlsbad Habitat Management Plan (HMP) Habitat Groups*.

Table 2
CARLSBAD HABITAT MANAGEMENT PLAN (HMP) HABITAT GROUPS

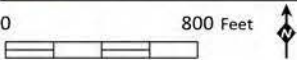
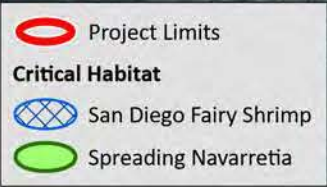
Habitat Group	Habitat Type and Description
A	Coastal salt marsh, alkali marsh, freshwater marsh, estuarine, salt pan/mudflats, riparian forest, riparian woodland, riparian scrub, vernal pools, disturbed wetlands, flood channel, freshwater Engelmann oak woodland, coast live oak woodland
B	Beach, southern coastal bluff scrub, maritime succulent scrub, southern maritime chaparral, native grassland
C	Gnatcatcher-occupied coastal sage scrub
D	Unoccupied coastal sage scrub, coastal sage/chaparral mix, chaparral (excluding southern maritime chaparral)
E	Annual (non-native) grassland
F	Disturbed land, eucalyptus, agricultural lands

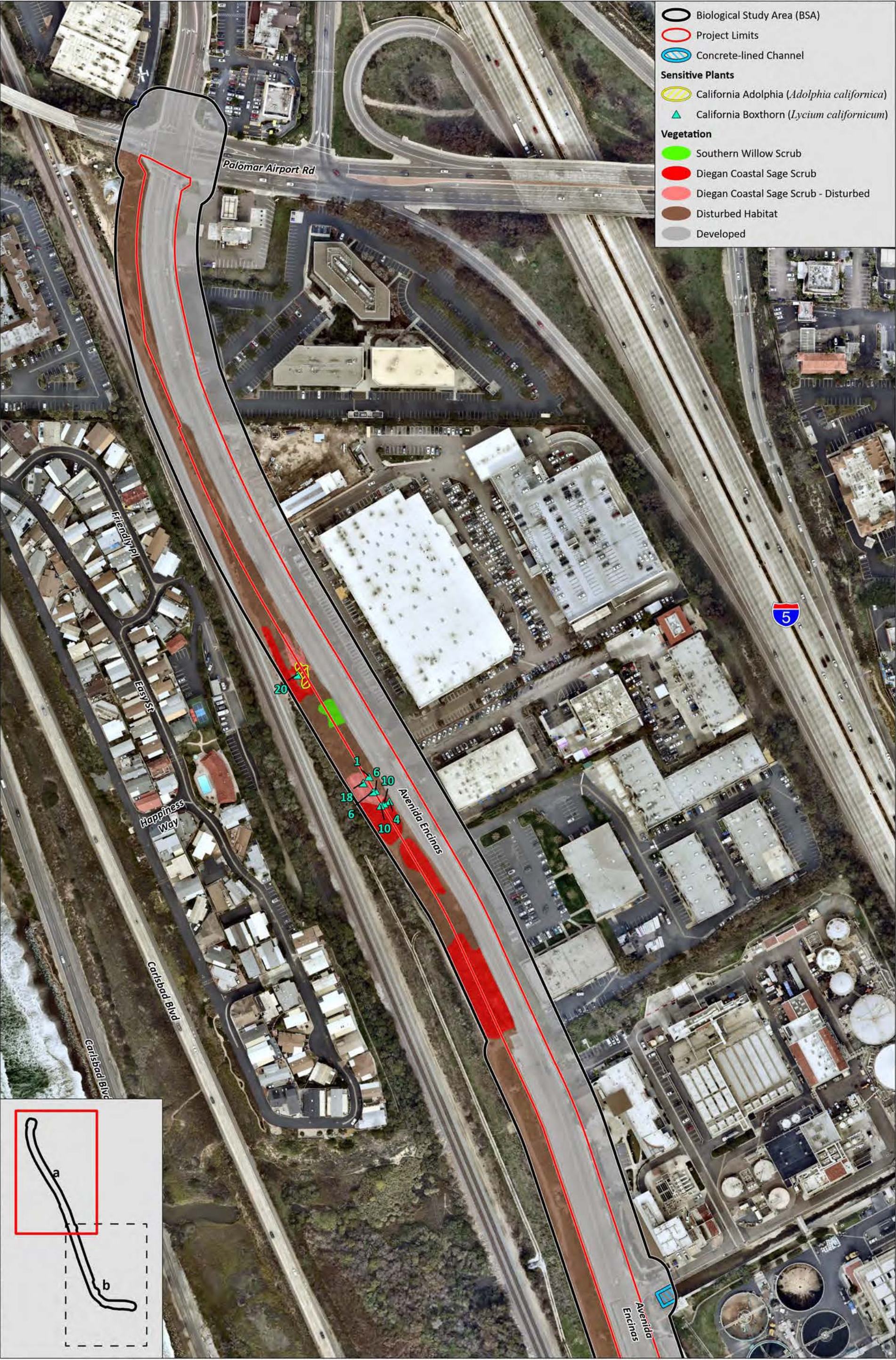
A total of five vegetation communities and land cover types were mapped within the project site during the general biological survey: southern willow scrub, Diegan coastal sage scrub (including disturbed), non-native grassland (disturbed), disturbed habitat, and developed land, and a sixth community, disturbed wetland, was identified in the study area outside of the project site (Table 3, *Vegetation Communities and Land Cover Types*). A brief description of the vegetation communities in the study area is provided below, and their distribution within the study area and project site is presented on Figures 6a through 6b, *Vegetation and Sensitive Biological Resources*.



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Source: Aerial (Esri, 2021)





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Source: Aerial (SanGIS 2023)

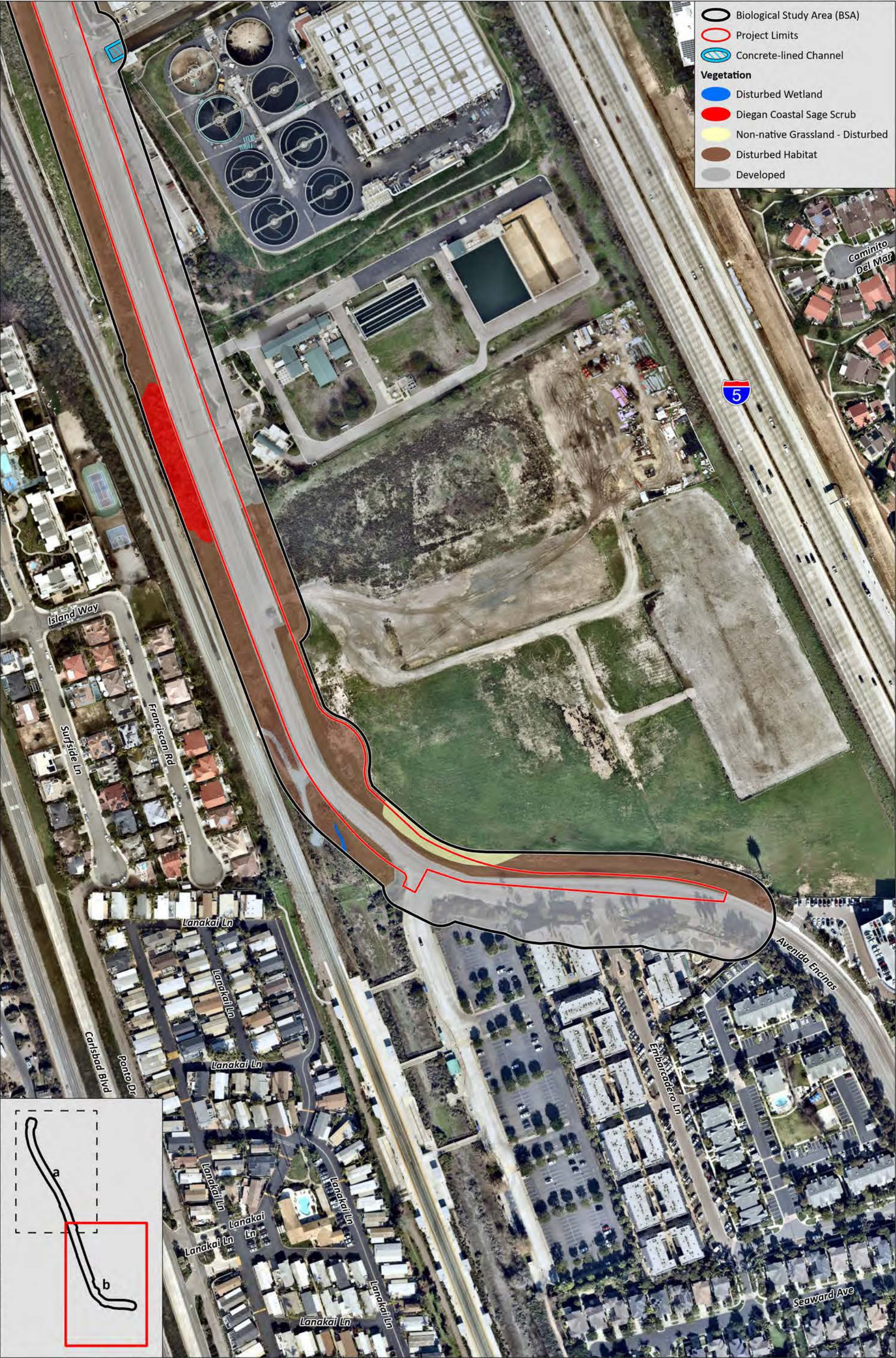


Table 3
VEGETATION COMMUNITIES AND LAND COVER TYPES

HMP Habitat Group	Vegetation/Land Cover Type	Acreage in Study Area ¹	Acreage in Project Limits ¹
A	Southern willow scrub	0.05	0.03
A	Disturbed wetland	0.01	--
C	Diegan coastal sage scrub, gnatcatcher occupied ²	1.25	0.33
E	Non-native grassland, disturbed	0.24	0.11
F	Disturbed habitat	6.96	1.83
N/A	Developed land	15.36	7.54
TOTAL		23.87	9.85

¹ Acreage rounded to the nearest hundredth acre; total reflects rounding.

² Protocol surveys not conducted; gnatcatcher presumed present.

4.3.1 Southern Willow Scrub

Southern willow scrub is defined as dense, broad-leaved, winter-deciduous riparian thickets dominated by several willow species, with scattered emergent western cottonwood California sycamore (*Populus fremontii*) and (*Platanus racemosa*). Most stands are too dense to allow much understory development (Oberbauer 2008).

Southern willow scrub within the project site consists of a small, isolated stand of arroyo willow (*Salix lasiolepis*) immediately adjacent to Avenida Encinas that established due to a culvert outlet along Avenida Encinas that directs stormwater runoff to this location (Figure 6a). Mule fat (*Baccharis salicifolia*), castor-bean (*Ricinus communis*), Brazilian peppertree (*Schinus terebinthifolius*), and African coral tree (*Erythrina caffra*) are also present in this community.

4.3.2 Disturbed Wetland

Disturbed wetland is a community dominated by non-native wetland plant species. The plant composition of this community is highly variable based on the hydrology, soils, and type and frequency of disturbance.

Disturbed wetland occurs within the study area as a single, small area dominated by grass poly (*Lythrum hyssopifolia*) and curly dock (*Rumex crispus*). This habitat occurs outside of the project site in the southern portion of the study area (Figure 6b).

4.3.3 Diegan Coastal Sage Scrub (including Disturbed)

Diegan coastal sage scrub consists of low, soft-woody subshrubs that are most active in winter and early spring. Many taxa are facultatively drought-deciduous. This plant community typically occurs on low moisture-availability sites: steep, xeric slopes or clay-rich soils that are slow to release stored water. Diegan coastal sage scrub (including disturbed) is considered a sensitive natural community due to its relative scarcity and high number of sensitive species associated with the habitat (Oberbauer 2008). In Carlsbad, this habitat type is known to support a number of sensitive species, including the coastal California gnatcatcher. Disturbed phases of this habitat are characterized by sparser shrub cover and a preponderance of non-native forbs or unvegetated habitat in the areas between shrubs.

Diegan coastal sage scrub in and adjacent to the project site occurs as pockets of habitat west of Avenida Encinas that are interspersed with disturbed lands (Figures 6a-6b). This habitat is dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and California encelia (*Encelia californica*). Other species observed include, but are not limited to, San Diego goldenbush (*Isocoma menziesii*), lemonadeberry (*Rhus integrifolia*), California adolphia (*Adolphia californica*), bladderpod (*Peritoma arborea*), big saltbush (*Atriplex lentiformis*), coast prickly pear (*Opuntia littoralis*), coyote brush (*Baccharis pilularis*), western ragweed (*Ambrosia psilostachya*), and tarweed (*Deinandra fasciculata*).

4.3.4 Non-native Grassland (Disturbed)

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs, especially in years of favorable rainfall. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Characteristic species include oats (*Avena* sp.), red brome (*Bromus rubens*), ripgut (*Bromus diandrus*), ryegrass (*Lolium* sp.), and mustard (*Brassica* sp.).

Non-native grassland within the project site is limited to an area along the eastern side of Avenida Encinas across from the Poinsettia Coaster Station (Figure 6b). This habitat is dominated by brome grasses (*Bromus* sp.), with lesser coverage by wild radish (*Raphanus sativus*), bristly ox-tongue (*Helminthotheca echioides*), shortpod mustard (*Hirschfeldia incana*), western ragweed, and Russian thistle (*Salsola tragus*). This habitat was identified as a disturbed phase as it is regularly mowed and maintained.

4.3.5 Disturbed Habitat

Disturbed habitat is characterized by areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association but continue to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native plant species, such as ornamentals or ruderal exotic species that take advantage of disturbance or show signs of past or present animal uses that remove any capability of providing viable natural habitat for uses other than dispersal (Oberbauer 2008).

Disturbed habitat is widespread within the project site and adjacent study area and consists of weedy areas dominated by ruderal non-native vegetation such as Russian thistle, sea-fig (*Carpobrotus* sp.), and crown daisy (*Glebionis coronaria*), as well as non-vegetated areas of bare ground (Figures 6a-b).

4.3.6 Developed

Developed land applies to areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation. Areas where no natural land is evident due to a large amount of debris or other materials being placed upon it may also be considered developed (Oberbauer 2008).

Developed land dominates the project site and consists of the existing paved road limits and other paved surfaces, as well as portions of surrounding commercial development and private residences (Figures 6a-b).

4.4 FLORA

A total of 46 plant species were identified in the project study area during the general biological survey, including 17 native species (37 percent) and 29 non-native species (63 percent). The diversity of flora on site is moderate and consists of a mixture of native and non-native trees, shrubs, and perennial and annual herbaceous species. A list of plant species identified within the study area during the surveys is provided in Appendix A, *Plant Species Observed*.

4.5 FAUNA

A total of 20 animal species were observed or detected in the study area during the general biological survey, including one reptile, 17 bird, and two mammal species. The majority of animal species observed are species commonly found in urban and suburban settings, such as California towhee (*Melospiza crissalis*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Spinus psaltria*), and mourning dove (*Zenaidura macroura*). A cumulative list of animal species observed or detected within the study area during the surveys is presented in Appendix B, *Animal Species Observed or Detected*.

4.6 JURISDICTIONAL WETLANDS AND WATERS

Results of the aquatic resources mapping and subsequent delineation concluded there is a single potential jurisdictional feature on the project site, consisting of 0.03 acre of southern willow scrub habitat (Figures 7a-7b, *Potentially Jurisdictional Resources*). This habitat would be considered coastal wetland to the CCC but based on the results of the jurisdictional delineation, was not considered to meet the criteria for USACE, RWQCB, and/or CDFW jurisdiction (Table 4, *Aquatic Resources in the Project Limits*), as further discussed below. A small area of disturbed wetland shown in the overall study area on Figure 7b is outside of the project site and was not formally delineated as no potential impacts would occur to this area.

