County of San Diego

Planning and Development Services

Local Coastal Program Update

DRAFT
EXISTING CONDITIONS, VULNERABILITY AND RISK, and KEY ISSUES REPORT

April 2016

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List of Acronyms

CAP	Climate Action Plan
CC&Rs	Comprehensive Deed Restrictions
CCC	California Coastal Commission
CCT	California Coastal Trail
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CoSMoS	Coastal Storm Modeling System
County	County of San Diego
CRPR	California Rare Plant Ranks
CTMP	County Trails Master Plan
County's CZ	Coastal Zone (Unincorporated in County of San Diego)
DWR	California Department of Water Resources
EIR/EIS	Environmental Impact Report/Environmental Impact Statement

ENSO	El Niño Southern Oscillation
ESHA	Environmentally Sensitive Habitat Area
FEMA	Federal Emergency Management Agency
General Plan	San Diego County General Plan
GHG	greenhouse gas
HCP	habitat conservation plan
I-5	Interstate 5
IP	Implementation Plan
LCP	local coastal program
LUP	land use plan
MHHW	Mean Higher High Water
MLLW	Mean Lower Low Water
MSCP	Multiple Species Conservation Program
NAVD88	North American Vertical Datum of 1988
NCCP	Natural Communities Conservation Planning Act
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
PDO	Pacific Decadal Oscillation
RCA	Resource Conservation Area
SCIC	South Coastal Information Center
SELRP	San Elijo Lagoon Restoration Project
SLR	sea level rise
USGS	U.S. Geological Survey
WPO	Watershed Protection, Stormwater Management, and Discharge Control Ordinance
^{o}F	degrees Fahrenheit

1 Introduction

The County of San Diego (County) initiated the development of a local coastal program (LCP) following the approval of the California Coastal Act of 1976 (Coastal Act); however, the adjacent Cities of Solana Beach and Encinitas incorporated in 1986, which substantially reduced the size of the County's LCP area. Given those circumstances, the County ultimately deferred acceptance of the California Coastal Commission's (CCC) certification of the LCP. The LCP has been revised a number of times since then and was most recently revised in 2011, but it has not been approved by the CCC.

The County's Planning and Development Services Department recently received a grant from the CCC to update the existing LCP to be in conformance with the Coastal Act. Accordingly, the LCP will be updated to reflect current circumstances and new scientific information, including climate change and sea level rise (SLR).

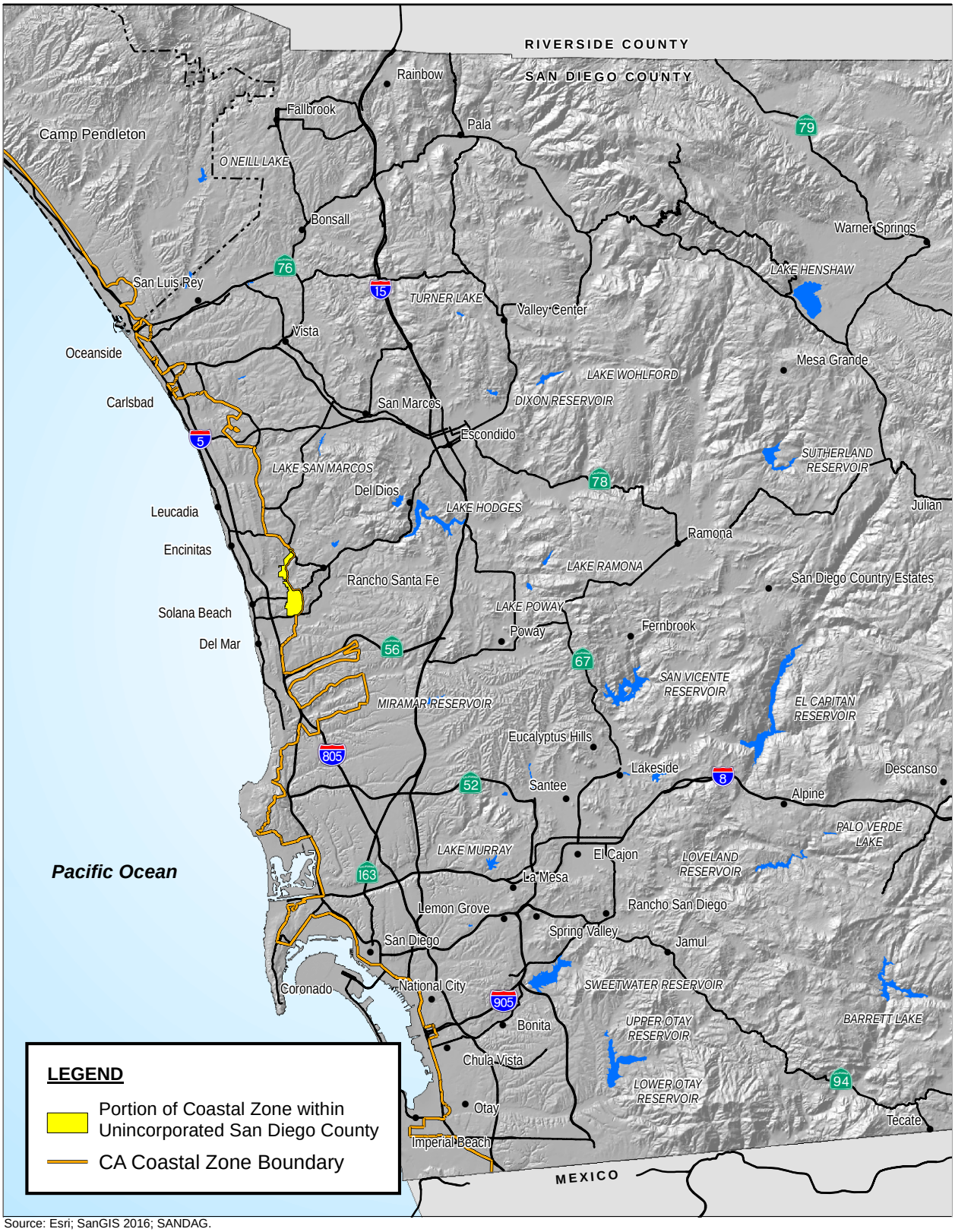
1.1 Purpose and Organization

LCPs are basic planning tools used by local governments to guide development in the coastal zone, in partnership with the CCC. Currently, due to the uncertified status of the County's LCP, property owners within the County's Coastal Zone (CZ) must currently go through the CCC to receive coastal development permits in addition to obtaining permits required by the County (Figures 1-1 and 1-2). Upon certification of its LCP, the County would assume responsibility for issuing coastal development permits, which would streamline the application process for property owners by eliminating the need to go to the CCC for approval.

To support the LCP update, this report summarizes existing data, identifies SLR vulnerabilities and risks, and identifies key issues for consideration in the LCP. The contents of this report are consistent with the CCC's Sea Level Rise Policy Guidance (SLR Policy Guidance) for California coastal communities (CCC 2015).

The report includes the following sections:

1. Introduction
2. Planning Framework and Context
3. Existing Conditions
4. Climate Change Vulnerabilities and Risk
5. Key Issues Analysis



Source: Esri; SanGIS 2016; SANDAG.

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Figure 1-1
Regional Map

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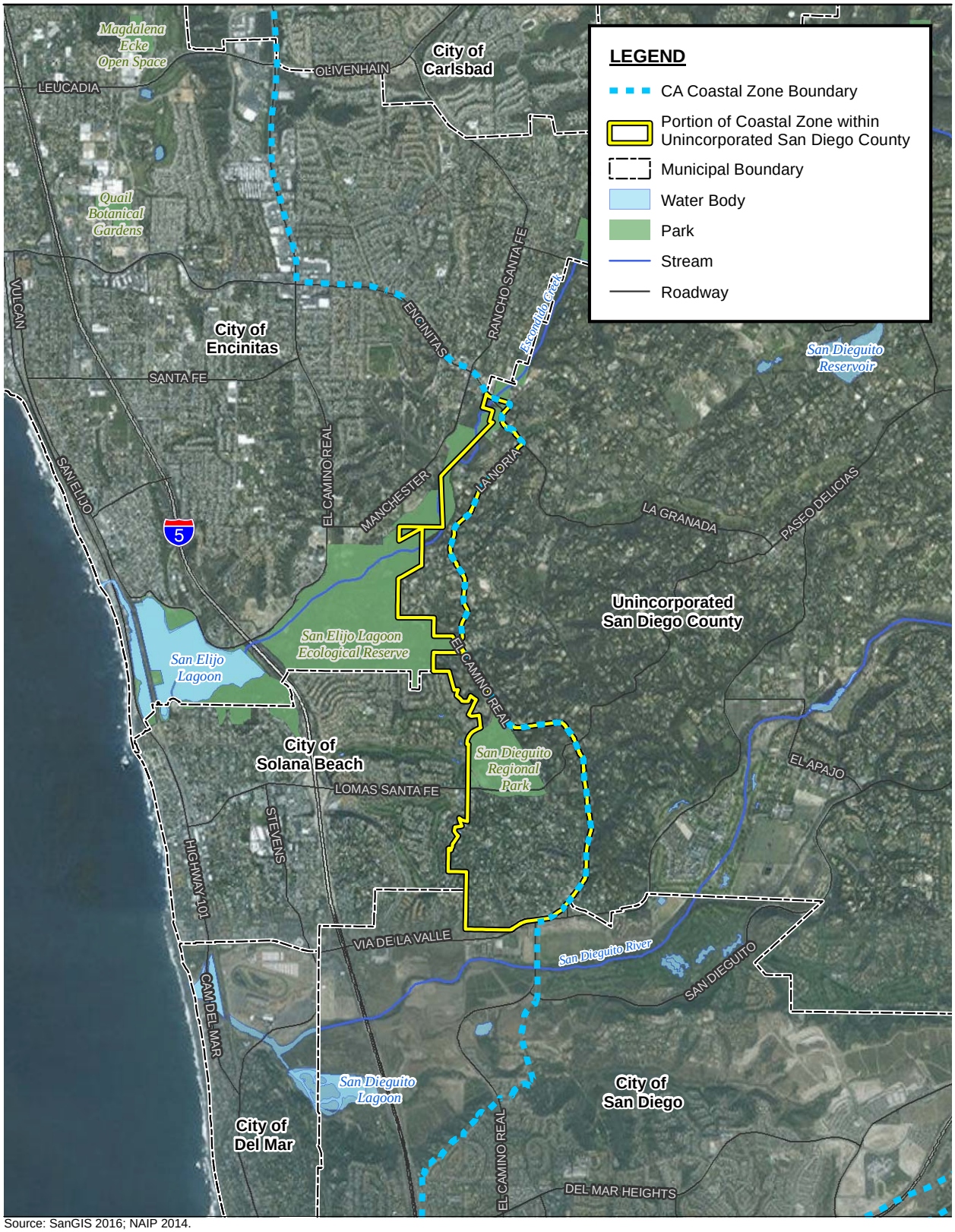

Source: SanGIS 2016; NAIP 2014.

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Figure 1-2
Local Context

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2 Planning Framework and Context

The California Coastal Act of 1976 declares that "to achieve maximum responsiveness to local conditions, accountability, and public accessibility it is necessary to rely heavily on local government and local land use planning procedures and enforcement" in carrying out the State of California's coastal objectives and policies. To this end, the Coastal Act directs each local government lying wholly or partly within the coastal zone to prepare an LCP for its portion of the coastal zone. The LCPs are the basic planning tools used to carry out the partnership between the state and local governments in their shared stewardship of the coast. Each LCP includes a land use plan (LUP) that prescribes land use classifications, types and densities of allowable development, and goals and policies concerning development; and zoning ordinances needed to implement the plan.

The overarching goal of the County of San Diego is to protect and enhance the County's coastal environment, natural resources, and recreational values while providing superior customer service to residents and property owners. To achieve this important community goal, the County has identified specific objectives for the LCP update:

- Develop a comprehensive LCP
- Secure CCC certification

2.1 History

The County initiated the development of an LCP, following the approval of the California Coastal Act of 1976. The San Dieguito Land Use Plan (2011b), inclusive of a LUP and an Implementation Plan (IP), was developed to implement the Coastal Act's statewide goals and policies at the local level.

The County's LUP and IP were certified in 1982 and 1985, respectively, by the CCC. However, the County deferred acceptance of the certified LCP due to the incorporation of the Cities of Solana Beach and Encinitas, which drastically reduced the size of the LCP area under County jurisdiction. Though the County adopted revised LUPs for the LCP in 1988 and 2011, these documents were not approved by the CCC.

Several efforts were made to revise the County's LCP over the past 30 years, although a comprehensive update was not undertaken to maintain the document's relevance under the Coastal Act and recent guidelines set forth by the CCC to address potential impacts from climate change and SLR. The uncertified status of the County's LCP leaves property owners within the County's CZ to seek coastal development permits through the CCC in addition to the County permit requirements and processes. As such, the County is undertaking an LCP update with the ultimate goal of receiving CCC certification and assuming responsibility for issuing coastal development permits within the County's CZ (San Diego County 2015a).

2.2 Study Area Description

The County's CZ is located in the San Dieguito community and consists of approximately 1,050 acres of land within the unincorporated area and jurisdiction of the County of San Diego (Figure 1-1). The San Dieguito Community Plan area is a low-density residential area surrounded by rapidly urbanizing neighborhoods (Figure 1-2):

- The City of Encinitas to the northwest;
- The City of Solana Beach along the western edge;
- The City of San Diego along the southern edge;
- The unincorporated neighborhoods of Rancho Santa Fe and Fairbanks Ranch to the northeast and southeast of the County's CZ boundary, respectively.

The County's CZ is located on the east side of Interstate 5 (I-5). The main roads around the County's CZ are:

- La Noria along the northeastern boundary of the County's CZ, which turns into the eastern and southeastern boundary of El Camino Real;
- Via de la Valle along a portion of the southern boundary of the County's CZ; and
- Highland Drive along the western portion of the County's CZ boundary, adjacent to San Dieguito Regional Park.

San Elijo Lagoon Ecological Reserve is adjacent to the northwest boundary of the County's CZ, while Escondido Creek (and Manchester Avenue in near parallel) roughly form the northwestern edge of the County's CZ boundary. Saltwater ocean tides enter San Elijo Lagoon and meet the freshwater streams from Escondido Creek and La Orilla Creek. As a coastal wetland, San Elijo Lagoon contains habitat for sensitive, threatened, and endangered plants and animals, including resident and migratory wildlife. Though much of the County's CZ is composed of and surrounded by semi-rural to urban development, areas adjacent to San Elijo Lagoon Ecological Reserve consist of a variety of riparian woodland, marsh, chaparral, and coastal sage scrub communities (San Elijo Lagoon Conservancy 2016). Topography for the County's CZ ranges from 10 to 320 feet above sea level, with variable hills throughout the County's CZ that provide limited views of San Elijo Lagoon Ecological Reserve and surrounding neighborhoods.

2.3 Relevant County Programs and Policies

This section identifies the County's existing or in-progress plans, programs, and policies that are relevant to the development of policy updates for the LCP. The existing policies that may be incorporated as part of the LCP LUP are identified below, where applicable. The LCP update will be consistent with the following plans, programs, and policies. Exceptions where the LCP update may produce inconsistencies with existing plans will be noted in this report.

2.3.1 San Diego County General Plan

In August 2011, the San Diego County Board of Supervisors approved the San Diego County General Plan (General Plan; San Diego County 2011a). This was the first comprehensive update of the San Diego County General Plan since 1978. The updated General Plan is based on a set of guiding principles designed to protect the County's unique and diverse natural resources and maintain the character of its rural and semi-rural communities. It reflects an environmentally sustainable approach to planning that balances the need for adequate infrastructure, housing, and economic vitality, while maintaining and preserving each unique community within San Diego County, agricultural areas, and extensive open space.

Community Development Model

As part of the General Plan, the Community Development Model identifies three Regional Categories—Village, Semi-Rural, and Rural Lands—that broadly reflect the different character and land use development goals of the County's developed areas, its lower-density residential and agricultural areas, and its very low-density or undeveloped rural lands. The Community Development Model directs the highest intensities and greatest mix of uses to Village areas, while directing lower-intensity uses, such as estate-style residential lots and agricultural operations, to Semi-Rural areas. The Semi-Rural category may effectively serve as an edge to the Village, as well as a transition to the lowest-density category, Rural Lands, which represents large open space areas where only limited development may occur.

Most of the land within the County's CZ is designated as Semi-Rural and Rural; there are no Village Boundaries, Rural Village Boundaries, or Special Studies Areas identified within the County's CZ as part of the General Plan. Figure 2-1 shows the Applicable Regional Categories within the San Dieguito Community Planning Area and the County's CZ area. Table 1 provides a description of the regional categories as described in the General Plan.

The three regional categories serve as a broad set of development classifications and do not specify land uses, but rather the general regional structure, character, scale, and intensity of development. The Regional Categories allow many different land use types to be planned in a more unified, regional manner.

Land Use Designations

The General Plan guides the intensity, location, and distribution of land uses in the County's CZ by identifying land use designations. Land uses with the General Plan are organized through a two-tier hierarchy, which includes Regional Categories (Tier 1) and Land Use Designations (Tier 2). The Regional Categories that apply to the County's CZ are described below in Table 1.

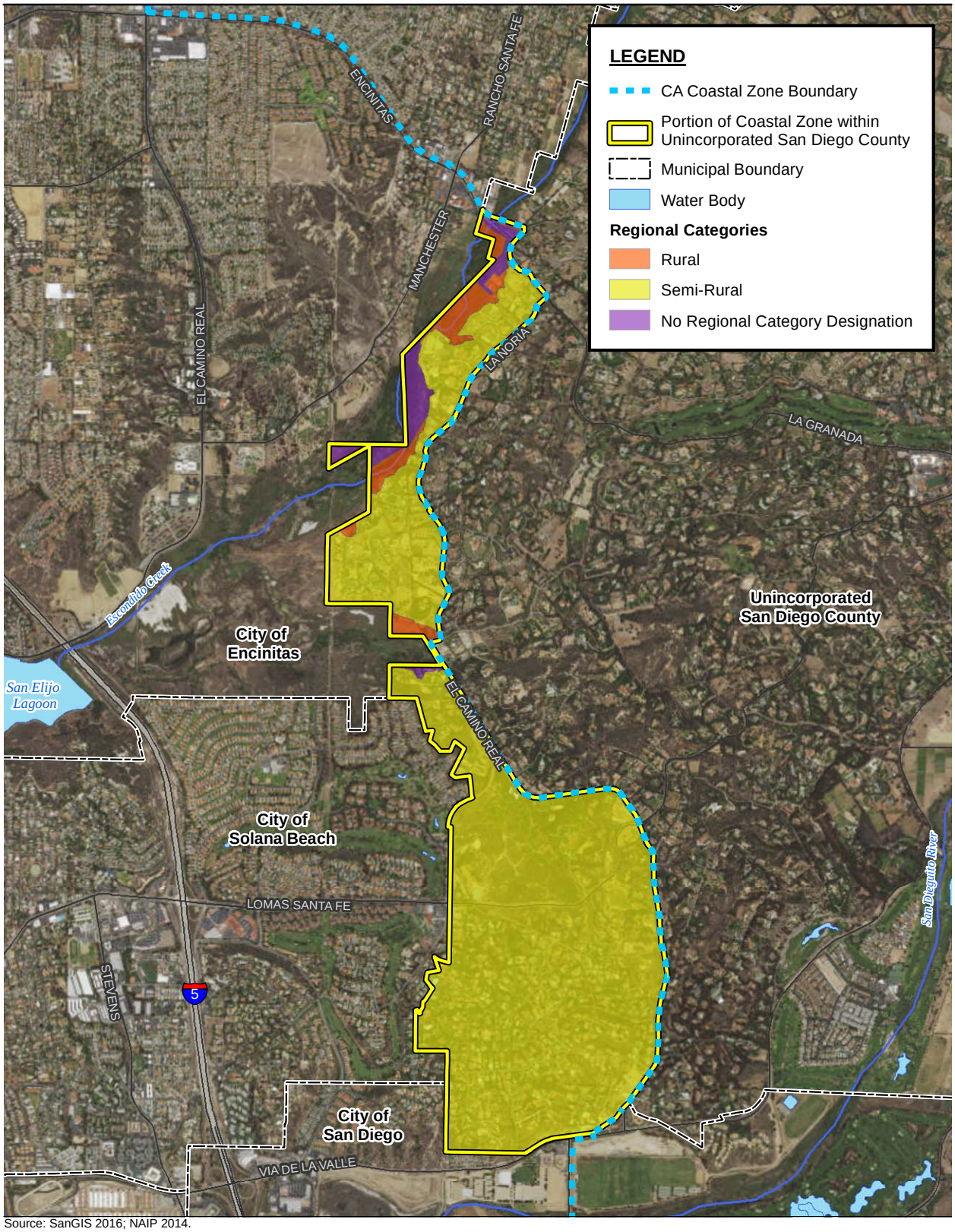
The Land Use Designations that apply to the County's CZ include only some of the Land Use Designations included in the General Plan at large. Land within the County's CZ is primarily designated as Semi-Rural Residential (SR-2). The remaining land within the County's CZ is designated as Rural Lands (RL-20), Open Space (Conservation), Open Space (Recreation), and small pockets of Office Professional (Semi-Rural)

and Public/Semi-Public Facilities (P/SP). The Land Use Designations applicable to the County's CZ are described in Table 2 and shown in Figure 2-2.

The General Plan also states that *"More specific standards may be established for each Land Use Designation to implement the goals and policies of the General Plan, through tool such as the Zoning Ordinance, to address impacts related to specific land uses or the needs of an individual community."*

Table 1 – Description of Regional Categories from the San Diego County General Plan

Regional Category	Description
Village	The Village category identifies areas where a higher intensity and a wide range of land uses are established or have been planned. Typically, Village areas function as the center of community planning areas and contain the highest population and development densities. Village areas are typically served by both water and wastewater systems. Ideally, a Village would reflect a development pattern that is characterized as compact, higher density development that is located within walking distance of commercial services, employment centers, civic uses, and transit (when feasible).
Semi-Rural	The Semi-Rural category identifies areas of the County that are appropriate for lower-density residential neighborhoods, recreation areas, agricultural operations, and related commercial uses that support rural communities. Semi-Rural areas often function as a transition between the Village and Rural Lands categories, providing opportunities for development, but without the intensity and level of public services expected in Villages and with design approaches that blend the development with the natural landscape. Semi- Rural residential densities are derived in consideration of the physical conditions, community character, and availability of public services, roads, and other infrastructure. Higher densities within the allowable range should be located near Village areas, while lower densities should be located near Rural Land areas. Site design methods that reduce on-site infrastructure costs and preserve contiguous open space or agricultural operations are encouraged.
Rural	The Rural Lands category is applied to large open space and very-low-density private and publicly owned lands that provide for agriculture, managed resource production, conservation, and recreation and thereby retain the rural character for which much of unincorporated County is known. Rural areas are not appropriate for intensive residential or commercial uses due to significant topographical or environmental constraints, limited access, and the lack of public services or facilities.



Source: SanGIS 2016; NAIP 2014.

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Figure 2-1
Applicable Regional Categories

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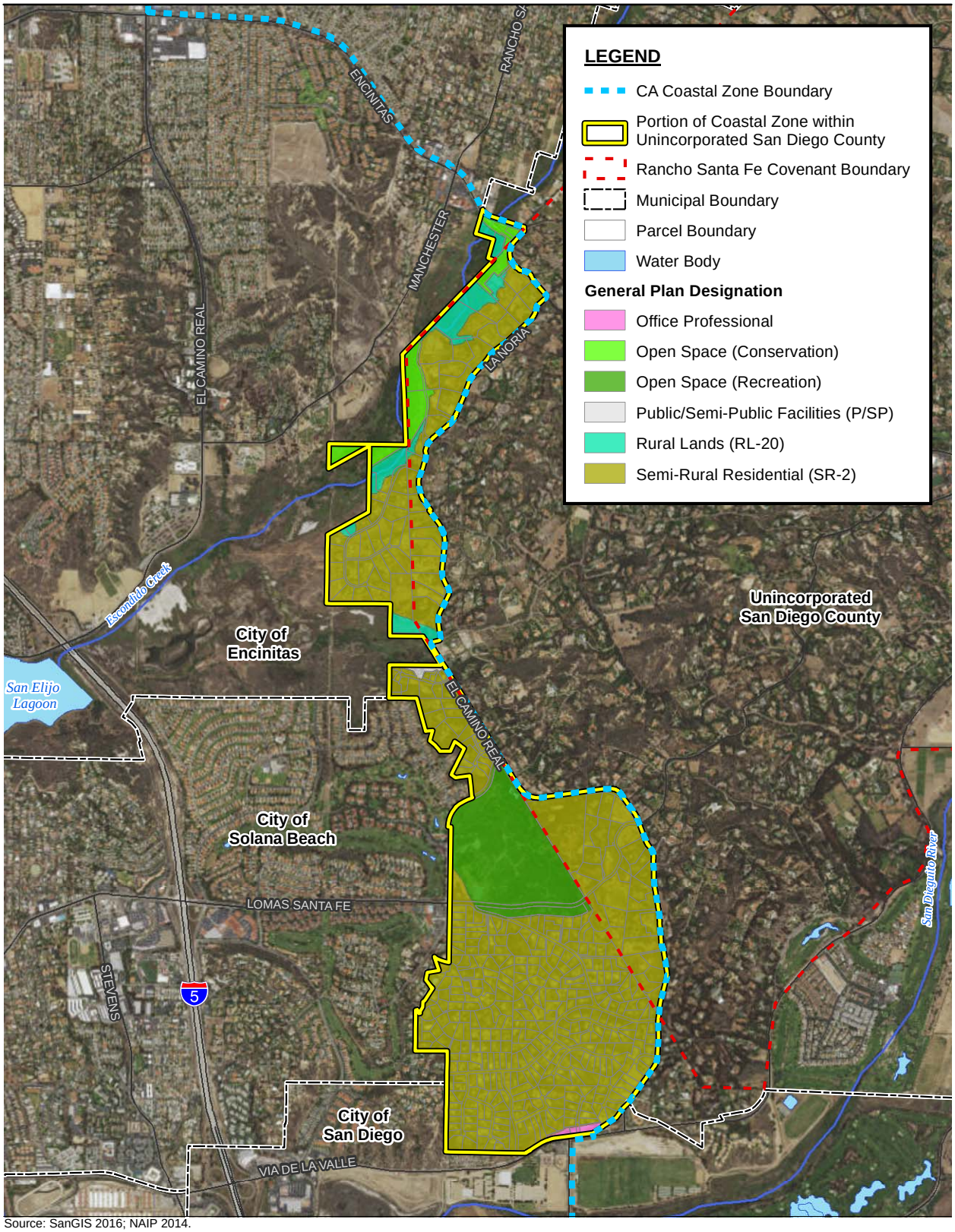
Table 2 – Applicable Regional Categories and Land Use Designations within the County's CZ

Land Use Designation	Description
Semi-Rural Residential (SR-2)	Semi-Rural Residential (SR-2) allows a base density of 1 dwelling units (du) / 2 gross acres (for slopes less than 25%). Adjustments are made for slope-dependent properties to allow 1 du / 8 gross acres (for slopes 25% to less than 50%), and 1 du / 8 gross acres for slopes 50% or greater. Residential development within Semi-Rural areas is not typically served by municipal water systems especially where water-intensive crops such as avocado and citrus are common.
Rural Lands (RL-20)	Rural Lands 20 (RL-20) allows 1 du / 20 gross acres. Rural Lands residential designations are intended to reflect the rural agricultural, environmentally constrained, and natural "backcountry" areas of the County. Residential development within rural lands is typically not served by either municipal water and or municipal sewer systems.
Office Professional (Semi-Rural)	Office Professional (Semi-Rural) provides areas dedicated to administrative and professional services as well as limited retail uses related to or serving the needs of the primary office uses. Residential development may also be allowed as a secondary use in certain instances. The maximum intensity of Office Professional within a Semi-Rural regional category is 0.45 floor-area ratio.
Open Space (Conservation)	Open Space (Conservation) is primarily applied to large tracts of land, undeveloped and usually dedicated to open space, that are owned by a jurisdiction, public agency, or conservancy group. Allowed uses include habitat preserves, passive recreation, and reservoirs. Grazing and other uses or structures ancillary to the primary open space use may be permitted if they do not substantially diminish protected resources or alter the character of the area. Such ancillary uses within this designation will typically be controlled by use-permit limitations. This designation is not normally applied to conservation easements within residential subdivisions on private lots.
Open Space (Recreation)	Open Space (Recreation) is applied to large, existing recreational areas. This designation allows for active and passive recreational uses such as parks, athletic fields, and golf courses. Uses and structures ancillary to the primary open space use may be permitted to enhance recreational opportunities only if they relate to the recreational purpose and do not substantially alter the character of the area.
Public/Semi-Public Facilities (P/SP)	Public and Semi-Public Facilities (P/SP) identifies major facilities built and maintained for public use, such as community service facilities. This designation may include privately owned facilities built and maintained for public use. A maximum FAC of 0.50 is permitted by this designation.



Source: SanGIS 2016; NAIP 2014.

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Figure 2-2
General Plan Land Uses

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2.3.2 San Dieguito Community Plan

Community Plans identify the individual community character for each community, along with community-specific planning and design issues such as local public and fire access road networks, town center and specific area plans, and design guidelines. Community Plans, adopted as an integral part of the County's General Plan, are policy plans specifically created to address the issues, characteristics, and visions of communities within the County.

The San Dieguito Community Plan was last updated in August 2011 concurrently with the General Plan. The Land Use section of the Community Plan states that the policies and recommendations in the Community Plan should "necessarily maintain a reasonable consistency with the goals and policies of the Land Use Element of the General Plan. The Land Use Element is designed to carry out the Regional Growth Management Plan."

The Community Plan for the San Dieguito Planning Area identifies many subareas and, where applicable, identifies specific policies for each. The County's CZ overlaps with only some of the subareas identified in the Community Plan. Community Plan subareas that exist within the County's CZ consist of:

- The western portions of the Rancho Santa Fe Covenant (indicated in Figure 2-2), which contains approximately 155 acres of the northern and 130 acres of the southern portions of the County's CZ; and
- The Sun Valley and Vicinity subarea, which dominates the southern portion of the County's CZ.

A summarized history, development policies, and guiding Community Plan policies for the County's CZ, Rancho Santa Fe Covenant, and the Sun Valley and Vicinity are provided in Appendix A of this report. Discussion pertaining to the significance of the Rancho Santa Fe Covenant as a historic California State Landmark is provided in Section 2.4.3 (Archaeological/Cultural Resources) of this report.

The Community Plan also identifies 12 Specific Plans for specific planned communities. However, none of these specific planned communities are located in or immediately adjacent to the County's CZ.