Table 4
AQUATIC RESOURCES IN THE PROJECT LIMITS (acre[s])¹

Habitat	Coastal Wetland
Wetlands/Riparian	
Southern willow scrub	0.03
TOTAL	0.03

¹ Areas are presented in acre(s) rounded to the nearest 0.01.

As described in Section 4.3.1, southern willow scrub within the project site consists of a small, isolated stand of arroyo willow immediately adjacent to Avenida Encinas that was established due to a culvert outlet that directs stormwater runoff to this location. The willows are rooted at the base of the roadway slope west of Avenida Encinas, co-occurring with Brazilian peppertree and other non-native species. The willow canopy extends eastward over the roadway slope and overhangs a portion of the paved roadway edge.

A total of three wetland determination sampling points were taken during the delineation: one at the base of the roadway slope where the willows are rooted, one along the roadway slope beneath the willow canopy, and one in sea-fig-dominated disturbed habitat adjacent to the willow habitat. The two points taken within southern willow scrub came back positive for hydrophytic vegetation; however,

neither of these points had indicators of hydric soils or wetland hydrology. The point taken in disturbed habitat did not have hydrophytic vegetation, hydric soils, or wetland hydrology and was taken as a representative upland point adjacent to the southern willow scrub.

This small stand of willow was created by urban runoff from a culvert outlet. It is an isolated feature that does not meet the three-parameter USACE or RWQCB wetland criteria, it is not a stream, nor does it exhibit an ordinary high water mark. For these reasons, it was not considered a USACE-jurisdictional or RWQCB-jurisdictional aquatic resource. Further, this small, isolated stand of southern willow scrub is not located along a stream or lake and, therefore, is not a streambed or riparian resource under CDFW jurisdiction as CDFW does not regulate isolated riparian or wetland habitats under Sections 1600-1603 of the CFG Code. Although not considered to fall under USACE-, RWQCB-, or CDFW-jurisdiction, the southern willow scrub would still meet the one-parameter definition for CCC coastal wetland.

The results included herein represent the results of HELIX's jurisdictional recommendations based on the field evidence, regulations, and environmental information available. Only the regulatory agencies can make a final determination on whether the aquatic resources present are subject to USACE, RWQCB, and/or CDFW regulation.

5.0 SENSITIVE BIOLOGICAL RESOURCES

5.1 SENSITIVE NATURAL COMMUNITIES

Sensitive habitats are those that are considered sensitive by CDFW, are targeted for conservation under the state's NCCP, are designated sensitive habitat group types under the Carlsbad HMP, are considered rare within the region, or support special-status plants or animals. Furthermore, the CCC, when issuing a CDP, may designate certain areas as environmentally sensitive habitat area (ESHA) or SRA.

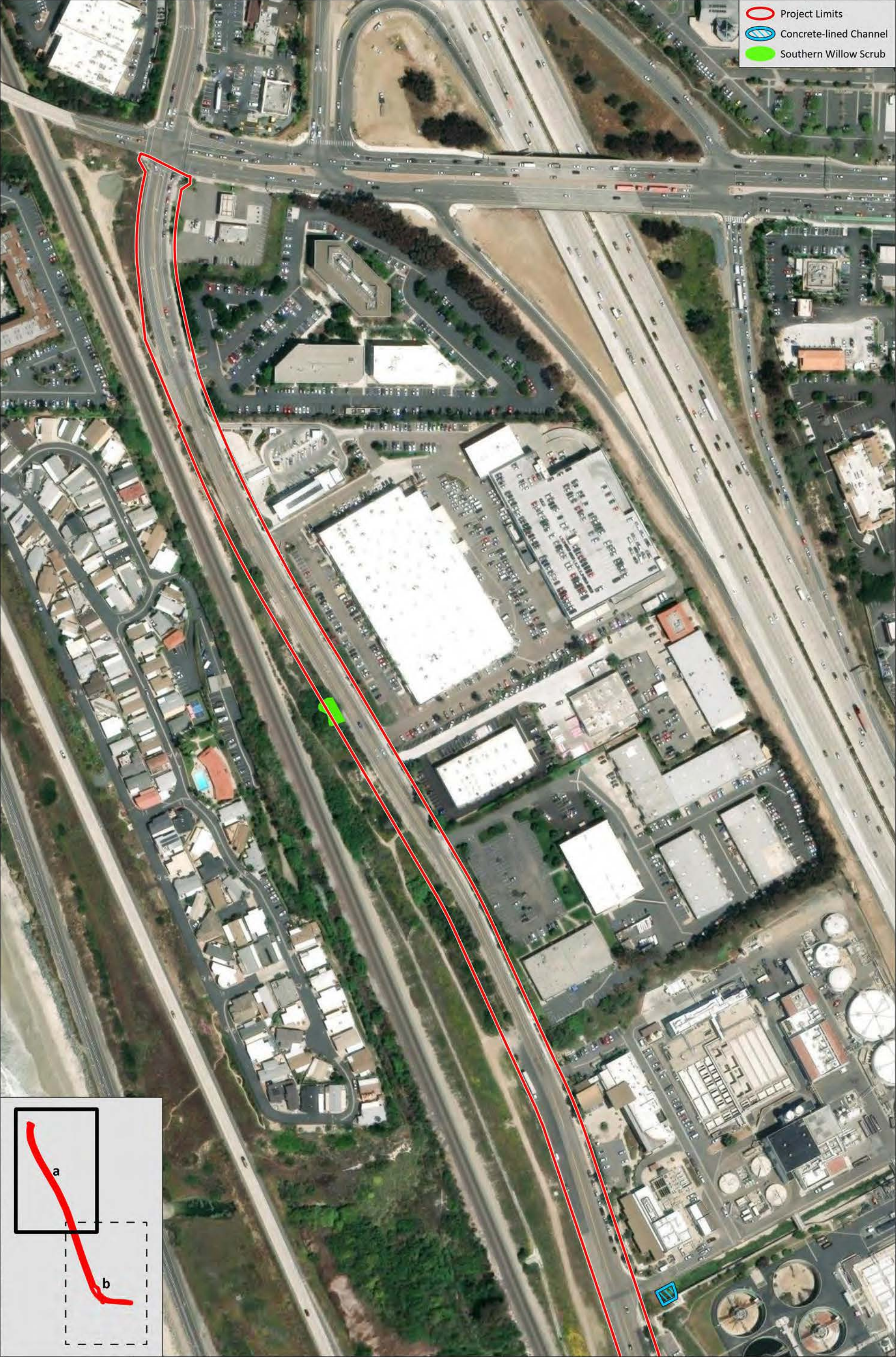
The project site supports three sensitive natural communities: southern willow scrub (HMP Habitat Group A), Diegan coastal sage scrub (HMP Habitat Group C), and non-native grassland (HMP Habitat Group E). Disturbed habitat and developed lands are not sensitive natural communities. See Figures 5a-b and Table 3.

5.2 SPECIAL-STATUS PLANT SPECIES

Special-status plant species are those with recognition by the USFWS, CDFW, CNPS Inventory of Rare and Endangered Plants, or the local Carlsbad HMP. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those that are endemic to the region) is geographically rare. A species may also be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exists naturally in small populations.

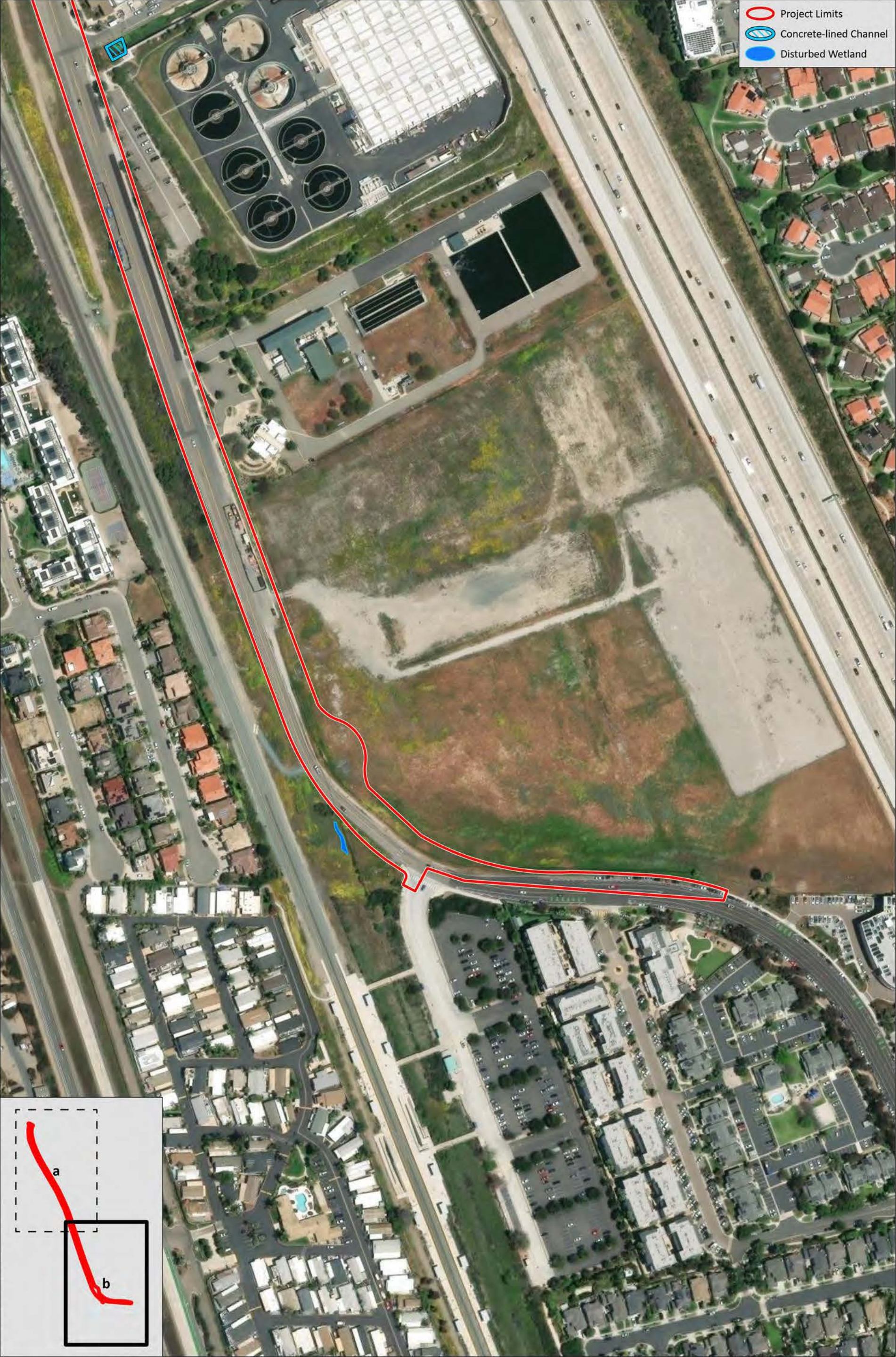
5.2.1 Special-status Plant Species Observed

Two special-status plant species were observed on the project site during biological surveys, as discussed below.



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Source: Aerial (SanGIS 2023)



Source: Aerial (SanGIS 2023)

California adolphia (*Adolphia californica*)**Status:** CRPR 2.1**Distribution:** San Diego County**Habitat:** Clay soils in chaparral, coastal scrub, and valley and foothill grassland**Presence in the Project Site:** Approximately 70 individuals were observed within Diegan coastal sage scrub in the northern portion of the study area west of Avenida Encinas. Most of these occur outside of the project limits within a dense cluster at the top of a berm between Avenida Encinas and the railroad (Figure 6a).**California box-thorn** (*Lycium californicum*)**Status:** CRPR 4.2**Distribution:** Los Angeles, Orange, Ventura, Santa Barbara, and San Diego counties within California**Habitat:** Coastal scrub and bluff scrub**Presence in the Project Site:** Approximately 75 individuals were observed in the northern portion of the study area west of Avenida Encinas, including 70 individuals within Diegan coastal sage scrub and five individuals within disturbed habitat (Figure 6a-b). Most of the individuals occur outside of the project limits.

5.2.2 Special-status Plant Species with Potential to Occur

In addition to the two sensitive plant species recorded within the site, a search of CNPS (nine-quad) and CNDDDB records (one-mile radius from the project site) and a review of the City's Narrow Endemic and HMP Covered Species was used to develop a matrix of sensitive plant species that may have potential to occur on-site due to the presence of suitable habitat (e.g., vegetation communities, soils, elevation, and geographic range, life form/blooming period, etc.). The matrix is presented in Appendix C, *Sensitive Plant Species Potential to Occur*, and includes 45 additional special-status plant species, their favorable habitat conditions, and their potential to occur on-site.

No additional special-status plant species were determined to have a moderate or higher potential to occur within the project site due to the previous and ongoing disturbances and lack of suitable habitat. The project site does not support the vegetation associations, soils, or hydrology required by many of the special-status plants known to the region. No plant species that are Covered or considered Narrow Endemic under the HMP are expected to occur on-site.

Lands located outside of the project site to the south within the City's Hardline Preserve have the potential to support several special-status plant species associated with vernal pools; however, the project site lacks suitable habitat for these species.

5.3 SPECIAL-STATUS ANIMAL SPECIES

Special-status animal species are those with recognition by the USFWS, CDFW, or the local Carlsbad HMP. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss. Additionally, avian nesting is protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFG Code).

5.3.1 Special-status Animal Species Observed or Otherwise Detected

No special-status animal species were detected within the project site or study area during the biological surveys.

5.3.2 Special-status Animal Species with Potential to Occur

A search of USFWS and CNDDDB records (one-mile radius from the project site) and a review of the City's Narrow Endemic and HMP Covered Species was used to develop a matrix of sensitive animal species that may have the potential to occur on-site due to the presence of suitable habitat (e.g., vegetation communities, soils, elevation, geographic range, etc.). The matrix is presented in Appendix D, *Sensitive Animal Species Potential to Occur*, and includes 13 special-status animal species, their favorable habitat conditions, and their potential to occur on-site.

Results of the species evaluations concluded that one special-status animal species, coastal California gnatcatcher (*Poliophtila californica californica*), not observed on-site may have a moderate potential to occur on or adjacent to the project site. This species is further discussed below.

Coastal California gnatcatcher is a federally threatened species, California species of special concern, and an HMP covered species that is a year-round resident in San Diego County. Coastal California gnatcatcher has the potential to use Diegan coastal sage scrub within and adjacent to the project alignment for breeding, foraging, and dispersal. CNDDDB shows a 2013 record for this species along the northern portion of the alignment in the project vicinity, and records from 2015 and 2018 indicate that habitat occupied by this species occurs approximately 1.1 miles south of the project alignment in habitat adjacent to the railroad and Carlsbad Boulevard.

No additional special-status animal species were determined to have a moderate or higher potential to occur due to the lack of suitable habitat. No vernal pools or vernal pool features (e.g., ephemeral basins, road-ruts, mima mound depressions) were detected in the project site during the field surveys and no vernal pools have been recorded on-site. Lands located outside of the project site to the south within the City's Hardline Preserve have the potential to support San Diego fairy shrimp, a federal listed endangered species, but this species is not expected within the project limits due to a lack of suitable habitat. No animal species that are considered Narrow Endemic under the HMP are expected to occur on-site.

5.4 U.S. FISH AND WILDLIFE SERVICE CRITICAL HABITATS

No USFWS-designated critical habitat occurs within the project limits. USFWS-designated final critical habitat for San Diego fairy shrimp and spreading navarretia occurs south of the project limits within the City's Hardline Preserve.

5.5 JURISDICTIONAL WETLANDS AND WATERS

The project site supports one potentially jurisdictional feature, consisting of a small stand of southern willow scrub immediately adjacent to the existing roadway (Figure 7a). This feature was delineated as CCC coastal wetland but was not considered to meet the criteria for USACE, RWQCB, or CDFW jurisdiction based on the results of the delineation.

5.6 WILDLIFE CORRIDORS AND LINKAGES

Wildlife corridors are linear spaces of undeveloped native habitats that connect large natural open space and provide opportunities for wildlife movement in the region. Wildlife corridors contribute to species' sustainability by providing access to adjacent habitat areas for dispersal, foraging, and mating. Linkages between wildlife corridors connect isolated blocks of habitat and allow the movement or dispersal of species over a large scale and the consequent mixing of genes between populations (i.e., gene pool diversity). Wildlife movement corridors and linkages are considered sensitive by the City, resource agencies, and conservation groups.

Important corridors and linkages have been identified on a local and regional scale throughout the MHCP and City HMP. The planning objectives of most corridors and linkages in coastal areas include establishing and preserving connections between the northern and southern regional populations of the coastal California gnatcatcher, in addition to facilitating movement and connectivity of habitat for large mammals and riparian bird species. As discussed in Section 3, the City's HMP includes an assemblage of LFMZs, HMP Cores and Linkages, SRAs, and hardline conservation areas, with objectives to establish a network of habitat for the sustainability of wildlife (mostly for birds and mammals) movement functions in the City.

Lands surrounding the project site to the north, east, and south are developed and constrained by existing transportation corridors and commercial and residential development. Lands located west of the project site are partially developed and constrained by existing private residences, hotel buildings, and the LOSSAN rail line.

The project site occurs within the existing City road ROW or adjacent property owned by the City and consists primarily of disturbed and developed lands. Although small areas of native and naturalized habitat are within and adjacent to the project, these areas are small, highly constrained, and fragmented by surrounding development. Although these habitats may provide marginal-quality foraging and breeding habitat for reptiles, birds, small mammals, and possibly larger urban-adapted mammals like coyote (*Canis latrans*), these lands do not function as a wildlife corridor or a linkage connecting isolated blocks of habitat.

The project site is not within or adjacent to a biological core area or linkage identified in the City's HMP. The southern end of the alignment is located immediately north of a narrow, linear ribbon of hardline preserve west of the Poinsettia Coaster Station, which is identified on Figure 4 of the HMP as SRA 2. This area, which overlaps with USFWS Critical Habitat for San Diego fairy shrimp and spreading navarretia, protects the Poinsettia Lane vernal pools and their watershed, and, although isolated from biological core and linkage areas by urban development, this location is critical to the conservation of several narrow endemic plant and fairy shrimp species (City 2004).

6.0 REGULATORY FRAMEWORK

6.1 FEDERAL

6.1.1 Federal Endangered Species Act

Administered by the USFWS, the federal Endangered Species Act (FESA) provides the legal framework for the listing and protection of species that are identified as being endangered or threatened with extinction. Actions that jeopardize such species and their habitats are considered a “take” under the federal ESA.

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is a term defined and used in the FESA and refers to specific geographic areas that contain features considered necessary for endangered or threatened species to recover. Critical habitat designations can include areas that are not currently occupied by the species, as the ultimate goal is to restore healthy populations of listed species within their native habitats so they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to the FESA, all federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of the critical habitat. Only activities that involve a federal permit, license, or funding require consultation with the USFWS.

Sections 7 and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species’ use of a site and there is an associated federal action for a proposed impact (e.g., the USACE would initiate a Section 7 consultation with the USFWS for impacts proposed to USACE jurisdictional areas that may also affect listed species or their critical habitat). Section 10(a) allows the issuance of permits for incidental take of endangered or threatened species with the preparation of a Habitat Conservation Plan (HCP) when there is no federal nexus. The term “incidental” applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. An HCP demonstrating how the taking would be minimized and how steps taken would ensure the species’ survival must be submitted for issuance of Section 10(a) permits. The City’s HMP was developed pursuant to Section 10(a) of the ESA.

6.1.2 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on the disturbance of active bird nests during the nesting season (generally February 15 to August 31). In addition, the USFWS commonly places restrictions on the disturbances allowed near active raptor nests.

6.1.3 Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) creates a broad program for the management of coastal lands based on land development control. It was enacted to encourage the participation and cooperation of state, local, regional, and federal agencies and governments having programs affecting the coastal zone. The CZMA allows state involvement through the development of Coastal Zone Management Plans (CZMP) for comprehensive management at the state level. The CZMPs define permissible land and water use within the state coastal zone. This coastal zone extends three miles seaward and inland as far as necessary to protect the coast. The CZMA also requires federal agencies or licensees to carry out their activities in such a way that they conform to the maximum extent practicable with a state's coastal zone management program. The California Coastal Act is California's coastal zone management program under the CZMA. This program is discussed below.

6.1.4 Clean Water Act and Rivers and Harbors Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act (CWA). The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. (including wetlands) is overseen by the USACE under Section 404 of the CWA. Projects could be permitted on an individual basis or be covered under one of several approved Nationwide Permits.

6.2 STATE

6.2.1 California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

6.2.2 California Endangered Species Act

The California Endangered Species Act (CESA) declares that deserving plant or animal species will be given protection by the state because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the state. The CESA establishes that it is state policy to conserve, protect, restore, and enhance endangered species and their habitats. Under state law, plant and animal species may be formally designated as rare, threatened, or endangered through official listing by the California Fish and Game Commission.

The CESA authorizes that private entities may “take” plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit (ITP) if the CDFW certifies that the incidental take is consistent with CESA (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of the CFG Code authorizes the CDFW to issue an ITP for state listed threatened and endangered species if specific criteria are met. ITPs are required from the CDFW for projects that may result in the incidental take of species listed by the state as endangered, threatened, or candidate species.

No Section 2081(b) permit may authorize the take of “fully protected” species and “specified birds.” If a project is planned in an area where a fully protected species or specified bird occurs, an applicant must design the project to avoid take; the CDFW cannot provide take authorization under CESA. On private property, endangered plants may also be protected by the Native Plant Protection Act (NPPA) of 1977. Threatened plants are protected by CESA, and rare plants are protected by the NPPA; however, CESA authorizes that “Private entities may take plant species listed as endangered or threatened under the FESA and CESA through a federal ITP issued pursuant to Section 10 of the FESA, if the CDFW certifies that the ITS or ITP is consistent with CESA.” In addition, CEQA requires disclosure of any potential impacts on listed species and alternatives or mitigation that would reduce those impacts. The Carlsbad HMP was prepared pursuant to Section 2081 of the CESA, and the City was issued an umbrella Section 2081 ITP from the CDFW authorizing take of multiple state listed species.

6.2.3 California Coastal Act of 1976

The California Coastal Act (CCA) provides for the protection of environmentally sensitive habitat identified by the CDFW from adjacent developments in the coastal zone. The CCA is California's coastal zone management program under the CZMA, as discussed above. The CCA establishes the CCC as having jurisdiction over California's coastal zone. The CCA identifies environmentally sensitive habitat areas as any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. Compliance with requirements in the CCA is ensured for specific development projects in the coastal zone through the issuance of a CDP. In most incorporated areas within the coastal zone, compliance with the CCA is regulated by the local government through the implementation of a certified LCP. The local government typically issues CDPs, unless a project is located within a deferred certification area. CDPs are issued by the CCC in deferred certification areas of the certified LCP.

The City implements its approved Carlsbad LCP in regulating developments within the coastal zone according to the CRPOZ Ordinance, as discussed below. CDPs issued by the City are appealable to the CCC only if they are located within an appeals area. Portions of the proposed project are located within the California Coastal Commission's (CCC's) Appeal Jurisdiction, which means the project can be appealed to the CCC.

6.2.4 California Fish and Game Code

Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of the CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or

ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required before any such activities.

6.2.5 California Natural Community Conservation Planning Act of 1991

The NCCP Act is designed to conserve habitat-based natural communities at the ecosystem scale while accommodating compatible land uses in coordination with CESA. The CDFW is the principal state agency implementing the NCCP Program. The NCCP Act established a process to allow for comprehensive, long-term, regional, multi-species, and habitat-based planning in a manner that satisfies the requirements of the state and FESAs (through a companion regional habitat conservation plan). The NCCP program has provided the framework for innovative efforts by the state, local governments, and private interests to plan for the protection of regional biodiversity and the ecosystems upon which they depend. NCCPs seek to ensure the long-term conservation of multiple species while allowing for compatible and appropriate economic activity to proceed. The Carlsbad HMP was prepared as part of the MHCP subregional planning pursuant to the NCCP Act.

6.3 LOCAL

6.3.1 Multiple Habitat Conservation Program

The MHCP is a comprehensive, multiple jurisdictional planning program designed to develop an ecosystem preserve in northwestern San Diego County. Implementation of the regional preserve system is intended to protect viable populations of key sensitive plant and animal species and their habitats while accommodating continued economic development and quality of life for residents of the North County region. The MHCP is one of several large, multiple jurisdictional habitat planning efforts in San Diego County, each of which constitutes a subregional plan under the NCCP Act of 1991. The MHCP includes seven incorporated cities in northwestern San Diego County: Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. These jurisdictions will implement their respective portions of the MHCP through citywide “subarea” plans, which describe the specific implementing mechanisms each city will institute for the MHCP. The goal of the MHCP is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46 percent) are already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species. The Carlsbad HMP is the only approved and adopted Subarea Plan under the MHCP.

6.3.2 Carlsbad Habitat Management Plan

The Carlsbad HMP establishes a regional conservation planning framework for biological resources and development projects occurring in Carlsbad. As a participant in the NCCP and MHCP subregional planning effort, the City prepared and adopted the Carlsbad HMP, which documents a citywide program to identify how, in cooperation with the USFWS, CDFW, and CCC, the City will preserve a diversity of habitats and implement policies for the protection of sensitive biological resources while allowing for development consistent with the Carlsbad General Plan and Growth Management Plan.

The Carlsbad HMP is one of several MHCP Subarea Plans prepared in North San Diego County pursuant to the NCCP Act; however, it is the only MHCP Subarea Plan that has been adopted to date. The City

approved the Carlsbad HMP in 2004 and adopted ordinance regulations in Chapter 21.210 (Habitat Preservation and Management Requirements) of Title 21 (Zoning) of the Carlsbad Municipal Code as a condition of receiving approval from the CCC, an ITP from the USFWS pursuant to Section 10(a)(1)(B) of the ESA, and incidental take authorization from the CDFW pursuant to the CESA and Section 2835 of the CFG Code. Since its adoption, the Carlsbad HMP has allowed for citywide permits and authorization for the incidental take of sensitive species in conjunction with private development projects, public projects, and other activities consistent with the HMP conservation goals and objectives.

6.3.3 Zone Level Recommendations

As discussed previously in Section 3.2, the proposed project is situated within LFMZ 3 (Zone 3) and LFMZ 22 (Zone 22) of the Carlsbad HMP and is expected to adhere to Zone Level Recommendations for Zone 22. Zone 3 does not have zone-specific preserve management guidelines. See Section 3.3 above for the specific recommendations prescribed in the HMP.

6.3.4 Coastal Resource Protection Overlay Zone Ordinance

The project site is located in the coastal zone and must demonstrate consistency with the approved Carlsbad LCP and obtain a CDP due to the proposed work within sensitive natural communities.

6.3.5 Coastal Zone Standards

The following additional conservation standards typically apply to projects within the coastal zone:

- ESHA shall be protected.
- Coastal sage scrub conservation (minimum 67 percent).
- Incorporation of development buffers adjacent to native habitats (minimum 100 feet for wetlands, 50 feet for riparian, and 20 feet for all other native habitats).
- Impacts to sensitive upland habitat, when permitted, shall include a creation component that achieves the no net loss standard.
- If impacts to uplands are allowed, mitigation shall be provided at a ratio of 2:1 for Diegan coastal sage scrub and 3:1 for native grassland impacts.
- If impacts to a wetland are allowed, mitigation shall be provided at a ratio of 3:1 for riparian impacts and 4:1 for saltwater or freshwater wetland or marsh impacts.
- Grading operations implemented outside of the rainy season, unless authorized.
- Project mitigation areas will be protected in perpetuity by a conservation easement or other mechanism to the satisfaction of the wildlife agencies, City, and CCC.

7.0 IMPACTS

This section presents an analysis of the impacts of the project as a result of implementation. The following impact analysis addresses direct and indirect impacts to vegetation communities, sensitive species, and potentially jurisdictional resources. The analysis also includes a determination of the

significance of impacts in accordance with City criteria. Potential project impacts to biological resources would occur within the existing City ROW or adjacent property owned by the City.

Direct impacts are immediate impacts resulting from permanent habitat removal, including impacts from grading, grubbing, clearing, and fuel modification. Direct impacts were quantified by overlaying the limits of project-related impacts on the biological resources map of the site. Indirect impacts are actions that are not direct removal of habitat but affect the surrounding biological resources either as a secondary effect of the direct impacts (e.g., construction noise, runoff, nighttime lighting, fugitive dust, etc.) or as the cause of degradation of a biological resource over time (e.g., edge effects and adjacency issues).

Indirect impacts can be short-term or long-term and incorporate areas adjacent to the project (i.e., edge effects). Examples of short-term indirect impacts include construction-related noises, dust, increased human presence, and hydrology modifications. Long-term indirect impacts primarily result from anthropogenic disturbances by humans such as noise, lighting, domesticated animals, spread of non-native ornamental and weedy plant species, and urban run-off (including potentially toxic or hazardous contaminants).

7.1 DIRECT IMPACTS

7.1.1 Vegetation Communities and Land Cover Types

The proposed project would directly impact 9.85 acres, of which 7.54 acres (76 percent) would occur within developed land. An additional 1.83 acres would occur within disturbed areas characterized by bare earth and/or a dominance of non-native vegetation. The remaining impacts of 0.47 acre would occur to the periphery of native and naturalized vegetation communities (southern willow scrub, Diegan coastal sage scrub, and non-native grassland) that overlap the City ROW area and occur immediately adjacent to the existing developments along Avenida Encinas. All project impacts are considered permanent (Table 5, *Impacts to Vegetation Communities and Mitigation Requirements*; Figures 8a-b, *Vegetation and Sensitive Biological Resources/Impacts*).

Table 5
PROJECT IMPACTS TO VEGETATION COMMUNITIES AND LAND COVER TYPES

HMP Habitat Group	Vegetation/Land Cover Type	Total Impacts ¹
A	Southern willow scrub	0.03
C	Diegan coastal sage scrub, gnatcatcher occupied ²	0.33
E	Non-native grassland, disturbed	0.11
F	Disturbed habitat	1.83
N/A	Developed land	7.54
TOTAL		9.85

¹ Acreage rounded to the nearest hundredth acre; totals reflect rounding. All impacts are permanent.

² Protocol surveys not conducted; gnatcatcher presumed present, thus habitat included as Group C.

7.1.2 Special-status Species

The proposed project would result in direct impacts to two sensitive plant species, California adolphia (CRPR 2.1) and California box-thorn (CRPR 4.2). A total of 18 individuals of California adolphia and 21 individuals of California box-thorn would be removed during project grading (Figures 8a-b).

The project would result in impacts to sage scrub habitat that has the potential to support coastal California gnatcatcher (FT/SSC, Carlsbad HMP Covered Species). Potential direct impacts to nesting coastal California gnatcatcher would not occur as the project would comply with the HMP Species Requirements (i.e., no clearing of gnatcatcher habitat between March 1 and August 15), as further discussed in Section 10.2.1 below.

7.1.3 Migratory Bird Treaty Act

Potential direct impacts to bird species protected under the MBTA and CFG Code could occur if brushing, clearing, or grading occurs during the breeding season of most bird species (general breeding season is February 15 to August 31). However, such impacts to nesting birds are not anticipated due to the implementation of mitigation measures with restrictions on clearing of habitat during the nesting season.