The San Dieguito Community Plan goals and findings relevant to the County's CZ are summarized here (see policies listed in Appendix A):

- *Community Character Goal* aims to provide for orderly development within the County's CZ to maintain the identities of historically established neighborhoods and the rural environment.
- *Residential Land Use Goal* aims to accommodate development that is consistent with the existing community environment, based on the semi-rural residential areas of Rancho Santa Fe and Sun Valley, which are largely built out.
- *Commercial Land Use* within the County's CZ is limited to a few parcels for mixed, office, and general commercial uses at the intersection of Via de la Valle and De la Valle Place. Surrounding policies do not support further expansion of commercial uses since it would detract from the existing rural residential character established in the County's CZ.
- *Agricultural Land Use Goal* aims to maintain and enhance the future of agriculture within the San Dieguito Community Plan area. Many of the residential estates within the County's CZ

engage in secondary agricultural uses (such as orchards and horsekeeping). There is a small pocket for agricultural use in the northern portion of the County's CZ, and the addition of future agricultural uses within the County's CZ is highly unlikely due to the established residential communities and existing ecological constraints.

- *Industrial Land Use Goal* aims to ensure future industrial development is compatible with the existing community character. There are no industrial land uses or zones within the County's CZ, and such future developments would be highly restricted and unlikely due to the established residential communities.
- *Circulation Goal* aims to accommodate various modes of transit to allow people to conveniently access services while maintaining the natural beauty and quality of life. Four road segments within the County's CZ are designated as "Light Collector Series." Table 3 (Mobility Element Network within the County's CZ) in Appendix A provides a listing of the specific road segments and associated improvements.

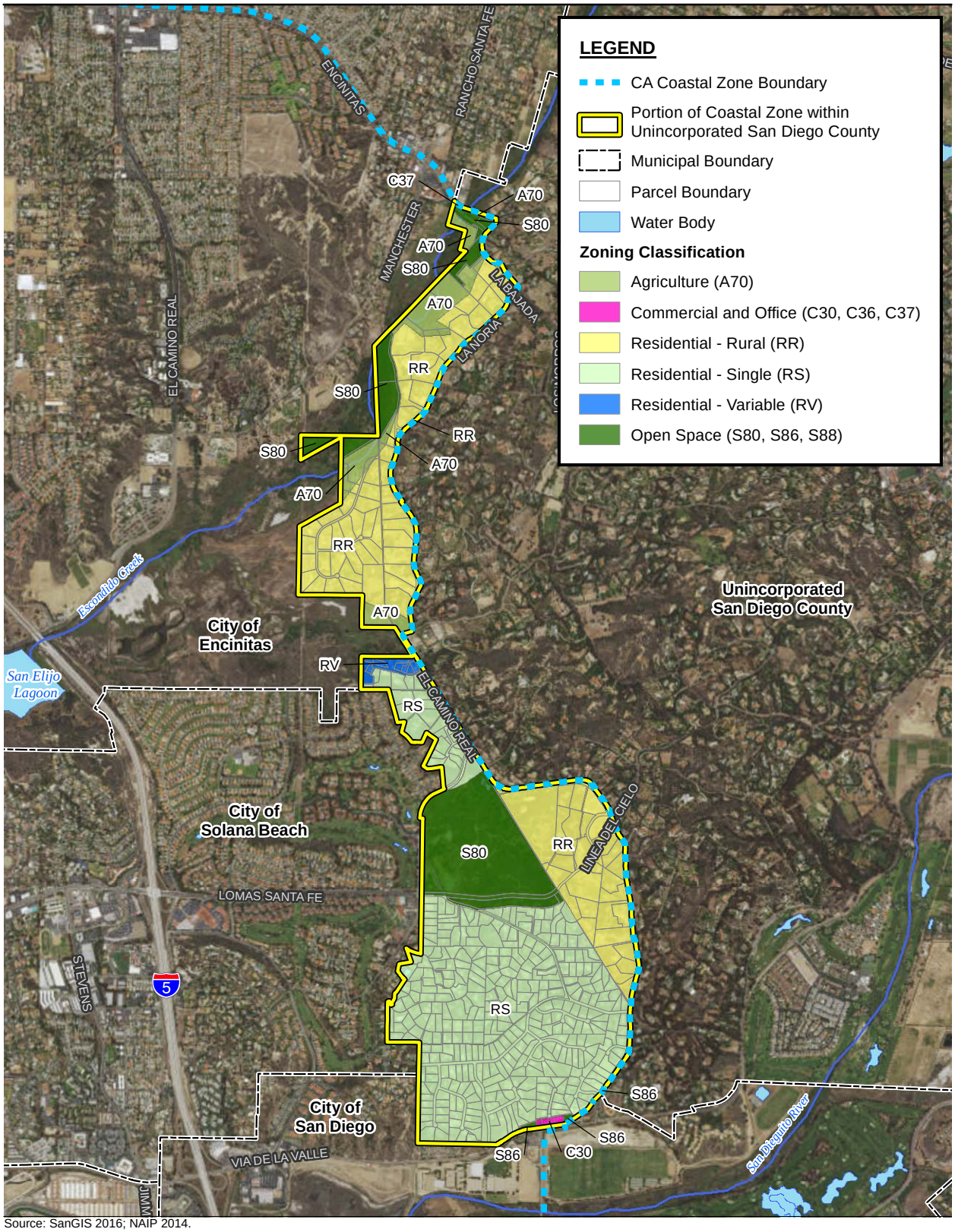
Public safety, services, and facilities that pertain to the San Dieguito Community Plan area and the County's CZ are discussed in Section 2.5 (Public Safety, Services, and Facilities Policies of San Dieguito Community Plan) of Appendix A.

2.3.3 Zoning

The Zoning Ordinance was adopted by the San Diego County Board of Supervisors to regulate land uses in the County of San Diego. The unincorporated area is divided into zones according to the present and potential uses of the land. The Zoning Ordinance and zoning maps must be consistent with the General Plan, because they are the primary methods for achieving the objectives of the Plan. The Use Regulations found in the Zoning Ordinance provide a more detailed description of those specific activities permitted under the Community Plan Designations. The Zoning Ordinance is not the only land use regulation that is applicable to development of property.

The Zoning Ordinance specifies the uses permitted, lot size, density, height, building types, animal regulations, and other requirements. The Zoning Ordinance separates each of these subjects and governs each with an individual designator. The designators are found in the appropriate schedules of the Zoning Ordinance. A "zone" is the combination of the Use Regulation and the other regulations, i.e., the entire zone "box." The Use Regulation is not the zone but specifies the permitted uses. In most cases, a dash (-) or blank space indicates that a particular designator is not used. However, in density, a dash (-) indicates the General Plan Land Use Designation will be referred to for the maximum allowed density. Because a zone is the combination of all designators, a change in any designator requires a zone reclassification.

A summary of the applicable Use Regulations within the County's CZ are described in Table 3 and shown in Figure 2-3. Some of the other significant designators applied to the Use Regulations are also noted where applicable.



Source: SanGIS 2016; NAIP 2014.

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Figure 2-3
Summary of Use Regulations

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Table 3 – Summary of Use Regulations in the County's CZ

Use Regulation	Description
RS – Single Family Residential	Family residential use is the principal and dominant use with other civic uses (essential services and fire protection), as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) also permitted. Other uses may be permitted subject to minor or major use permit.
RR - Rural Residential	Residential areas where agricultural use compatible with a dominant, permanent residential use is desired. Applied to areas where urban levels of service are not available and where large lots are desired. In addition to family residential, other civic uses (essential services and fire protection), as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) are permitted. Other uses may be permitted subject to minor or major use permit.
RV – Variable Family Residential	Family residential use is the principal and dominant use with other civic uses (essential services and fire protection), as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) also permitted. Other uses may be permitted subject to minor or major use permit.
S80 – Open Space	Land generally unsuitable for intensive development that is applied to hazard or resource areas, public lands, recreation areas, or lands subject to open space easement or similar restrictions. Allowable uses include those that have a minimal impact on the natural environment, or those compatible with hazards, resources, or other restrictions. All development requires site plan review. In addition to family residential, other civic uses (essential services and fire protection), as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) are permitted. Other uses may be permitted subject to minor or major use permit.
S86 – Parking	Areas identified and created for automotive parking in association with another dominant land use and to create physical separation between one type of use and another, or to accommodate off-street parking requirements for commercial or industrial uses. Permitted uses include other civic uses (essential services, fire protection, and parking services), as well as commercial uses (automotive and equipment: parking). Other uses may be permitted subject to minor or major use permit.
C30 – Office-Professional	Office-Professional use regulations are intended to create and enhance areas where administrative, office, and professional services are the principal and dominant use, where such uses do not involve high volumes of vehicular traffic. Typically applied near residential areas, and have a scale and appearance compatible with and complementary to adjacent residential uses, and have pedestrian as well as vehicular access. A variety of civic and commercial uses are permitted; other uses may be permitted subject to minor or major use permit.
A70 – Limited Agricultural	Primarily for agricultural crop production, with a limited number of small farm animals. Agricultural products raised on the premises may be processed. This designation is intended to protect moderate to high quality agricultural land. Permitted uses include family residential, civic uses (essential services and fire protection services), and agricultural uses (horticulture, tree crops, row and field crops, packing and processing: limited). Other uses may be permitted subject to minor or major use permit.

In addition to the Use Designations, the Zoning Ordinance specifies lot size, density, height, building types, animal regulations, and other requirements. In general, zoning within the County's CZ also requires large lots with large setbacks for residential uses. In addition, building heights are limited to 30

feet and two stories. Some of the parcels within the County's CZ have additional special regulations that are tailored to special circumstances. These special designations within the County's CZ include, but are not limited to, Flood Plain, Coastal Resource Protection Area, and Scenic (see Figure 2-4).

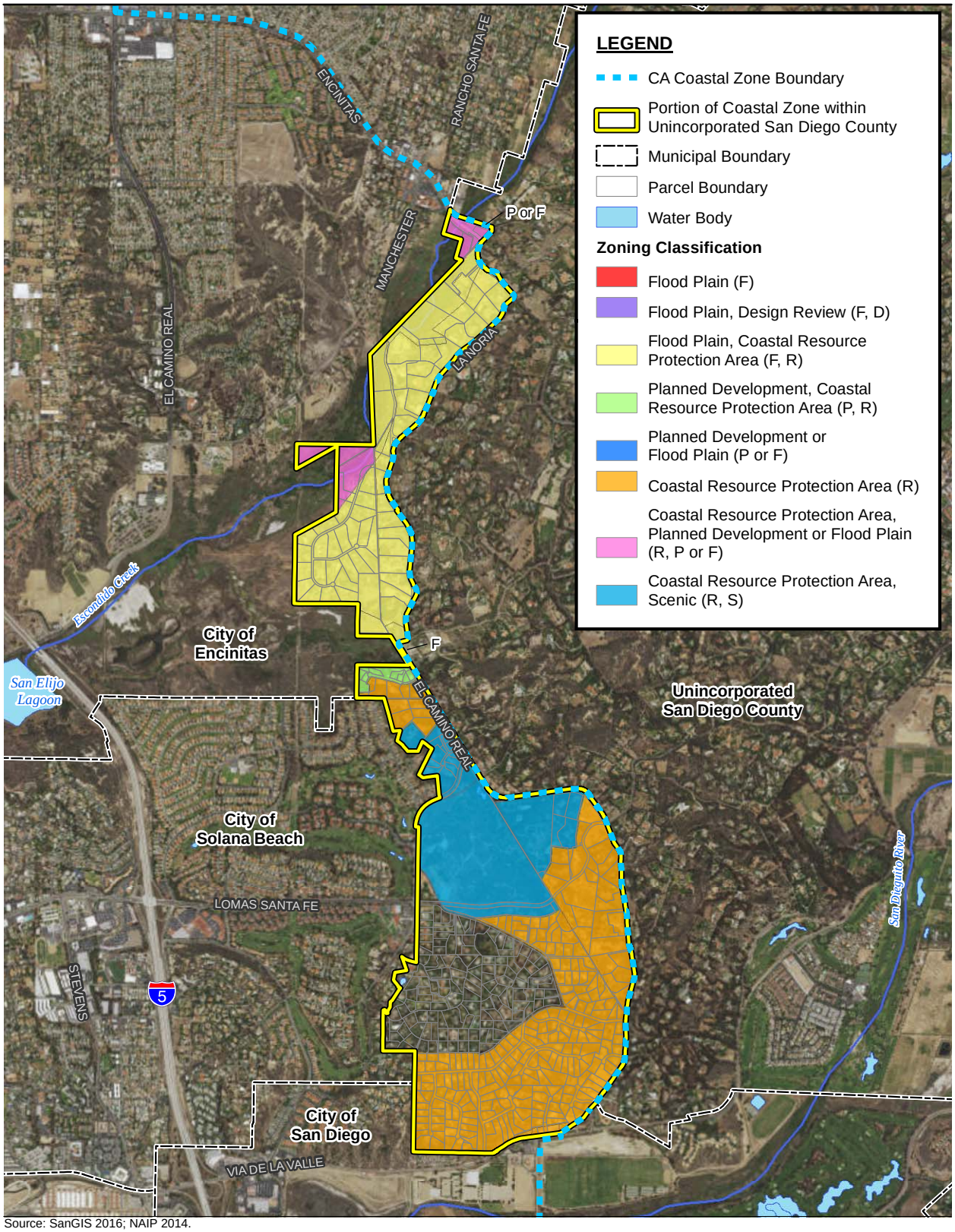
2.3.4 Other Relevant Programs

Several other relevant programs applicable to the unincorporated areas of San Diego County and the San Dieguito Community Plan area in relation to the County's CZ were analyzed as a part of this report.

County of San Diego Climate Action Plan (CAP): In July 2015, the County kicked off the new CAP for San Diego County. The CAP will be a comprehensive Plan that will outline the specific activities that the County will undertake to reduce greenhouse gas (GHG) emissions in the unincorporated communities of San Diego County. The CAP will also aid the County in meeting state mandated GHG reduction targets. The CAP will focus on activities that can achieve the greatest GHG emission reductions in the most technologically feasible and cost-effective manner. Project completion is anticipated in the fall 2017.

Multiple Species Conservation Program (MSCP): In 1992, the State of California enacted the Natural Communities Conservation Planning (NCCP) Act. This voluntary program allows the state government to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a threatened or endangered species, and the areas that are not as important. These NCCP plans may become the basis for a state permit to take threatened and endangered species in exchange for conserving their habitat. The federal government has a similar program under section 10(a) of the federal Endangered Species Act providing for the preparation of habitat conservation plans (HCPs). In California, the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (CDFW) have worked to combine the NCCP program with the federal HCP process, to provide permits for listed species. Local governments, such as the County, can take the lead in developing these plans and become the recipient of state and federal permits.

It should be noted that the County is currently working on the MSCP North County Plan. The County's CZ falls within the boundaries of the North County Plan. Thus, additional biology policies may apply to the County's CZ once the North County Plan is finalized.



Source: SanGIS 2016; NAIP 2014.

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Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-4
Special Zoning Designations

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San Diego County Multi-Jurisdictional Hazard Mitigation Plan: The Multi-Jurisdictional Hazard Mitigation Plan is a countywide plan that identifies risks and ways to minimize damage by natural and manmade disasters. The plan is a comprehensive resource document that serves many purposes such as enhancing public awareness, creating a decision tool for management, promoting compliance with state and federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination. The federal Disaster Mitigation Act of 2000 requires all local governments to create such a disaster plan in order to qualify for hazard mitigation funding.

San Diego County was one of the first in the State to tackle this planning effort on a region-wide basis in 2004, and the plan was last revised in 2010. The plan is currently being reviewed and revised to reflect changes to the hazards threatening San Diego as well as the programs in place to minimize or eliminate those hazards. This revision will include an evaluation of the impact climate change is having on the natural hazards facing San Diego.

The most recent draft of the Hazard Mitigation Plan (San Diego County 2010) identifies the variety of potential hazards that may occur within the County's CZ, including: rain-induced landslide hazards, liquefaction hazards, flood hazards, fire/wildfire hazards, earthquake hazards, and dam failure hazards (Table 4). In addition, there are critical facilities located within the County's CZ. No potential hazards were identified for coastal storms, erosion, or tsunamis, and for toxic or radiologic plume areas.

Table 4 – Potential Natural Hazards within the County's CZ

Category	Potential Hazard
Rain-Induced Landslide Hazard	- Landslide Susceptibility - Steep Slopes (+25%)
Liquefaction Hazard	- Liquefaction Potential - Peak Ground Acceleration 0.18 – 0.5 (Low Liquefaction Risk)
Flood Hazard	- 100-year floodplain - 500-year floodplain
Fire/Wildfire Hazard	- Moderate / High / Very High
Earthquake Hazard	- 0.16–0.2 (relatively low)
Dam Failure Hazard	- Dam Inundation Areas (High Risk)

County Trails Program/Community Trails Master Plan (CTMP): On January 12, 2005, the San Diego County Board of Supervisors unanimously approved the adoption of the County Trails Program and the CTMP. The trails program will be utilized to develop a system of interconnected regional and community trails and pathways. These trails and pathways are intended to address an established public need for recreation and transportation, but will also provide health and quality of life benefits associated with hiking, mountain biking, and horseback riding throughout the County's biologically diverse environments. The County Trails Program involves both trail development and management on public, semi-public, and private lands. The CTMP will be the implementing document for the County Trails Program and contains adopted individual community trails and pathways plans.

The San Dieguito Trails and Pathway Plan provides focused trail planning within the San Dieguito community. The CTMP also identifies the Coast to Crest Trail (San Dieguito River Park) as a regional trail. The goal of the San Dieguito River Park is to create a multi-use trail system for hikers, bicyclists, and horseback riders that will extend from the ocean at Del Mar to the San Dieguito River's source at Volcan Mountain, just north of Julian. This is a distance of approximately 55 miles. Some portions of the Coast to Crest Trail have been completed and are open to the public. In addition, some auxiliary trails with the San Dieguito River Park are open to public use but are not part of the Coast to Crest Trail system. Although the Coast to Crest Trail is planned as a regional trail through the San Dieguito community, it is not currently planned to occur within the County's CZ. Additional specific trail alignments will be defined as area master plans are completed, or as funding becomes available for individual segments. Future trails will be aligned along existing rights-of-way and back country dirt roads whenever possible, to minimize impacts to the natural environment, and existing uses such as farming, cattle ranching, and private residences (San Diego County 2009).

The San Dieguito Trails and Pathway Plan identifies community trails that serve a different function than regional trails. Community trails are local public facilities in proximity to residents, intended for multi-use passive recreation and alternative modes of transportation. The County has established two forms of non-motorized facilities that serve both transportation and recreation needs called "Trails" and "Pathways." Trails are typically away from vehicular roads that are primarily recreational in nature but can also serve as an alternative mode of transportation. They are soft-surface facilities for single or multiple uses by pedestrians, equestrians, and mountain bicyclists. Pathways are non-motorized transportation facilities located within a parkway or road right-of-way. A riding and hiking trail located in the road right-of-way is considered a pathway. These trails can range from a separated, soft-surface, single track adjacent to a rural road to a widened decomposed-granite shoulder intended for biking, hiking, and equestrian uses.

The San Dieguito Trails and Pathway Plan identified existing and proposed trails and pathways. Table 5 identifies and describes the three proposed trails in the San Dieguito Trails and Pathway Plan that are within the County's CZ. Further discussion pertaining to regional trail networks in and around the County's CZ is in Section 2.4.5 (Recreation and Public Access) of this report.

Storm Water Regulations, Reports, and Plans: The County's regulatory programs for storm water are established in County ordinances, principally the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO), at County Code sections 67.801 et seq. The WPO defines the requirements that are legally enforceable by the County in the unincorporated parts of San Diego County. These programs and other relevant regulations, reports, and plans are summarized in Section 4 (Other Relevant Plans and Policies) of Appendix A.

Table 5 – Existing and Proposed Trails and Pathways

Trail #37	**El Camino Real / Sun Valley Road Pathway** Trail Status: Proposed Trail Type: Pathway Trail Priority: 1 Estimated Length: 1.28 miles	**Connections:** City of San Diego Border Sun Valley / Lomas Santa Fe Connector Trail (#38) San Dieguito Park Trail (39)	**Trail Priority Criteria:** Connectivity Loop **Special Features:** San Dieguito Park connection
Trail #38	**Sun Valley / Lomas Santa Fe Connector Trail** Trail Status: Proposed Trail Type: Trail Trail Priority: 1 Estimated Length: 0.05 mile	**Connections:** El Camino Real / Sun Valley Road Pathway (#37) Sun Valley / Lomas Santa Fe Trail Easement	**Trail Priority Criteria:** Connectivity Loop **Special Features:** San Dieguito Park connection
Trail #39	**San Dieguito Park Loop Trail** Trail Status: Proposed Trail Type: Trail Trail Priority: 1 Estimated Length: 1.69 miles	**Connections:** El Camino Real / Sun Valley Road Pathway (37) Sun Valley / Lomas Santa Fe Trail Easement El Camino Real / Sun Valley Road Pathway (37)	**Trail Priority Criteria:** Connectivity Loop Setting **Special Features:** San Dieguito Park

Adapted from the San Dieguito Trails Map Index (San Diego County 2009).

Environmental Impact Report/Environmental Impact Statement for the San Elijo Lagoon Restoration Project (SCH # 2011111013): A Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) for the San Elijo Lagoon Restoration Project was circulated for public review in August 2014. The Draft EIR/EIS for the San Elijo Lagoon Restoration Project (SELRP) has two components: the restoration of San Elijo Lagoon and the disposal or reuse of materials excavated as part of the restoration. Although the County of San Diego is the lead agency for the EIR/EIS, and is a property owner of part of San Elijo Lagoon, the lagoon is west of the County's CZ boundary and the SELRP would not occur within the County's CZ.

San Elijo Lagoon is a coastal wetland formed where Escondido and La Orilla Creeks meet the Pacific Ocean in Encinitas. The lagoon provides habitat for sensitive, threatened, and endangered plants and animals, including resident and migratory wildlife. There are also public recreational opportunities within San Elijo Lagoon Ecological Reserve, including more than 7 miles of hiking trails. The reserve is owned and managed by the CDFW – 348 acres; County of San Diego Parks and Recreation Department – 567 acres; and the San Elijo Lagoon Conservancy – 62 acres (CDFW, 2016b).

As typical of coastal lagoons in southern California, San Elijo Lagoon has a relatively narrow connection to the ocean and a confluence of freshwater flows from upstream. Various transportation infrastructures that traverse the lagoon inhibit freshwater flow to the ocean and tidal flow into the lagoon. A mosaic of habitat and ecosystems occurs, from open water to dense freshwater marsh. The habitat is linked directly to tidal inundation and frequency. The species that utilize this mosaic vary by habitat (San Elijo Lagoon Conservancy 2016).

2.4 Existing Conditions and Uses

The County's CZ contains pockets of resource significant areas, and future development is constrained by existing residential developments and ongoing conservation efforts in San Elijo Lagoon Ecological Reserve. This section describes the existing physical, biological, cultural, and scenic resources, and public access and recreation within the County's CZ boundary.

2.4.1 Physical Resources

Climate

The Mediterranean climate in the County's CZ is typical for the San Diego region, characterized by warm dry summers and mild wet winters. The climate monitoring station nearest to the County's CZ is located in the City of Oceanside, for which average annual rainfall during the wet season between November and April is 10.54 inches. The average maximum temperature is 67.6 degrees Fahrenheit (°F) and the average minimum temperature is 52.9°F (WRCC 2016). Humidity is fairly high along the coast and around the County's CZ during the summer due to the marine layer (USGS 1983).

Hydrology and Water Quality

The northern portion of the County's CZ is part of the Carlsbad watershed and the southern portion is part of the San Dieguito River watershed. Escondido Creek is the primary hydrologic resource in the County's CZ, running between Manchester Avenue and La Noria/El Camino Real, and is part of the Escondido Creek watershed. Escondido Creek, its tributaries, and La Orilla Creek feed into San Elijo Lagoon prior to discharge into the Pacific Ocean. The San Dieguito River runs just south of the County's CZ. San Elijo Lagoon is a critical regional resource that provides freshwater and estuarine habitats for numerous plant and animal species. Existing topography within the County's CZ (10 feet to 320 feet above sea level) is not threatened by storm water intrusion. However, urbanization in and around the Carlsbad and San Dieguito River watersheds challenges the water and habitat qualities of San Elijo Lagoon in the form of accelerated freshwater storm flows, sediment loading, and year-round urban runoff (San Elijo Lagoon Conservancy 2016). Total phosphorus, nitrogen, and fecal coliform are the main pollutants of concern for the San Dieguito River watershed, and the same is true for the Carlsbad watershed with the addition of total suspended solids. Management of upstream development and activities that contribute to urban runoff are of key concern for the ongoing restoration projects in San Elijo Lagoon that are aimed at improving water and habitat qualities (San Elijo Lagoon Conservancy 2016). Section 3.2.1 (Existing Local Water Conditions) of this report provides additional information regarding existing risks for flooding and tsunamis, and Section 3.2.4 (Water Quality) provides additional information regarding water quality in San Elijo Lagoon and the County's CZ under potential future SLR conditions.

Geology and Soils

Escondido Creek and, to a lesser extent, La Orilla Creek are the historic principal transporters of alluvial sediment into San Elijo Lagoon. A majority of the lagoon sedimentation occurred during peak

construction and agricultural activities starting in the 1880s when the lower Escondido Creek area was settled (San Diego County 1996; San Elijo Lagoon Conservancy 2016). However, lagoon sedimentation rates have decreased over time due to urban buildout, reduced agriculture, and subsequent conservation practices (San Diego County 1996; San Elijo Lagoon Conservancy 2016).

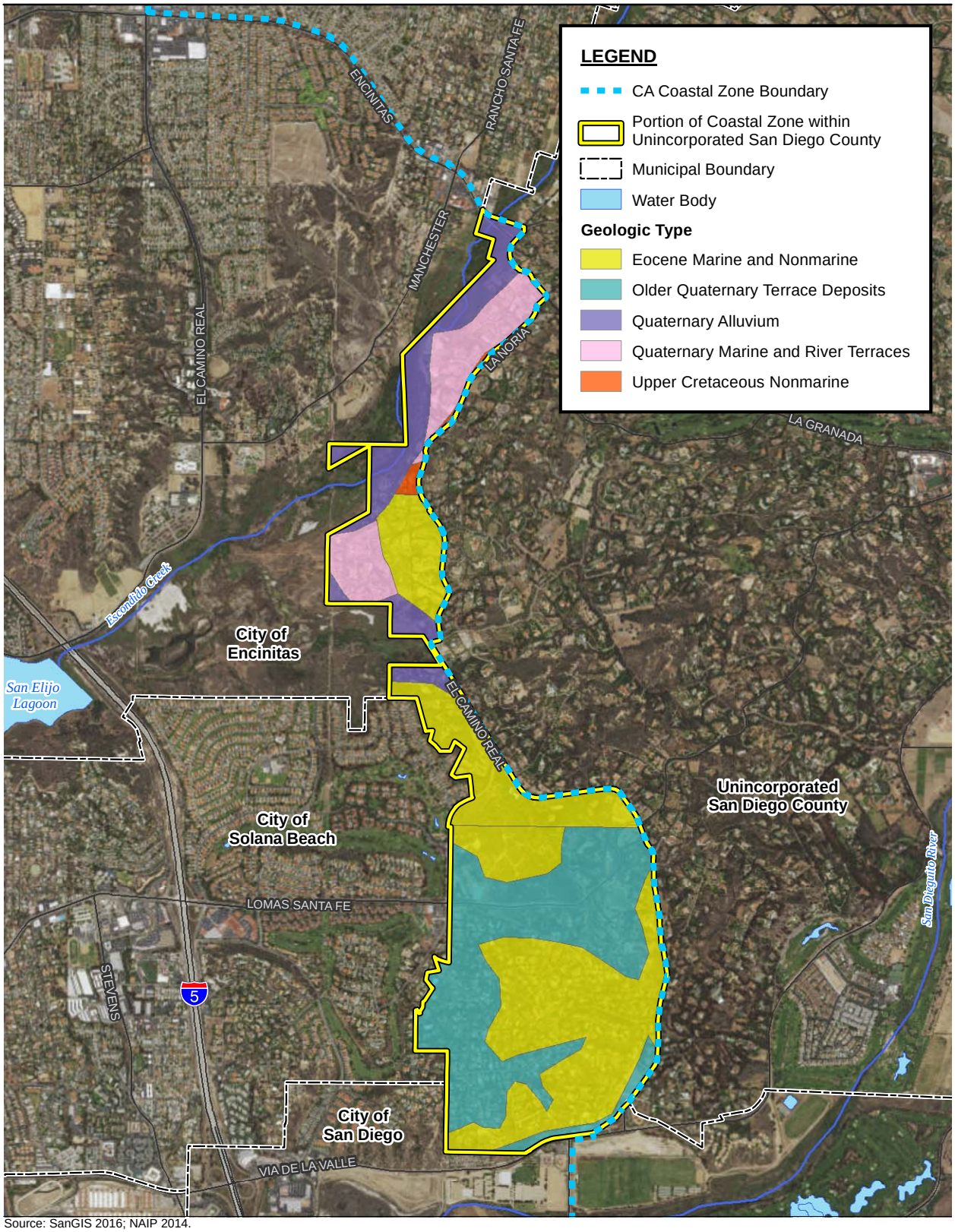
Geology within the County's CZ varies between the northern and southern areas, and is consistent with hydrologic activities in the vicinity (Figure 2-5). The northern area of the County's CZ is primarily defined by Quaternary alluvial deposits and Quaternary Marine and River Terraces along Escondido Creek, which is indicative of historic sedimentation flows from upstream to downstream into the lagoon and generally contains low potential for existence of paleontological resources in these areas (San Elijo Lagoon Conservancy 2016). The southern area of the County's CZ contains sandstones consistent with Torrey sandstone formation topped by Lindavista formation.

Similarly, soil composition within the County's CZ varies between the northern and southern areas (Figure 2-6). The northern area of the County's CZ is dominated by Chino silt loam (<2% slopes) and Huerhuero loam (15–30% slopes), both of which continue throughout the southern edge and east basin of the San Elijo Lagoon (San Elijo Lagoon Conservancy 2016). Soil composition in the southern area of the County's CZ is more varied, with loamy alluvial Huerhuero and Corralis loamy sands (>25% slopes) in the Rancho Serena and Horseman Valley communities and San Dieguito Regional Park, with Huerhuero loam and Terrace escarpments in the southwestern portion of the County's CZ in Sun Valley (>25% slopes).

The County's CZ is located approximately 3 miles from the northern end of the Rose Canyon fault zone, an active offshore/onshore fault capable of generating an earthquake of magnitude 7.2 on the Richter scale (San Elijo Lagoon Conservancy 2016). The Rose Canyon fault zone is considered the greatest potential threat to San Diego as a region in the event of an earthquake, due to its proximity to high-density populations and potential to generate moderate to severe groundshaking in the coastal area of northern San Diego County (San Diego County 2010). As noted in Table 4 (Potential Natural Hazards within the County's CZ) above, earthquake hazard potential within the County's CZ is relatively low.