7.1.4 Jurisdictional Wetlands and Waters

The proposed project would result in 0.03 acre of impact to aquatic resources (Figures 9a-b, *Potentially Jurisdictional Resources/Impacts*; Table 6, *Project Impacts to Aquatic Resources*). Based on the results of the aquatic resources delineation, the affected area is not considered to fall under USACE, RWQCB, or CDFW jurisdiction, and would be regulated only as a coastal wetland pursuant to the CCC wetland definition.

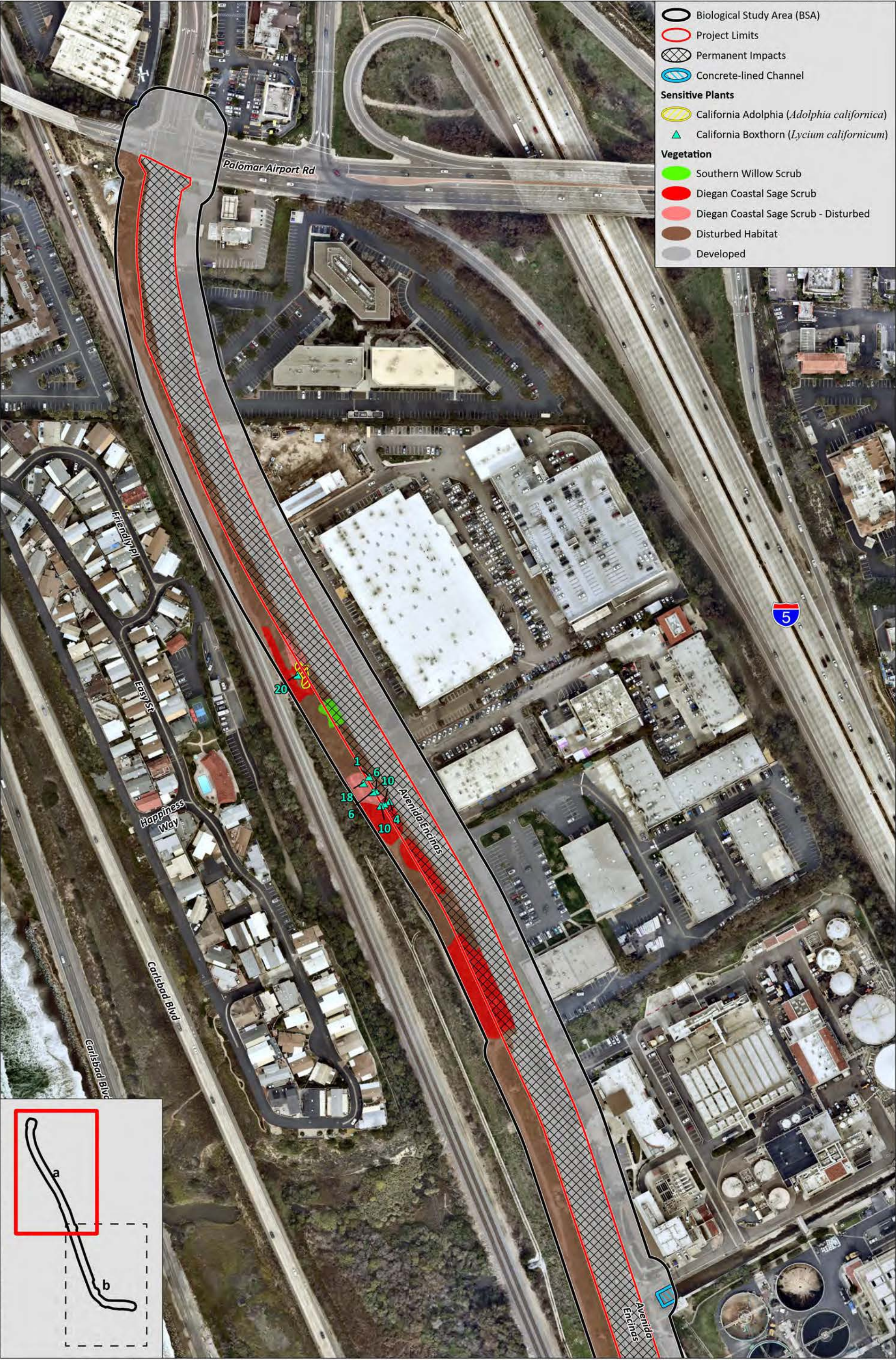
Table 6
PROJECT IMPACTS TO AQUATIC RESOURCES (acre[s])¹

Habitat	Total Impacts
Wetlands/Riparian	
Southern willow scrub	0.03
TOTAL	0.03

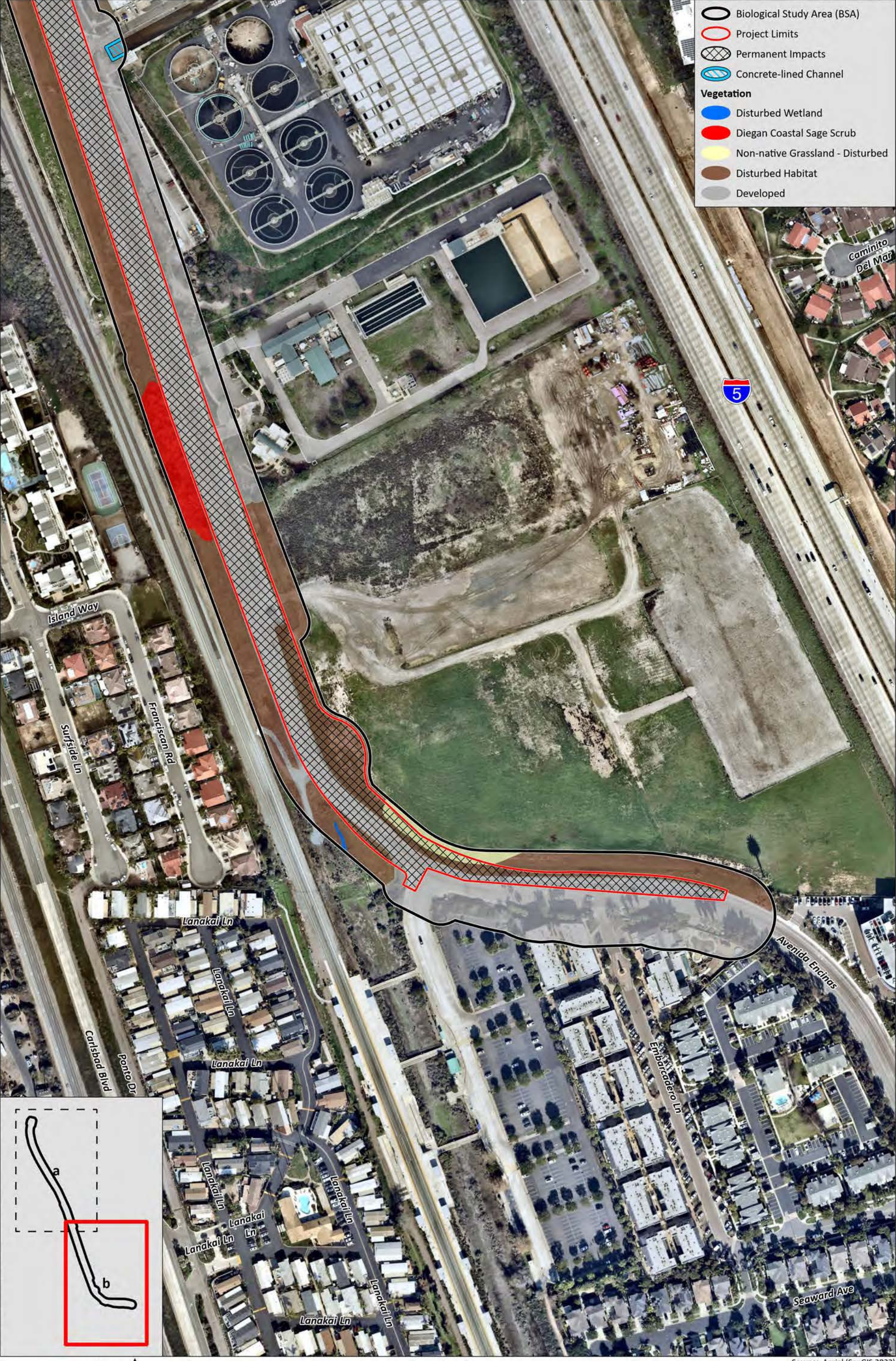
¹ Areas are presented in acre(s) rounded to the nearest 0.01. All impacts are permanent.

7.1.5 Wildlife Corridors and Linkages

As discussed previously, there are no regionally identified wildlife movement corridors or habitat linkages on the project site; however, there is an existing hardline preserve and USFWS Critical Habitat area immediately south of the project site that extends further south along the east side of the LOSSAN rail line to Poinsettia Lane. The project will completely avoid wildlife corridors and linkages as defined in the Carlsbad HMP. Additionally, the project would not further fragment existing stands of native vegetation, as project impacts would occur within the existing road ROW or adjacent property owned by the City along a sliver of native/naturalized habitats located adjacent/parallel to developed land.

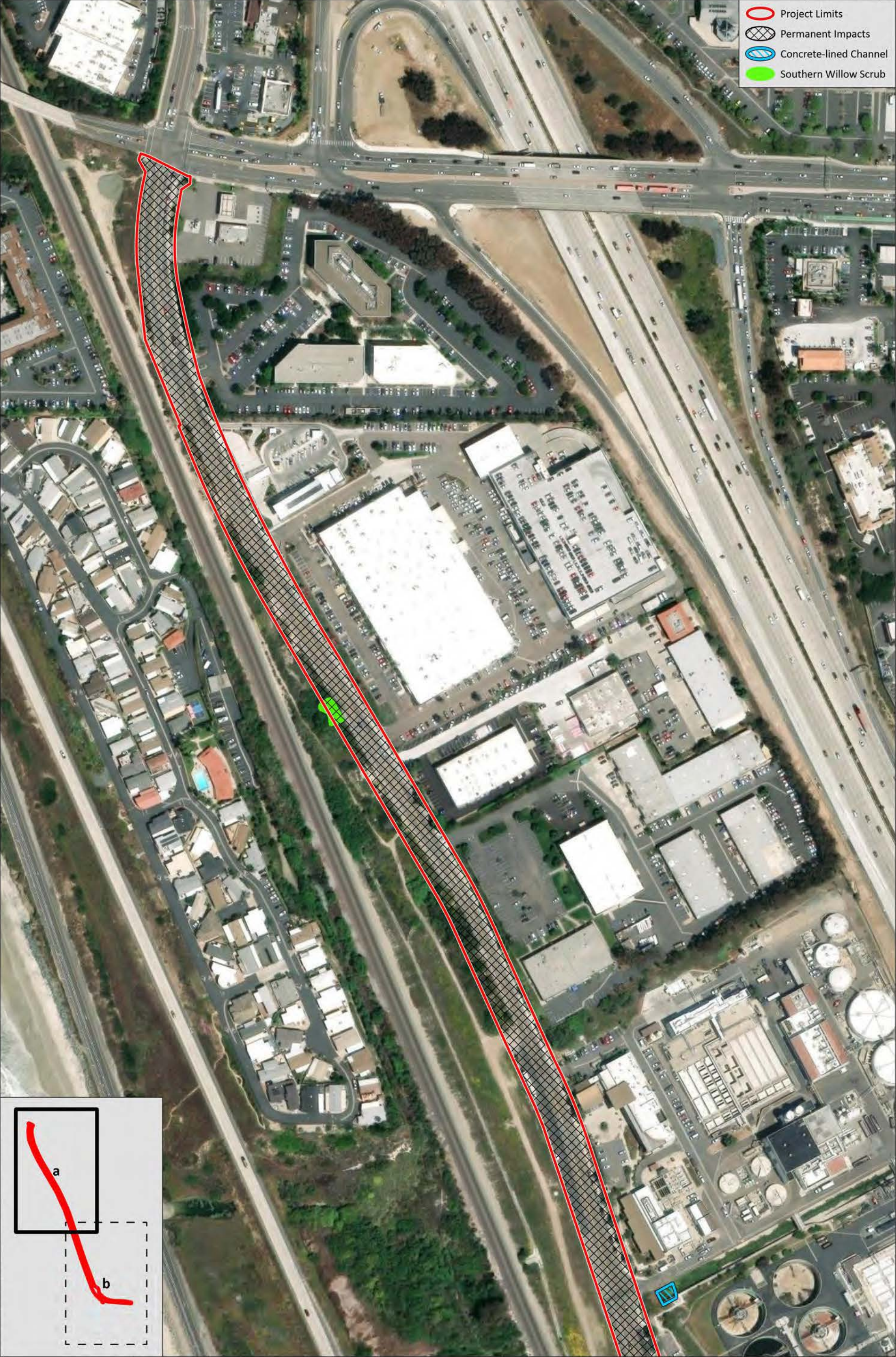


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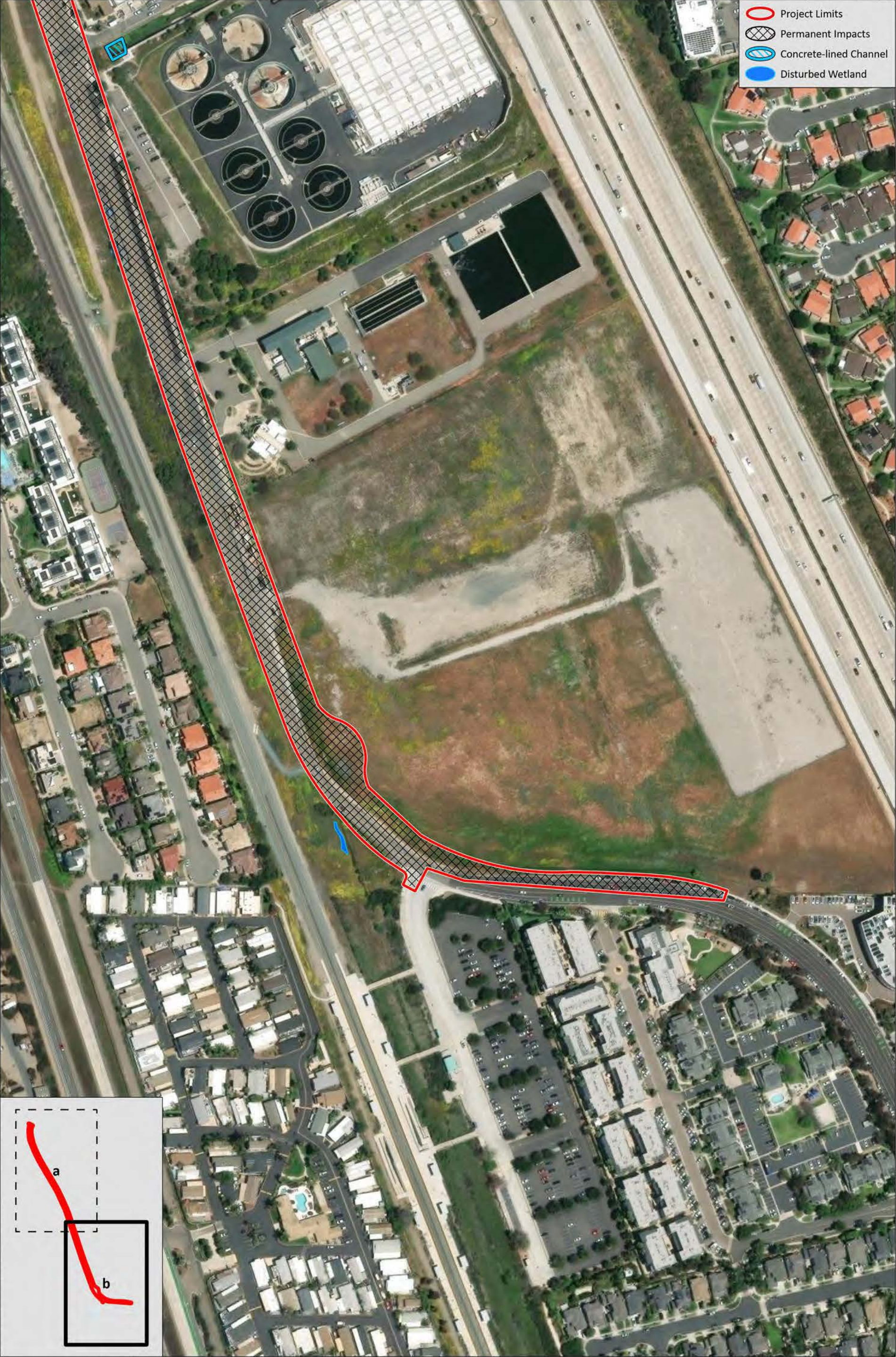
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Source: Aerial (SanGIS 2023)



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Source: Aerial (SanGIS 2023)



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Source: Aerial (SanGIS 2023)

7.2 INDIRECT IMPACTS

7.2.1 Vegetation Communities

Indirect impacts to vegetation communities are generally short-term and associated with edge effects of project construction. Common adverse edge effects during construction include fugitive dust, erosion, and sedimentation. The proposed project will implement current construction best management practices (BMPs) that address these common edge effects; therefore, indirect impacts to vegetation communities are not expected. The project would also adhere to the City's HMP Adjacency Standards, further ensuring that indirect impacts (including long-term impacts) to vegetation within the Hardline Preserve do not occur.