Areas in the northern portion of the County's CZ, bounded between San Elijo Lagoon to the west and La Noria to the east, are most susceptible to rain-induced landsides according to Figure 4.3.5 (Rain-Induced Landslide Map) in the County's *Multi-Jurisdictional Hazard Mitigation Plan* (2010). The hilly southern portion of the County's CZ, bordering the City of Solana Beach to the west and El Camino Real to the east, contain steep slopes, though there no indications of specific areas that are most or marginally susceptible to landslides.

Liquefaction is not known to have occurred historically in San Diego County, with the exception of seismically triggered events in the Imperial Valley. Seismic groundshaking has not been sufficient to trigger liquefaction elsewhere (San Diego County 2010). According to Figure 4.3.6 (Liquefaction Map) in the County's *Multi-Jurisdictional Hazard Mitigation Plan* (2010), areas of liquefaction potential exist within the County's CZ along Escondido Creek and La Orilla Creek. Despite its proximity to San Elijo Lagoon, and segments of Escondido and La Orilla Creeks that run through the County's CZ, the County's CZ is subject to low liquefaction risk based on peak ground acceleration.



Source: SanGIS 2016; NAIP 2014.

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Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-5
Regional Geology

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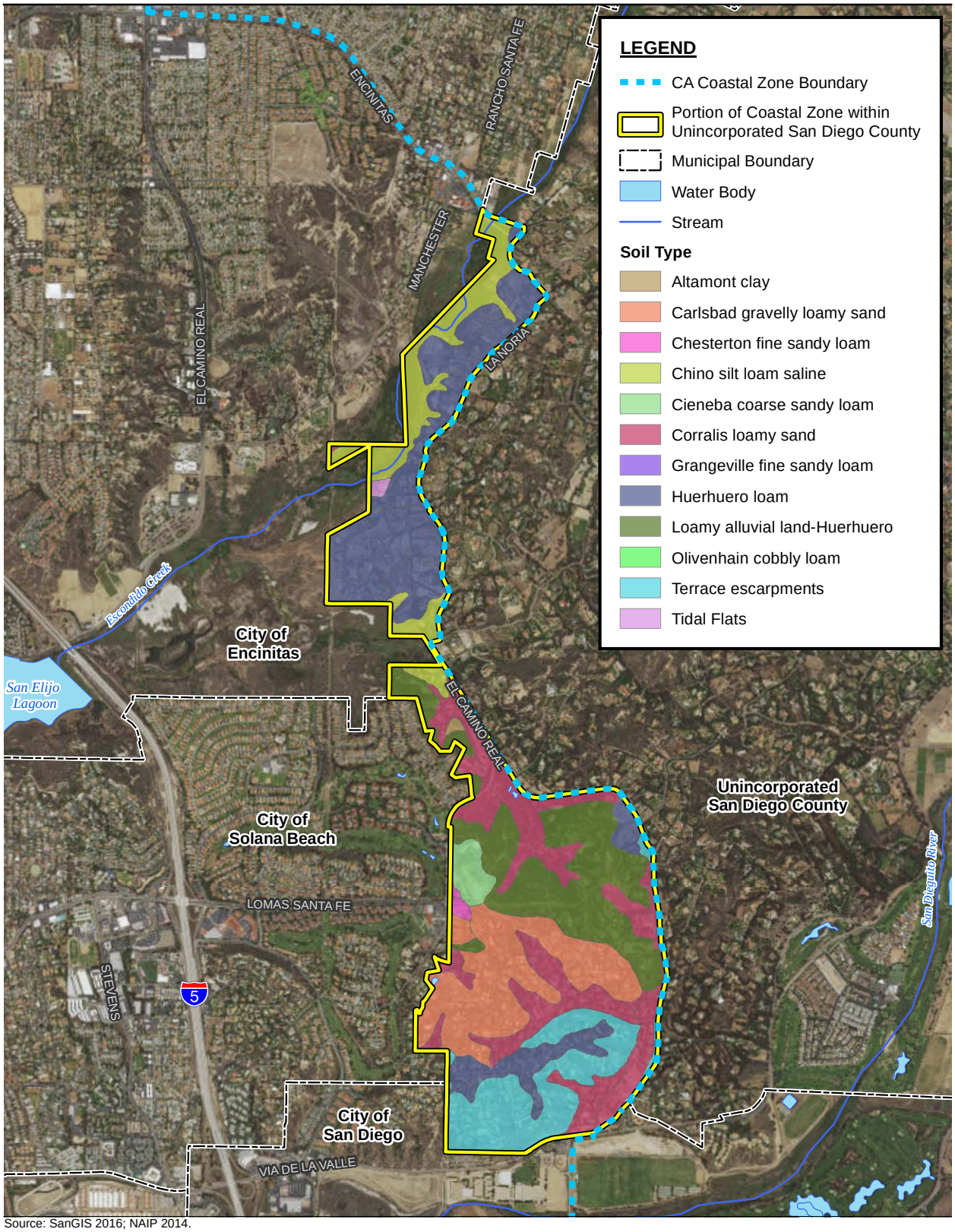

Source: SanGIS 2016; NAIP 2014.

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Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-6
Soil Classifications

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2.4.2 Biological Resources

The California Coastal Act contains standards for the protection of Environmentally Sensitive Habitat Areas (ESHAs), which include various types of wetlands, riparian areas, coastal prairies, woodlands and forests, and other natural resources in the County's CZ. This section provides descriptions of ESHAs and wetlands identified in the County's CZ, consistent with Coastal Act definitions for an ESHA (Section 30107.5) and wetlands (Section 30121, in conjunction with California Code of Regulations 13577 (b)).

ESHAs

This section provides a preliminary assessment of existing ESHAs and wetlands within the County's CZ. The following discussion is a summary of findings in the Biological Resources Summary Memorandum (Appendix B). No site visits were conducted as part of this preliminary assessment. This section and the associated figure (Figure 4 in Appendix B) do not represent an exhaustive compilation of the areas that meet ESHA or wetland definition; rather, they are an illustrative tool to help identify potential resources and it is the actual presence of ESHAs on the site that should dictate whether ESHA policies apply to a site.

As the methods in Appendix B describe, the ESHAs delineated in Figure 4 represent those 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 which could be easily disturbed or degraded by human activities and development.

Rare Natural Terrestrial Communities and Wetlands

The following vegetation communities mapped within the County's CZ by the County of San Diego SanGIS database (SanGIS 2016) are either considered a Rare Natural Terrestrial Community by CDFW (CDFW 2016a) or qualify as a wetland under the definition provided in Appendix B. Therefore, the following vegetation communities were delineated as ESHAs (Appendix B; Figure 4):

- Disturbed Wetland (Wetland)
- Alkali Marsh (Wetland)
- Freshwater Marsh (Wetland)
- Southern Riparian Scrub (Wetland and Sensitive Terrestrial Community)
- Southern Willow Scrub (Wetland and Sensitive Terrestrial Community)

Special-Status Species

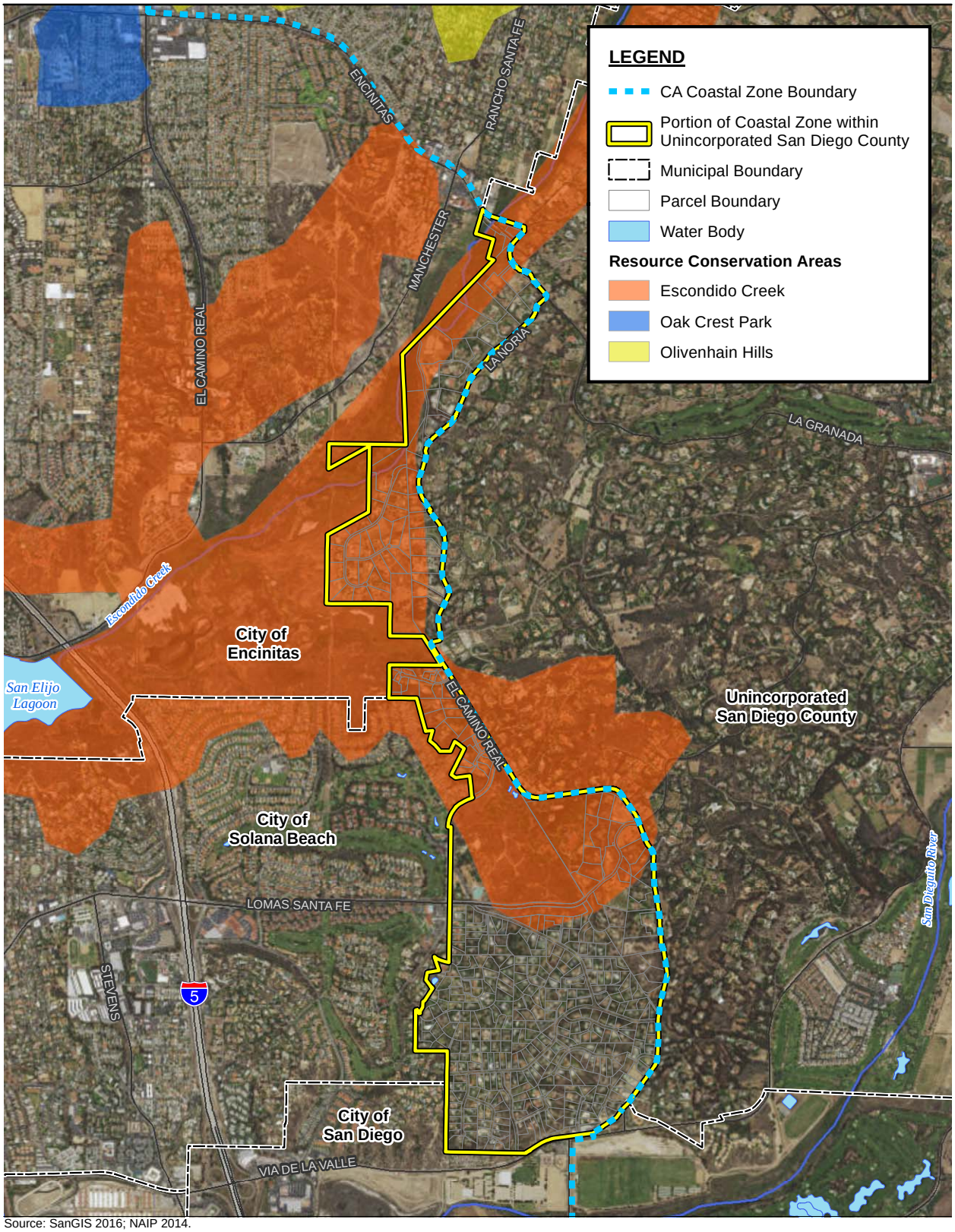
Two historical species records fall within the County's CZ: coastal California gnatcatcher (*Polioptila californica californica*), a special-status bird (federally threatened) that nests exclusively in Diegan coastal sage scrub (CDFW 2016a); and Del Mar manzanita (*Arctostaphylos glandulosa* ssp*. crassifolia*), a perennial special-status plant (federally endangered/CNPS List 1B.1) that occurs in southern maritime chaparral (CNPS 2016). While these are historical records from databases that may be slightly inaccurate with regard to exact location, the ESHA boundary was delineated around these data points per the

requirements of the Coastal Act. For the coastal California gnatcatcher location, the ESHA includes all Diegan coastal sage scrub habitat within the County's CZ, including the coastal sage-chaparral transition areas (see Appendix B; Figures 2 and 4). For the Del Mar manzanita location, the ESHA includes all southern maritime chaparral habitat within the (see Appendix B; Figures 2 and 4). In addition, although no records of historical occurrence were identified, the potential for least Bell's vireo (*Vireo bellii pusillus)* and Belding's savannah sparrow (*Passerculus sandwichensis beldingi)* to occur within the County's CZ should be considered on a case-by-case basis, due to the proximity of known occurrences and suitable habitat adjacent to the County's CZ. Suitable habitat for least Bell's vireo includes riparian woodland and riparian scrub communities. Suitable habitat for Belding's savannah sparrow includes grasslands with few trees, including meadows, pastures, grassy roadsides, sedge wetlands, and cultivated fields planted with cover crops like alfalfa. Near oceans, this species also inhabits tidal saltmarshes and estuaries.

It is noted that other vegetation communities within the County's CZ have the potential to support special-status species and therefore possibly qualify as an ESHA. These include disturbed habitat, eucalyptus woodland, non-native grassland, and the margins of agricultural fields that are capable of supporting special-status species such as burrowing owl (*Athene cunicularia*) and white-tailed kite (*Elanus leucurus*), among others. Given that none of the species listed in Attachment A of Appendix B rely exclusively on the vegetation communities noted above, these community types are not included as ESHAs herein. Additional analyses through field investigations would be required on a case-by-case basis.

Resource Conservation Areas

The County Board of Supervisors has adopted Resource Conservation Areas (RCAs) for a number of communities within San Diego County. These RCAs identify lands that possess some significant natural resource that requires special attention so that it can be preserved or utilized in a manner best satisfying public or private objectives. Figure 2-7 shows the Escondido Creek RCA as defined in the San Dieguito Community Plan, running through much of the County's CZ. Most of the RCA covers developed land, which would not provide much value for natural resources. However, some open space or preserve land occurs within the RCA; these areas should retain the open space or preserve land uses to provide open space values for natural resources.



Source: SanGIS 2016; NAIP 2014.

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Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-7
Resource Conservation Area

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2.4.3 Archaeological/Cultural Resources

The California Coastal Act requires mitigation for any adverse impacts on archaeological/cultural and/or paleontological resources. As such, a brief history of the region and results from the existing cultural records search are provided in this section.

Regional History

The San Elijo Lagoon area supported a substantial native coastal population starting around 8,000 years ago as SLR began to slow and shape formations of a productive bay, lagoon, and estuary habitats (San Elijo Lagoon Conservancy 2016). The Kumeyaay group occupied much of San Elijo Lagoon and the County's CZ, prior to Spanish colonization starting in the late 1700s. Most of the area was largely undeveloped under the Spanish land grant and ownership of Juan Maria Osuna, between 1830 to the early 1900s, and was mainly used for grazing and agriculture (San Diego County 2014).

Under ownership of the Santa Fe Railway and Santa Fe Land Improvement company between the early 1890s through 1928, Coast Highway 101 and the Atchison, Topeka, and Santa Fe Railroad developed as major transportation routes to enable coastal access, alongside the communities of Solana Beach, Encinitas, and Rancho Santa Fe around the lagoon (San Elijo Lagoon Conservancy 2016). The Rancho Santa Fe Covenant was established in 1928 and set in place basic restrictions and conditions regulating future development of the community in order to maintain the characteristics of farmer estates. As a result, Rancho Santa Fe became one of the first planned communities in California (Rancho Santa Fe Historical Society 2016; California State Parks 2016). The Covenant area was designated as a California State Landmark in 1982 in recognition of its history and unique development pattern (San Diego County 2014).

Existing Cultural Records Search Results

A records search was performed by the County of the records on file at the South Coastal Information Center (SCIC) and provided to the County under contract. The SCIC manages the San Diego County portion of the State of California's records of cultural resources for the California Office of Historic Preservation. The search area included the County's CZ and a buffer of 300 feet.

The records search identified 14 cultural resources within the search area. Of the 14 resources, 13 are prehistoric archaeological sites, one is a historic archaeological site, and one is a historic building. Archaeological site types are summarized in the Table 6 below.

Table 6. Archaeological Site Types

Site Type	Count
Historic-period resource (bridge, refuse scatter, structure, well/cistern)	1
Prehistoric habitation/temporary camp	3
Prehistoric lithic and shell scatter	6
Prehistoric shell midden/scatter	2
Isolated artifact/feature	2

Based on geological and environmental characteristics of the area, it is likely that undiscovered archaeological sites may exist within portions of the County's CZ. In particular, the area around San Elijo Lagoon is rich in resources that would have been appealing to past peoples. Many of the prehistoric sites identified during the records search are clustered around the lagoon.

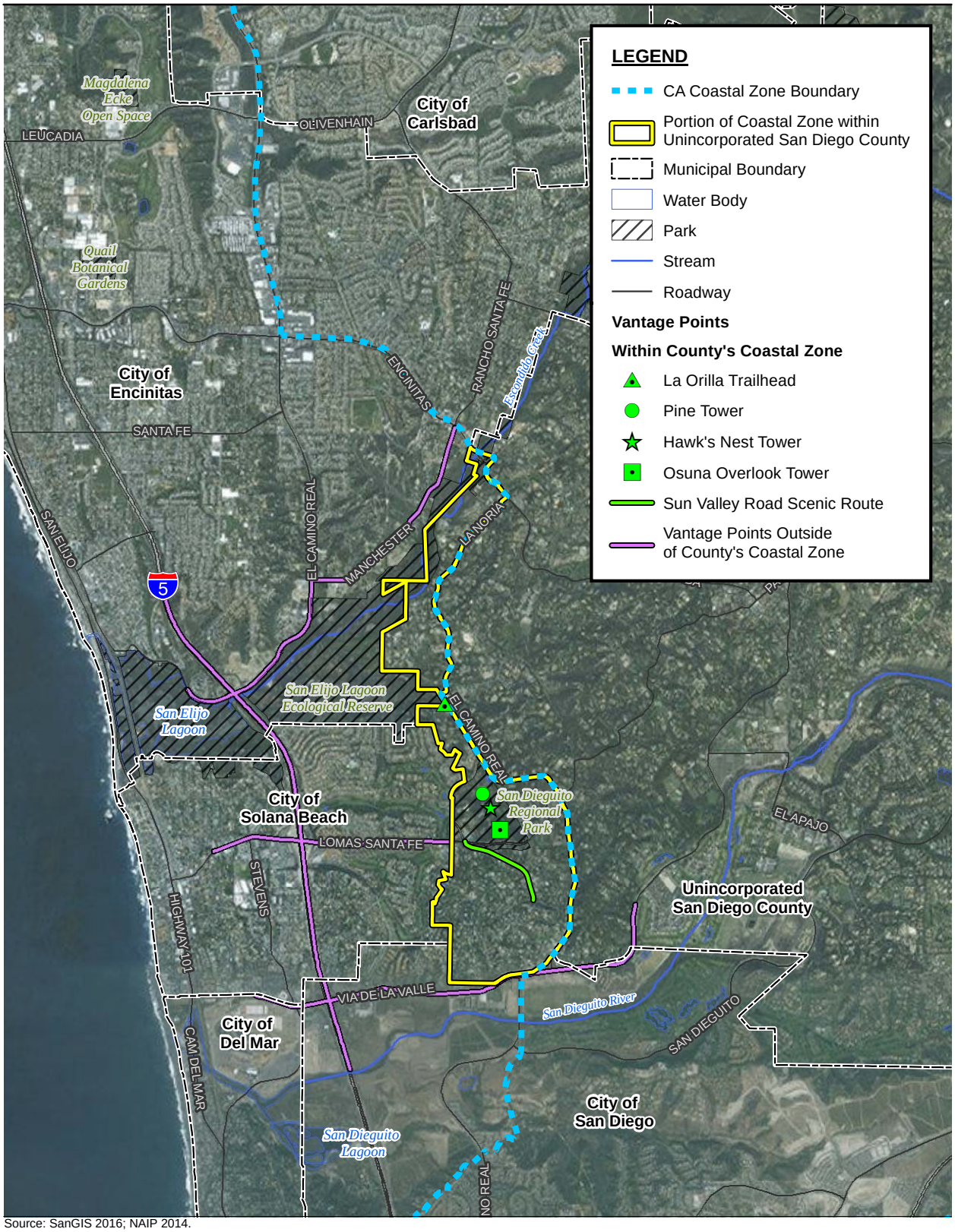
2.4.4 Scenic and Visual Resources

The protection of scenic resources within California's coastal zones is a central component of LCPs. As such, Section 30251 of the Coastal Act requires consideration to, and the protection of, scenic and visual qualities of coastal resources for the public. Section 30253 (e) of the Coastal Act also requires the protection of special communities that, because of their unique characteristics, are popular visitor destination points for recreational uses. The County's CZ does not contain special communities, per this definition; thus, they are not addressed further in this report. The remainder of this section focuses on protected view corridors that exist within the County's CZ.

Protected View Corridors

To adequately apply Coastal Act policies, local governments should identify public viewsheds and view corridors and their characteristics to be protected. A number of residential areas within the County's CZ have sweeping views of San Elijo Lagoon and the Pacific Ocean, though access to such views is limited due to the hilly topography and private access (most of the viewsheds and view corridors within the County's CZ are not publicly accessible). Public viewing areas outside of the County's CZ include Manchester Avenue, I-5, Pacific Coast Highway, Lomas Santa Fe Drive, and Via de la Valle. Publicly accessible vantage points within the County's CZ were identified as follows (Figure 2-8):

- La Orilla Trailhead (16398 El Camino Real in Rancho Santa Fe);
- Lookout towers located within San Dieguito Regional Park (total of 3):
    - Pine Tower
    - Hawk's Nest Tower
    - Osuna Overlook Tower; and
- Sun Valley Road, starting south of Linea Del Cielo and ending where Sun Valley Road turns into Ladera Sarina (San Diego County 2014).



Source: SanGIS 2016; NAIP 2014.

1 0.5 0 1 Mile

Scale: 1:63,360; 1 inch = 1 mile

Figure 2-8

Publicly Accessible Vantage Points

Local Coastal Program Update: Existing Conditions, Vulnerability and Risk, and Key Issues Report

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2.4.5 Recreation and Public Access

One of the fundamental goals of the Coastal Act is to provide maximum public access to the coast. Section 30500 of the Coastal Act requires the inclusion of coastal access to "assure that maximum public access to the coastal and public recreation areas is provided." Existing recreation and trail networks and public access points within the County's CZ are described below.

Existing Recreation and Trail Networks

San Dieguito Regional Park constitutes the largest contiguous tract of recreational open space (125 acres) within the County's CZ. The park is located southeast of San Elijo Lagoon Ecological Reserve, bounded by Highland Drive, Linea Del Cielo, and a northeastern sliver of El Camino Real. The day-use park offers diverse recreation opportunities such as picnic areas, ball fields, basketball courts, equestrian and multi-use trails, multi-purpose pavilions for events, a wedding gazebo, and playgrounds (San Diego County 2015b). The San Dieguito Regional Park is a popular recreational destination, garnering approximately 95,000 visitors annually. Trails within the park are not connected to regional trail networks; rather, the park serves as a publicly accessible open space within the County's CZ, which is otherwise surrounded by residential and private recreational areas.

Proposed Trails

Two trails are proposed within the County's CZ, noted in the CTMP (Table 5):

- Trail #37: El Camino Real / Sun Valley Road Pathway (estimated length of 1.28 mi), which would connect the San Diego Park Loop Trail to the Coast to Crest Trail; and
- Trail #38: Sun Valley / Lomas Santa Fe Connector Trail (estimated length of 0.05 mi), which connects a trail easement to Trail #37.

There are also two trail easements noted on the San Dieguito Community Trails and Pathways Plan map (San Diego County 2009):

- The segment of Lomas Santa Fe Drive (as it turns into Linea Del Cielo) between Sun Valley Road and Highland Drive (estimated length of 500 feet); and
- A north-south pathway between private residences, starting from Linea Del Cielo and near La Floresta and ending at Echo Hill Lane (estimated length of 900 feet), which appears to connect to proposed Trail #38.

These proposed trail connections would serve as publicly accessible trail connections from the County's CZ to the coast via the Coast to Crest Trail, when implemented.

California Coastal Trail: The California Coastal Trail (CCT) was recognized as a statewide and national resource in 2000. The vision for the CCT is to provide public trail access along California's 1,100-mile-long coast as a continuous system that connects parks, beaches, bicycle routes, hostels, and other state and local trail networks (San Diego County 2009). According to the 2009 Community Trails Master Plan, San Diego County has 76 miles of the coastal trail with trails in progress in North County and San Diego Bay. Access to the CCT from the County's CZ is possible starting from the La Orilla Trailhead (16398 El Camino Real in Rancho Santa Fe; identified in Figure 2-8), trekking through the southern portion of San Elijo Lagoon (Figure 2-9).

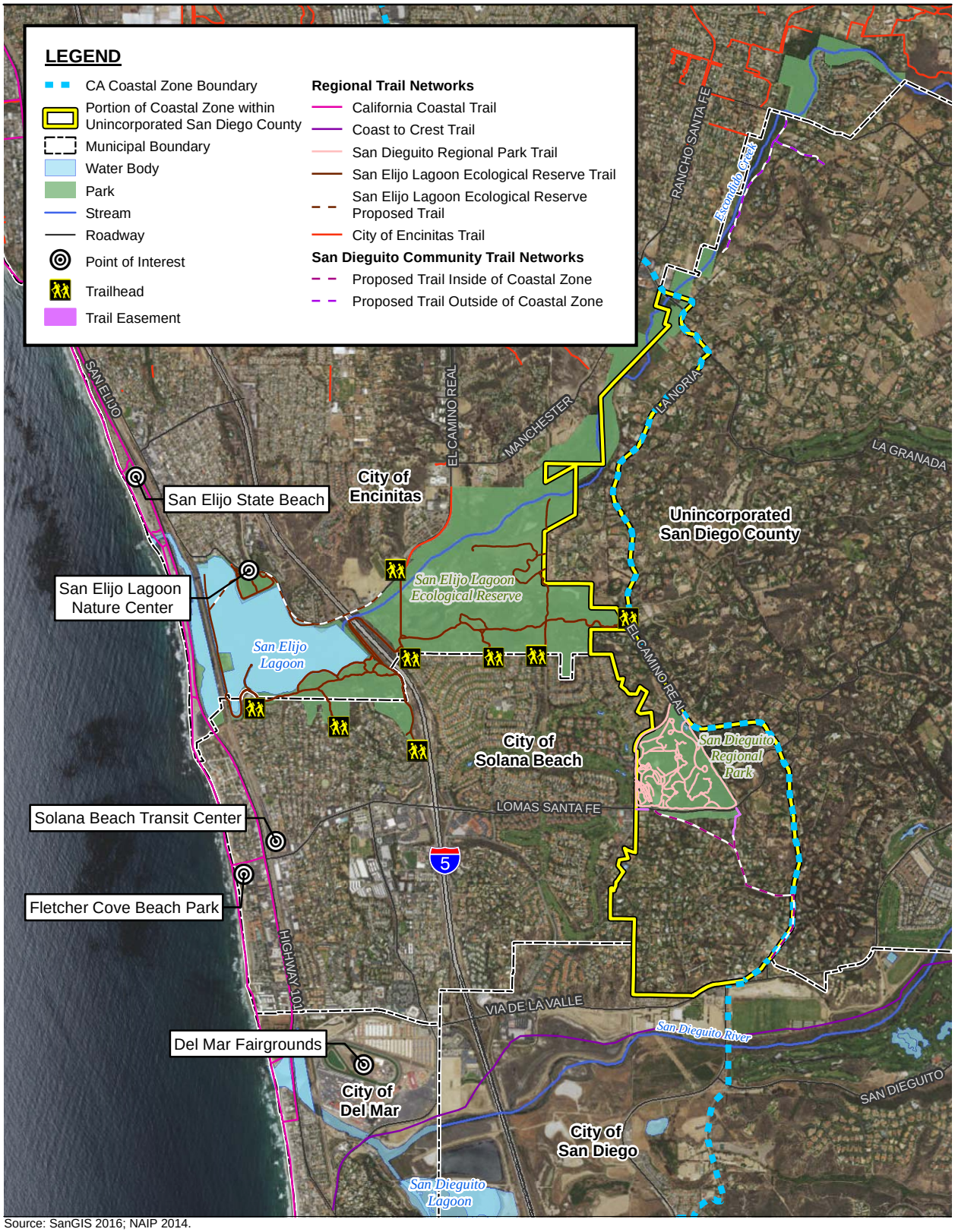
Coast to Crest Trail: The Coast to Crest Trail is within the San Dieguito River Park and covers a distance of approximately 55 miles, extending from the beaches at Del Mar to the San Dieguito River's source at Volcan Mountain (north of Julian). The ultimate goal for this Coast to Crest Trail, also called the San Dieguito River Park Trail, is to create a multi-use trail system for hikers, bicyclists, and horseback riders, though trail segments are still in progress. This trail is connected to the CCT, southwest of the Del Mar Fairgrounds. The Coast to Crest Trail runs south of Via de la Valle and there are no trail connections or access points from the County's CZ.

San Elijo Lagoon Ecological Reserve: San Elijo Lagoon Ecological Reserve contains approximately 7 miles of hiking and multi-use (equestrian). While the lagoon trail network has multiple trailheads along the southern boundary of the reserve (Figure 2-9), La Orilla Trailhead (Figure 2-8) is the only publicly accessible trailhead within the County's CZ. There are no developed facilities on the southern trails running through the reserve portion of the lagoon. Restrooms and water are available at the Nature Center, located on the north side of the lagoon (2719 Manchester Avenue), which is outside of the County's CZ. Designed and constructed with the implementation of "green" building concepts, the Nature Center also contains interactive exhibits about the history and development of, and flora and fauna found in, the reserve. The Nature Center provides regional value as an educational resource, and serves as a rentable venue for meetings and events (San Diego County 2016b). Plans for an expanded and comprehensive trail system to facilitate connectivity between San Elijo Lagoon and the coast exist.

Public Access Points

The majority of publicly accessible trails within the County's CZ reside in San Dieguito Regional Park. Points of interest near the shoreline between the Cities of Encinitas and Del Mar are called out in Figure 2-9. These points of interests are not directly accessible from the County's CZ except from the La Orilla Trailhead. Accessibility to these points of interests is most convenient via Manchester Avenue (northern end of the County's CZ), Lomas Santa Fe (central portion of the CZ along southern boundary of San Dieguito Regional Park), and Via de la Valle (southern end of the County's CZ).

As mentioned in Section 2.4.4 (Scenic and Visual Resources), public access points to coastal resources are limited in the County's CZ. Based on existing conditions, establishing more public access points within the County's CZ may be constrained by the surrounding residential communities. There may be some potential in the northern region of the County's CZ, adjacent to San Elijo Lagoon Ecological Reserve, where several parcels contain land use and zoning designations for open space or preserve (Figures 2-2 and 2-3).



Source: SanGIS 2016; NAIP 2014.

4,000 2,000 0 4,000 Feet

Scale: 1:48,000; 1 inch = 4,000 feet

Figure 2-9

Regional Trail Networks and Points of Interest

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2.5 Key Stakeholders

The primary partners and co-operators for the LCP update are the following:

- Residents
- Property Owners
- Visitors and Park Patrons
- San Dieguito Community Planning Group
- Rancho Santa Fe Association
- California Coastal Commission
- City of Carlsbad
- City of Del Mar
- City of Encinitas
- City of San Diego
- City of Solana Beach
- County of San Diego
- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service
- National Oceanic and Atmospheric Administration (NOAA) Fisheries
- San Elijo Lagoon Conservancy
- Surfrider Foundation
- Climate Collaborative: San Diego Region

The County intends to coordinate with these key stakeholders throughout the LCP update process, focusing on key decision points in the process to ensure that stakeholder input is informing development of policies and implementing ordinances.

3 Climate Change Vulnerabilities and Risk

3.1 Sea Level Rise Projections

The following section summarizes SLR projections relevant to the County's CZ. The selected SLR scenarios were developed through a review of the CCC's SLR Policy Guidance (CCC 2015) and other local and regional SLR planning efforts conducted to date within the County. AECOM concluded that there are currently no consistently applied SLR scenarios within the County based on review of these prior studies. The majority of prior studies were performed prior to finalization of the CCC's recently adopted SLR Policy Guidance in August 2015 and therefore reflect the available guidance at the time of each study.

SLR Ranges and Scenarios

The 2015 CCC SLR Policy Guidance recommends use of the best-available SLR science for the California coast when addressing SLR in LCPs. The National Research Council's (NRC) 2012 report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, Future,* is currently considered the "best available science" by climate scientists. The years 2030, 2050, and 2100 were selected as the planning time horizons for the SLR vulnerability and risk assessment for the San Diego County LCP update for consistency with NRC planning horizons, to allow for evaluation of assets with a range of service lives, and to facilitate identification of trigger points for SLR impacts. NRC SLR projections were adopted for evaluation as part of the SLR vulnerability and risk assessment conducted for the San Diego County LCP update. NRC's 2012 report provides three different SLR scenarios: low-range (or best-case), mid-range, and high-range. These scenarios represent a range of possible futures. Use of the lowest projections is not recommended for planning purposes, since robust planning generally requires use of more conservative futures than best-case scenarios. AECOM evaluated the mid-range and high-range SLR scenarios as part the vulnerability and risk assessment. These projections are shown in Table 7 and Exhibit 1.

Table 7. NRC (2012) Regional Sea Level Rise Projections for Southern California

	NRC (2012) SLR Projections California – South of Cape Mendocino Region	
Year	**Mid-Range (inches)**	**High-Range (inches)**
2030	6	12
2050	11*	24
2100	37	66

Note: *An SLR value of 12 inches was adopted for the 2050 mid-range projection for the vulnerability and risk assessment because the risks at 11 and 12 inches of SLR would be comparable and a 12-inch SLR amount can represent the 2030 high-range and 2050 mid-range scenarios using a single value.
Source: NRC (2012) – Table 5.3, Regional Sea-Level Rise Projections Relative to Year 2000 for the Los Angeles Tide Station.

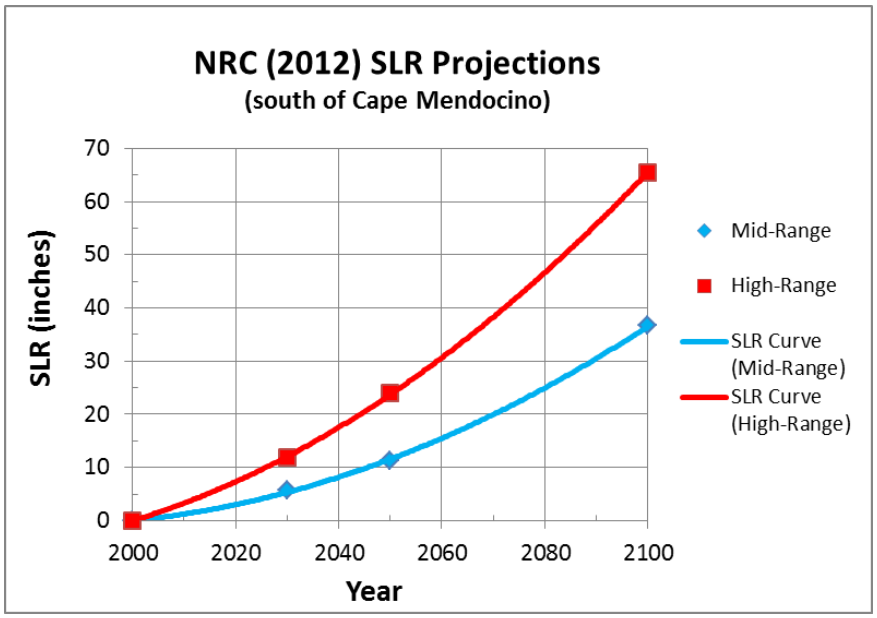


Exhibit 1. NRC (2012) Sea Level Rise Projections for Southern California

3.2 Potential Physical SLR Impacts

The following sections discuss potential SLR impacts to physical hazards, such as local water conditions, historical and future shoreline change, and water quality.

3.2.1 Existing Local Water Conditions

a. Tides

Coastal water levels fluctuate naturally throughout the day due to astronomical tides caused by the gravitational pull of the moon and sun. The San Diego coast experiences two high and two low tides each day, which vary in height over time. The largest annual tides, often referred to as King Tides, occur approximately 4 to 5 days each year. King Tides produce ocean levels that are approximately 1 foot higher than average high tides.

Tide elevations along the coast are typically measured relative to a vertical datum—a baseline position against which other elevations may be related. Tidal datums are defined by a certain phase of the tide, for example, mean higher high water (MHHW) or mean sea level. Tidal datums are calculated by the NOAA over a standard 19-year period of observation. The North American Vertical Datum of 1988 (NAVD88) is the current national standard reference datum. Tides along the San Diego open coast are characterized by NOAA's recorded water levels at the La Jolla tide station. Table 8 shows NOAA's published tidal datums and extreme tide estimates from the Federal Emergency Management Agency (FEMA) (BakerAECOM 2015). The diurnal tide range (height from MHHW to mean lower low water [MLLW]) is approximately 5.3 feet, although extreme tides can reach heights of nearly 8 feet.

Table 8. Tidal Datums and Extreme Tides at La Jolla, CA Tide Station

Water Level	Feet MLLW	Feet NAVD88
100-year Tide	7.93	7.74
50-year Tide	7.78	7.59
10-year Tide	7.46	7.27
Highest Observed Tide	7.66	7.47
Highest Astronomical Tide	7.14	6.95
Mean Higher High Water (MHHW)	5.32	5.13
Mean High Water (MHW)	4.50	4.31
Mean Tide Level (MTL)	2.75	2.56
Mean Sea Level (MSL)	2.73	2.54
Mean Low Water (MLW)	0.90	0.71
Mean Lower Low Water (MLLW)	0.00	-0.19

Source: NOAA Tides and Currents La Jolla, CA Tide Station (#9410230) and BakerAECOM (2015)

High tides propagate from the open coast through the mouth of San Elijo Lagoon, but tidal exchange and flushing are impeded by four constrictions or barriers within the lagoon: Highway 101, the railroad bridge, I-5, and the CDFW dike. These barriers divide the lagoon into three distinct basins (west, central, and east) and mute the tide range within the lagoon so that high tides are lower and low tides are higher than along the open coast. The CDFW dike extends from north to south across the marsh and is the primary constraint on tidal flows reaching the upstream reaches of the lagoon. The CDFW dike and constriction at I-5 also impound freshwater discharge from Escondido and La Orilla Creeks. The east basin is primarily freshwater influenced as a result. The reduced tide range and impoundment of freshwater discharge produce a variety of transitional marsh habitats, including riparian, freshwater, brackish, and salt marsh. The distribution of these habitats depends on ground elevation, inundation regime, and water salinity.

b. Water Level Changes from Storms, PDO, ENSO, and Basin Phenomena

Many factors influence ocean water levels, including storm surge, ocean swell, wind waves, the El Niño Southern Oscillation (ENSO), the Pacific Decadal Oscillation (PDO), and tsunamis. Each of these factors can raise water levels independently, and two or more may combine to form exceptionally high coastal waters. Elevated coastal waters along the open Pacific coast will flow into San Elijo Lagoon and elevate water levels within the lagoon as well.

El Niño-Southern Oscillation: California's coastal water levels are strongly influenced by the large-scale changes in the ENSO cycle. Under normal conditions, global trade winds blow from east to west across the Pacific, moving warm surface water away from the Americas toward the western Equatorial Pacific. Every 2 to 7 years, these winds weaken or reverse, pushing warm, equatorial water toward the Americas, and north along the San Diego coastline. This warmer ocean water expands and coastal waters during El Niño conditions are higher than typical. In addition, El Niño conditions in the Pacific Ocean frequently produce severe winter storms that impact the San Diego coastline because Pacific

Ocean storms follow a more southerly route. Because the storm tracks are shifted farther south, waves approach from a more southerly direction, exposing normally protected reaches of shoreline to high water levels and wave hazards.

Pacific Decadal Oscillation: The PDO is a long-term (multi-decadal) ocean-atmosphere cycle of climate variability that shifts the locations of cold and warm water masses in the Pacific Ocean basin and alters the path of the jet stream. It is similar to ENSO, but it occurs over a longer time scale. The "warm" phase of the PDO is characterized by warmer than normal water temperatures in the eastern North Pacific and a more southerly jet stream. The "cool" phase of the PDO is characterized by cooler than normal water temperatures in the eastern North Pacific and a more northerly jet stream.

Coastal Storms: Large storm systems can impact the San Diego coast during the winter season. These storms are typically characterized by low barometric pressure and strong winds, which produce storm surge, and are accompanied by large powerful waves. Storm characteristics such as wind speed, water level, and wave height are often described statistically using a concept referred to as the "return period" such as a "100-year wave runup elevation." It is important to note that a 100-year storm does not occur once every 100 years, but rather has a 1% chance of occurring in any given year. Therefore, it is possible to experience two 100-year storm events in a single year, or have a period of greater than 100 years without a 100-year storm.

Table 9 presents factors that may contribute to extreme water levels along the San Diego coast.

Table 9. Processes That Temporarily Elevate Coastal Waters along the San Diego Coast

Factors Affecting Water Level	Typical Range	Duration of Impact	Frequency
King Tides	1 to 1.3 feet above MHHW	Hours	2 to 4 times each year
Storm Surge	0.5 to 2 feet	Days	Several times each year
Storm Waves	10 to 15 feet	Hours to Days	Several times each year
El Niño	0.5 to 1 feet	Months	Every 2 to 7 years
Pacific Decadal Oscillation	Unknown	20 to 30 years	Decades

c. Wave Impacts

Wave impacts from wave runup occur during coastal storm events along coastlines exposed to high tides, storm surge, and ocean storm waves. Since the County's CZ is located landward of the Pacific coastline, it is not exposed to these hazards.

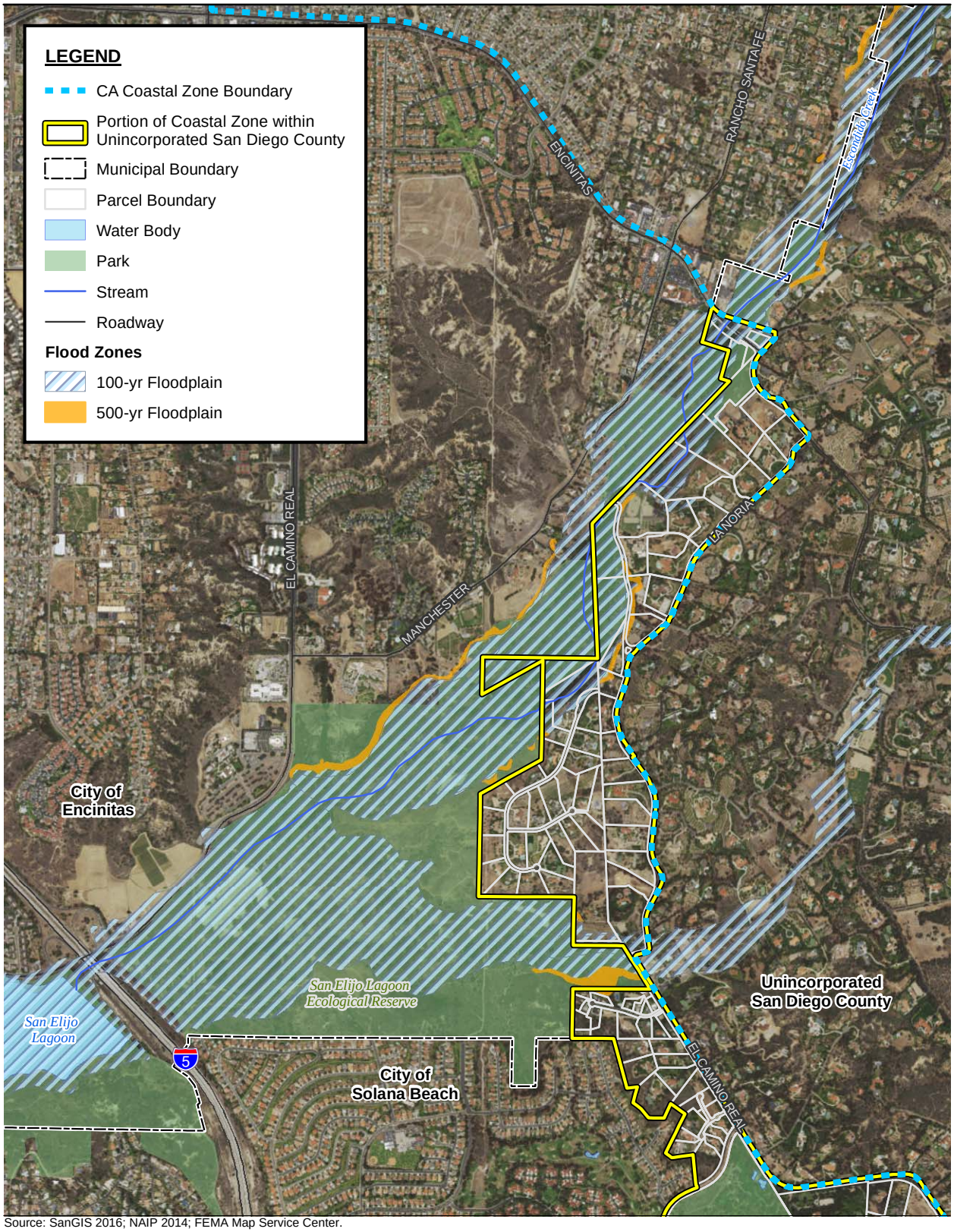
d. Flooding from Extreme Events

The County's CZ is subject to flooding from extreme events from a number of sources: (1) extreme tide flooding from the Pacific Ocean, (2) riverine flooding from watershed runoff, and (3) tsunami runup and inundation from local and distant seismic events. Potential sources of existing conditions flooding due to extreme events within the County's CZ are discussed below.

Extreme Tidal Flooding: Extreme tidal flooding along the open coast is a relatively rare occurrence that results from the combination of high astronomical tides coupled with other factors such as storm surge and/or El Niño conditions (Table 9). These factors elevate high tides above normal levels and can result in temporary flooding of low-lying areas along the shoreline. Extreme tides along the San Diego open coast do not have the potential to reach inland areas of the County's CZ except within San Elijo Lagoon. Extreme tides along the San Diego open coast will propagate through the lagoon mouth, overtop the CDFW dike, and flood the upstream reaches of San Elijo Lagoon Ecological Reserve at its boundary with the County's CZ. Statistical analysis of extreme tide levels along the San Diego open coast conducted by FEMA (Table 8) estimated the 100-year tide level to be approximately 7.7 feet NAVD88. Low-lying coastal resources and assets exposed to extreme tides would experience temporary flooding by saltwater. High waters within the lagoon drain to the ocean over subsequent low tides. Given the inland and upland location of the County's CZ, extreme tides do not impact the County's CZ under existing conditions.

Riverine Flooding: Riverine flooding within the County's CZ occurs as a result of freshwater discharge during heavy precipitation events. Portions of the County's CZ are immediately adjacent to and contained within the FEMA Special Flood Hazard Area along Escondido and La Orilla Creeks. The Escondido Creek watershed is much larger in size and therefore represents the primary source of riverine flooding within the County's CZ. Freshwater discharge from Escondido and La Orilla Creeks enters San Elijo Lagoon prior to draining to the ocean. The CDFW dike impounds freshwater discharge within the east basin of San Elijo Lagoon Ecological Reserve. Modeling conducted as part of the San Elijo Lagoon Restoration Project EIR/EIS estimated the 100-year riverine flood level in the east basin to be approximately 14 to 15 feet NAVD88 (Moffatt & Nichol 2012)—approximately 6 feet higher than the 100-year tide level. Floodwaters within the lagoon can completely fill the east basin and freshwater conditions can remain for approximately 1 week following a storm (Moffatt and Nichol 2012). Approximately 24 parcels along Escondido Creek upstream of San Elijo Lagoon and within the County's CZ are located within FEMA's 1% (100-year) or 0.2%-annual-chance (500-year) riverine floodplain (Figure 3-1).

Tsunami Inundation: Tsunamis are ocean waves with very long wavelengths that are generated from geologic events such as earthquakes, landslides, and volcanic eruptions. The California coast is exposed to tsunami hazards from local sources within the Southern California Bight and distant sources such as the Pacific Northwest, Aleutian Islands, Japan, and Kuril Islands. The State of California (2009) evaluated potential tsunami inundation hazard zones along the California coast and developed exposure maps for emergency planning purposes. Tsunami hazard zones within San Elijo Lagoon are depicted on the Encinitas Quadrangle; however, the tsunami inundation area does not extend landward of I-5 so impacts to the County's CZ would be negligible.



Source: SanGIS 2016; NAIP 2014; FEMA Map Service Center.

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 3-1
FEMA Special Flood Hazard Areas

Local Coastal Program Update: Existing Conditions, Vulnerability and Risk, and Key Issues Report

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3.2.2 Future Local Water Conditions

Future coastal and riverine flood risks may be magnified by the effect of future climate change. As sea levels rise, the frequency and magnitude of tidal flooding will increase. Higher sea levels may also exacerbate riverine flooding because higher water levels at the coast may impede drainage of freshwater discharge from lagoons and creeks. Other aspects of climate change, such as changes in storm frequency and intensity, may change the nature of coastal and watershed storm events in the future.

The following coastal and riverine flood hazards may increase as a result of climate change:

Daily tidal inundation: As sea level rises, the amount of land and infrastructure subjected to daily inundation by high tides will increase. The County's CZ is relatively high in elevation compared to typical daily high tide elevations and currently does not experience adverse impacts of tidal flooding. However, as seas rise, previously dry or rarely inundated areas may be reached with increased frequency. This will result in the conversion of transitional or upland areas to tidal wetland within the upper reaches of San Elijo Lagoon Ecological Reserve, but daily tidal inundation is not anticipated to occur within the County's CZ under the SLR scenarios and with the proposed restoration actions evaluated in this report.

Annual high tide inundation (King Tides): King Tides are abnormally high, predictable astronomical tides that occur approximately two to four times per year. As seas rise, the elevation of King Tides will rise concurrently. When King Tides occur coincident with storm waves, coastal flood and erosion impacts are more likely to occur; however, these conditions are not anticipated to occur within the County's CZ under the SLR scenarios and proposed restoration actions evaluated in this report.

Extreme tides: Extreme tides refer to any temporary ocean water level above the predicted (astronomical) daily high tide (not including wave effects). They occur as a combination of high astronomical tides, storm surge, and El Niño effects (see Table 9). As seas rise, the elevation of extreme tides will rise concurrently. The impact of future extreme tides on the County's CZ is discussed in Section 3.3 (Potential Risks for Sea Level Rise to Coastal Resources and Development) of this report.

Storms and El Niño: Climate change may affect the frequency and intensity of coastal storms, El Niño cycles, and related processes. A clear consensus has not yet fully emerged on the nature of these changes in the Pacific Ocean and this is an area of active research.

Shoreline change and coastal erosion: The San Diego County coastline has undergone natural and manmade alterations that have impacted natural shoreline change processes. The long-term cumulative effects of tides, waves, and SLR generally results in the landward migration of the shoreline; however, there is much variability depending on location and time period. A general consensus among the scientific community is that SLR will increase long-term rates of shoreline change although the exact nature of that increase is not well understood and this is an area of active research. The County's CZ is located inland from the open coast, and long-term shoreline change and coastal erosion will not directly impact coastal resources and assets in the County's CZ. However, resources and assets located along the open coast that are utilized by residents of unincorporated areas of San Diego County may be impacted.

Riverine flooding: SLR may exacerbate riverine flooding by raising flood levels along tidally influenced creeks and streams; however, a detailed assessment of the impact of SLR, changes in land use (such as future development), and climate change[1] on riverine flood hazards along Escondido and La Orilla Creeks has not been conducted to date.

Tsunami inundation: The effect of SLR on tsunami hazards is an area of active research. SLR will increase the base tide level upon which tsunami waves propagate and therefore may increase the extent of inland inundation by tsunamis; however, local topography and wave dynamics are also important factors. A detailed assessment of the impact of SLR on tsunami hazards has not been conducted to date.

Planning is currently underway to implement a restoration project within San Elijo Lagoon Ecological Reserve (San Elijo Lagoon Conservancy 2016). The proposed project would make improvements to the mouth of the lagoon and interior channel network, and would reduce existing flow constrictions that currently restrict tidal exchange and flushing of the lagoon and degrade habitat quality. The proposed improvements would promote more efficient lagoon hydraulics and increase tidal influence in the east basin. These changes would effectively unmute tides within the upper reaches of the lagoon so that high tides would be higher and low tides would be lower. In addition, reduction of flow constrictions within the lagoon would reduce impoundment of freshwater during watershed flooding events and reduce the potential for riverine flooding along Manchester Avenue. The proposed restoration actions are relevant to the County's CZ because they will change the riverine and coastal flood levels within the east basin of San Elijo Lagoon Ecological Reserve. Increased tidal influence will likely increase coastal flood risk by allowing extreme high tides to propagate farther upstream, while reduction in flow constrictions will likely decrease riverine flood risk by reducing impoundment and ponding of freshwater discharge.

3.2.3 Shoreline Change

a. Historical Shoreline Change

Shoreline change is a complex process that can occur on a variety of time scales, ranging from individual storm events to multi-decadal climatic cycles, and can result in either retreating or advancing shorelines. Short-term shoreline change generally consists of episodic, storm-induced erosion or human alterations (e.g., beach nourishments or placement of coastal protection or sand retention structures). Long-term shoreline change is typically facilitated by natural or human-induced changes in sediment budget, longshore and cross-shore sediment transport, wave climate, SLR, surface runoff, and groundwater processes (Hapke et al. 2006; Hapke and Reid 2007). The USGS National Assessment of Shoreline Change estimated historical rates of change along sandy and cliff shorelines in Encinitas, Cardiff, and Solana Beach. Results indicated that shorelines remained fairly stable over the long term (1887–1998) but moderately erosional over the short term (1972–1998).

[1] Effects of climate change on riverine flood hazards include changes in storm characteristics such as magnitude, intensity, and duration.

b. Future Shoreline Changes

While historical rates of shoreline change can be estimated from careful measurements of aerial photographs and topography changes, no standard methodology exists to predict future rates of shoreline change. Coastal engineers apply a variety of methods and techniques to incorporate the effects of SLR on shoreline response. The simplest approach is to project historical rates of shoreline change into the future; however, there is broad consensus among scientists that SLR will increase the rate of shoreline retreat above historical values. Uncertainties in future management scenarios further complicate future projections of shoreline change. The U.S. Geological Survey (USGS) recently completed a study of long-term shoreline evolution in southern California for sandy beaches and bluffs using the Coastal Storm Modeling System (CoSMoS). Initial future shoreline positions corresponding to SLR scenarios of 0.5 meter (1.6 feet), 1.0 meter (3.3 feet), 1.5 meters (4.9 feet), and 2.0 meters (6.6 feet) are available for public use. Additional scenarios will be available at the end of 2016.

Shoreline change within San Elijo Lagoon Ecological Reserve will occur due to the increased extent of tidal influence as a result of SLR and the proposed restoration actions. The tidally influenced footprint of the lagoon will increase gradually over time as high tides reach higher elevations and the lagoon expands. These potential shoreline changes within the lagoon are discussed here for context and are not anticipated to impact the County's CZ.

3.2.4 Water Quality

a. Saltwater Intrusion

Saltwater intrusion into aquifers can occur when freshwater aquifers have a direct connection to the ocean or other saltwater source (such as a lagoon or estuary system). The extent of saltwater influence within freshwater aquifers depends on the balance between dense saltwater intruding from the ocean side and the characteristics of the freshwater aquifer, including subsurface geology, elevation of the water table, volume and rate of groundwater withdrawal, and rate of recharge.

The extent of saltwater intrusion into a freshwater aquifer is affected by the relative difference between water levels in the ocean and the aquifer. Typically, groundwater elevations are higher than mean sea level and groundwater flows toward the coast, effectively blocking intrusion of saltwater into the aquifer. When the relative difference between the ocean and the groundwater level decreases—due to drawdown of the aquifer by pumping, or raising of mean sea level due to SLR—the interface between saltwater and freshwater can move inland. Once saltwater intrudes into a freshwater aquifer, it can be very difficult and costly to remove.

San Elijo Lagoon is underlain by the San Elijo Valley Groundwater Basin, which has been identified as a potential source of potable water. The basin comprises a surface alluvial aquifer directly underlying the lagoon and a deeper aquifer. The basin is unconfined and exchange occurs between the aquifer and the overlying lagoon and adjacent ocean waters. Natural recharge of the alluvial aquifer is primarily through percolation from Escondido Creek. Infiltration from direct precipitation and agricultural and residential uses contributes additional recharge (DWR 2004).

Increased tidal exchange and shifts in salinity regime that would occur as a result of SLR and proposed restoration actions are not predicted to cause a substantial change in conditions that influence groundwater quality and/or recharge characteristics within the County's CZ (although seawater intrusion may impact the groundwater basin in the area west of I-5). The groundwater aquifer is at depths substantially lower than the alluvial aquifer directly underlying the lagoon and exchange between the lagoon and groundwater is believed limited to the alluvial aquifer (San Elijo Lagoon Conservancy 2016).

b. Coastal Water Pollution

Potential effects of SLR on coastal water pollution are typically the result of failure of wastewater infrastructure as a result of exposure to erosion and flood conditions. AECOM did not identify any critical wastewater infrastructure exposed to SLR impacts within the County's CZ, thereby concluding that increased risk of coastal water pollution as a result of SLR is minimal.

3.3 Potential Risks for Sea Level Rise to Coastal Resources and Development

In addition to direct exposure to coastal flooding and erosion as a result of SLR, coastal communities may also be at risk of, and indirectly affected by, impairment of critical infrastructure and services. Within the County's CZ, SLR impacts could directly damage, destroy, or temporarily interrupt critical infrastructure including roads and water, wastewater, and power supply systems. Temporary or permanent loss of such facilities would have indirect, but serious, impacts to coastal residents. This section evaluates direct and indirect impacts[2] to:

- Existing and planned development, including residential and commercial property
- Vulnerable public facilities, such as schools, post offices, libraries, or community centers
- Critical infrastructure, including transit, water and wastewater, and power
- Public access, including beaches, recreation areas, and coastal trails
- Environmentally sensitive habitats and sensitive marine species, such as seals and sea lions and sensitive coastal bird species

The County's CZ is generally located landward and upland of coastal oceanographic processes that are typically evaluated as part of a SLR vulnerability and risk assessment, such as waves, tides, storm surge, coastal storm erosion, and long-term shoreline change. Discussion of physical SLR impacts will therefore be limited to the upstream reaches of San Elijo Lagoon at the confluence of Escondido and La Orilla Creeks, where portions of the County's CZ have the potential for exposure to SLR impacts.

[2] Residents of the County's Coastal Zone (CZ) rely on critical infrastructure that is located outside of the study area (for example, power and wastewater treatment facilities). Sea level rise impacts to these assets were not evaluated as part of this assessment.

3.3.1 Exposure Analysis

AECOM evaluated potential risks of SLR to coastal resources and development within the County's CZ through the creation of inundation and flooding exposure maps. The mapping effort focused on the upstream reaches of San Elijo Lagoon Ecological Reserve and its boundary with the County's CZ. The inundation maps were developed using a 1-meter digital elevation model created from high-resolution coastal Lidar data obtained from NOAA. Each SLR scenario (Table 7) was combined with the estimated daily high tide (MHHW) and extreme tide (100-year tide) water levels to estimate future inundation and flooding extents within the County's CZ. The future conditions water level scenarios are shown in Table 10. The evaluated scenarios assume full tidal exchange between the lagoon and the Pacific Ocean because the exact nature of the lagoon response to SLR and proposed restoration actions is unknown. Hydrodynamic modeling conducted as part of the San Elijo Lagoon Restoration Project EIR/EIS found that all proposed restoration alternatives would increase the high tide range within the east basin of the lagoon; however, the exact response will depend on a variety of natural and anthropogenic factors. Actual future daily high tide and extreme tide elevations may be less than shown in Table 10 depending on future management and geomorphic evolution of the lagoon.

Table 10. Future Conditions Daily High Tide and Extreme Tide Sea Level Rise Scenarios

Sea Level Rise (inches)	Daily High Tide (MHHW) (feet NAVD88)	Extreme Tide (100-yr tide) (feet NAVD88)	Sea Level Rise Scenario
Existing	5.1	7.7	-
6	5.6	8.2	2030 mid
12	6.1	8.7	2030 high, 2050 mid
24	7.1	9.7	2050 high
37	8.2	10.8	2100 mid
66	10.6	13.2	2100 high

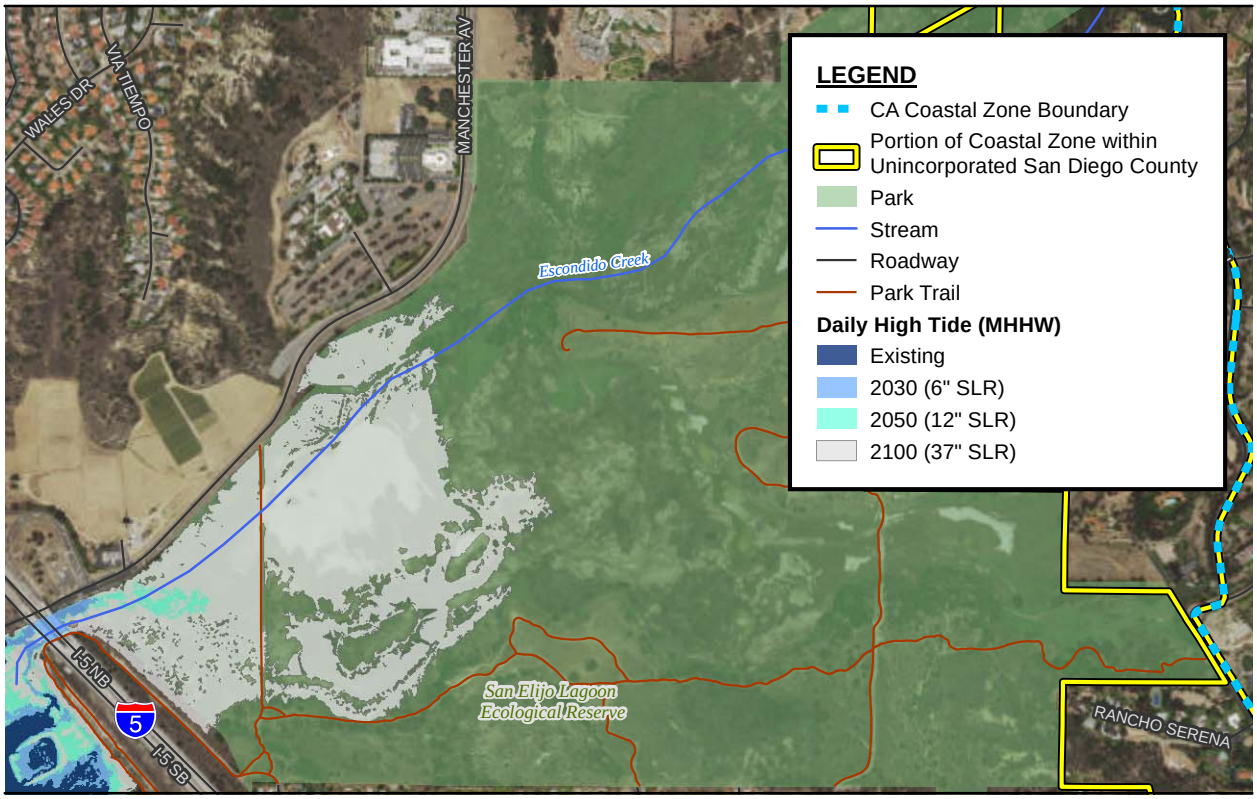
The future inundation and flooding maps for the County's CZ are shown in Figures 3-2 and 3-3, respectively, for the mid-range and high-range SLR scenarios (see NRC SLR scenarios Table 7).