7.2.2 Special-status Species

Indirect impacts to special-status species in the short-term are as a result of construction edge effects or in the long-term during project operation. The project site is already subject to the long-term effects of being situated within and immediately adjacent to existing development, and project implementation will not cause additional long-term effects. The project will implement construction BMPs that address edge effects and would adhere to the City's HMP species requirements and City HMP adjacency standards. Because coastal California gnatcatcher has the potential to nest within habitat immediately adjacent to the project site, potential indirect impacts (i.e., excessive noise) to nesting could occur if project construction activities are conducted during the breeding season for this species.

Long-term indirect impacts to special-status species are not anticipated, as many of the effects are already occurring under the current, baseline condition and would not be expected to worsen in the post-construction condition. Examples include urban pollutant run-off (e.g., oils, pesticides, herbicides, chemical fertilizers, etc.), presence of exotic plants and animals, and human encroachment into the area, which could crush plants or deter nesting birds. Further, project compliance with the City HMP adjacency standards would avoid potential long-term indirect impacts to special-status species; therefore, no long-term indirect impacts are expected as a result of the project.

7.2.3 Jurisdictional Wetlands and Waters

Implementation of construction BMPs and compliance with the City's HMP, including adjacency standards, would avoid indirect impacts to off-site jurisdictional resources. Further, as discussed above, features of the proposed project would reduce some of the currently ongoing adverse effects (urban pollutant run-off) to jurisdictional wetlands at the site by adding bio-filtration swales. No indirect impacts to jurisdictional wetlands or waters are expected as a result of the project.

7.2.4 Wildlife Corridors

No indirect impacts to wildlife corridors or habitat linkages are expected. The project site is not identified or considered a regional wildlife corridor or habitat linkage and would adhere to the City's HMP adjacency standards to ensure that indirect impacts to the off-site Hardline Preserve west of the Poinsettia Coaster Station do not occur.

8.0 DETERMINATION OF SIGNIFICANCE

In accordance with the City's HMP, the City LCP, and CEQA, a project would result in a significant or potentially significant biological resource impact if it would result in:

1. A substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in the Multiple Species Conservation Program or other local or regional plans, policies, or regulations, or by the CDFW or USFWS.
2. A substantial adverse impact on any Habitat Groups A, B, C, D, E, or F as identified in the City's HMP or other sensitive natural community identified in local or regional plans, policies, regulations, or considered sensitive by CDFW or USFWS.
3. A substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the City's HMP Plan, or impede the use of native wildlife nursery sites.
5. A conflict with the provisions of the State NCCP, City LCP, City HMP, or other approved conservation plans or ordinances protecting biological resources.
6. Introducing land use within an area adjacent to the Existing Hard Line Conservation Area would result in adverse edge effects (including the introduction of non-native invasive species).

Impacts as a result of the proposed project implementation were evaluated in terms of significance, and the corresponding determinations are provided below.

8.1 VEGETATION COMMUNITIES

Proposed project impacts to vegetation communities in Habitat Groups A, C, and E would be considered significant and require mitigation. This includes permanent impacts to 0.03 acre of southern willow scrub, 0.33 acre of Diegan coastal sage scrub, and 0.11 acre of disturbed non-native grassland (Table 5).

8.2 SPECIAL-STATUS SPECIES

The project would not result in significant impacts to special-status plant species, and no mitigation is required. The project's impacts to 18 California adolphia (CRPR 2.1) would not be considered significant due to the small numbers of individuals impacted, their location outside of an existing or proposed hardline conservation area, and the adequate conservation of this species by the City's HMP. Proposed project impacts to 21 California boxthorn (CRPR 4.2) would not be considered significant. CRPR 4 species are considered relatively widespread species that do not typically require species-specific mitigation. The proposed impacts to California box-thorn would not substantially reduce their populations in the region and would not be considered significant.

Proposed project impacts to sage scrub habitat with the potential to support coastal California gnatcatcher are considered significant. Potential displacement of gnatcatcher individuals outside the HMP Hardline Preserve as a result of habitat removal would be considered less than significant due to the low number of individuals potentially affected, the relatively small amount of habitat impacted, the remaining suitable habitat available immediately adjacent to the south and west of the project, and adequate species coverage under the HMP. Potential indirect impacts to nesting coastal California gnatcatcher would be considered significant.

Additionally, direct impacts to nesting bird species protected under the MBTA and CFG Code would be significant. Indirect impacts to non-listed species other than raptors, are not considered significant.

8.3 JURISDICTIONAL RESOURCES

The project's proposed permanent impacts to 0.03 acre of coastal wetland would be considered significant.

9.0 MITIGATION

The proposed project would result in potential significant impacts to sensitive natural communities, jurisdictional resources, and special-status animal species, including nesting birds. The mitigation measures proposed below shall be implemented to reduce these impacts to below a level of significance.

9.1 VEGETATION COMMUNITIES

Mitigation for impacts to sensitive vegetation communities will be met as described below in mitigation measures BIO-1 and BIO-2. A summary of compensatory mitigation acreages is provided in Table 7, *Mitigation for Impacts to Vegetation Communities*.

Table 7
MITIGATION FOR IMPACTS TO VEGETATION COMMUNITIES

HMP Group	Vegetation Community	Impact Acreage ¹	Mitigation Ratio	Mitigation Acreage ¹
A	Southern willow scrub	0.03	1:1 ²	0.03 ²
C	Diegan coastal sage scrub	0.33	2:1 ³	0.66
E	Non-native grassland – disturbed	0.11	0.5:1	0.06

¹ Acreage rounded to the nearest hundredth acre. All impacts are permanent.

² 1:1 is anticipated if mitigation is met through use of the City's unused credits purchased from the North County Habitat Bank, as the Bank has met success criteria and the project site is located within the same watershed as the Bank.

³ Impacts to coastal sage scrub in the coastal zone are mitigated at 2:1, irrespective of whether the habitat is occupied by coastal California gnatcatcher.

BIO-1 **Compensatory Mitigation.** Project mitigation for impacts to native habitat types shall be provided to achieve no net loss. Impacts to Group A riparian habitats (i.e., southern willow scrub) shall be mitigated at a minimum 1:1 ratio, Group C upland habitat (coastal sage scrub) at a 2:1 ratio, and Group E upland habitat (non-native grassland [disturbed]) at a 0.5:1 ratio.

Mitigation for impacts to HMP Group A, C, and E habitat shall be provided at an off-site location approved by the City. The project mitigation for Group A and C habitat shall include a minimum 1:1 creation or substantial restoration to ensure no-net loss of native habitat.

Southern Willow Scrub: Mitigation for impacts to 0.03 acre of Group A southern willow scrub is proposed to occur at a 1:1 ratio through the use of 0.03 acre of the City's unused North County Habitat Bank mitigation credits.

Diegan Coastal Sage Scrub: Mitigation for impacts to 0.33 acre of Group C Diegan coastal sage scrub is proposed to occur at a 2:1 ratio through one or a combination of the following options:

- a) Use of 0.66 acre of SANDAG Sage Hill Mitigation Parcel mitigation credits; or
- b) Creation, restoration, an/or enhancement at The Crossings site identified as a "Proposed Future Mitigation Area," and/or another offsite location to be determined by the City, totaling 0.66 acre, with at least 0.33 acre (1:1) composed of creation or substantial restoration.

Non-native Grassland: Mitigation for impacts to 0.11 acre of Group D non-native grassland is proposed to occur at a 0.5:1 ratio through the use of 0.06 credit at the City's Lake Calavera Mitigation Parcel.

If mitigation credits are not used to mitigate for project impacts to Diegan coastal sage scrub, a Restoration Plan addressing compensatory mitigation for impacts to this habitat shall be prepared for review and approval by the City's Planning Department and HMP Coordinator. The final restoration plan shall be submitted for review at least 30 days before initiating project impacts. Where the off-site mitigation would occur within lands that are not already preserved in perpetuity and subject to long-term management within an existing biological conservation easement, the City shall record an Open Space Easement and a Conservation Easement or Restrictive Covenant over the off-site mitigation lands and provide long-term management. Before clearing or impacts to any habitat, the following items shall be approved by the City's Planning Department and HMP Coordinator and considered final: Recordation of Conservation Easement, Restoration Plan, Preserve Management Plan, long-term management funding, and Management Agreement with qualified preserve manager, if not the City.

BIO-2 **Construction Fencing and Equipment Staging and Maintenance.** To help ensure errant impacts to sensitive vegetation communities outside of the impact footprint are avoided during construction, environmental fencing (including silt fencing where determined necessary by the SWPPP) would be installed at the edges of the impact limits before the

initiation of grading. All construction staging shall occur within the approved limits of construction.

Throughout construction, employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint or within existing developed areas. Equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced project impact limits. These designated areas shall be located in previously developed and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering adjacent off-site habitats and shall be shown on the construction plans. Fueling of equipment shall take place within existing developed areas. Contractor equipment shall be checked for leaks before operation and repair, as necessary. "No-fueling zones" shall be designated on construction plans.

If work occurs beyond the fenced or demarcated limits of impact, work shall cease until the problem has been remedied to the satisfaction of City Planning. Impacts to jurisdictional areas or HMP Habitat Groups that occur beyond the approved work limits fence shall be mitigated in accordance with ratios specified in the Carlsbad HMP or as otherwise determined by City Planning and in coordination with the applicable resource agencies, as appropriate. Temporary construction fencing shall be removed upon project completion.

- BIO-3 **Biological Construction Monitoring.**** A qualified biologist will monitor the installation of environmental fencing wherever it would abut sensitive vegetation communities, jurisdictional waters or wetlands, or biological open space. The biologist also will conduct a pre-construction environmental training session for construction personnel to inform them of the sensitive biological resources on-site and avoidance measures to remain in compliance with project approvals. The biologist also will monitor vegetation clearing, grubbing, and grading activities on a regular basis to help ensure compliance with project approvals.

9.2 SPECIAL-STATUS SPECIES

Consistent with the HMP, impacts to sensitive animal species and nesting birds shall be met through the implementation of avoidance measures. Potential impacts to sensitive species determined to have the potential to occur, including coastal California gnatcatcher, shall be mitigated by the implementation of avoidance measures identified below, and a provision of habitat mitigation per measure BIO-1 above.

- BIO-4 **Gnatcatcher Nesting Season Avoidance.**** No clearing of occupied gnatcatcher habitat may occur between March 1 and August 15 per the conditions of coverage for this species.
- BIO-5 **Nesting Bird Avoidance.**** Potential direct impacts to nesting bird species protected under the MBTA and CFG Code shall be mitigated by restricting brushing, clearing/grubbing, and grading to outside of the breeding season of most bird species (general breeding season, inclusive of raptors, is January 15 to September 15). Grubbing, grading, or clearing during the breeding season could occur if it is determined, based on the results of a pre-construction survey (see below), that no nesting birds (or birds

displaying breeding or nesting behavior) are present immediately before impacting potential nesting habitat. The City shall be notified of any sensitive bird species identified during the pre-construction surveys.

If project impacts to vegetation or grading are necessary within and/or adjacent to habitat during the bird breeding season (January 15 to September 15), a qualified biologist shall conduct pre-construction surveys to determine the presence or absence of nesting birds, including raptors and sensitive bird species. The survey shall begin not more than three days before the beginning of impacts or grading activities. If nests of listed birds, migratory birds, raptors, or other sensitive species are located, they will be fenced with a protective buffer of at least 500 feet from active nests of listed species, and 300 feet from other sensitive bird species. Nests of non-sensitive bird species will be flagged for avoidance, and an appropriate setback determined by the biologist. All construction activity will be prohibited within the identified setbacks until a qualified biologist has determined that nesting behavior has ceased, nests have failed, or young have fledged.

The USFWS shall be notified of any federally listed species observed nesting within 500 feet of proposed grading activities, and the CDFW shall be notified of any state listed or special-status species observed nesting within 500 feet of proposed grading activities.

If listed species are present and construction is to occur during the nesting season, construction noise will be measured regularly to maintain a threshold at or below 60 dBA hourly Leq. within 500 feet of breeding habitat occupied by listed species. If noise levels supersede the threshold, noise barriers shall be erected to reduce noise impacts to occupied habitat from project construction to below 60 dBA hourly Leq, and/or the activities shall be suspended until nesting is complete.

9.3 JURISDICTIONAL WETLANDS AND WATERS

The project would impact 0.03 acre of aquatic resources (southern willow scrub) considered CCC coastal wetland. Compensatory mitigation shall be satisfied by the implementation of BIO-1 above.

Additionally, as a regulatory requirement, the City shall submit the appropriate agency notifications and permit applications for impacts to jurisdictional resources and shall obtain all necessary permits. Final permit requirements would be determined in consultation with the regulating agencies.

10.0 CARLSBAD HABITAT MANAGEMENT PLAN COMPLIANCE

The entirety of the project is within the coastal zone, to which additional HMP standards apply. The HMP regulations are described below.

10.1 CONSISTENCY WITH HMP PRESERVE

The proposed project is situated within LFMZ 3 (Zone 3) and LFMZ 22 (Zone 22). The project has been designed to stay within the City ROW or adjacent property owned by the City and out of HMP preserve

areas. Therefore, the project would not affect the HMP preserve and would be consistent with the HMP preserve boundaries.

10.2 CONSISTENCY WITH HMP SPECIES REQUIREMENTS

10.2.1 Section D6 of the HMP (pg. D-90), Measures to Minimize Impact on HMP Species and Mitigation Requirements

Narrow Endemic Species

No narrow endemic plant or animal species were identified during the field surveys or are expected to occur on-site.

Other Sensitive Species

The HMP states that “the primary mitigation for impacts to HMP Species under the Plan is the conservation and management of habitat for species in the preserve system” (City 2004). It also states that incidental take must be minimized and mitigated to the maximum extent practicable. Table 9 of the HMP provides specific minimization and mitigation measures for covered species.

No sensitive animal species addressed in Table 9 of the HMP were observed on-site during biological surveys. One species addressed in Table 9 (coastal California gnatcatcher) was determined to have a moderate potential to occur on-site; project consistency with the HMP for this species is discussed below.