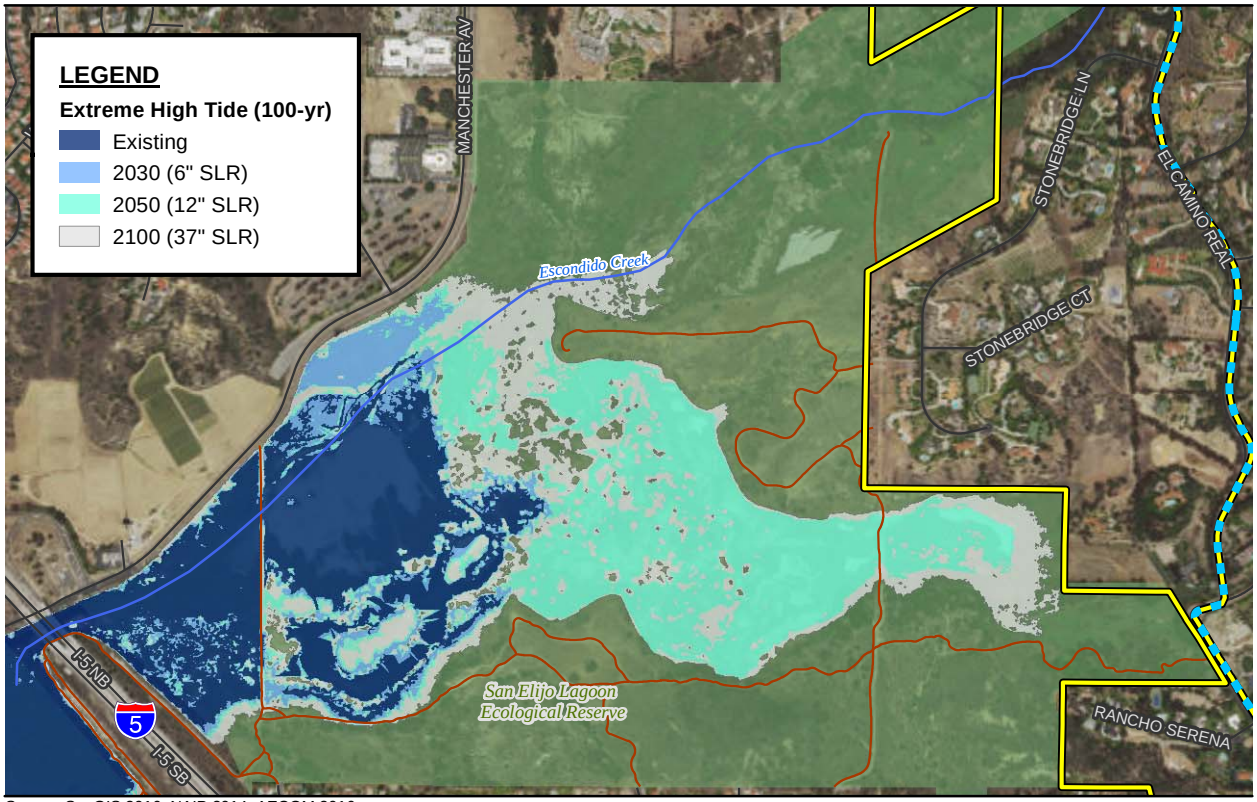
AECOM also evaluated future exposure to combined coastal and riverine flooding using modeling results from the USGS CoSMoS study.[3] The CoSMoS modeling results are shown in Figure 3-4.[4] The USGS modeling evaluated combined flooding from a future conditions 100-year coastal storm event with SLR and a likely coincident riverine discharge event.[5] The results suggest that the flow constriction at I-5 impounds freshwater discharge in the lagoon and that flood levels in the east basin do not increase as a

[3] Note that the U.S. fore do not exactly align with the adopted National Research Council SLR scenarios used to produce the inundation maps presented in Figures 3-2 and 3-3.

[4] USGS sea level rise scenarios: 50 cm (20 inches), 100 cm (39 inches), 150 cm (59 inches), and 200 cm (79 inches). The flood extents of the existing and future SLR scenarios overlap in the eastern portion of San Elijo Lagoon Ecological Reserve, indicating that SLR does not influence the extent of riverine flooding east of Interstate5.

[5] The USGS modeling scenarios were intended to capture future flooding associated with the 100-year coastal storm event. Freshwater discharge was included in the coastal storm modeling because the same storm systems that contribute to coastal flooding are often accompanied by watershed precipitation. The return period of the freshwater discharge event modeled with the coastal storm conditions is not known and represents a best guess of the discharge that may occur coincident with the 100-year coastal storm event.





Source: SanGIS 2016; NAIP 2014; AECOM 2016.

1,250 625 0 1,250 Feet

Scale: 1:15,000; 1 inch = 1,250 feet

Figure 3-2
San Elijo Lagoon Ecological Reserve
Future Inundation and Flooding (Mid-range SLR)

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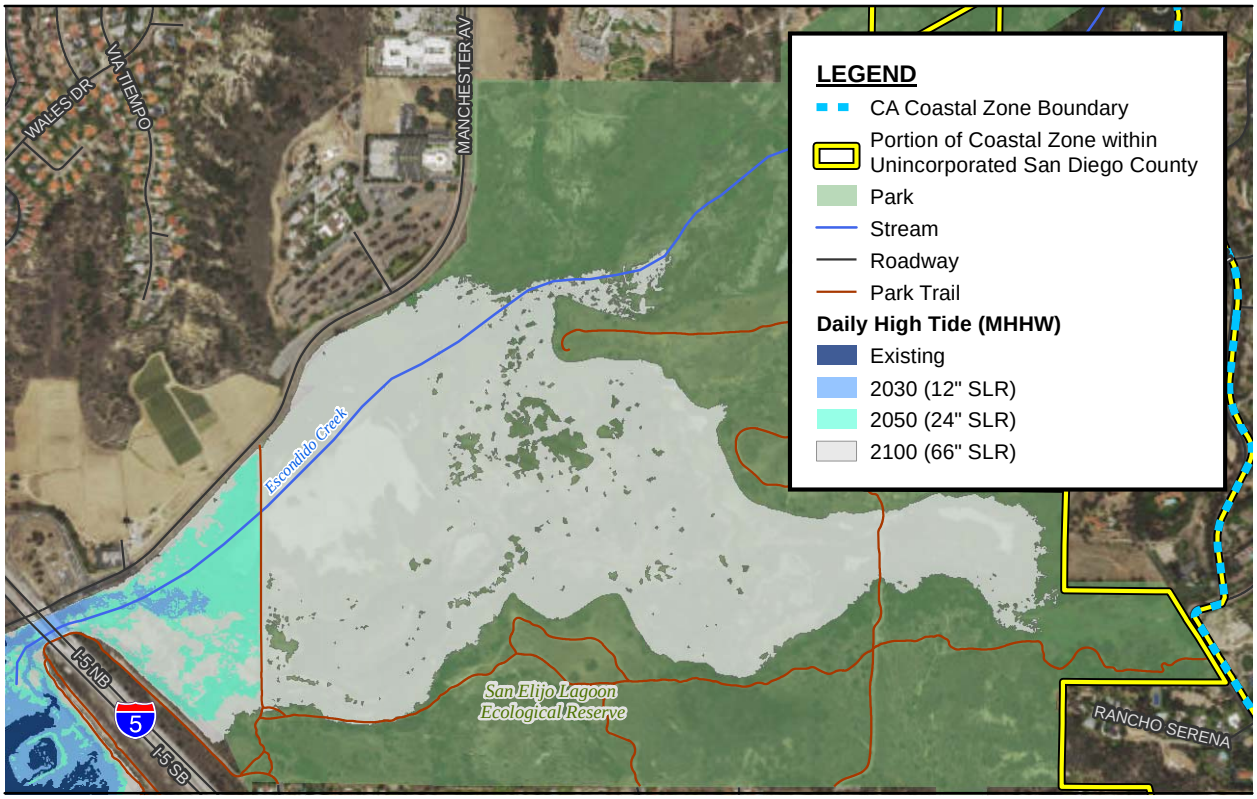

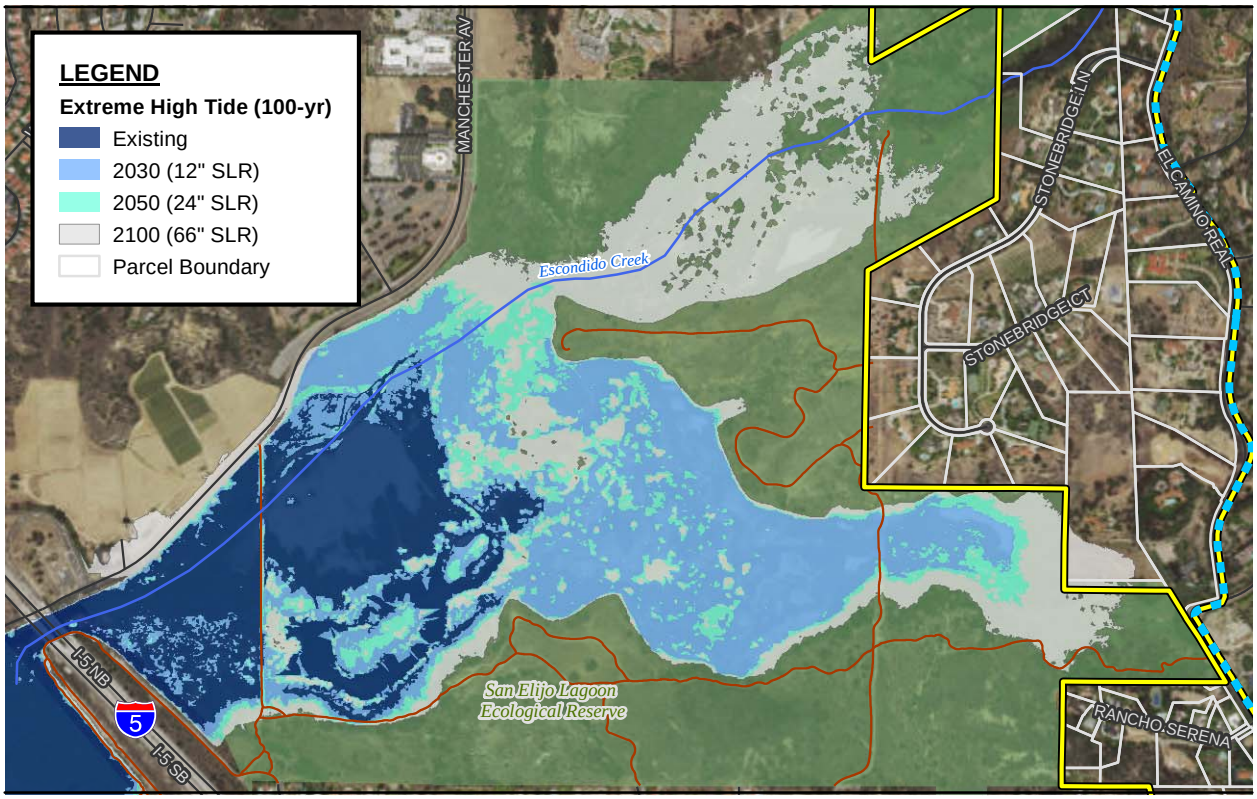

Source: SanGIS 2016; NAIP 2014; AECOM 2016.

1,250 625 0 1,250 Feet

Scale: 1:15,000; 1 inch = 1,250 feet

Figure 3-3
San Elijo Ecological Reserve
Future Inundation and Flooding (High-range SLR)

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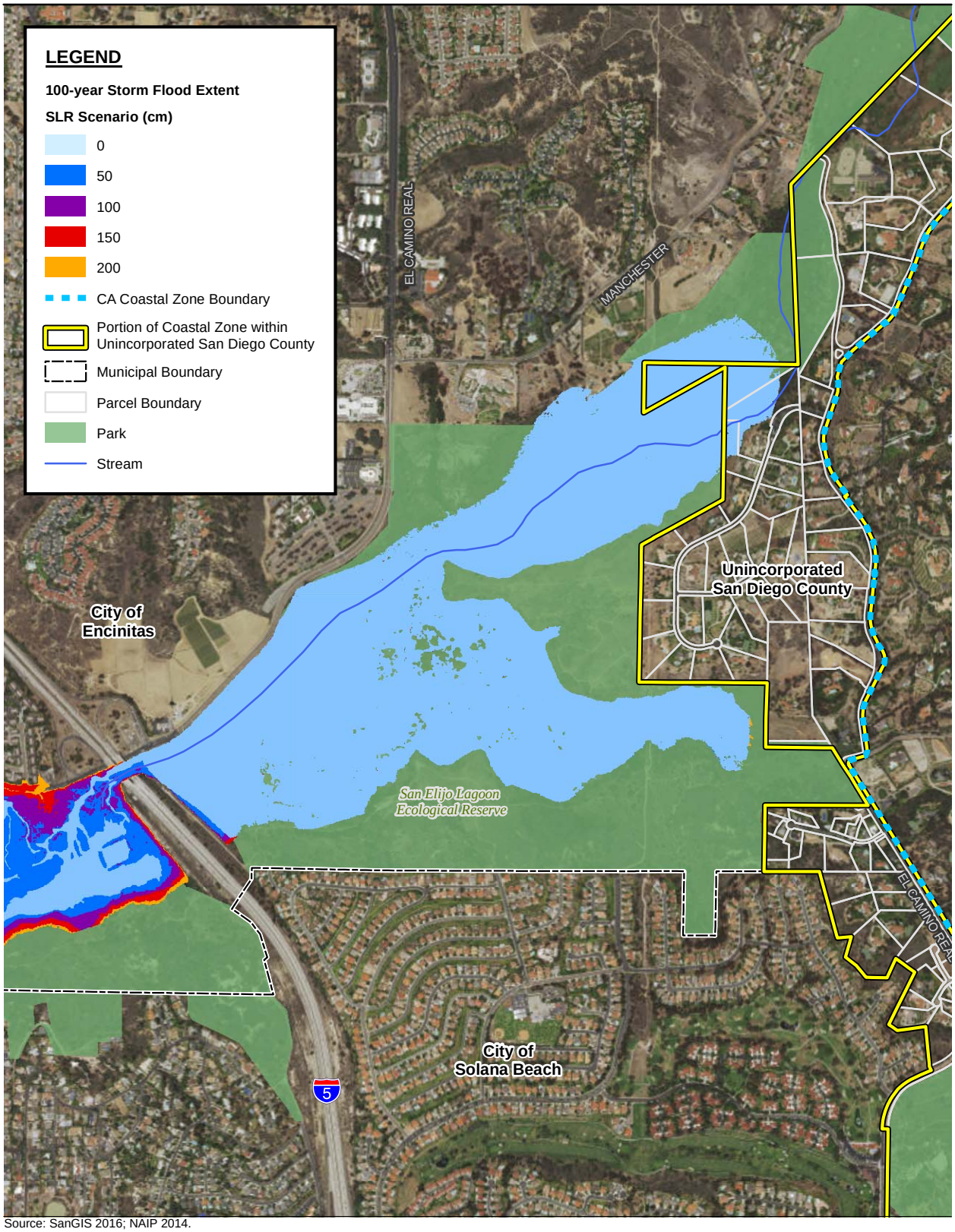

Source: SanGIS 2016; NAIP 2014.

1,500 750 0 1,500 Feet

Scale: 1:18,000; 1 inch = 1,500 feet

Figure 3-4
USGS CoSMoS Modeling Results within San Elijo Lagoon Ecological Reserve

Path: P:_6048\60484703_Local_Coastal_Program_Update\800-CAD-GIS\822_Maps\USGS_CoSMoS.mxd, 4/6/2016, daniel_arellano

result of SLR; however, the combined effects of an extreme freshwater discharge event (e.g., 100-year discharge) and SLR were not evaluated. These findings are consistent with modeling completed for the San Elijo Lagoon Restoration Project EIR/EIS (Moffatt & Nichol 2012), which showed elevated flood levels within the east basin due to impoundment of freshwater behind the CDFW dike and I-5 embankment.

3.3.2 Resource Inventory

The full list of coastal resources and assets identified above was screened to identify those that could potentially be exposed to direct and indirect SLR impacts in the future. Potentially exposed assets were identified by overlaying the maximum flood extent for the 100-year extreme tide with 66 inches of SLR[6] on the resource and asset inventory. Coastal resources and assets that were located within this exposure area were identified for further evaluation. The list of resources below includes those located within the County's CZ and those located immediately adjacent to the County's CZ, which may indirectly impact residents of the County's CZ (for example, transportation routes that provide access from the County's CZ to the coast):

- Existing development within the Stonebridge Community along Stonebridge Lane;
- Manchester Avenue, east of I-5 and north of San Elijo Lagoon;
- ESHAs immediately adjacent to or within the County's CZ; and
- San Elijo Lagoon Ecological Reserve trail network.

3.3.3 Vulnerability and Risk

Existing development: Existing development within the County's CZ may be exposed to coastal or riverine flood hazards under future SLR scenarios. Existing development within the County's CZ is generally located landward and upland of the extent of tidal influence, with the exception of one parcel located west of the El Camino Real-La Orilla intersection and near the limit of flooding under the 100-year tide + 66 inches of SLR scenario (Figure 3-3). In general, however, all existing development within the County's CZ is located at an elevation above the predicted future limit of riverine and coastal flooding and is not vulnerable to direct impacts of SLR.

Transportation infrastructure: No transportation infrastructure is located within the County's CZ that falls within the SLR exposure area; however, Manchester Avenue, which runs along the northern boundary of San Elijo Lagoon Ecological Reserve, provides an important transportation route from the County's CZ to I-5, Highway 101, and coastal recreation areas. The 0.4-mile-long portion of Manchester Avenue east of I-5 is at an elevation of approximately 12 feet NAVD88 and is exposed to temporary flooding under the 100-year + 66 inches SLR scenario. Flooding during such an event would inundate the

[6] The flood extent of the 100-year extreme tide with 66 inches of SLR was used to develop the SLR exposure area because it encompassed the maximum extent of tidal flooding under the end-of-century high-range SLR scenario and covered the functional service life of existing assets.

roadway by approximately 1 foot of water for approximately 2 to 3 hours around high tide. Vehicular passage along this stretch of Manchester Avenue may be interrupted during this time and travelers may have to take an alternate route. Adaptation strategies such as elevating the roadway, construction of a low-profile floodwall, or setback of the roadway from the lagoon edge could improve the resiliency of this transportation route in the future.

Environmentally Sensitive Habitat Areas: ESHAs are discussed in Section 2.4.2 (Biological Resources) of this report, with additional information provided in Appendix B. Changes in inundation and salinity regime as a result of SLR and/or proposed restoration actions (which would increase conveyance of tidal waters to upper reaches of the lagoon) could expose some of these existing habitat areas to increasingly saline conditions. Existing wetland habitat adjacent to and downstream of the County's CZ primarily consists of coastal salt marsh along Escondido and La Orilla Creeks, although a more diverse mix of riparian, brackish, and freshwater marsh exists along Escondido Creek due to larger freshwater inflows. These existing freshwater-influenced habitats (riparian, brackish, and freshwater marsh) within San Elijo Lagoon may convert to more saline habitats such as coastal salt marsh in the future as a result of regular but infrequent flooding by saltwater caused by SLR and improved drainage of freshwater ponding due to proposed restoration actions. This would allow sensitive habitats and species to migrate inland or upland as sea level rises; however, habitat conversion within the County's CZ is not expected because its higher ground elevations are above the reach of future conditions daily high tides.

San Elijo Lagoon Ecological Reserve trail network: As mentioned in Section 2.4.5 (Recreation and Public Access) of this report, a network of trails provides public access to San Elijo Lagoon Ecological Reserve. The La Orilla trailhead near the El Camino Real-La Orilla intersection provides the only public access point to the lagoon located within the County's CZ (Figure 2-8). The trailhead is located at an elevation above 20 feet NAVD88 and is not exposed to coastal flooding under the SLR scenarios evaluated for this study; however, portions of the trail network within San Elijo Lagoon Ecological Reserve accessed from this trailhead are impacted by coastal flooding:

- North-south cross trail connecting La Orilla and Stonebridge Trails: This trail has low spots at an elevation of approximately 7–8 feet NAVD88 and is first impacted at the MHHW + 37 inches SLR scenario (daily inundation) and 100-year existing conditions scenario (temporary flooding).
- CDFW Dike/Levee Trail: This trail has low spots at an elevation of approximately 8 feet NAVD88 and is first impacted at the MHHW + 66 inches SLR scenario (daily inundation) and 100-year + 12 inches SLR scenario (temporary flooding). The proposed restoration action within San Elijo Lagoon would remove the CDFW dike so this impact is only relevant for the without-project scenario.

Trails subject to daily inundation would likely be rendered inoperable unless they were raised or elevated on a boardwalk. Trails subject to infrequent temporary flooding during an extreme tide event may require monitoring and/or more frequent maintenance but could likely remain in service except during storm events.

4 Key Issues Analysis

This section summarizes key issues that should be considered as efforts commence on the LUP and the IP. This section does not contain an exhaustive list of all the issues raised in this report; rather, it identifies the key issues that need to be considered during preparation of the LUP and IP. This section has been organized consistently with the Draft LUP Outline to allow for easy comparison between these key issues and the Draft LUP Outline.

4.1 Public Access and Recreation

- Because the County's CZ for this LCP is somewhat removed from the coast and the beach, the LCP will not address direct public access to the beach. However, improving trail connectivity from the County's CZ to the beach could indirectly improve public access to the coast. Consider policies that can help improve trail connectivity to the coast, particularly in the northern portion of the County's CZ, adjacent to San Elijo Lagoon Ecological Reserve.
- Providing trail and/or pathway connections between the existing trail network in San Dieguito Regional Park and San Elijo Lagoon Ecological Reserve, via the County's CZ, could greatly enhance public access and recreation. As work commences on the LUP, further assessment will take place regarding whether policies could be included to support this potential trail connection.
- The LCP update will ensure that low cost visitor and recreational opportunities remain available at San Dieguito Regional Park.

4.2 Environmentally Sensitive Habitats

- ESHAs were mapped as part of this report. During preparation of the LCP, policies and designations will remain protective of ESHAs, as directed by Coastal Act policies, based on the latest available scientific information and precedential decisions. Protection can also encompass buffering of ESHAs, mitigating for the allowed loss of any ESHA and following up on any mitigation or restoration to ensure success.
- Advances in ESHA protection regarding invasive species, tree trimming and landscaping, fire buffers, bird safe buildings, night lighting, noise, wind and solar energy, and climate change will be considered in the LCP update.
- Existing freshwater-influenced habitats within San Elijo Lagoon may convert to more saline habitats due to SLR and proposed restoration actions; however, habitat conversion within the County's CZ is not expected to occur due to its higher ground elevations above the reach of future conditions daily high tides.

4.3 Water and Marine Resources

- Urbanization within the Carlsbad, Escondido Creek, and San Dieguito River watersheds contributes to accelerated freshwater storm flows and year-round urban runoff, which may affect the ecological capacity of riparian systems within the County's CZ, and the ecological capacity of downstream resources, such as San Elijo Lagoon. This is an important consideration for future development and activities within the County's CZ.
- Improper management of steep slopes can contribute to erosion issues. One source of water quality issues in San Elijo Lagoon has stemmed from improper erosion control from nearby developments. Policies to address erosion on steep slopes will be considered as part of the LCP update.
- Updating water use policies within the LCP will be critical due to the increasing cost of water and decreasing supplies associated with recent drought conditions.
    - LCP policies related to hydromodification and storm water management will be updated to reflect the many regulatory changes in these areas since the last comprehensive update of the LCP. Measures will be identified in the LCP to protect drainage areas and to prevent siltation and pollution from storm water runoff and construction.
    - The County has adopted a Water Conservation in Landscaping Ordinance[7] that strives to reduce the amount of imported water consumed for outdoor use. It limits the amount of water to be used in irrigation for new development and encourages the use of native species in landscaping.

4.4 Agriculture

- The LCP will need to assess whether the secondary agricultural uses that occur within the County's CZ (such as lemon and orange orchards) are considered "Prime Agricultural Land" as defined in the Coastal Act.
- Because the County's CZ is largely built out and current agricultural uses are largely secondary to residential uses, consider policies that support preserving existing secondary agricultural uses and encourage establishment of new secondary agricultural uses.

4.5 Scenic and Visual Resources

- The County's CZ contains limited public viewsheds. Because of this, the LCP should identify policies to protect the viewsheds, and potentially enhance public access to these viewsheds.

[7] Landscape Ordinance: http://www.sdcounty.ca.gov/pds/Landscape-Ordinance_Design_Review_Manual.html

4.6 Planning, New Development, and Public Works

- The LCP will need to address discovery and preservation of cultural resources. The LCP update will establish policies and standards that protect archaeological and/or paleontological resources to the maximum extent feasible.

4.7 Hazards

- Riverine flooding within the County's CZ occurs as a result of freshwater discharge during heavy precipitation events. Portions of the County's CZ are immediately adjacent to and contained within the FEMA Special Flood Hazard Area along Escondido and La Orilla Creeks. Approximately 24 parcels along Escondido Creek upstream of San Elijo Lagoon and within the County's CZ are located within FEMA's 1% (100-year) or 0.2%-annual-chance (500-year) riverine floodplain. Existing land uses in these parcels primarily consist of open space or reserve, and vacant and undeveloped land, with some residential. Adaptation strategies will need to be considered as part of the LCP update.
- Existing development within the County's CZ may be exposed to coastal or riverine flood hazards under future SLR scenarios. Existing development within the County's CZ is generally located landward and upland of the extent of tidal influence, with the exception of one parcel (residential) located west of the El Camino Real-La Orilla intersection and near the limit of flooding under the 100-year tide + 66 inches of SLR scenario. In general, however, all existing development within the County's CZ is located at an elevation above the predicted future limit of riverine and coastal flooding and is not vulnerable to direct impacts of SLR.
- Residents of the County's CZ rely on critical infrastructure located outside of the study area. There is no transportation infrastructure located within the County's CZ that falls within the SLR exposure area; however, Manchester Avenue, which runs along the northern boundary of San Elijo Lagoon Ecological Reserve, provides an important transportation route from the County's CZ to I-5, Highway 101, and coastal recreation areas. The 0.4-mile-long portion of Manchester Avenue east of I-5 is at an elevation of approximately 12 feet NAVD88 and is exposed to temporary flooding under the 100-year + 66 inches SLR scenario. Adaptation strategies such as elevating the roadway or construction of a floodwall could improve the resiliency of this transportation route in the future.
- The most recent draft of the Hazard Mitigation Plan (San Diego County 2010) identifies the variety of potential hazards that may occur within the County's CZ, including rain-induced landslide hazards, liquefaction hazards, flood hazards, fire/wildfire hazards, earthquake hazards, and dam failure hazards.

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Appendix A

Relevant County Programs and Policies for the
San Dieguito Local Coastal Program (LCP) Update

Relevant County programs and policies

This document identifies the County of San Diego's (County) existing or in-progress plans, programs, and policies that are relevant to the development of policy updates for the LCP. The existing policies that may be incorporated as part of the LCP Land Use Plan are identified where applicable. The LCP update will be consistent with the following plans, programs, and policies. Exceptions where the LCP update may produce inconsistencies with existing plans will be noted in the Existing Conditions, Vulnerability and Risk, and Key Issues Report.

1. San Diego County General Plan (August 2011)

In August 2011, the San Diego County Board of Supervisors approved the San Diego County General Plan (General Plan). This was the first comprehensive update of the General Plan since 1978. The updated General Plan is based on a set of guiding principles designed to protect the County's unique and diverse natural resources and maintain the character of its rural and semi-rural communities. It reflects an environmentally sustainable approach to planning that balances the need for adequate infrastructure, housing, and economic vitality, while maintaining and preserving each unique community within the County, agricultural areas, and extensive open space.

The General Plan directs future growth in the unincorporated areas of the County with a projected capacity that will accommodate more than 232,300 existing and future homes. This growth is targeted to occur primarily in the western portions of the unincorporated County where there is the opportunity for additional development. Compared to the previous General Plan, this update reduces housing capacity by 15 percent and shifts 20 percent of future growth from eastern backcountry areas to western communities. This change reflects the County's commitment to a sustainable growth model that facilitates efficient development near infrastructure and services, while respecting sensitive natural resources and protection of existing community character in its extensive rural and semi-rural communities. The General Plan provides a renewed basis for the County's diverse communities to develop Community Plans that are specific to, and reflective of, their unique character and environment consistent with the County's vision for its future.

1.1. Community Development Model

As part of the General Plan, the Community Develop Model identifies three Regional Categories—Village, Semi-Rural, and Rural Lands—that broadly reflect the different character and land use development goals of the County's developed areas, its lower-density residential and agricultural areas, and its very low-density or undeveloped rural lands. The Community Development Model directs the highest intensities and greatest mix of uses to Village areas, while directing lower-intensity uses, such as estate-style residential lots and agricultural operations, to Semi-Rural areas. The Semi-Rural category

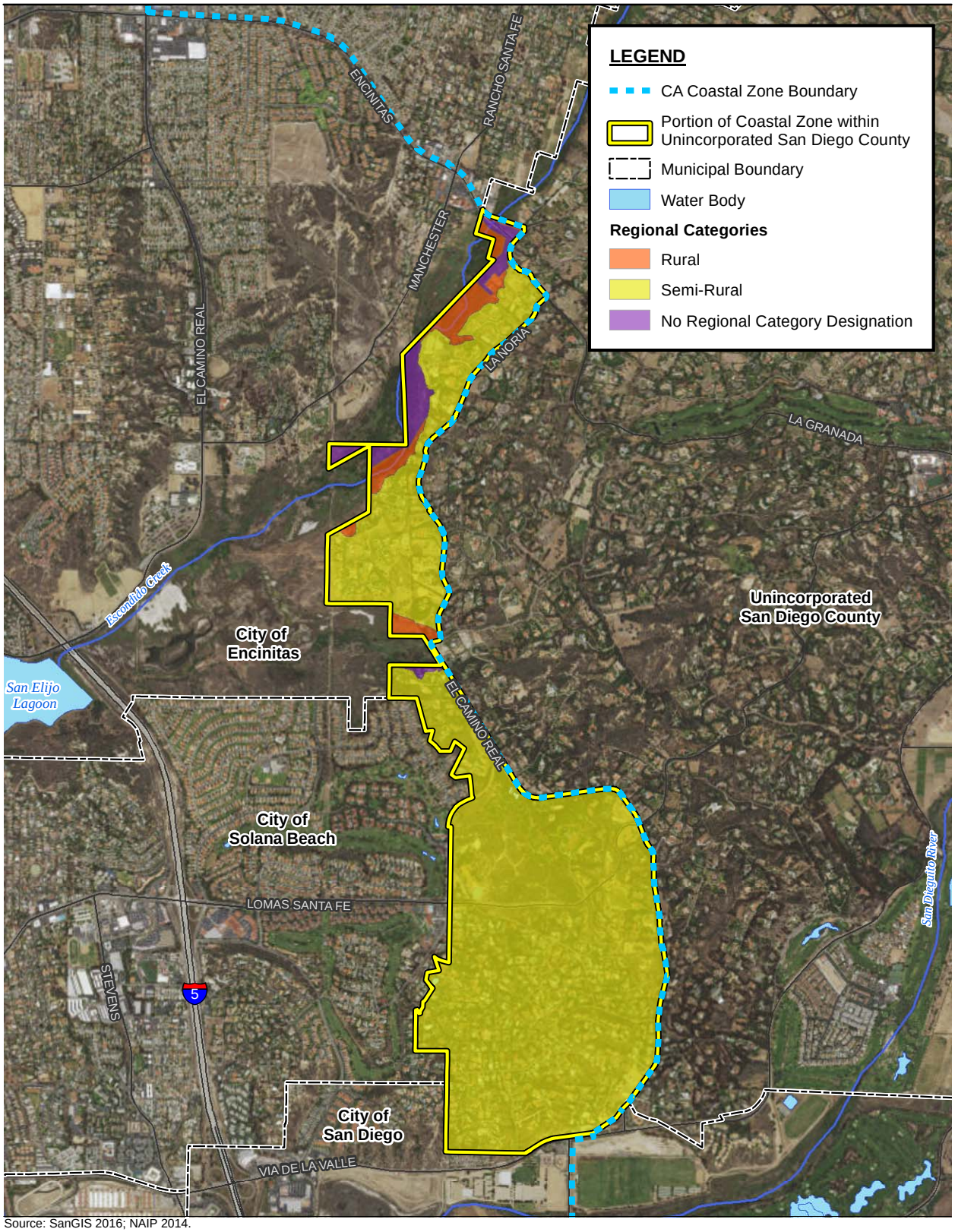
may effectively serve as an edge to the Village, as well as a transition to the lowest-density category, Rural Lands, which represents large open space areas where only limited development may occur.

Most of the land within the County's Coastal Zone (CZ) is designated as Semi-Rural and Rural; there are no Village Boundaries, Rural Village Boundaries, or Special Studies Areas that are identified within the County's CZ as part of the General Plan. Figure 2-1 shows the Applicable Regional Categories within the San Dieguito Community Planning Area and the County's CZ area. Table 1 provides a description of the regional categories as described in the General Plan.

The three regional categories serve as a broad set of development classifications and do not specify land uses, but rather the general regional structure, character, scale, and intensity of development. The Regional Categories allow many different land use types to be planned in a more unified, regional manner.

Table 1 – Description of Regional Categories

Regional Category	Description
Village	The Village category identifies areas where a higher intensity and a wide range of land uses are established or have been planned. Typically, Village areas function as the center of community planning areas and contain the highest population and development densities. Village areas are typically served by both water and wastewater systems. Ideally, a Village would reflect a development pattern that is characterized as compact, higher density development that is located within walking distance of commercial services, employment centers, civic uses, and transit (when feasible).
Semi-Rural	The Semi-Rural category identifies areas of the County that are appropriate for lower-density residential neighborhoods, recreation areas, agricultural operations, and related commercial uses that support rural communities. Semi-Rural areas often function as a transition between the Village and Rural Lands categories, providing opportunities for development, but without the intensity and level of public services expected in Villages and with design approaches that blend the development with the natural landscape. Semi- Rural residential densities are derived in consideration of the physical conditions, community character, and availability of public services, roads, and other infrastructure. Higher densities within the allowable range should be located near Village areas, while lower densities should be located near Rural Land areas. Site design methods that reduce on-site infrastructure costs and preserve contiguous open space or agricultural operations are encouraged.
Rural	The Rural Lands category is applied to large open space and very-low-density private and publicly owned lands that provide for agriculture, managed resource production, conservation, and recreation and thereby retain the rural character for which much of unincorporated County is known. Rural areas are not appropriate for intensive residential or commercial uses due to significant topographical or environmental constraints, limited access, and the lack of public services or facilities.



Source: SanGIS 2016; NAIP 2014.

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Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-1
Applicable Regional Categories

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1.2 Land Use Designations

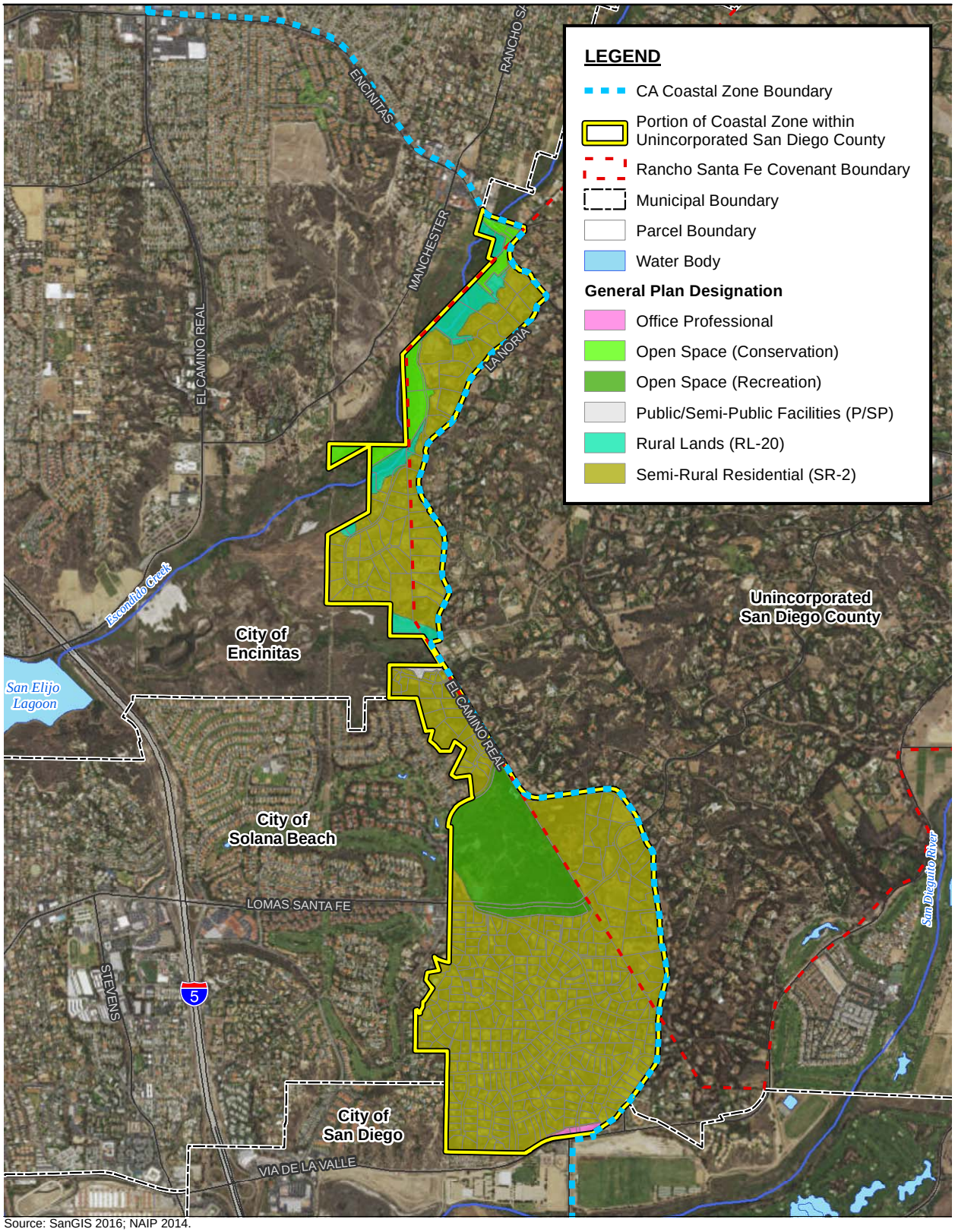
The General Plan guides the intensity, location, and distribution of land uses in the County's CZ by identifying land use designations. Land uses with the General Plan are organized through a two-tier hierarchy, which includes Regional Categories (Tier 1) and Land Use Designations (Tier 2). The Regional Categories that apply to the County's CZ are described below in Table 2.

The Land Use Designations that apply to the County's CZ include only some of the Land Use Designations included in the General Plan at large. Land within the County's CZ is primarily designated as Semi-Rural Residential (SR-2). The remaining land within the County's CZ is designated as Rural Lands (RL-20), Open Space (Conservation), Open Space (Recreation), and small pockets of Office Professional (Semi-Rural) and Public/Semi Public Facilities (P/SP). The Land Use Designations that are applicable to the County's CZ are described in Table 2 and shown in Figure 2-2.

The General Plan also states that: *"More specific standards may be established for each Land Use Designation to implement the goals and policies of the General Plan, through tool such as the Zoning Ordinance, to address impacts related to specific land uses or the needs of an individual community."*

Table 2 – Applicable Regional Categories and Land Use Designations within the County's CZ

Land Use Designation	Description
Semi-Rural Residential (SR-2)	Semi-Rural Residential (SR-2) allows a base density of 1 dwelling units (du) / 2 gross acres (for slopes less than 25%). Adjustments are made for slope-dependent properties to allow 1 du / 8 gross acres (for slopes 25% to less than 50%), and 1 du / 8 gross acres for slopes 50% or greater. Residential development within Semi-Rural areas is not typically served by municipal water systems especially where water-intensive crops such as avocado and citrus are common.
Rural Lands (RL-20)	Rural Lands 20 (RL-20) allows 1 du / 20 gross acres. Rural Lands residential designations are intended to reflect the rural agricultural, environmentally constrained, and natural "backcountry" areas of the County. Residential development within rural lands is typically not served by either municipal water and or municipal sewer systems.
Office Professional (Semi-Rural)	Office Professional (Semi-Rural) provides areas dedicated to administrative and professional services as well as limited retail uses related to or serving the needs of the primary office uses. Residential development may also be allowed as a secondary use in certain instances. The maximum intensity of Office Professional within a Semi-Rural regional category is 0.45 floor-area ration (FAR).
Open Space (Conservation)	Open Space (Conservation) is primarily applied to large tracts of land, undeveloped and usually dedicated to open space, that are owned by a jurisdiction, public agency, or conservancy group. Allowed uses include habitat preserves, passive recreation, and reservoirs. Grazing and other uses or structures ancillary to the primary open space use may be permitted if they do not substantially diminish protected resources or alter the character of the area. Such ancillary uses within this designation will typically be controlled by use-permit limitations. This designation is not normally applied to conservation easements within residential subdivisions on private lots.
Open Space (Recreation)	Open Space (Recreation) is applied to large, existing recreational areas. This designation allows for active and passive recreational uses such as parks, athletic fields, and golf courses. Uses and structures ancillary to the primary open space use may be permitted to enhance recreational opportunities only if they relate to the recreational purpose and do not substantially alter the character of the area.
Public/Semi-Public Facilities (P/SP)	Public and Semi-Public Facilities (P/SP) identifies major facilities built and maintained for public use, such as community service facilities. This designation may include privately owned facilities built and maintained for public use. A maximum FAC of 0.50 is permitted by this designation.



Source: SanGIS 2016; NAIP 2014.

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Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-2
General Plan Land Uses

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2. San Dieguito Community Plan (August 2011)

Community Plans identify the individual community character for each community, along with community-specific planning and design issues such as local public and fire access road networks, town center and specific area plans, and design guidelines. Community Plans, adopted as an integral part of the County's General Plan, are policy plans specifically created to address the issues, characteristics, and visions of communities within the County.

The San Dieguito Community Plan was last updated in August 2011 concurrently with the General Plan. The Land Use section of the Community Plan states that the policies and recommendations in the Community Plan should "necessarily maintain a reasonable consistency with the goals and policies of the Land Use Element of the General Plan. The Land Use Element is designed to carry out the Regional Growth Management Plan."

The Community Plan for the San Dieguito Planning Area identifies many subareas, and where applicable, identifies specific policies for each. The County's CZ overlaps with only some of the subareas identified in the Community Plan. Community Plan subareas that existing within the County's CZ consist of:

- The western portions of the Rancho Santa Fe Covenant (indicated in Figure 2-2) and the Stone Bridge communities in the northern portion of the County's CZ; and
- The Sun Valley and Vicinity subarea, which dominates the southern portion of the County's CZ.

2.1 Specific Plans in the San Dieguito Community Plan

There are twelve Specific Plans that have been adopted throughout the San Dieguito Planning Area. However, none of the specific plan areas are located within or immediately adjacent to the County's CZ.

The Covenant of Rancho Santa Fe

The design of Rancho Santa Fe was based on a concept that had its origins in the English countryside. The roads, laid-out by A.L. Sinnard, were given a winding, rural appearance that tends to discourage high speeds and through traffic. The Rancho Santa Fe Association, a homeowners association, was formed as a non-profit corporation on July 14, 1927. The association adopted a Protective Covenant that utilized deed restrictions to maintain community style. This Protective Covenant sets forth detailed building, land use, and subdivision requirements. The Association operates and maintains a golf course, tennis courts, playing fields, and riding and hiking trails for the sole benefit of its members, the property owners within the Covenant. As it exists today, the Rancho Santa Fe Covenant area covers approximately 6,720 acres, all within the San Dieguito Community Plan Area. This area contains approximately 1,900 residential building sites with very few remaining unimproved. Build-out population is estimated at 8,200 residents.

Architectural Design Guidelines were prepared by the Association in 1986 and are intended to assist property owners, architects, and contractors in their understanding of the Protective Covenant and

the Association Regulations by providing a set of parameters for the preparation of architectural drawings and specifications.

The Covenant area was also designated as a California State Landmark in 1982 in recognition of its history and unique development pattern. Subsequently, in 2004, the State of California amended the existing landmark status to include a Cultural Landscape Amendment, which recognizes the history and evolution of the six different Component Landscapes that make up the Covenant.

Outside of the Covenant of Rancho Santa Fe are a number of subdivisions that are considered an integral part of the public community of Rancho Santa Fe. These subdivisions, which comprise about 1,800 acres, include Hacienda Santa Fe, Rancho Del Lago, Rancho Cielo, Rancho Santa Fe Groves, Rancho La Cima, South Pointe Farms, Rancho Santa Fe Highlands, Rancho Del Rio, Horseman's Valley, Stone Bridge, Rancho Serena, and Whispering Palms. Only the subdivisions of Horseman's Valley, Stone Bridge, and Rancho Serena are located within the County's CZ.

These areas have many geographic, topographic, and socioeconomic characteristics in common with the Rancho Santa Fe area as evidenced through various studies conducted by the Rancho Santa Fe Association and Local Agency Formation Commission (LAFCO). In addition, nearly all of these perimeter subdivisions have comprehensive deed restrictions (CC&Rs) similar to that of the Rancho Santa Fe Covenant area, along with active art juries or architectural review committees directed by community associations with elected boards of directors. Most architectural styles, material quality, home size, and lot sizes are comparable to the core covenant area.

The Community Plan identifies the following policies specific to the Rancho Santa Fe area:

1. Preserve the unique visual character and landscape features of the Covenant area.
2. Require that development be compatible with the historic development patterns and California State Landmark designation.
3. Apply a maximum density of 10.9 dwelling units per acre and floor-to-area ratio (FAR) of 0.7 to the Village Core Mixed Use area within the Covenant. These or more restrictive standards shall also be reflected in the zoning for properties subject to the Village Core Mixed Use designation. *Note: This does not apply to the LCP because the Village Core Mixed Use area within the Covenant is not within the County's CZ.*
4. Require lot sizes within the Residential areas of the Covenant of Rancho Santa to be preserved at 2.86 acres and 2 acres, in zoning and through discretionary actions, as shown in Figure 3 in the San Dieguito Community Plan.

Sun Valley

The Sun Valley and vicinity area within the Community Plan is composed of a number of homeowners associations and other residentially subdivided land located between the incorporated cities of Solana Beach and Encinitas; the City of San Diego; and the covenant area of the Rancho Santa Fe Association.

When Solana Beach incorporated in 1985, the Sun Valley and vicinity area was purposely excluded because the residents felt that they had more in common with the rural areas to the east. Hoping to maintain and enhance the rural aspects of their neighborhood, citizens from the area formulated a report describing those elements that give their neighborhood its unique character. The report also included recommendations on how these qualities might be preserved.

This area is generally characterized as being quiet, peaceful, serene, and scenic. Those elements that the residents feel are essential to the maintenance of their highly desired, peaceful rural unique character are:

- Rural residential lots
- Dark night-time skies
- Slow speed, narrow meandering country-like roads without curbs, gutters, or sidewalks
- Equestrian trails co-mingling with the roads through the neighborhood
- Abundant mature landscape
- Abundant open space

The wooded corridor that Sun Valley Road follows from Linea del Cielo south toward Via de La Valle is a valuable visual resource. The absence of urban-type improvements like curbs, gutters, and sidewalks help give the narrow, meandering roads a country-like appearance.

Sun Valley is composed of large estate residential lots situated along the northwestern hillsides of feeder valleys into the San Dieguito River Valley. Sun Valley retains a more rural character due to strong enforcement of "dark sky" policies; abundant mature landscaping; country-like roads without curbs, gutters, and sidewalks; equestrian trails co-mingling with the roads; and abundant open space.

Low noise levels are a unique quality of this area, which significantly enhances its character. Narrow, low-speed roads are a primary factor in keeping noise at a minimum. The combination of low noise levels, dark night sky, and abundant open space clearly distinguishes this area from the urbanized development to the west (outside of the County).

2.2 General Development Policies in the San Dieguito Community Plan

Community Character Goal: *Provide for the orderly development of the San Dieguito Planning Area while maintaining the identities of historically established neighborhoods and preserving a more rural environment.*

1. Perpetuate the present state of rural residential living in the San Dieguito Plan Area.
2. Utilize the open spaces provided by low-intensity land uses to separate distinct neighborhoods and utilize low-density development graduated toward urban growth.
3. Establish and maintain San Dieguito as an economically and socially balanced community while ensuring that development is gradual, orderly, and in harmony with the existing environment.

4. Ensure the adequate provision of such amenities as quality education programs, parks, and recreation programs that meet the needs of all the residents of the plan area.
5. Encourage the preservation and enhancement of the natural features located within the San Dieguito Plan Area.
6. Encourage high standards of design, materials, and workmanship in all construction.
7. Signs shall be regulated to prevent any adverse impact upon the basic character of the community or on property values.
8. Heliports or heli-stops are incompatible with the character of the San Dieguito Planning Area. Also, helicopter flights over the plan area shall be restricted to only those necessary in emergency situations.
9. In reviewing proposed development, the County shall consider such criteria as:
    a. Site topography and protection of steep slopes;
    b. View orientation and view protection of adjacent properties;
    c. Natural site amenities such as trees, bluff, rocks, and natural drainage channels;
    d. Access to the proposed residence;
    e. Protection of ridgelines, and
    f. Preservation of dark skies.
10. The design of a building must be reasonably appropriate to its site, and harmonize with its surroundings.

2.3 Land Use Policies in the San Dieguito Community Plan

General Land Use Goal: *Provide for a distribution of land uses that is compatible with the existing character of the community and preserves the rural nature as it transitions to surrounding jurisdictions.*

1. Prohibit "leap frog" development as it will unnecessarily increase the costs of providing public services and facilities.
2. Ensure that development takes place in a coordinated, integrated fashion that is compatible with the rural, scenic qualities of the area.
3. Include this plan and Del Dios community representation in any future planning process.
4. Investigate the creation of a permanent planning committee with representatives from all surrounding jurisdictions and communities to develop a master plan for the entire Lake Hodges viewshed to prevent piecemeal development.
   Note: This does not apply to the areas within the County's CZ since they are not anticipated to be included in the Lake Hodges viewshed.

Residential Land Use Goal: *Enhance the present living environment while accommodating gradual residential development that harmonizes with the natural environment.*

Findings: Residential uses should continue to dominate in San Dieguito, with Semi-Rural Residential as the primary residential form. Rancho Santa Fe and those areas in the general vicinity of Sun Valley are largely built out.

1. Permit flexibility in improvement requirements in areas where the minimum lot size is greater than or equal to 1 acre.
2. Except within the Covenant of Rancho Santa Fe, site designs should emphasize the clustering of dwelling units in order to improve upon the amount and character of usable open space.
3. New and existing residential development should provide street landscaping and underground utilities.
4. Encourage the development of recreational uses in non-subdivided areas, so as to separate such uses away from existing residential uses.
5. Require compliance with community road design guidelines and discourage curbs, sidewalks, and gutters; and minimize street lights consistent with safety needs in keeping with the rural character of the area.
6. Encourage preservation of the character of historic dwellings.
7. Encourage the upgrading of existing residences, while discouraging increased residential development.

Commercial Land Use Goal: *Provide for well-designed and located commercial areas that are compatible with the character of the community.*

Findings: The two largest commercial districts located within the San Dieguito community are the Village of Rancho Santa Fe and the 4S Ranch Commons Town Center, both of which are outside of the County's CZ. Within the County's CZ, there are some mixed, office, and general commercial uses at the intersection of Via de la Valle and De la Valle Place. The surrounding neighborhoods do not support further expansion of commercial uses because it would detract from the rural character of these areas.

1. Design and construct all commercial areas with sufficient off-street parking and loading facilities.
2. Upgrade existing commercial areas through cleanup, landscaping, beautification, and utility undergrounding, and by providing additional parking in areas that have a proliferation of substandard parking lots.
3. Provide landscaping for new shopping areas and commercial buildings so that they blend with the surrounding neighborhood.
4. Provide landscape screening for any unsightly commercial uses.

5. Provide neighborhood shopping and service centers to satisfy the daily needs of adjacent neighborhoods and locate them in areas with easy, safe pedestrian and bicycle access.
6. Cluster commercial uses and discourage strip commercial development.
7. Protect areas designated as commercial from encroachment by incompatible non-commercial uses.
8. Provide a commercial land use pattern that will offer the opportunity for a diversity of commercial types, thereby supplying the community with a broad economic base.
9. Maintain a proper balance between acreage of commercial land and population served.
10. Ensure that additional commercially designated land will be provided only when existing commercial land has been developed, is approaching full use, and there is a demonstrated need for commercial growth in San Dieguito due to residential growth.
11. Consider commercial uses in adjacent urbanized areas when determining the need for additional or expanded commercial uses within San Dieguito.

Agricultural Land Use Goal: *Maintain and enhance the future of agriculture within the plan area.*

Findings: According to a land use analysis by SANDAG in 2007, 5.6% or about 1,660 acres in the San Dieguito Planning Area are currently in productive agricultural use. There are also about 3,000 acres currently under Agricultural Preserve contracts. Many of these estate areas have secondary agriculture uses such as orchards and horsekeeping. Some intensive agricultural activities still exist in the San Dieguito River Valley; however, these uses are expected to give way to estate residential uses within the next 10 to 15 years. Agriculture is important to maintaining the rural character of the San Dieguito Planning Area and it is expected to continue to be a permanent feature of the estate residential areas as a secondary use.

1. Preserve and promote San Dieguito's unique horticultural crops.
2. Utilize agricultural activities, particularly tree crops, to provide visually pleasing open spaces.
3. Encourage the preservation of prime agricultural lands for high-value crop production.
4. Emphasize agriculture as one of the highest and best uses for floodplains.
5. Utilize agriculture in combination with other uses to help agriculture compete against the forces of urbanization.
6. Protect existing agricultural activities from scattered and incompatible urban intrusions.
7. Ensure the careful maintenance and upkeep of greenhouses and other agricultural accessory buildings.
8. Utilize reclaimed water for irrigation.
9. Advocate for air quality control measures that protect against agricultural crop damage.

Industrial Land Use Goal: *Ensure that future industrial development is clean, non-polluting, and will be compatible with the existing character of the community.*

Findings: There are currently 149 acres zoned for industrial uses in the San Dieguito Planning Area. This area is outside of the County's CZ, and is entirely within the 4S Ranch Specific Plan Area, and it is adjacent to the Bernardo Industrial Park located to the east in the City of San Diego. Therefore, this section is not discussed in detail in relation to the LCP.

2.4 Circulation Policies of San Dieguito Community Plan

Circulation Goal: *Implement a transportation system that is balanced and designed to accommodate a diversity of modes. Automobile, bicycle, equestrian, pedestrian and mass transit networks should be included within the total system. It shall be constructed to include the convenient movement of people, goods, and services within the plan area, while minimizing any impacts that would detract from the natural beauty of the area and the quality of life of its citizens.*

Findings: The Mobility Element of the County General Plan depicts corridors for public mobility and access that are planned to meet the needs of existing and anticipated population of the County. The Mobility Element road network identifies road classification, improvements, and any special circumstances, such as accepting a road at a level of service (LOS) of E or F. In addition to the local public roads identified within the Mobility Element Network, there are four road segments within the County's CZ designated as Light Collector Series. These road segments and associated improvements are shown in Table 3.

Table 3 – Mobility Element Network within the County's CZ

Road Segment	Designation / Improvement	Special Circumstances
La Bajada / La Granada (SC 1523) *Segment: Rancho Santa Fe Road to Linea del Cielo*	**2.2F Light Collector** Reduced Shoulder	**Accepted at LOS E/F** Segment: Rancho Santa Fe Road to Paseo Delicias
Rancho Santa Fe Road *Segment: Encinitas city limits to La Bajada*	**2.2F Light Collector** Reduced Shoulder	**Accepted at LOS E** Segment: Encinitas city limits to La Bajada
La Noria / El Camino Real (SC 1522) *Segment: La Bajada to San Diego city limits*	**2.2F Light Collector** Reduced Shoulder	None
Lomas Santa Fe Drive (SF 1409) *Segment: San Diego city limits to El Camino Real*	**2.2F Light Collector** Reduced Shoulder	None

2.5 Public Safety, Services, and Facilities Policies of San Dieguito Community Plan

Public services and facilities provided for the San Dieguito Planning Area include sewer and water facilities, police and fire protection, schools, libraries, and utilities. To balance the demands without further burdening existing residents, new development should pay its proper share of the additionally required public services through the process of levying special fees for support of schools, libraries, and parks. It is the objective both to provide the necessary facilities as they are required and to ensure that the proper share of costs is paid by the new development.

Site and building standards for public facilities, and the extension of utilities, should be based upon the distribution and density of population and the use category of the land to be served. Natural and scenic sites in particular should be developed for public purposes in harmony with surrounding private uses.

Police

The Sheriff's Department provides rural police protection in most of the San Dieguito Plan Area through Master Beat 22. Coverage comes from the Encinitas substation on El Camino Real, 4S Ranch substation, and partial coverage from the Vista, San Marcos, and Poway substations. There is no quick and direct access to the majority of the area from Beat 22. Many of the estate developments within the San Dieguito Plan Area are guarded by security gates, and the Covenant of Rancho Santa Fe employs its own security patrol and primarily utilizes visibility and presence as deterrence to crime. There is a growing desire for increased police protection in Rancho Santa Fe and throughout the Plan Area.

Fire Protection

Fire protection is provided within the developed portions of the Plan Area by the Rancho Santa Fe Fire Protection District (RSFFPD). There are four existing fire stations currently within the Plan Area, with locations in the village of Rancho Santa Fe; adjacent to the Fairbanks Ranch Specific Plan Area, in the Rancho Cielo Specific Plan Area, and in the 4S Specific Plan Area. Mt. Israel and Del Dios are served by the RSFFPD and CAL FIRE. The Elfin Forest area receives exceptional fire protection service by the Elfin Forest Volunteer Fire Department. Automatic and mutual aid agreements for fire protection have been formed by 4S Ranch with the RSFFPD and the Cities of Escondido and San Diego.

Facilities

The Olivenhain Municipal Water District (MWD) and Santa Fe Irrigation District (ID) both provide service within the County's CZ. The Olivenhain MWD provides water within the northern portion of the County's CZ, including La Bajada Bridge, Stone Bridge, Rancho Serena, Horseman's Valley, and part of Sun Valley (San Diego LAFCO 2013a). The remaining areas of the County's CZ are served by the Santa Fe ID, including the Covenant of Rancho Santa Fe, and the majority of Sun Valley (except the small northern section served by Olivenhain MWD; San Diego LAFCO 2013b).

Sewer

The County's CZ is partially within the Rancho Santa Fe Community Service District (CSD), which is responsible for providing sewer service. The Rancho Santa Fe CSD serves some of the areas west of the Covenant of Rancho Santa Fe, including Rancho Serena. However, the majority of the area is not currently served by a sewer provider—including La Bajada Bridge, Stone Bridge, and Horseman's Valley. The majority of Sun Valley is also not served by the Rancho Santa Fe CSD; however, there is a small isolated area served by the Rancho Santa Fe CSD, and the remaining areas are within a LAFCO identified study area. Most of the existing developments use septic tanks.

Solid Waste Disposal

No solid waste disposal facilities are currently located within the County's CZ. Residents may contract privately with local garbage haulers and recyclers.

Utilities

San Diego Gas & Electric Company is responsible for ensuring that electrical capacity is available within the San Dieguito plan area. In addition, with the exception of possible future mains, gas service can be extended to all other areas of San Dieguito by adding to the distribution system. Such extensions would generally be made along public streets, utilizing existing franchise rights, or within existing transmission corridors.