Coastal California Gnatcatcher

Conservation goals for the coastal California gnatcatcher include:

- Conserve approximately 2,000 acres of coastal sage scrub.
- Conserve mapped gnatcatcher locations within conserved habitat.
- Maintain regional linkages.

Impact avoidance/minimization measures for the coastal California gnatcatcher include:

- Manage preserve areas to minimize edge effects.
- Prepare and implement a fire management program for preserve areas.
- Where possible, enhance and restore sage scrub habitat within preserve areas.
- No clearing of occupied habitat may occur between March 1 and August 15 annually.

The proposed project is located outside of preserve areas and would not affect any linkages. The project would mitigate impacts to potential gnatcatcher habitat (sage scrub) through habitat-based mitigation identified in mitigation measure BIO-1 above. Direct and indirect impacts from clearing/grubbing/grading impacts during the gnatcatcher breeding season would be restricted under mitigation measures BIO-4 and BIO-5.

Therefore, the project is consistent with the HMP goals and impact minimization measures for the coastal California gnatcatcher.

10.3 CONSISTENCY WITH HMP ADJACENCY STANDARDS AND ZONE-LEVEL RECOMMENDATIONS

10.3.1 Section F3-Adjacency Standards (Carlsbad HMP pg. F-16)

The project limits are outside of any Hardline Preserve or other conservation area. The HMP adjacency standards apply to the southern end of the project alignment where it is near the northern end of a narrow, isolated reach of Hardline Preserve (SRA 2) that was established to protect vernal pool habitat and associated sensitive plant and animal species.

Fire Management

Fire management includes the recognition that fire is an important component of natural ecosystems in Southern California while ensuring public safety for areas adjacent to the HMP preserve. The proposed project does not require fuel management zones and will not pose a fire risk to the adjacent preserve.

Therefore, the project would be consistent with this Adjacency Standard.

Erosion Control

The project would comply with National Pollutant Discharge Elimination System requirements for construction and would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). These measures would avoid new surface drainage and erosion near SRA 2.

Therefore, the project would be consistent with this Adjacency Standard.

Landscaping Restrictions

The project would conform to the City's landscaping requirements and will submit a landscape plan to the City for review and approval before the project impacts. Landscaping adjacent to the preserve will use appropriate native species, and invasive plant species will not be included in the landscaping palette, including species identified in Table 12 (Invasive Exotic Plants Occurring or Potentially Occurring in the City of Carlsbad) of the HMP.

Therefore, the project would be consistent with this Adjacency Standard.

Fencing, Signs, and Lighting

The project does not result in new uses of the area that would increase the need for fencing or signage adjacent to SRA 2 in the project vicinity. Lighting associated with the project would be the minimum amount necessary for safety and directed away from SRA 2.

Thus, the project would be consistent with this Adjacency Standard.

Predator and Exotic Species Control

The project does not propose uses that would increase feral or domestic animal use adjacent to SRA 2. Additionally, the project site and adjacent areas are characterized primarily by non-native plant species and/or habitats, which are widespread along the rail corridor. The project would not result in the introduction of additional non-native plant species near SRA 2, and the revegetation plant palettes on the west side of Avenida Encinas would include only native species. Project landscaping palettes would not use invasive species.

Therefore, the project would be consistent with this Adjacency Standard.

10.3.2 Section F5-Zone-Level Recommendations for Zone 3 and Zone 22 (Carlsbad HMP pg. F25-F28)

There are no zone-specific preserve management guidelines for Zone 3, and, therefore, have no conflict with the proposed project.

The proposed project is not located within a current or future proposed preserve area, and project implementation will not conflict with the management goals and guidelines for Zone 22 (see Section 3.3 herein), as summarized below. The project will avoid impacts and minimize adverse edge effects to vernal pool habitat; no effect on water quality of the pools would occur. The project will not conflict with preserve management actions to stabilize sensitive species populations, as no changes in use are proposed by the project, and plant palettes in the landscape plan will not use invasive species. The project will implement a SWPPP to address runoff, erosion, and sedimentation during project construction for the protection of water quality against potential pollutants and will not change runoff into vernal pool watersheds. The project will have no effect on the Preserve Manager's ability to monitor the status of preserved populations in LFMZ 22 to ensure they remain viable.

Zone Level recommendations typically do not apply to existing City ROWs, which are specifically in-place for allowing roadway, mobility, and other planned infrastructure improvements to occur. Regardless of applicability, the project considered the HMP Zone Level recommendations, and no conflict would occur.

10.4 CONSISTENCY WITH HMP COASTAL ZONE STANDARDS (CARLSBAD HMP PG. D-114)

The entirety of the project is within the coastal zone, to which additional HMP conservation standards apply (City 2004). These standards are further discussed below. In addition, the CRT is a mobility project and is a planned non-motorized transportation and community enhancement project identified in the City's LCP.

Standard 7-1: Environmentally Sensitive Habitat Areas

Per the CCA, ESHAs are identified and shall be protected against significant disruption. The nearest ESHA, as defined by the CCA, would be the vernal pool habitat within HMP Hardline Preserve SRA 2.

The project proposes relatively minor impacts to native habitats occurring within and adjacent to the road ROW along an existing road edge. Evidence of substantial disturbance (i.e., the proliferation of non-

native and invasive plant species, informal trails, and/or mowing) is currently present within all of these roadside areas. Proposed project impacts to these roadside edges would not disrupt areas of ESHA. Indirect impacts to ESHA would be avoided through compliance with the HMP adjacency standards. Therefore, the project is consistent with this HMP coastal zone standard.

Standard 7-2: Coastal Sage Scrub

Properties containing coastal sage scrub located in the Coastal Zone shall conserve a minimum of 67 percent of the coastal sage scrub and 75 percent of the gnatcatchers on site.

Impacts to coastal sage scrub have been avoided and minimized to the extent feasible and are confined to narrow strips of habitat immediately adjacent to the existing road. A total of 1.25 acres of coastal sage scrub is present adjacent to the west side of Avenida Encinas along the project alignment. The project would impact 0.33 acre or 26 percent of the coastal sage scrub, which would result in conservation of 74 percent of the existing coastal sage scrub. Furthermore, the project proposes mitigation to achieve no net loss (BIO-1). No gnatcatchers were detected within the study area during the biological surveys; however, the coastal sage scrub has the potential to support gnatcatchers. The project would mitigate impacts to potential gnatcatcher habitat (Diegan coastal sage scrub) through habitat-based mitigation identified in mitigation measure BIO-1 above. Direct and indirect impacts from clearing/grubbing/grading impacts during the gnatcatcher breeding season would be restricted under mitigation measures BIO-4 and BIO-5 identified above. Thus, the project is consistent with this coastal zone standard.

Standard 7-7: Wetland Mitigation Requirements

Per this standard, property development that impacts wetlands shall provide mitigation at a ratio of 3:1 for riparian impacts and 4:1 for saltwater or freshwater wetland or marsh impacts.

The project would impact 0.03 acre of riparian habitat and would mitigate to achieve no net loss (BIO-1).

Standard 7-8: No Net Loss of Habitat

Per this standard, the development of a property in the coastal zone of Carlsbad shall result in no net loss of the following vegetation types: coastal sage scrub, maritime succulent scrub, southern maritime chaparral, southern mixed chaparral, native grassland, and oak woodland.

The project would impact 0.33 acre of coastal sage scrub vegetation and proposes mitigation to achieve no net loss (BIO-1); thus, the project is consistent with this coastal zone standard.

Standard 7-9: Upland Habitat Mitigation Requirements

Habitat mitigation will occur in accordance with HMP Table 11 and shall result in no net loss; thus, the project is consistent with this coastal zone standard.

Standard 7-11: Buffer and Fuel Modification Zones

Per this standard, the development of a property shall provide buffers between all preserved habitat areas and proposed development, including 100-foot for wetlands and least Bell's vireo occupied riparian areas, 50-foot for unoccupied riparian areas, and 20-foot for all other native habitats.

As stated previously, the CRT is a mobility project within the City's ROW and is a planned project addressed within the City's LCP. HMP development requirements, such as habitat buffers, are not typically considered applicable to existing City ROWs, which are specifically intended for allowing roadway, mobility, and other planned infrastructure improvements to occur.

The proposed alignment is primarily adjacent to existing disturbed habitat or developed lands, and in the few locations where native habitat does occur, it is immediately adjacent to the existing roadway and does not have an existing buffer. As such, there are no existing habitat buffers within the project site that meet the HMP requirements. No portion of the alignment is within a hardline preservation area, standards area, or focus planning area under the HMP. The project proposes to retain a no-buffer condition; however, the project will improve the condition of disturbed areas in the western portion of the ROW by using a native hydroseed mix as part of the project's landscape plan. To further protect adjacent habitat, the project will install biofiltration swales to capture and treat project runoff from developed areas.

Standard 7-12: Grading and Landscaping Requirements

The project will adhere to the City's grading schedule and will have a project-specific SWPPP to address erosion and water quality during construction. Thus, the project will not conflict with this coastal zone standard.

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12.0 REFERENCES

- American Ornithological Society (AOS). 2023. AOS Checklist of North and Middle American Birds (online checklist). Retrieved from: <http://checklist.aou.org/taxa/>.
- Bradley, R.D., Ammerman, L.K., Baker, R.J., Bradley, L.C., Cook, J.A., Dowler, R.D. Jones, C., Schmidly, D.J, Stangi, F.B., Van De Bussche, R.A., Wursig, B. (2014). Revised checklist of North American mammals north of Mexico. Museum of Texas Tech University Occasional Papers. 327:1-27.
- Calflora. 2024. Retrieved from: <http://www.calflora.org/>.
- California Department of Fish and Wildlife (CDFW). 2023a. State and Federally Listed Endangered & Threatened Animals of California. Available at: <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>. December.
- 2023b. California Natural Diversity Data Base (CNDDDB). RareFind 5.
- 2023c. California Natural Diversity Database (CNDDDB). Special Animals List. Periodic publication. April. 65 pp.
- California Native Plant Society, Rare Plant Program. 2024. Inventory of Rare and Endangered Plants of California (online edition, v9.5). Available at: <http://www.rareplants.cnps.org>. January.
- Carlsbad, City of.
2011. Revised Vegetation Community Data Provided by City of Carlsbad GIS. Data available at the City of Carlsbad.
2004. Final Habitat Management Plan for Natural Communities in the City of Carlsbad. Final approval November 2004, including implementing agreement and terms and conditions. Available at: <https://www.carlsbadca.gov/departments/environmental-sustainability/habitat-protection>.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.
- Google Earth (Google). 2022. Aerial and Historical Imagery. Accessed November.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, 156 pp.
- Jepson Flora Project (eds.) 2022. *Jepson eFlora*. Available at: <http://ucjeps.berkeley.edu/eflora/>.
- Oberbauer, T. 2008. Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. Revised from 1996 and 2005. July.
- Society for the Study of Amphibians and Reptiles. 2023. North American Standard English and Scientific Names Database. Available at: <https://ssarherps.org/publications/north-american-checklist/>.

State Water Resources Control Board (SWRCB). 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Adopted April 2, 2019.

Technology Associates. 2008. Guidelines for Biological Studies. Prepared for the City of Carlsbad. September.

U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Eds. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center. September.

U.S. Department of Agriculture. 2023. Web Soil Survey. Natural Resources Conservation Service. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.

U.S. Fish and Wildlife Service (USFWS). 2023. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office (CFWO). Retrieved from: <http://www.fws.gov/carlsbad/gis/cfwogis.html>.

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Appendix A

Plant Species Observed

Family	Scientific Name ^{*,†}	Common Name	Habitat ¹
Aizoaceae	<i>Carpobrotus edulis</i> *	iceplant	DCSS, DH
	<i>Malephora crocea</i> *	coppery mesembryanthemum	DH
	<i>Mesembryanthemum crystallinum</i> *	crystalline ice plant	DH
Anacardiaceae	<i>Rhus integrifolia</i>	lemonade berry	DCSS, DH
	<i>Schinus terebinthifolius</i> *	Brazilian pepper tree	DH, SWS
Apiaceae	<i>Apiastrum angustifolium</i>	wild celery	DCSS
	<i>Foeniculum vulgare</i> *	fennel	DH
Apocynaceae	<i>Nerium oleander</i> *	oleander	DH
Arecaceae	<i>Washingtonia robusta</i> *	Mexican fan palm	DH
Asphodelaceae	<i>Asphodelus fistulosus</i> *	onionweed	DH
Asteraceae	<i>Ambrosia psilostachya</i>	ragweed	DCSS, NNG
	<i>Artemisia californica</i>	California sagebrush	DCSS
	<i>Baccharis pilularis</i>	coyotebrush	DCSS
	<i>Baccharis salicifolia</i>	mule fat	DH, SWS
	<i>Deinandra fasciculata</i>	clustered tarweed	DCSS
	<i>Dittrichia graveolens</i> *	stinkwort	DH
	<i>Encelia californica</i>	bush sunflower	DCSS
	<i>Erigeron canadensis</i>	Canada horseweed	DH
	<i>Glebionis coronaria</i> *	crown daisy	DH
	<i>Helminthotheca echioides</i> *	bristly ox-tongue	NNG
	<i>Heterotheca grandiflora</i>	telegraph weed	DH
	<i>Isocoma menziesii</i>	San Diego goldenbush	DCSS, DH
Boraginaceae	<i>Heliotropium curassavicum</i>	salt heliotrope	DH
Brassicaceae	<i>Brassica nigra</i> *	black mustard	DCSS, DH
	<i>Hirschfeldia incana</i> *	mustard	NNG, DH
	<i>Raphanus sativus</i> *	wild radish	NNG, DH
Cactaceae	<i>Opuntia littoralis</i>	prickly pear	DCSS
Chenopodiaceae	<i>Atriplex lentiformis</i>	big saltbush	DCSS, DH
	<i>Atriplex semibaccata</i> *	Australian saltbush	DH
	<i>Chenopodium sp.</i> *	goosefoot	DH
	<i>Salsola tragus</i> *	Russian thistle	NNG, DH
Cleomaceae	<i>Peritoma arborea</i>	bladderpod	DCSS
Cyperaceae	<i>Cyperus involucratus</i> *	umbrella plant	NNG
Euphorbiaceae	<i>Euphorbia maculata</i> *	spotted spurge	DH
	<i>Ricinus communis</i> *	castor bean	SWS
Fabaceae	<i>Acacia longifolia</i> *	golden wattle	DCSS, DH
	<i>Erythrina caffra</i> *	coral tree	SWS
Lythraceae	<i>Lythrum hyssopifolia</i> *	hyssop loosestrife	DW
Myrtaceae	<i>Psidium guajava</i> *	guava	DH
Oleaceae	<i>Fraxinus uhdei</i> *	shamel ash	SWS
Poaceae	<i>Bromus sp.</i> *	brome	NNG
	<i>Cortaderia selloana</i> *	pampas grass	DH
Polygonaceae	<i>Eriogonum fasciculatum</i>	California buckwheat	DCSS, DH
	<i>Rumex crispus</i> *	curly dock	NNG, DW, DH
Rhamnaceae	<i>Adolphia californica</i> ^{††}	California adolphia	DCSS
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	SWS

Family	Scientific Name ^{*,†}	Common Name	Habitat ¹
Sapindaceae	<i>Cupaniopsis anacardioides</i> [*]	carrotwood	DH
Scrophulariaceae	<i>Myoporum laetum</i> [*]	ngaio tree	DH
Solanaceae	<i>Lycium californicum</i> ^{††}	California box-thorn	DCSS

* Non-native

†† Sensitive

1 DCSS=Diegan coastal sage scrub; DH=Disturbed habitat; DW=Disturbed wetland; NNG=Non-native grassland; SWS=Southern willow scrub.

Appendix B

Animal Species Observed or Detected

Order	Family	Scientific Name	Common Name
INVERTEBRATES			
Reptiles			
Squamata	Phrynosomatidae	Sceloporus occidentalis	Western Fence Lizard
Birds			
Apodiformes	Trochilidae	Calypte anna	Anna's Hummingbird
Charadriiformes	Charadriidae	Charadrius vociferus	Killdeer
Columbiformes	Columbidae	Zenaida macroura	Mourning Dove
Passeriformes	Corvidae	Corvus brachyrhynchos	American Crow
	Fringillidae	Haemorhous mexicanus	House Finch
		Spinus psaltria	Lesser Goldfinch
	Mimidae	Mimus polyglottos	Northern Mockingbird
	Parulidae	Geothlypis trichas	Common Yellowthroat
		Setophaga coronata	Yellow-rumped Warbler
	Passerellidae	Melospiza melodia	Song Sparrow
		Melospiza crissalis	California Towhee
		Pipilo maculatus	Spotted Towhee
		Zonotrichia leucophrys	White-crowned Sparrow
	Passeridae	Passer domesticus	House Sparrow
	Sturnidae	Sturnus vulgaris	European Starling
Tyrannidae	Sayornis nigricans	Black Phoebe	
	Tyrannus vociferans	Cassin's Kingbird	
Mammals			
Lagomorpha	Leporidae	Sylvilagus audubonii	Desert Cottontail
Rodentia	Sciuridae	Otospermophilus beecheyi	California Ground Squirrel

Appendix C

Sensitive Plant Species with Potential to Occur

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Abronia maritima</i>	red sand-verbena	-- / -- CRPR 4.2	Perennial herb. Grows in prostrate mats on well-developed coastal dunes away from areas with heavy foot traffic which has severely degraded habitat on most southern California beaches. Found on the Channel Islands and along the immediate coast from San Luis Obispo County south to San Diego County; nearly extirpated in southern California. Flowering period: February to November. Elevation: below 330 feet (100 meters).	Not Likely to Occur. Coastal dune habitat associated with this species does not occur onsite.
<i>Acanthomintha ilicifolia</i>	San Diego thorn-mint	FT / SE CRPR 1B.1 HMP Covered Narrow Endemic	Annual herb. Typically grows on clay soils within chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Found in San Diego County. Flowering period: April to June. Elevation: below 30 to 3,150 feet (10 to 960 meters).	Not Likely to Occur. Suitable clay soils do not occur on site. Vernal pools do not occur on site.
<i>Acmispon prostratus</i>	Nuttall's lotus	-- / -- CRPR 1B.1	Annual herb. Grows on coastal dunes and sandy areas coastal scrub in San Diego County. Flowering Period: March to June. Elevation: below 35 feet (10 meters).	Low. Coastal dune habitat does not occur onsite, and the site is above known elevation range for the species. Approximately 100 individuals were recorded in 2015 on South Carlsbad State Beach approximately 900 feet west of project site.
<i>Adolphia californica</i>	California adolphia	-- / -- CRPR 2B.1	Perennial shrub. Most often found in coastal scrub but occasionally occurs in peripheral chaparral habitats. Found in San Diego County. Flowering period: December to May. Elevation: 30 to 2,430 feet (10 to 740 meters).	Present. Approximately 70 individuals were observed within Diegan coastal sage scrub in the northern portion of the study area. Most of these occur within a dense cluster at the top of a berm between Avenida Encinas and the railroad.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Agave shawii</i> var. <i>shawii</i>	Shaw's agave	-- / -- CRPR 2B.1	Perennial succulent. Most often found on coastal bluffs and along mesas and foothill within coast bluff scrub, coastal scrub. Maritime succulent scrub, and chaparral. Found in San Diego County. Flowering period: September to May. Elevation: below 395 feet (120 meters).	Not Likely to Occur. Coastal bluffs are not present on site. Furthermore, this perennial succulent would likely have been observed during surveys if present onsite.
<i>Aphanisma blitoides</i>	aphanisma	-- / -- CRPR 1B.2	Annual herb. Occurs on sandy or gravelly soils within coastal dunes, coastal bluff scrub, and coastal scrub. Found along the coast from Santa Barbara County south to San Diego County and the Channel Islands. Flowering period: June to September. Elevation: below 656 feet (305 meters).	Low. Potentially suitable coastal scrub habitat with sandy and gravelly soils is present but limited onsite, and subject to disturbance rendering it unlikely to support this species.
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	FE / -- CRPR 1B.1 HMP Covered Narrow Endemic	Perennial shrub. Occurs within relatively open, coastal chaparral and maritime chaparral on sandy soils. At occasional inland sites it occurs in denser mixed chaparral vegetation. Found in San Diego County. Flowering Period: December to June. Elevation: below 1,200 feet (365 meters).	Not Likely to Occur. Chaparral is not present on site. Furthermore, this perennial shrub would likely have been observed during surveys if present onsite.
<i>Artemisia palmeri</i>	San Diego sagewort	-- / -- CRPR 4.2	Perennial shrub. Typically found along stream courses, often beneath riparian woodland, on sandy and mesic soils. May occur in coast live oak woodland, coastal sage scrub, and southern mixed chaparral. Found in San Diego County. Flowering period: June to October. Elevation: 50 to 3,000 feet (15 to 915 meters).	Not Likely to Occur. Suitable riparian habitat is limited on site and this perennial shrub would likely have been observed during surveys if present.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Atriplex pacifica</i>	South coast saltscale	-- / -- CRPR 1B.2	Annual herb. Found coastally on dunes and within playas in alkali sinks, sage scrub, and wetland and riparian habitats. Found along the coastal regions from Santa Barbara County south to San Diego County, western portions of San Bernardino and Riverside counties, and the Channel Islands. Flowering period: March to October. Elevation: below 460 feet (140 meters).	Low. Coastal dunes and playas are not present on site. One individual was recorded in 2014 on South Carlsbad State Beach approximately 700 feet west of the project site.
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	FT / SE CRPR 1B.1 HMP Covered Narrow Endemic	Perennial herb. Often associated with vernal pools. Also occurs within playas, grasslands, coastal scrub, openings in chaparral, and cismontane woodland; often on clay soils. Found in Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. Flowering period: March to June. Elevation: 80 to 3,675 feet (25 to 1,120 meters).	Not Likely to Occur. Vernal pool habitat is not present on site, and preferred clay soils do not occur on site.
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	-- / -- CRPR 1B.1 HMP Covered Narrow Endemic	Perennial bulbiferous herb. Occurs within closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Prefers mesic or clay soils. Found in Riverside San Diego counties. Flowering period: May to July. Elevation: 98 to 5,550 feet (30 to 1,692 meters).	Not Likely to Occur. Suitable habitat and clay soils do not occur onsite, and the site is below the species known elevation range.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	-- / -- CRPR 3	Annual herb. Occurs on sandy or clay soils within grasslands, coastal scrub, cismontane woodland, and coastal bluffs and dunes. Found in Los Angeles, Orange, and San Diego counties. Flowering period: March to June. Elevation: below 985 feet (300 meters).	Low. Sandy soils within grassland and coastal scrub are present, but very limited and disturbed onsite.
<i>Ceanothus verrucosus</i>	Wart-stemmed ceanothus	-- / -- CRPR 2B.2 HMP Covered	Perennial shrub. Found on rocky slopes within chaparral, particularly southern maritime chaparral. Found in Riverside and San Diego counties. Flowering period: December to May. Elevation: below 1,245 feet (380 meters).	Not Likely to Occur. Chaparral does not occur onsite. Furthermore, this perennial shrub would likely have been observed during surveys if present.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	-- / -- CRPR 1B.1	Annual herb. Found on coastal dunes and sandy areas within coastal bluff scrub. Typically, in proximity to moist ocean breezes from Ventura County south to San Diego County. Elevation: below 330 feet (100 meters). Flowering Period: January to August.	Not Likely to Occur. Sand dune habitat and coastal bluffs do not occur onsite.
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	FE / SE CRPR 1B.1 HMP Covered Narrow Endemic	Annual herb. Found in sandy openings of coastal sage scrub, maritime chaparral, and closed-cone coniferous forests. Known from only three occurrences in Encinitas and Point Loma within San Diego County. Flowering period: March to May. Elevation: 5 to 410 feet (3 to 125 meters).	Low. Sandy soils are present within coastal sage scrub on site, but soils are disturbed and all occurrence data for this species is from Encinitas and southward.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	Long-spined spineflower	-- / -- CRPR 1B.2	Annual herb. Occurs in chaparral, coastal scrub, and native grassland, often on clay soils. Found within Orange, Riverside, San Bernardino, and San Diego counties. Flowering period: April to July. Elevation: 95 to 5,020 feet (30 to 1,530 meters).	Low. Suitable coastal scrub is present but limited, and preferred clay soils do not occur with coastal scrub habitat onsite.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Cistanthe maritima</i>	Seaside cistanthe	-- / -- CRPR 4.2	Annual herb. Occurs on sandy bluffs near the beach and sandy openings in coastal sage scrub and grasslands. Found along the coast from Santa Barbara County south to San Diego County and the Channel Islands. Flowering period: February to June. Elevation: below 984 feet (300 meters).	Low. Suitable sandy soils within coastal sage scrub are present, but very limited and disturbed onsite.
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	Summer-holly	-- / -- CRPR 1B.2 HMP Covered	Perennial shrub. Occurs in chaparral and cismontane woodland. Found in Santa Barbara, Orange, Riverside, and San Diego counties. Flowering period: April to June. Elevation: 95 to 2,590 feet (30 to 790 meters).	Not Likely to Occur. Chaparral and cismontane woodland habitat do not occur onsite. Furthermore, this perennial shrub would likely have been observed during surveys if present onsite.
<i>Convolvulus simulans</i>	Small-flowered morning-glory	-- / -- CRPR 4.2	Annual herb. Occurs on clay soils and serpentinite seeps in openings within chaparral, coastal scrub, and native grassland. Found within the San Francisco Bay area, San Joaquin Valley, western Sierra Nevada foothills, along the coast of southern California, the Channel Islands, and the western Transverse and Peninsular Ranges. Flowering period: April to June. Elevation: 95 to 2,430 feet (30 to 740 meters).	Not Likely to Occur. Suitable clay soils are not present onsite. Furthermore, the project site is below the known elevation range for this species.
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar Mesa sand aster	-- / -- CRPR 1B.1 HMP Covered Narrow Endemic	Perennial herb. Found on sandy soils and disturbed areas within southern maritime chaparral, coastal sage scrub, and coastal bluffs. Found in San Diego County. Flowering Period: May to September. Elevation: 45 to 490 feet (15 to 150 meters).	Low. Suitable disturbed sandy soils within coastal sage scrub are present, but very limited onsite. Occurrence data for this species is primarily between La Jolla north to San Elijo Lagoon.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Ericameria palmeri</i> var. <i>palmeri</i>	Palmer's goldenbush	-- / -- CRPR 1B.1	Perennial shrub. Grows in mesic areas within coastal sage scrub and chaparral in San Diego County. Flowering period: September to November. Elevation: 95 to 1,960 feet (30 to 600 meters).	Not Likely to Occur. Suitable coastal sage scrub present, but very limited onsite. Furthermore, this perennial shrub would likely have been observed during surveys if present onsite.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery	FE / SE CRPR 1B.1 HMP Covered Narrow Endemic	Annual or perennial herb. Grows in vernal pools and other mesic areas, such as marshes. Found in Los Angeles, Orange, Riverside, and San Diego counties. Flowering period: April to June. Elevation: 65 to 2,035 feet (20 to 620 meters).	Low. Vernal pool habitat does not occur onsite. Species has been recorded approximately 500 feet south of the southern portion of the project site within the Hardline Preserve supporting vernal pools.
<i>Erysimum ammophilum</i>	Sand-loving wallflower	-- / -- CRPR 1B.2	Perennial herb. Found in open areas and sandy soils within coastal dunes, coastal strand, coastal sage scrub, and maritime chaparral. Found within northern Monterey County, San Diego County, and the northern Channel Islands. Flowering Period: February to June. Elevation: below 195 feet (60 meters).	Low. Suitable open coastal sage scrub with sandy soils is present but limited onsite, however, this showy perennial herb would likely have been observed during surveys if present onsite.
<i>Euphorbia misera</i>	Cliff spurge	-- / -- CRPR 2B.2 HMP Covered	Perennial shrub. Found in rocky areas of coastal bluffs, coastal sage scrub, and Mojave desert scrub. Found in Riverside, Orange, and San Diego counties and the Channel Islands. Flowering period: December to August. Elevation: 30 to 1,640 feet (10 to 500 meters).	Not Likely to Occur. Coastal sage scrub is present, however rocky soils do not occur onsite. Furthermore, this perennial shrub would likely have been observed during surveys if present onsite.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Ferocactus viridescens</i>	San Diego barrel cactus	-- / -- CRPR 2B.1 HMP Covered	Perennial (stem succulent) shrub. Grows in sandy to rocky areas within chaparral, valley grassland and coastal sage scrub communities. Found in San Diego County. Flowering period: May to June. Elevation: 5 to 492 feet (3 to 450 meters).	Not Likely to Occur. Coastal sage scrub with sandy soils are present but very limited onsite, and this species would likely have been observed during surveys if present.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	-- / -- CRPR 4.2	Annual herb. Grows on clay soils within openings of grasslands, coastal sage scrub, and chaparral. Found in Los Angeles, Orange, San Diego, and Riverside counties. Flowering Period: March to May. Elevation: 65 to 3,135 feet (20 to 955 meters).	Not Likely to Occur. Preferred clay soils do not occur in onsite coastal scrub or grassland habitats.
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	Beach goldenaster	-- / -- CRPR 1B.1	Perennial herb. Occurs in coastal chaparral, coastal dunes, and coastal scrub. Found in San Bernardino and San Diego counties. Flowering Period: March to December. Elevation: below 4,020 feet (1,225 meters).	Not Likely to Occur. Coastal scrub and sandy soils are present but disturbed, and preferred sand dune habitat does not occur onsite.
<i>Hordeum intercedens</i>	Vernal barley	-- / -- CRPR 3.2	Annual herb. Occurs in vernal pools, alkaline flats, and dry, saline streambeds. Also found in saline flats and depressions within grasslands. Found in the San Joaquin Valley, South Coast and Peninsular Ranges, San Jacinto Mountains, and southern coast of California. Flowering period: March to June. Elevation: below 3,280 feet (1,000 meters).	Not Likely to Occur. Vernal pool, alkaline flat, and streambed habitats are not present onsite.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Isocoma menziesii</i> var. <i>decumbens</i>	Decumbent goldenbush	-- / -- CRPR 1B.2	Perennial shrub. Occurs in sandy soils and disturbed areas on the inland side of dunes, hillsides, and arroyos within coastal sage scrub and chaparral. Found along the coast of southern California, Peninsular Ranges, and Channel Islands. Flowering period: July to November. Elevation: below 656 feet (200 meters).	Low. Suitable coastal sage scrub with sandy soils are present but limited onsite; and this perennial shrub would likely have been observed during surveys if present.
<i>Iva hayesiana</i>	San Diego marsh-elder	-- / -- CRPR 2B.2 HMP Covered	Perennial herb. Found in alkaline flats, depressions, and streambanks within wetland habitats in San Diego County. Flowering period: April to October. Elevation: 30 to 1,640 feet (10 to 500 meters).	Not Likely to Occur. Suitable alkaline flats, depressions, and streambed habitats are not present onsite.
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern spiny rush	-- / -- CRPR 4.2	Perennial herb. Found in streambeds and drainages along the coastal regions from San Luis Obispo County south to San Diego County. Flowering period: May to June. Elevation: below 984 feet (300 meters).	Not Likely to Occur. Suitable wetland habitats are not present onsite. Furthermore, this large perennial herb would likely have been observed during surveys if present.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	-- / -- CRPR 1B.1	Annual herb. Grows in vernal pools, playas, and saline habitats within alkali sinks, coastal salt marshes, and wetland habitats. Found along the Coast, Sierra Nevada, and Peninsular Ranges; Sacramento and San Joaquin Valleys; central and southern coasts; Mojave Desert; and north Channel Islands. Flowering period: April to May. Elevation: below 4,005 feet (1,220 meters).	Not Likely to Occur. Suitable wetland habitats are not present onsite.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	-- / -- CRPR 4.3	Annual herb. Grows in openings of sage scrub and chaparral at the coastal and foothill elevations throughout California. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Also, found in disturbed areas. Flowering period: March to June. Elevation: below 9,186 feet (2,800 meters).	Not Likely to Occur. Suitable disturbed and open coastal sage scrub is present but limited onsite, however the species has not been previously recorded within the surrounding 5-mile vicinity.
<i>Leptosyne maritima</i>	Sea dahlia	-- / -- CRPR 2B.2	Perennial herb. Occurs within coastal scrub and coastal bluffs scrub in San Diego County. Flowering period: March to May. Elevation: below 490 feet (150 meters).	Low. Suitable coastal scrub with is limited but present onsite, however this showy perennial herb would likely have been observed during surveys if present onsite.
<i>Lycium californicum</i>	California box-thorn	-- / -- CRPR 4.2	Perennial shrub. Occurs within coastal bluff and coastal sage scrub along the immediate coast. Found along the coast from Los Angeles County south to San Diego County, and the Channel Islands. Flowering period: March to August. Elevation: below 495 feet (150 meters).	Present. Approximately 75 individuals were observed in the northern portion of the study area west of Avenida Encinas, including 70 individuals within Diegan coastal sage scrub, and five individuals within disturbed habitat.
<i>Microseris douglasii</i> ssp. <i>platycarpha</i>	Small-flowered microseris	-- / -- CRPR 4.2	Annual herb. Found on clay soils within coastal sage scrub, woodlands, and grasslands. Often near vernal pools or serpentine outcrops. Found in Los Angeles, Orange, Riverside, and San Diego counties and the Channel Islands. Flowering period: March to May. Elevation: 49 to 3,510 feet (15 to 1,070 meters).	Not Likely to Occur. Coastal sage scrub and grasslands are present but limited, however, suitable clay soils do not occur.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Myosurus minimus</i> ssp. <i>apus</i>	Little mouse-tail	-- / -- CRPR 3.1 HMP Covered Narrow Endemic	Annual herb. Occurs in alkaline vernal pools within native grassland. Flowering period: March to June. Found within San Joaquin Valley south to San Diego County and east to western Riverside and San Bernardino counties. Elevation: 65 to 2,100 feet (20 to 640 meters).	Low. Vernal pool habitat does not occur onsite. This species has been recorded approximately 1,000 feet south of the southern portion of the project site within the Hardline Preserve supporting vernal pools.
<i>Navarretia fossalis</i>	Spreading navarretia	FT / -- CRPR 1B.1 HMP Covered Narrow Endemic	Annual herb. Occurs in vernal pools, vernal swales, roadside depressions, playas, marshes and swamps, and chenopod scrub. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Found in the Mojave Desert, desert mountains, Channel Islands, and the Transverse and Peninsular Ranges. Flowering period: April to June. Elevation: 98 to 4,265 feet (30 to 1,300 meters).	Low. Suitable wetland habitat does not occur on site. Species has been recorded approximately 1,000 feet south of the southern portion of the project site within the Hardline Preserve supporting vernal pools.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	Coast woolly-heads	-- / -- CRPR 1B.2	Annual herb. Occurs within coastal dunes; seems to prefer the back dunes in mildly protected areas. Found along the coastline from Los Angeles County south to San Diego County. Flowering Period: April to September. Elevation: below 330 feet (100 meters).	Not Likely to Occur. Coastal dune habitat associated with this species does not occur onsite.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Orcuttia californica</i>	California Orcutt grass	FE / SE CRPR 1B.1 HMP Covered Narrow Endemic	Annual herb. Occurs in vernal pools. Tends to grow in wetter portions of the vernal pool basins but does not show much growth until the basins become somewhat desiccated. Found in the coastal regions of southern California from Ventura County south to San Diego County and in western Riverside County. Flowering period: April to August. Elevation: 45 to 2,165 feet (15 to 660 meters).	Low. Vernal pool habitat does not occur onsite. Species has been recorded south of the project site within the Hardline Preserve supporting vernal pools.
<i>Pinus torreyana</i> ssp. <i>torreyana</i>	Torrey pine	-- / -- CRPR 1B.2 HMP Covered	Perennial evergreen tree. Grows on sandstone soils within chaparral and closed-cone coniferous forest. Found in San Bernardino and San Diego counties. Flowering period: none. Elevation: 95 to 525 feet (30 to 160 meters).	Not Likely to Occur. Chaparral and forest habitats do not occur onsite, the site is below the species known elevation range, and this perennial evergreen tree would have likely been observed during surveys if present.
<i>Quercus dumosa</i>	Nuttall's scrub oak	-- / -- CRPR 1B.1 HMP Covered	Perennial shrub. Occurs on sandy or clay loam soils near the coast within coastal scrub, chaparral, cismontane woodland, and riparian woodland. Found along the coast, San Jacinto Mountains, and Peninsular Ranges of southern California. Flowering period: March to May. Elevation: below 1,310 feet (400 meters).	Not Likely to Occur. Small areas of coastal scrub with sandy soils occurs on site, however this perennial shrub would have likely been observed during surveys if present.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Selaginella cinerascens</i>	Ashy spike-moss	-- / -- CRPR 4.1	Perennial herb. Grows in sunny spots or under shrubs within coastal sage scrub and chaparral. Often associated with “red clay” soils. Found in coastal regions from southern Los Angeles County south to San Diego County. Flowering period: none. Elevation: below 1,804 feet (550 meters).	Low. Coastal sage scrub is present in limited amounts, however preferred clay soils do not occur and soils on site have been subject to past disturbance making them unlikely to support this species.
<i>Sphenopholis interrupta</i> ssp. <i>californica</i>	Baja California oatgrass	-- / -- CRPR 1B.1	Annual grass-like herb. Grows on friable clay lenses in dense coastal chaparral. Thought to be extinct but rediscovered near Carlsbad in 2020. Prior to this discovery, there were only two representative specimens from Baja, Mexico, both from 1886.	Not Likely to Occur. Chaparral habitat is not present on site.
<i>Stipa diegoensis</i>	San Diego County needle grass	-- / -- CRPR 4.2	Perennial herb. Occurs in rocky, mesic soils near streams or along the coast within coastal scrub and chaparral. Found in Santa Barbara, Orange, and San Diego counties and the Channel Islands. Flowering period: February to June. Elevation: 30 to 2,600 feet (10 and 800 meters).	Not Likely to Occur. Stream habitat with rocky soils does not occur onsite.
<i>Suaeda esteroa</i>	Estuary seablite	-- / -- CRPR 1B.2	Perennial herb. Found in coastal salt marshes and swamps from Ventura County south to San Diego County. Flowering period: May to October. Elevation: below 15 feet (5 meters).	Not Likely to Occur. Alkaline wetland habitat does not occur onsite, and the site is above the known elevation range for the species.