3. Zoning

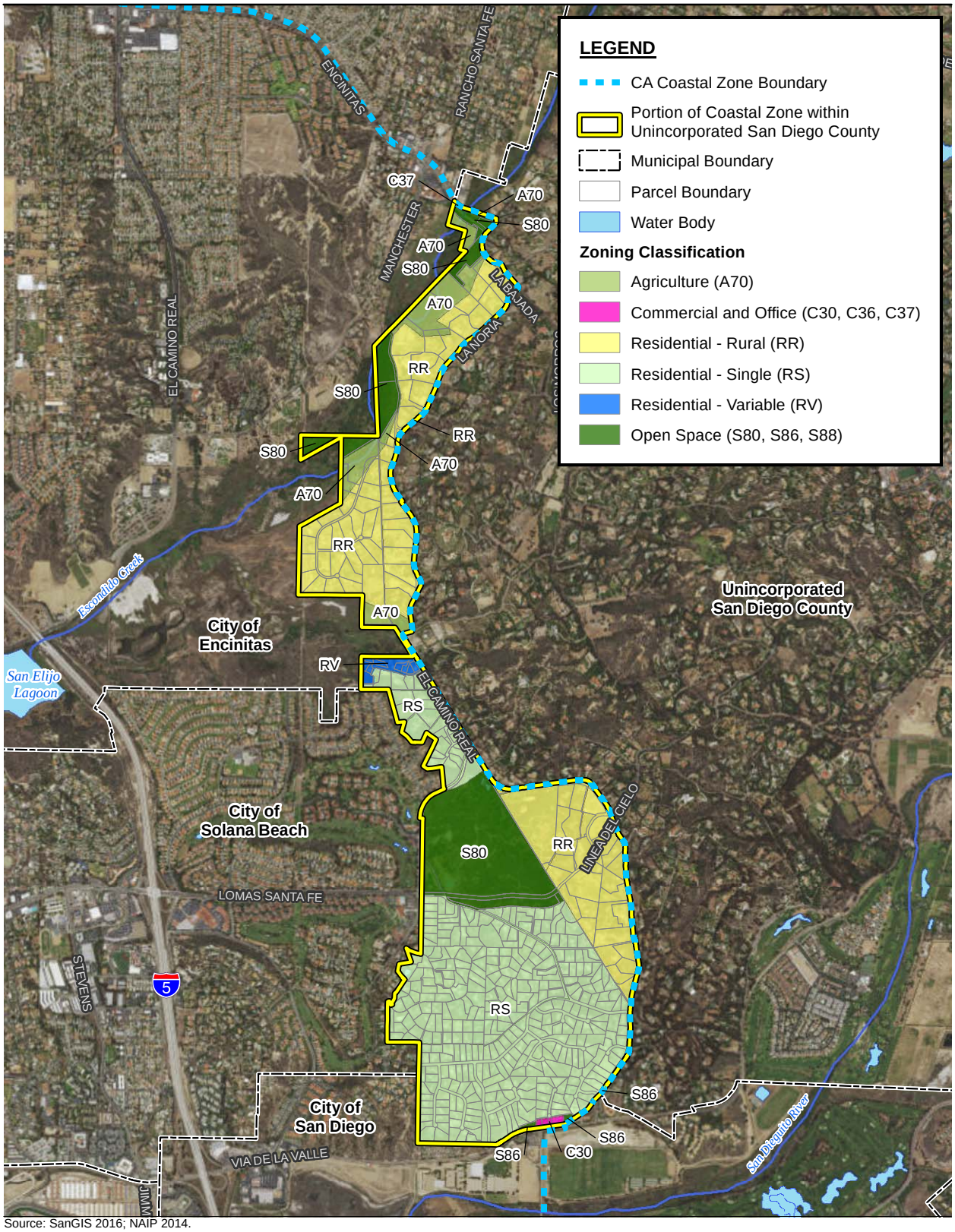
The Zoning Ordinance was adopted by the Board of Supervisors to regulate land uses in the County of San Diego. The unincorporated area is divided into zones according to the present and potential uses of the land. The Zoning Ordinance and zoning maps must be consistent with the General Plan, because they are the primary methods for achieving the objectives of the Plan. The Use Regulations found in the Zoning Ordinance provide a more detailed description of those specific activities permitted under the Community Plan Designations. The Zoning Ordinance is not the only land use regulation applicable to development of property.

The Zoning Ordinance specifies the uses permitted, lot size, density, height, building types, animal regulations, and other requirements. The Zoning Ordinance of the County of San Diego separates each of these subjects and governs each with an individual designator. The designators are found in the appropriate schedules of the Zoning Ordinance. A “zone” is the combination of the Use Regulation and the other regulations, i.e., the entire zone “box.” The Use Regulation is not the zone, but specifies the permitted uses. In most cases a dash (-) or blank space indicates that a particular designator is not used. However, in density, a dash (-) indicates the General Plan Land Use Designation shall be referred to for the maximum allowed density. Because a zone is the combination of all designators, a change in any designator requires a zone reclassification.

The applicable Use Regulations within the County’s CZ are summarized in Table 4, and shown in Figures 2-3 and 2-4. Some of the other significant designators that are applied to the Use Regulations are also noted where applicable.

Table 4 – Summary of Use Regulations in the County's CZ

Use Regulation	Description
RS – Single Family Residential	Family residential use is the principal and dominant uses; other civic uses (essential services and fire protection) as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) are also permitted. Other uses may be permitted subject to minor or major use permit.
RR - Rural Residential	Residential areas where agricultural use is compatible with a dominant, permanent residential use is desired. Applied to areas where urban levels of service are not available and where large lots are desired. In addition to family residential, other civic uses (essential services and fire protection), as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) are permitted. Other uses may be permitted subject to minor or major use permit
RV – Variable Family Residential	Family residential use is the principal and dominant uses; other civic uses (essential services and fire protection) as well as agricultural uses (horticulture cultivation, tree crops, row and field crops) are also permitted. Other uses may be permitted subject to minor or major use permit.
S80 – Open Space	Land generally unsuitable for intensive development that is applied to hazard or resource areas, public lands, recreation areas, or lands subject to open space easement or similar restrictions. Allowable uses include those that have a minimal impact on the natural environment, or those compatible with hazards, resources, or other restrictions. All development requires site plan review. In addition to family residential, other civic uses (essential services and fire protection), as well as agricultural uses (horticulture cultivation, tree crops, row and field crops), are permitted. Other uses may be permitted subject to minor or major use permit
S86 – Parking	Identify and create areas for automotive parking in association with another dominant land use and to create physical separation between one type of use and another, or to accommodate off-street parking requirements for commercial or industrial uses. Permitted uses include other civic uses (essential services, fire protection, and parking services), as well as commercial uses (automotive and equipment: parking). Other uses may be permitted subject to minor or major use permit
C30 – Office-Professional	Office-Professional use regulations are intended to create and enhance areas where administrative, office, and professional services are the principal and dominant use, where such uses do not involve high volumes of vehicular traffic. Typically applied near residential areas, and have a scale and appearance compatible with and complementary to adjacent residential uses, and have pedestrian as well as vehicular access. A variety of civic and commercial uses are permitted; other uses may be permitted subject to minor or major use permit.
A70 – Limited Agricultural	Primarily for agricultural crop production, with a limited number of small farm animals. Agricultural products raised on the premises may be processed. This designation is intended to protect moderate to high quality agricultural land. Permitted uses include family residential, civic uses (essential services and fire protection services) and agricultural uses (horticulture, tree crops, row and field crops, packing and processing: limited). Other uses may be permitted subject to minor or major use permit.



Source: SanGIS 2016; NAIP 2014.

3,000 1,500 0 3,000 Feet

Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-3
Summary of Use Regulations

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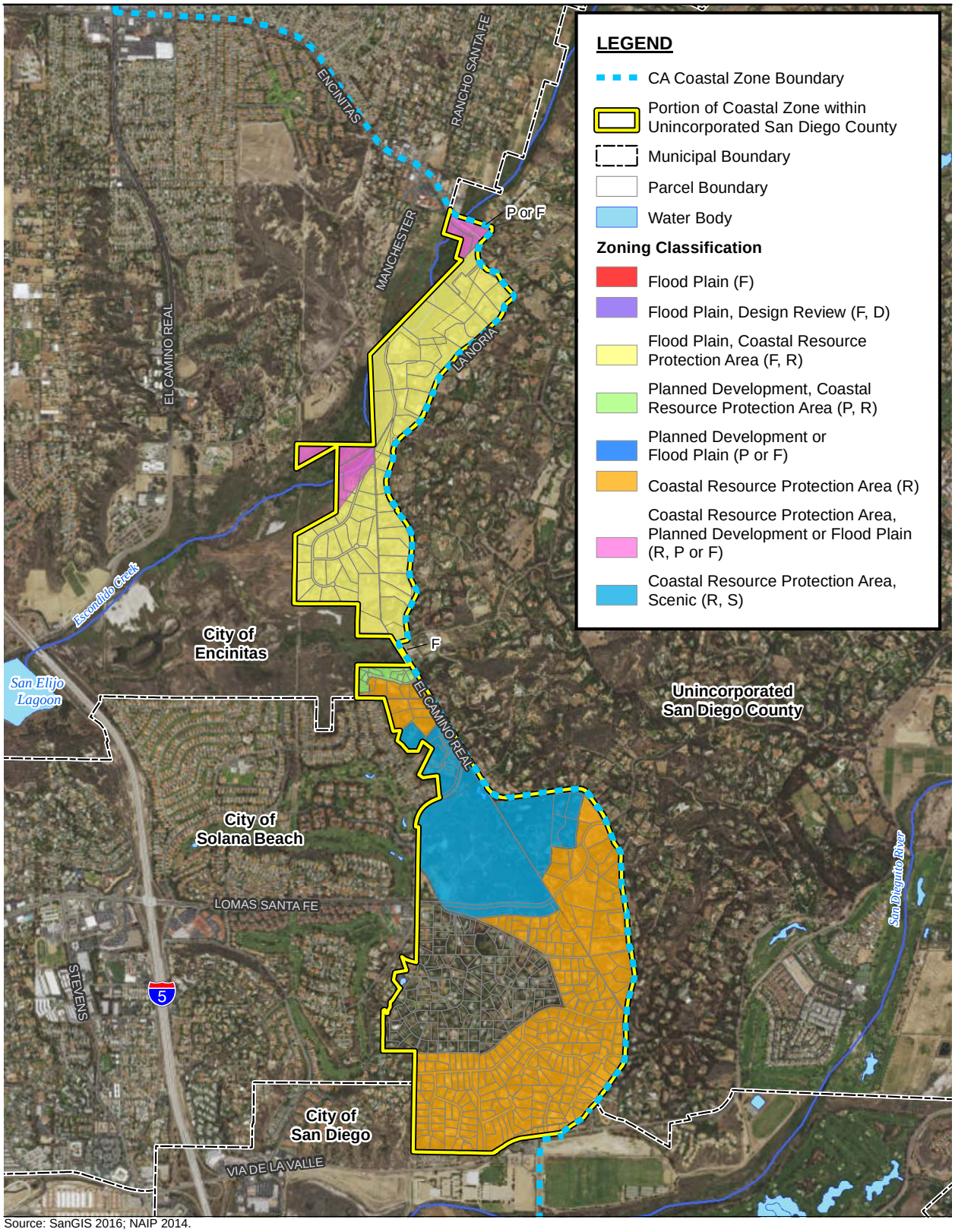

Source: SanGIS 2016; NAIP 2014.

3,000 1,500 0 3,000 Feet

Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2-4
Special Zoning Designations

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In addition to the Use Designations, the Zoning Ordinance specifies the, lot size, density, height, building types, animal regulations, and other requirements. In general, zoning within the County's CZ also requires large lots with large setbacks for residential uses. In addition, building heights are limited to 30 or 35 feet, and two stories. Some of the parcels within the County's CZ have additional special regulations that are tailored to special circumstances. These special designations within the County's CZ include, but are not limited to, Flood plain, Coastal Resource Protection Area, and Scenic.

4. Other Relevant Plans and Policies

The County's regulatory programs for stormwater are established in County ordinances, principally the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO), at County Code sections 67.801 et seq. The WPO defines the requirements that are legally enforceable by the County in the unincorporated parts of the County.

On May 8, 2013, the San Diego Regional Water Quality Control Board (Regional Board) adopted a new Municipal Stormwater Permit (National Pollution Discharge Elimination System Permit, No. R9-2013-0001), and subsequently adopted R9-2015-0001 on February 11, 2015, which amended the order. This Permit mandates that the County of San Diego develop new and updated Runoff Management Plans and Programs, including Water Quality Improvement Plans and a Jurisdictional Runoff Management Program. These documents were submitted to the Regional Board on June 26, 2015. Permit requirements are generally implemented in the unincorporated County under authority of the WPO.

On May 13, 2015, the County Board of Supervisors adopted the WPO, which is updated to reflect current Stormwater Permit requirements. The WPO became effective June 12, 2015.

On November 18, 2015, the Regional Board amended the 2013 Municipal Separate Storm Sewer System (MS4) Permit (Order No. R9-2015-0100) to make minor permit revisions and to enroll south Riverside County Copermittees. The amended MS4 Permit, like all previous iterations, requires the County to establish and maintain adequate legal authority to implement all updated MS4 Permit provisions. The ,WPO), is being amended to ensure that it is current with the minimum requirements of the recently amended MS4 Permit.

On January 6, 2016, the County Board of Supervisors considered the adoption of amendments to the WPO needed to bring it into conformance with the current MS4 Permit to include updating terminology and definitions related to land development priority development projects (PDPs), removal of outdated sections, minor updates to discharge prohibitions, and the incorporation of an optional program to allow development projects to satisfy some of its stormwater compliance obligations at off-site locations. The amended WPO will become effective on February 26, 2016.

In addition to the updated WPO, the County has produced a number of reports and plans that also assist with stormwater pollution prevention, including:

- Hydromodification Management Plan: The need to address hydromodification and its influence on water quality is included in the San Diego Regional Water Board Order R9-2007-001, Provision D.1.g of California Regional Water Quality Control Board San Diego Region Order R9-2007-0001, which requires the San Diego Stormwater Copermittees to implement a

Hydromodification Management Plan (HMP) "…to manage increases in runoff discharge rates and durations from all Priority Development Projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force." To address this permit condition, the Copermittees, represented by the County of San Diego, proceeded with developing an HMP that meets the intent of the Permit Order. The permit requires the Copermittees to develop an HMP for all PDPs, with certain exemptions. The HMP must develop standards to control flows within the geomorphically-significant flow range. Supporting analyses must be based on continuous hydrologic simulation modeling. As required by Permit Order No. R9-2007-0001, each Copermittee shall incorporate and implement the HMP into the Standard Urban Storm Water Mitigation Plan (SUSMP) and implement the HMP for all applicable PDPs by January 14, 2011. PDPs are required to implement hydromodification mitigation measures so that post-project runoff flow rates and durations do not exceed pre-project flow rates and durations where such increases would result in an increased potential for erosion or significant impacts to beneficial uses.

- Low Impact Development Handbook: The County's Low Impact Development (LID) Handbook integrates the most current research on LID implementation in San Diego County. The LID Handbook includes requirements in the County's Standard Urban Stormwater Mitigation Plan (SUSMP), HMP, and seamlessly integrates stormwater pollution prevention standards. All LID facilities designed to meet PDP requirements shall be sized according to County of San Diego SUSMP guidelines.

- Stormwater Urban Mitigation Plan (SUSMP) for Development Applications: SUSMP requirements only apply to projects that have received Prior Lawful Approval (PLA) before February 26, 2016. Projects without PLA on or after February 26, 2016, will be subject to the requirements of the County BMP Design Manual. The SUSMP is intended to help implement one part of the County's Stormwater Program. The SUSMP only addresses land development and capital improvement projects. It is focused on project design requirements and related post-construction requirements, not on the construction process itself.

- Grading Ordinance: All grading within the County of San Diego must be completed in accordance with approved plans and permits. A grading permit is required if an excavation or fill is less than 8 feet in vertical height or does not result in the movement of more than 200 cubic yards of material on any one site; or, if an excavation is below a finished grade for basements and footings of a building, retaining wall, swimming pool, septic tank, leaching system, or other structure authorized by a valid building permit; or permitted refuse disposal area or sanitary fills; or tilling or cultivation of land for agricultural purposes.

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Appendix B

Biological Resources Summary Memorandum for the
San Dieguito Local Coastal Program (LCP) Update

To	Danny Serrano, County of San Diego
Subject	County of San Diego Local Coastal Program Update Biological Resources Summary Memorandum
From	Jessica Sisco and Dallas Pugh, AECOM
Date	February 29, 2016

This memorandum was prepared to support the development of the Local Coastal Program (LCP) Update for the County of San Diego. Specifically, this Biological Resources Summary Memorandum (memo) was prepared to address the first five elements of the natural resources component checklist on page 4-1 of Section 4 of the California Coastal Commission's (CCC) LCP Update Guide (CCC 2013):

- A definition of Environmentally Sensitive Habitat Area (ESHA) that is consistent with the Coastal Act §30107.5;
- A definition of wetland that is consistent with Coastal Act §30121 and §13577(b) of the Code of Regulations;
- A statement that the condition of the wetland does not affect its regulatory status as a wetland, as defined in your LCP;
- An ESHA map and descriptions of existing, known sensitive habitat areas;
- A statement that the ESHA maps are not an exhaustive compilation of the habitat areas that meet the ESHA definition;

The Biological Study Area (BSA) addressed in this memo consists of the portion of the Coastal Zone that falls within unincorporated San Diego County, which totals roughly 1,050 acres (Figure 1).

This memo includes the following sections:

- Section 1.0 – Methods
  - Section 1.1 – Natural Resource Definitions
  - Section 1.2 – Identification of ESHAs using Historical Records of Natural Resources within the BSA
- Section 2.0 – Results and Discussion
  - Section 2.1 – Vegetation Communities and Other Land Cover Types
  - Section 2.2 – Special-Status Resources
  - Section 2.3 – Delineation of ESHAs
- Attachment A – Special-Status Species with Potential to Occur in the BSA

1.0 Methods

The following section describes the methods used to define and identify the natural resources that occur, or have potential to occur, within the BSA. This includes rare terrestrial natural communities deemed sensitive by the CCC and the California Department of Fish and Wildlife (CDFW), special-status plant and wildlife species, and commonly occurring vegetation communities and other land cover types.

1.1 Natural Resource Definitions

The following section provides the natural resource definitions identified in the LCP Update Guide and suggested for inclusion in the LCP. These definitions include excerpts from the LCP Update Guide relevant to the identification of ESHA and wetlands.

1.1.1 ESHA

Coastal Act Section 30107.5 Definition of Environmentally Sensitive [Habitat] Areas (ESHAs)

> "Environmentally sensitive area" means 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 development.

Section 30240(a) of the Coastal Act restricts development within ESHA to only those uses that are dependent on the resource, and requires that ESHA be protected against significant disruption of habitat values. It also requires that areas adjacent to ESHA and parks and recreation areas be sited and designed to prevent degradation of those areas and to be compatible with the continuance of those habitat and recreation areas. Pursuant to Section 30107.5, in order to determine whether an area constitutes an ESHA, and is therefore subject to the protections of Section 30240, the CCC has asked if either of the following conditions have been met:

> 1) There are rare species or habitat in the subject area;
>
> 2) There are especially valuable species or habitat in the area, which is determined based on:
>
> a) whether any species or habitat that is present has a special nature, OR
>
> b) whether any species or habitat that is present has a special role in the ecosystem.

When the CCC has found that either of these two conditions is met, it has assessed whether the habitat or species meeting these conditions is easily disturbed or degraded by human activities and developments. If they are, the CCC has found the area to be an ESHA. It should be noted that even disturbed or degraded habitats may constitute ESHA depending on the level of disturbance.

1.1.2 Wetlands

Coastal Act Section 3021 Definition of Wetland

> "Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

CCR §13577(b) (in part)

> 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.

Based on these definitions, wetlands under the Coastal Act may only display one of the wetland parameters typically used to define wetland areas, unlike the U.S. Army Corps of Engineers, which uses a three-parameter definition under its federal authorities.

The Coastal Act definition of wetland (§ 30121) does not distinguish between wetlands according to their quality. Thus, under the Coastal Act, poorly functioning or degraded areas that meet the definition of wetlands are subject to wetland protection policies. To ensure consistency with the Coastal Act, therefore, the condition of the wetland would not affect its regulatory status as a defined wetland under the LCP.

1.1.3 Special-Status Resources

For the purposes of this memo, resources were considered special status, and potential ESHAs or indicators of ESHAs, if they met at least one of the following criteria:

- Listed or proposed for listing (including candidate species[1]) under the federal Endangered Species Act and California Endangered Species Act (CESA);
- CDFW Species of Special Concern;
- CDFW Watch List Species;
- CDFW Fully Protected species;

[1] Candidate species are those petitioned species that are actively being considered for listing under the federal Endangered Species Act (ESA), as well as those species for which the U.S. Fish and Wildlife Service (USFWS) has initiated an ESA status review, as announced in the Federal Register. Proposed species are those candidate species that warrant listing as determined by USFWS and have been officially proposed for listing in the Federal Register. Under the California Endangered Species Act, candidate species are those species currently petitioned for state-listing status.

- Listed by California Native Plant Society (CNPS) as California Rare Plant Ranks (CRPR) 1A (presumed extinct in California and rare/extinct elsewhere); 1B (rare, threatened, and endangered in California and elsewhere); 2A (presumed extinct in California, but more common elsewhere); or 2B (rare, threatened, or endangered in California, but more common elsewhere) (CNPS 2016). All plants constituting CRPR 1A, 1B, 2A, and 2B meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CNPS 2016);
- Some, but not all, CRPR 3 and 4 species. Some plants constituting CRPR 1A, 1B, 2A, and 2B meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CNPS 2016). CRPR 3 plants are those for which more information is needed (a review list) and CRPR 4 plants are those of limited distribution (watch list) (CNPS 2016);
- Species covered by the San Diego County Multiple Species Conservation Program (SanGIS 2016); and/or
- Rare Terrestrial Natural Communities Recognized by CDFW (CDFW 2016).

1.2 Identification of ESHAs using Historical Records of Natural Resources within the BSA

The following section describes the methods used to identify the natural resources that have the potential to occur or have historically occurred within the BSA. As described in this section, the historical data were also gathered to delineate ESHAs throughout the BSA. No site visits were conducted as part of this preliminary assessment.

1.2.1 Historical Literature and Database Review

The following resources were reviewed to determine what historically recorded resources occur or have the potential to occur within the BSA, and whether an area should be considered an ESHA based on the presence of said resources. Select information pertaining to both common and special-status resources of the BSA was reviewed for the update of the LCP. The following sources were consulted to obtain public information relevant to the BSA:

- U.S. Fish and Wildlife Service (USFWS) regional species database (USFWS 2015);
- County of San Diego SanGIS Geographic Information System (GIS) Data (SanGIS 2016);
- San Diego Bird Atlas (Unitt 2005);
- California Natural Diversity Data Base (CNDDB) (CDFW 2016);
- CNPS Electronic Inventory (CNPS 2016);
- San Dieguito Community Plan - Escondido Creek Resource Conservation Area (RCA) Rare Species List (County of San Diego 2014); and
- County of San Diego SanGIS database (SanGIS 2016).

For the CNDDB and CNPS database queries, AECOM searched special-status species records within the Del Mar, Encinitas, and Rancho Santa Fe USGS 7.5-minute topographic quadrangles, which encompass the BSA.

1.2.2 Delineation of ESHAs

Per the natural resource definitions described in Section 1.1, a preliminary delineation of ESHAs within the BSA was based on the presence of one or more of the following parameters:

- Vegetation community mapped within the BSA by the County of San Diego SanGIS database (SanGIS 2016) is considered a Rare Natural Terrestrial Community by CDFW (CDFW 2016);
- Vegetation community mapped within the BSA by the County of San Diego SanGIS database (SanGIS 2016) qualifies as a wetland under the definition provided in Section 1.1.2; and
- Vegetation community mapped within the BSA by the County of San Diego SanGIS database (SanGIS 2016) has the potential to support one or more special-status species based on records yielded within the BSA during the historical literature and database review described in Section 1.2.1 (USFWS 2015; SanGIS 2016; Unitt 2005; CDFW 2016; County of San Diego 2014).

Please note that the preliminary delineation of ESHA boundaries does not include an exhaustive compilation of the habitat areas that meet the ESHA definition. Site-specific biological evaluations and field observations are required to identify ESHAs and other special-status resources that may not have been included in the literature and database review.

2.0 Results and Discussion

The following section provides the results of the historical literature and database review, and delineation of ESHAs described in Section 1.2.

2.1 Vegetation Communities and Other Land Cover Types

Sixteen vegetation communities and other land cover types were identified within the BSA during AECOM's review of the databases in February 2016, as described in Section 1.3 (Figure 2). Table 1 includes the acreages for each vegetation community or land cover type within the BSA, as illustrated in Figure 2.

Table 1. Vegetation Community and Other Land Cover Type Acreages in the BSA

Vegetation Community/Land Cover Type	Acreage
Marsh/Wetland/Riparian	
Alkali Marsh*	16.2
Disturbed Wetland*	6.8
Freshwater Marsh*	7.6
Southern Riparian Scrub*	28.1
Southern Willow Scrub*	0.04
Uplands	
Coastal Sage-Chaparral Transition*	1.0
Diegan Coastal Sage Scrub*	79.1
Disturbed Habitat	3.2
Eucalyptus Woodland	6.9
Non-Native Grassland	27.2
Southern Maritime Chaparral*	104.5
Southern Mixed Chaparral*	19.5
Other Land Cover Types	
Field/Pasture	22.7
Intensive Agriculture	16.8
Orchards and Vineyards	12.8
Urban/Developed	707.0
TOTAL	**1,059.4**

*Considered an ESHA based on the preliminary analysis described in this memo. Please see Section 2.3 for a full discussion of ESHA delineation.

2.2 Special-Status Resources

The following section provides the results of the historical literature and database review described in Section 1.2.1.

2.2.1 Rare Terrestrial Natural Communities (CDFW 2016)

The following nine Rare Terrestrial Natural Communities were listed in the CNDDB (CDFW 2016) for the Del Mar, Encinitas, and Rancho Santa Fe USGS 7.5-minute topographic quadrangles, which encompass the BSA.

- Maritime Succulent Scrub
- San Diego Mesa Hardpan Vernal Pool
- Southern Coastal Salt Marsh
- Southern Cottonwood Willow Riparian Forest
- Southern Maritime Chaparral
- Southern Riparian Forest
- Southern Riparian Scrub

- Southern Willow Scrub
- Torrey Pine Forest

2.2.2 Special-Status Species

Special-status species considered for potential to occur in the BSA were based on a review of the literature and database searches described in Section 1.2.1. A total of 87 special-status plant species and 54 special-status wildlife species were considered to have potential to occur within the BSA (Attachment A). For this preliminary analysis, the level of potential for a species to occur within the BSA (i.e., none, low, moderate, high, present) was not included in Attachment A as there have not been recent field efforts (e.g., current vegetation mapping, habitat assessments, etc.) with specific data on which to confidently make those determinations. The specific level of potential should be determined on a case-by case basis as development projects or plan amendments move through the environmental review process, using the comprehensive list in Attachment A as a baseline for species to consider. Note: all databases and literature should be reevaluated for each project or plan amendment to ensure the table in Attachment A represents the most current set of available data.

Figure 3 illustrates the locations of those species found within the vicinity of the BSA according to the GIS databases queried during the literature search. These include the SanBIOS (SanGIS 2016), San Diego Bird Atlas (Unitt 2005), and USFWS GIS (USFWS 2015) databases. The accuracy of mapped historical locations was also considered when evaluating species potential to occur within the BSA. For example, occurrences located in developed areas were often a result of low accuracy and only represent a center point of a larger radius in which the species may have been found. Note that the CNDDB locations are not included in Figure 3 as it is against CDFW regulations to disclose their data without prior authorization. Additionally, Figure 3 does not include the locations of species identified in the San Dieguito Community Plan as the exact locations are unknown; estimating unpublished locations would be speculative and could be problematic for adjacent land owners. However, Attachment A provides a comprehensive list of species yielded from the literature and database review that have potential to occur within the BSA. Attachment A includes details on each species' listing status and general habitat requirements.

2.3 Delineation of ESHAs

This section provides a preliminary assessment of existing ESHAs and wetlands within the BSA. No site visits were conducted as part of this preliminary assessment. This section and the associated figure (Figure 4) do not represent an exhaustive compilation of the areas that meet ESHA or wetland definition. Rather, they are an illustrative tool to help identify potential resources and it is the actual presence of ESHA on the site that should dictate whether ESHA policies apply to a site.

As the methods in Section 1.2.2 describe, the ESHAs delineated in Figure 4 represent those 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 which could be easily disturbed or degraded by human activities and development.

2.3.1 Rare Natural Terrestrial Communities and Wetlands

The following vegetation communities mapped within the BSA by the County of San Diego SanGIS database (SanGIS 2016) are considered a Rare Natural Terrestrial Community by CDFW (CDFW 2016) or qualify as a wetland under the definition provided in Section 1.1.2. Therefore, the following vegetation communities were delineated as ESHAs (Figure 4):

- Disturbed Wetland (Wetland)
- Alkali Marsh (Wetland)
- Freshwater Marsh (Wetland)
- Southern Riparian Scrub (Wetland and Sensitive Terrestrial Community)
- Southern Willow Scrub (Wetland and Sensitive Terrestrial Community)

2.3.2 Special-Status Species

Two historical species records fall within the BSA: coastal California gnatcatcher (*Polioptila californica californica*), a special-status bird (federally threatened) that nests exclusively in Diegan coastal sage scrub (CNDDB 2016); and Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), a perennial special-status plant (federally endangered/CNPS List 1B.1) that occurs in southern maritime chaparral (CNPS 2016). While these are historical records from databases that may be slightly inaccurate with regard to exact location, the ESHA boundary was delineated around these data points per the requirements of the LCP Update Guide. For the coastal California gnatcatcher location, the ESHA includes all Diegan coastal sage scrub habitat within the BSA, including the coastal sage-chaparral transition areas (see Figures 2 and 4). For the Del Mar manzanita location, the ESHA includes all southern maritime chaparral habitat within the BSA (see Figures 2 and 4).

It is noted that other vegetation communities within the BSA have the potential to support special-status species and therefore possibly qualify as an ESHA. These include disturbed habitat, eucalyptus woodland, non-native grassland, and the margins of agricultural fields that are capable of supporting special-status species such as burrowing owl (*Athene cunicularia*) and white-tailed kite (*Elanus leucurus*), among others. Given that none of the species listed in Attachment A rely exclusively on the vegetation communities noted above, these community types are not included as ESHAs herein. Additional analyses through field investigations would be required on a case-by-case basis.