Scientific Name	Common Name	Status	Habitat, Ecology and Life History	Potential to Occur
<i>Suaeda taxifolia</i>	Woolly seablite	-- / -- CRPR 4.2	Shrub. Occurs in the margins of coastal salt marshes, coastal dunes, and coastal bluff scrub from San Luis Obispo County south San Diego County. Flowering period: all year. Elevation: below 49 feet (15 meters).	Not Likely to Occur. Coastal dune and salt marsh habitat does not occur onsite, and the site is above the known elevation range for the species.

¹ Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare

² CNPS = California Native Plant Society Rare Plant Rank: 1A—presumed extirpated in California and either rare or extinct elsewhere; 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—more information needed; 4—watch list for species of limited distribution. Extension codes: .1—seriously endangered; .2—moderately endangered; .3—not very endangered.

³ HMP Covered = City of Carlsbad Habitat Management Plan HMP Covered Species; Narrow Endemic = Plants identified as narrow endemic in the HMP.

Not Likely to Occur—There are no present or historical records of the species occurring on or in the immediate vicinity, (within one mile) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur—There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat onsite, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur—The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within one mile). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur—There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within one mile).

Species Present—The species was observed on the Project Site at the time of the survey or during a previous biological survey

Appendix D

Sensitive Animal Species with Potential to Occur

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
INVERTEBRATES				
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	FE / -- HMP Covered Species; Narrow Endemic	Restricted to vernal pools and other ephemeral basin in southern California from coastal Orange County to San Diego County. Found in seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.	Low Potential to Occur. Although the species has been previously recorded southwest of the project site within HMP Hardline Preserve, suitable habitat does not occur within the project site for this species.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE / -- HMP Covered Species; Narrow Endemic	In California, occurs from Los Angeles County south to coastal San Diego County, and east to western Riverside County. Found in deep seasonal vernal pools, ephemeral ponds, stock ponds, and other human modified depressions at least 30 centimeters deep. Associated with grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.	Not Likely to Occur. Suitable vernal pool habitat does not occur within the project site, and the species has not been recorded within the immediate vicinity.
<i>Cicindela latesignata latesignata</i>	western beach tiger beetle	-- / --	Inhabits mudflats and beaches in coastal San Diego County.	Not Likely to Occur. Suitable mudflat and beach habitat does not occur within the project site.
<i>Tryonia imitator</i>	mimic tryonia	-- / --	Very small water snail occurring along coastal California from Sonoma County south to San Diego County. Inhabits brackish waters of coastal lagoons, creeks, sloughs, and marshes.	Not Likely to Occur. Suitable brackish wetland habitat does not occur within the project site.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
Reptiles				
<i>Arizona elegans occidentalis</i>	California glossy snake	-- / SSC	Occurs along the coastal regions of California from San Francisco south to San Diego County; though it is absent along the central coast. Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas and areas with soils loose enough for easy burrowing.	Low Potential to Occur. Open areas with suitable scrub and grassland habitat are present within the edges of and alongside the project site, however surrounding development reduces the likelihood of this species traveling to and occurring onsite.
<i>Aspidoscelis hyperythra beldingi</i>	Belding's orange-throated whiptail	-- / -- HMP Covered Species	Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego counties on the western slopes of the Peninsular Ranges at elevations below 3,500 feet. Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species is correlated with the presence perennial plants which provide a food base for its major food source, termites.	Low Potential to Occur. Open areas with suitable scrub and grassland habitat are present within the edges of and alongside the project site, however surrounding development reduces the likelihood of this species traveling to and occurring onsite.
Birds				
<i>Charadrius nivosus nivosus</i>	western snowy plover	FT / SSC HMP Covered Species	Breeds and winters along the coast of California. Nesting habitat includes sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries within 50 miles of the ocean. Prefers sand, silt, or dry mud with even surface, avoiding rocky or broken ground. Exhibits high breeding site fidelity. In winter, found on many of the beaches used for nesting, as well as others where they do not nest. Also occurs in constructed salt ponds and on estuarine sand and mud flats.	Low Potential to Occur. Although the species has previously been recorded along the beach to the west of the project site, suitable sandy soils and saline wetland habitat do not occur within the project site.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
<i>Sternula antillarum browni</i>	California least tern	FE / SE -- / FP HMP Covered Species	Occurs locally along California coastal regions breeding in colonies from San Francisco Bay south to San Diego County. Nests on relatively bare or sparsely vegetation beaches and mudflats near water. Forages in the bays and estuaries near their colonies, on the ocean near shore, and at inland lakes in the coastal lowland. In San Diego nesting sites occur at Aliso Creek, the Santa Margarita River mouth, Batiquitos Lagoon, San Elijo Lagoon, Mission Bay, Naval Training Center in the San Diego Bay, salt works, and Tijuana River mouth.	Not Likely to Occur. Suitable beach and mudflat nesting habitat and foraging habitat do not occur within the project site.
<i>Rallus obsoletus levipes</i>	light-footed Ridgway's rail	FE / SE -- / FP HMP Covered Species	One of six recognized subspecies occurring as a resident in coastal salt marshes and lagoons from Santa Barbara County south to Baja California. The species is found primarily in tall, dense cordgrass and occasionally pickleweed (<i>Salicornia</i> ssp.) in the low marsh zone. Also found in freshwater marshes in winter.	Not Likely to Occur. Suitable marsh habitat does not occur within the project site.
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	BCC / SE HMP Covered Species	Year-round resident of coastal salt marshes within southern California from Santa Barbara County south to San Diego County. Particularly associated with salt marsh habitat dominated by dense pickleweed (<i>Salicornia</i> ssp.) within which most nests are found.	Not Likely to Occur. Suitable salt marsh habitat does not occur within the project site.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
<i>Polioptila californica californica</i>	coastal California gnatcatcher	FT / SSC HMP Covered Species	Year-round resident of California occurring from Ventura County south to San Diego County, and east to the western portions of San Bernardino and Riverside Counties. Typically occurs in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 3,000 feet. Composition of sage scrub in which gnatcatchers are found varies though California sagebrush (<i>Artemisia californica</i>) present as dominant or co-dominant species. Mostly absent from areas dominated by black sage (<i>Salvia mellifera</i>), white sage (<i>Salvia apiana</i>), or lemonade berry (<i>Rhus integrifolia</i>), though may occur more regularly in inland regions dominated by black sage.	Moderate Potential to Occur. Although suitable sage scrub habitat is limited and disturbed within the project site, the species has been previously recorded nearby including immediately west of the central portion, and approximately one mile south of the southern portion of the project site.
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	BCC / SSC	One of seven subspecies occurring restricted to southern California from southern Orange County and San Diego County. Occupies native scrub vegetation with thickets of mature cacti consisting of cholla (<i>Cylindropuntia</i> spp.) or prickly-pear cactus (<i>Opuntia littoralis</i>). Cacti must be tall enough to support and protect the bird's nest (typically 3 feet or more in height). Surrounding vegetation usually consists of coastal sage scrub habitat with shrubs normally below the level of nest placement.	Not Likely to Occur. Suitable sage scrub is present within the project site, however required thickets of mature cacti are not present.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE / SE HMP Covered Species	In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo, San Bernardino, and Riverside Counties. Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood (<i>Populus</i> spp.) and willows (<i>Salix</i> spp.) with mule fat (<i>Baccharis salicifolia</i>), oaks (<i>Quercus</i> spp.), and sycamore (<i>Platanus racemosa</i>), and mesquite (<i>Prosopis</i> spp.) and arrowweed (<i>Pluchea sericea</i>) within desert habitats. Can be tolerant of the presence of non-native species such as tamarisk (<i>Tamarix</i> spp.).	Low Potential to Occur. Suitable riparian habitat is very limited within and adjacent to the project site, consisting of a single isolated stand of habitat totaling less than 0.1 acre. The species is not expected to occur in or adjacent to the project limits due to the very small size of suitable habitat present and general lack of larger expanses of suitable habitat in the vicinity. A single USFWS/CNDDDB record of this species occurs in the project vicinity as an incidental detection west of the railroad in 2002.

¹ Listing codes are as follows: FE = Federally Endangered; FT = Federally Threatened; FC= Federal Candidate species; BCC = Birds of Conservation Concern; SE = State of California Endangered; FP = State of California Fully Protected; WL = State of California Watch List; SSC = State of California Species of Special Concern.

² City of Carlsbad Habitat Management Plan (HMP) Covered Species; Narrow Endemic = Animals that only occur within the area.

Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within one mile) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur - There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within one mile). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within one mile).

Species Present - The species was observed on the Project Site at the time of the survey or during a previous biological survey