References

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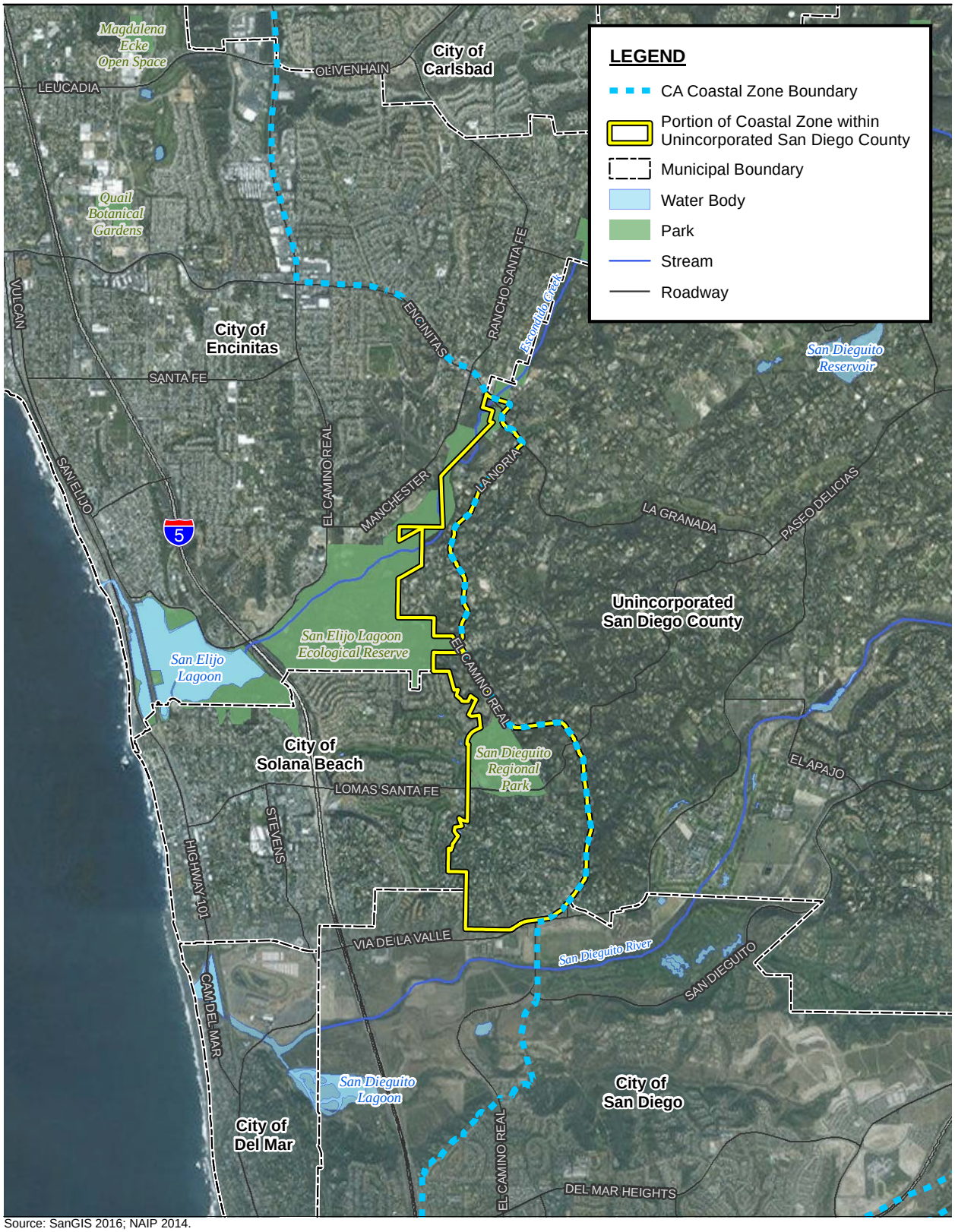
U.S. Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP). 2014. Aerial Imagery. Available at http://www.fsa.usda.gov/programs-and-services/aerial-photography/imagery-programs/naip-imagery/ [accessed February 2016].

U.S. Fish and Wildlife Service (USFWS). 2015. Carlsbad Fish and Wildlife Office GIS division. Available at http://www.fws.gov/carlsbad/GIS/CFWOGIS.html. Last updated October 2015 [accessed February 2016].

Unitt, Phillip. 2005. *San Diego County Bird Atlas* GIS Database. San Diego Natural History Museum & Ibis Publishing Company, San Diego. 645 pp. Literature published in 2004; GIS database published in January 2005 [accessed February 2016].

Figure 1

Local Context



Source: SanGIS 2016; NAIP 2014.

1 0.5 0 1 Mile

Scale: 1:63,360; 1 inch = 1 mile

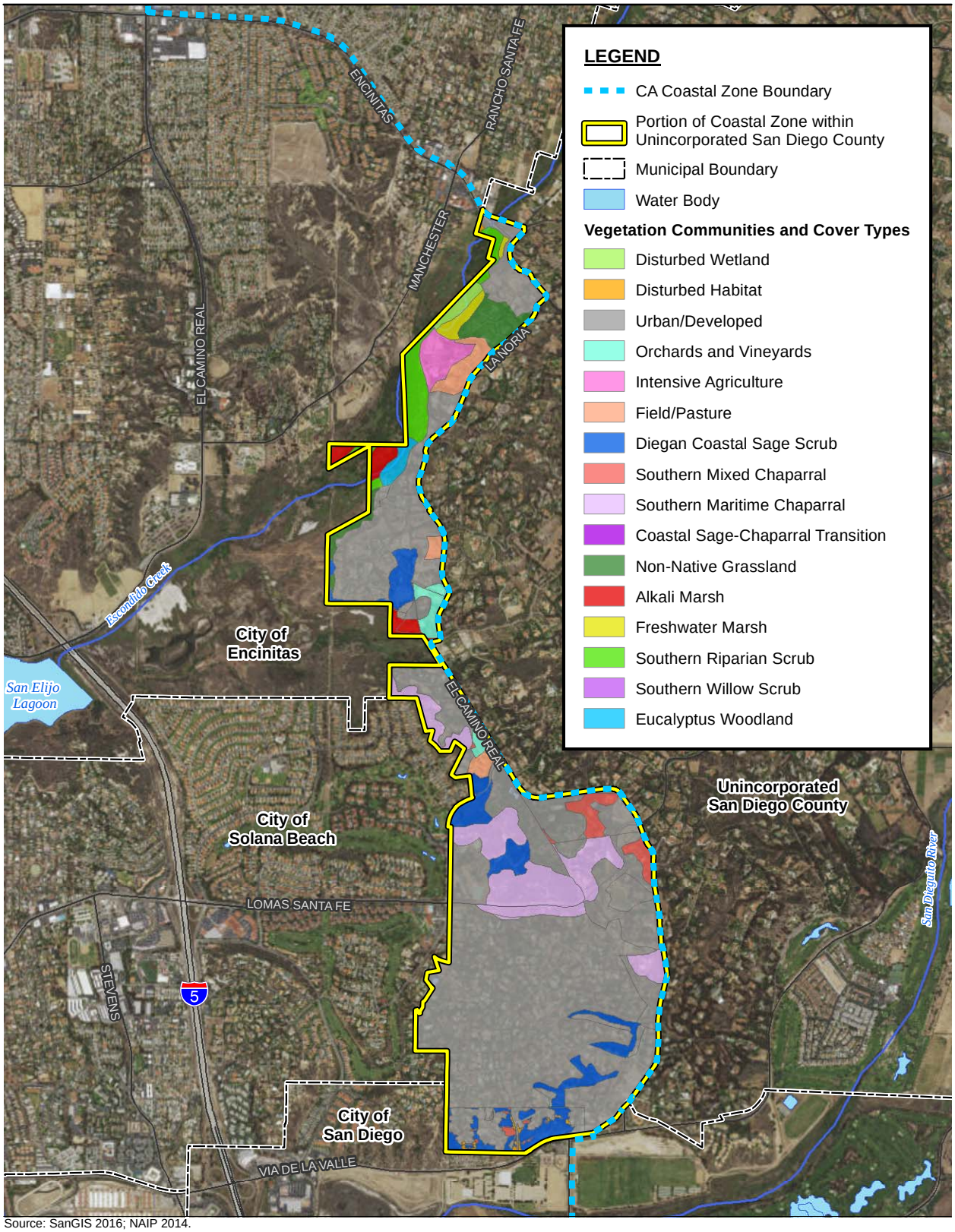
Figure 1
Local Context

Local Coastal Program Update: Existing Conditions, Vulnerability and Risk, and Key Issues Report

Path: P:_6048\60484703_Local_Coastal_Program_Update\800-CAD-GIS\822_Maps\Bio_LocalContext.mxd, 4/6/2016, daniel_arellano

Figure 2

Vegetation Communities and Other Cover Types



Source: SanGIS 2016; NAIP 2014.

3,000 1,500 0 3,000 Feet

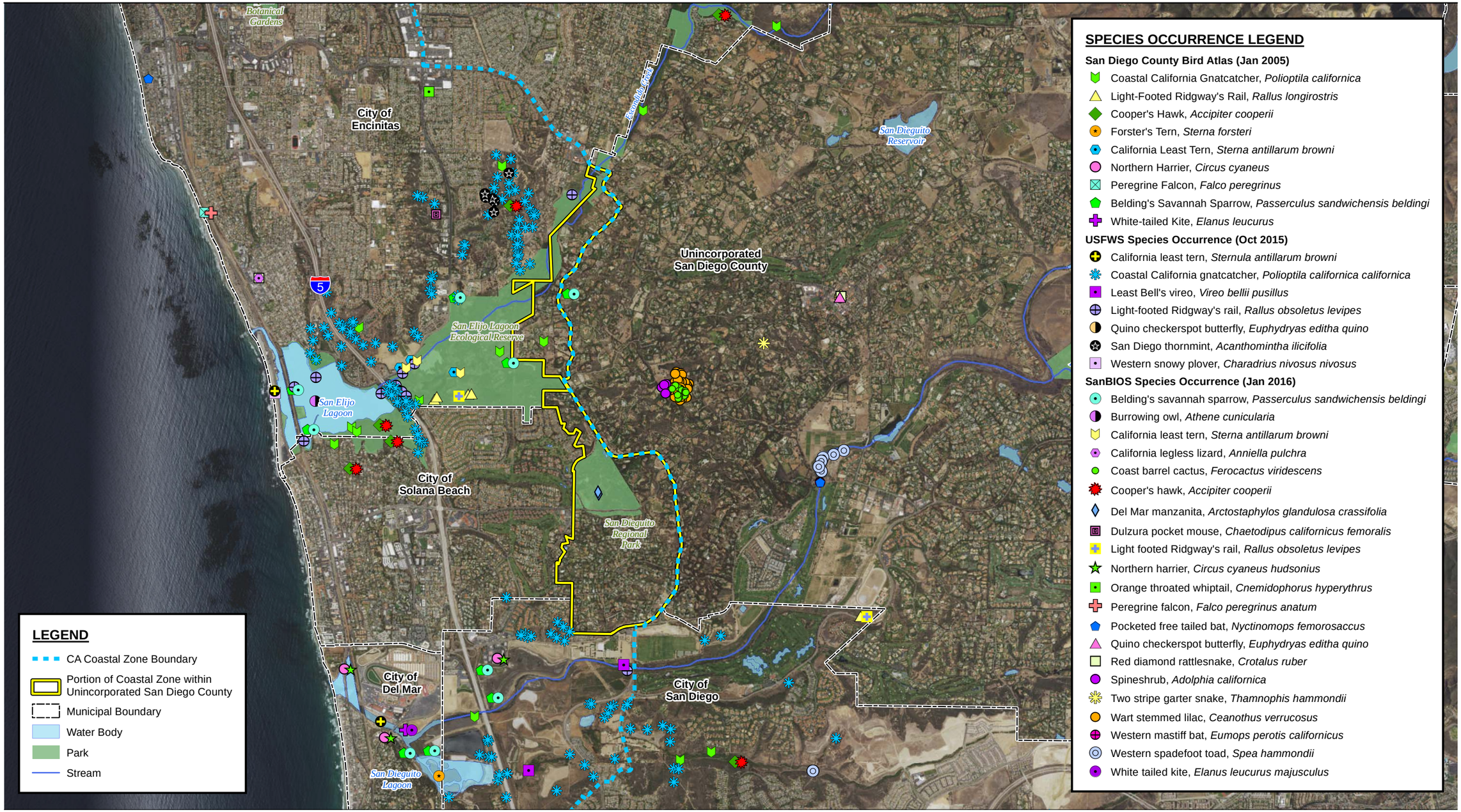
Scale: 1:36,000; 1 inch = 3,000 feet

Figure 2
Vegetation Communities and Other Cover Types

Path: P:_6048\60484703_Local_Coastal_Program_Update\800-CAD-GIS\822_Maps\Bio_Veg.mxd, 4/6/2016, daniel_arellano

Figure 3

Historical Special-Status Species Records



Source: NAIP 2014; SanGIS 2016 (SanBIOS Species Occurrence); USFWS 2015 (Species Occurrence); San Diego County Bird Atlas 2005.

4,000 2,000 0 4,000 Feet

Scale: 1:48000; 1 inch = 4,000 feet

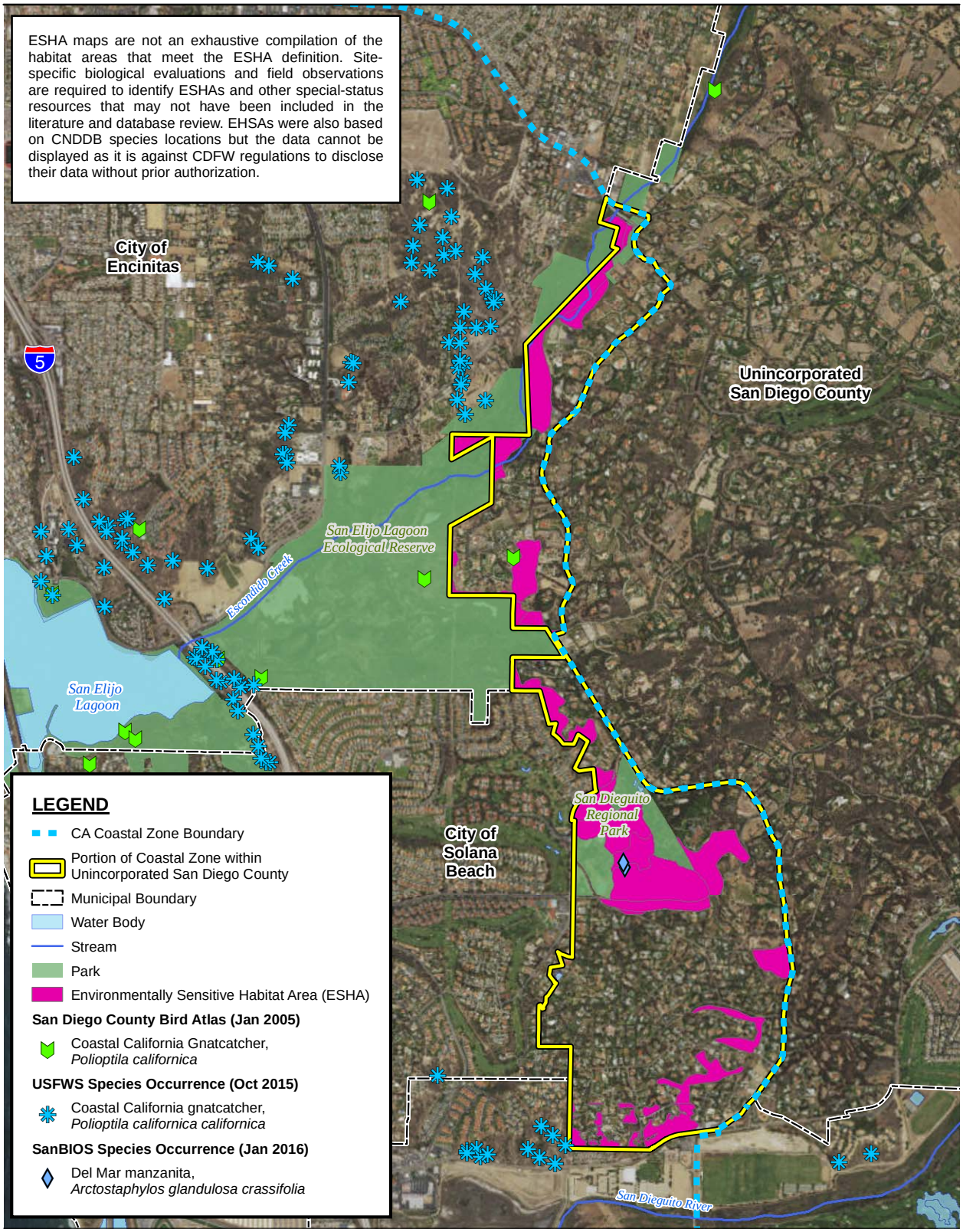
Figure 3

Historical Special-status Species Records

Path: P:_6048\60484703_Local_Coastal_Program_Update\800-CAD-GIS\822_Maps\Bio_Species.mxd, 4/6/2016, daniel_arellano

Figure 4

Environmentally Sensitive Habitat Areas (ESHAs)



Source: NAIP 2014; SanGIS 2016 (SanBIOS Species Occurrence); USFWS 2015 (Species Occurrence); San Diego County Bird Atlas 2005.

3,000 1,500 0 3,000 Feet

Scale: 1:36,000; 1 inch = 3,000 feet

Figure 4
Environmentally Sensitive Habitat Areas (ESHAs)

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Attachment A

Special-Status Species with Potential to Occur in the BSA

Special-Status Species with Potential to Occur in the BSA

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat
Plants						
Abronia maritima	Red sand-verbena	-	-	No	CNPS RPR 4.2	Coastal dunes.
Acanthomintha ilicifolia	San Diego thorn-mint	FT	SE	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Usually on clay lenses w/in grassland or chaparral communities.
Acmispon prostratus	Nuttall's lotus	-	-	Yes	CNPS RPR 1B.1	Coastal dunes, coastal scrub.
Adolphia californica	California adolphia	-	-	No	CNPS RPR 2B.1	Chaparral, coastal sage scrub, valley and foothill grassland.
Agave shawii	Shaw's agave	-	-	Yes	CNPS RPR 2B.1	Coastal bluff scrub, coastal scrub.
Ambrosia pumila	San Diego ambrosia	FE	-	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Dry creek beds, floodplains.
Aphanisma blitoides	Aphanisma	-	-	Yes	CNPS RPR 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. On bluffs and slopes near the ocean in sandy or clay soils.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE	-	Yes	CNPS RPR 1B.1	Low growing, open chaparral on eroding sandstone.
Artemisia palmeri	San Diego sagewort	-	-	No	CNPS RPR 4.2	Coastal scrub, chaparral, riparian forest, riparian woodland.
Astragalus tener var. *titi*	Coastal dunes milk-vetch	FE	SE	Yes	CNPS RPR 1B.1	Coastal bluff scrub, coastal dunes.
Atriplex coulteri	Coulter's saltbush	-	-	No	CNPS RPR 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland.
Atriplex pacifica	South coast saltscale	-	-	No	CNPS RPR 1B.2	Coastal scrub, coastal bluff scrub, playas, chenopod scrub.
Atriplex parishii	Parish's brittlescale	-	-	No	CNPS RPR 1B.1	Chenopod scrub, playas and vernal pools in alkaline soils.
Baccharis vanessae	Encinitas baccharis	FT	SE	Yes	CNPS RPR 1B.1	Chaparral, on sandstone soils in steep, open, rocky areas with chaparral associates.
Bergerocactus emoryi	Golden-spined cereus	-	-	No	CNPS RPR 2B.2	Coastal scrub, sometimes chaparral margins. Limited to the coastal belt. Usually on clay soils.
Bloomeria clevelandii	San Diego goldenstar	-	-	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Mesa grasslands, scrub edges; clay soils. Often on mounds between vernal pools in fine, sandy loam.
Brodiaea filifolia	Thread-leaved brodiaea	FT	SE	Yes	CNPS RPR 1B.1	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools. Usually associated with annual grassland and vernal pools; often surrounded by shrubland habitats. Occurs in openings on clay soils.
Brodiaea orcuttii	Orcutt's brodiaea	-	-	Yes	CNPS RPR 1B.1	Vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, meadows.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat
Camissoniopsis lewisii	Lewis' evening-primrose	-	-	No	CNPS RPR 3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on sandy or clay soils.
Ceanothus cyaneus	Lakeside ceanothus	-	-	Yes	CNPS RPR 1B.2	Closed-cone coniferous forest, chaparral.
Ceanothus verrucosus	Wart-stemmed ceanothus	-	-	Yes	CNPS RPR 2B.2	Coast chaparral and scrub.
Centromadia parryi ssp. *australis*	Southern tarplant	-	-	No	CNPS RPR 1B.1	Marshes and swamps (margins), valley and foothill grassland. Often in disturbed sites near the coast at marsh edges.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	-	-	No	CNPS RPR 1B.1	Coastal bluff scrub, coastal dunes.
Chloropyron maritimum ssp. *maritimum*	Salt marsh bird's-beak	FE	SE	Yes	CNPS RPR 1B.2	Coastal dunes and coastal salt marshes/swamps
Chorizanthe orcuttiana	Orcutt's spineflower	FE	SE	No	CNPS RPR 1B.1	Coastal scrub, chaparral, closed-cone coniferous forest. Sandy sites and openings.
Chorizanthe polygonoides var. *longispina*	Long-spined spineflower	-	-	No	CNPS RPR 1B.2	Chaparral, coastal scrub, meadows, valley and foothill grassland. Gabbroic clay.
Cistanthe maritima	Seaside cistanthe	-	-	No	CNPS RPR 4.2	Coastal bluff scrub, coastal scrub, and valley and foothill grassland in sandy soils.
Clarkia delicata	Delicate clarkia	-	-	No	CNPS RPR 1B.2	Chaparral and cismontane woodland, often in gabbroic soils.
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	-	-	No	CNPS RPR 1B.2	Chaparral.
Convolvulus simulans	Small-flowered morning-glory	-	-	No	CNPS RPR 4.2	Chaparral (openings), coastal scrub, and valley and foothill grasslands in clay or serpentinite seeps.
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	-	-	No	CNPS RPR 1B.1	Coastal scrub, coastal bluff scrub, chaparral.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	-	-	Yes	CNPS RPR 1B.1	Chaparral and coastal scrub.
Cryptantha wigginsii	Wiggins' cryptantha	-	-	No	CNPS RPR 1B.2	Coastal scrub often found in clay soils.
Cylindropuntia californica var. *californica*	Snake cholla	-	-	Yes	CNPS RPR 1B.1	Chaparral and coastal scrub.
Dichondra occidentalis	Western dichondra	-	-	No	CNPS RPR 4.2	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.
Dudleya brevifolia	Short-leaved dudleya	-	SE	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub.
Dudleya variegata	Variegated dudleya	-	-	Yes	CNPS RPR 1B.2	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland.
Dudleya viscida	Sticky dudleya	-	-	Yes	CNPS RPR 1B.2	Coastal scrub, coastal bluff scrub, chaparral.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	-	-	Yes	CNPS RPR 1B.1	Coastal scrub, chaparral.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools, coastal scrub, valley and foothill grassland.
Erysimum ammophilum	Sand-loving wallflower	-	-	Yes	CNPS RPR 1B.2	Maritime chaparral, coastal dunes and coastal scrub in sandy openings.
Euphorbia misera	Cliff spurge	-	-	No	CNPS RPR 2B.2	Coastal bluff scrub, coastal scrub.
Ferocactus viridescens	San Diego barrel cactus	-	-	Yes	CNPS RPR 2B.1	Chaparral, Diegan coastal scrub, valley and foothill grassland.
Frankenia palmeri	Palmer's frankenia	-	-	No	CNPS RPR 2B.1	Coastal dunes, marshes (coastal salt), playas.
Geothallus tuberosus	Campbell's liverwort	-	-	No	CNPS RPR 1B.1	Mesic coastal scrub an vernal pools.
Grindelia hallii	San Diego gumplant	-	-	No	CNPS RPR 1B.2	Chaparral, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland.
Harpagonella palmeri	Palmer's grapplinghook	-	-	No	CNPS RPR 4.2	Chaparral, coastal scrub, valley and foothill grassland. Clay soils.
Hazardia orcuttii	Orcutt's hazardia	-	ST	No	CNPS RPR 1B.1	Often on clay; in grassy edges of chaparral and coastal scrub.
Heterotheca sessiliflora ssp. *sessiliflora*	Beach goldenaster	-	-	No	CNPS RPR 1B.1	Coastal dunes, coastal scrub, chaparral (coastal).
Holocarpha virgata ssp. *elongata*	Graceful tarplant	-	-	No	CNPS RPR 4.2	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.
Hordeum intercedens	Vernal barley	-	-	No	CNPS RPR 3.2	Coastal dunes, coastal scrub, valley and foothill grasslands, and vernal pools.
Horkelia truncata	Ramona horkelia	-	-	No	CNPS RPR 1B.3	Mixed chaparral, vernal streams, and disturbed areas near roads. Clay soil; at least sometimes on gabbro.
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	-	-	No	CNPS RPR 1B.2	Coastal scrub.
Iva hayesiana	San Diego marsh-elder	-	-	No	CNPS RPR 2B.2	Marshes and swamps, playas.
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	-	-	No	CNPS RPR 4.2	Coastal dunes, meadows and seeps, marshes and swamps.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	-	-	No	CNPS RPR 1B.1	Coastal salt marshes, playas, valley and foothill grassland, vernal pools.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	-	-	No	CNPS RPR 4.3	Chaparral, coastal scrub.
Leptosyne maritima	Sea dahlia	-	-	No	CNPS RPR 2B.2	Coastal scrub, coastal bluff scrub.
Lycium californicum	California box-thorn	-	-	No	CNPS RPR 4.2	Coastal bluff scrub and coastal scrub.

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Microseris douglasii ssp. *platycarpha*	Small-flowered microseris	-	-	No	CNPS RPR 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools.
Mimulus diffusus	Palomar monkeyflower	-	-	No	CNPS RPR 4.3	Chaparral and lower montane coniferous forest.
Monardella hypoleuca ssp. *lanata*	Felt-leaved monardella	-	-	No	CNPS RPR 1B.2	Occurs in understory in mixed chaparral, chamise chaparral, and southern oak woodland; sandy soil.
Monardella viminea	Willowy monardella	FE	SE	Yes	CNPS RPR 1B.1	Coastal scrub/alluvial ephemeral washes with adjacent coastal scrub, chaparral, or sycamore woodland.
Myosurus minimus ssp. *apus*	Little mousetail	-	-	No	CNPS RPR 3.1	Vernal pools.
Navarretia fossalis	Spreading navarretia	FT		Yes	CNPS RPR 1B.1	San Diego hardpan and San Diego claypan vernal pools, chenopod scrub, marshes and swamps, playas.
Nemacaulis denudata var. *denudata*	Coast woolly-heads	-	-	No	CNPS RPR 1B.2	Coastal dunes.
Ophioglossum californicum	California adder's-tongue	-	-	No	CNPS RPR 4.2	Chaparral, valley and foothill grassland, and vernal pools in mesic soils.
Orcuttia californica	California Orcutt grass	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools.
Orobanche parishii ssp. *brachyloba*	Short-lobed broomrape	-	-	No	CNPS RPR 4.2	Coastal bluff scrub, coastal dunes, coastal scrub.
Phacelia ramosissima var. austrolitoralis	South coast branching phacelia	-	-	No	CNPS RPR 3.2	Chaparral, coastal dunes, coastal scrub, and coastal salt marshes/swamps in sandy and sometimes rocky soils.
Pentachaeta aurea ssp. *aurea*	Golden rayed pentachaeta	-	-	No	CNPS RPR 4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, and valley and foothill grassland.
Phacelia stellaris	Brand's star phacelia	FC	-	No	CNPS RPR 1B.1	Coastal scrub, coastal dunes.
Pinus torreyana ssp. *torreyana*	Torrey pine	-	-	No	CNPS RPR 1B.2	Closed-cone coniferous forest, chaparral. On dry, sandstone slopes.
Piperia cooperi	Chaparral rein orchid	-	-	No	CNPS RPR 4.2	Chaparral, cismontane woodland, and valley and foothill grassland.
Pogogyne abramsii	San Diego mesa mint	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools.
Pogogyne nudiuscula	Otay Mesa mint	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools.
Quercus dumosa	Nuttall's scrub oak	-	-	No	CNPS RPR 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub. Generally on sandy soils near the coast.
Quercus engelmannii	Engelmann oak	-	-	No	CNPS RPR 4.2	Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland.
Selaginella cinerascens	Ashy spike-moss	-	-	No	CNPS RPR 4.1	Chaparral and coastal scrub.
Senecio aphanactis	Chaparral ragwort	-	-	No	CNPS RPR 2B.2	Cismontane woodland, coastal scrub. Drying alkaline flats.

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Sphaerocarpos drewei	Bottle liverwort	-	-	No	CNPS RPR 1B.1	Chaparral and coastal scrub openings.
Stemodia durantifolia	Purple stemodia	-	-	No	CNPS RPR 2B.1	Sonoran desert scrub.
Stipa diegoensis	San Diego County needle grass	-	-	No	CNPS RPR 4.2	Chaparral and coastal scrub in rocky often mesic soils.
Suaeda esteroa	Estuary seablite	-	-	No	CNPS RPR 1B.2	Marshes and swamps. Coastal salt marshes in clay, silt, and sand substrates.
Suaeda taxifolia	Woolly seablite	-	-	No	CNPS RPR 4.2	Coastal bluff scrub, coastal dunes, and marshes and swamps (margins of coastal salt).
Texosporium sancti-jacobi	Woven-spored lichen	-	-	No	CNPS RPR 3	Chaparral openings on soil, small mammal pellets, dead twigs, and on *Selaginella* spp.
Viguiera laciniata	San Diego County viguiera	-	-	No	CNPS RPR 4.2	Chaparral and coastal scrub.
Invertebrates						
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	-	Yes	-	Restricted to vernal pools, hardpan and claypan pools; Orange and San Diego Counties, Baja California. Generally found at elevations between 50 and 410 feet, but up to 1,640 feet.
Euphydryas editha quino	Quino checkerspot butterfly	FE	-	No	-	The larvae may use either *Plantago erecta* or *Castilleja exserta*, both of which may be common in meadows and upland sage scrub/chaparral habitat. Adults can use a variety of open scrub and grassland habitats with ample nectaring sources.
Streptocephalus woottoni	Riverside fairy shrimp	FE	-	Yes	-	Restricted to deep, large vernal pools with long periods of inundation; San Diego (within 9 miles of the ocean) and Riverside Counties. Generally found at elevations between 100 and 1,360 feet.
Actinemys marmorata pallid	Southwestern pond turtle	-	SSC	Yes	-	Associated with permanent water or nearly permanent water from sea level to 6,000 feet. Prefers habitats with basking sites such as floating mats of vegetation, partially submerged logs, rocks, or open mud banks.
Reptiles and Amphibians						
Anniella pulchra	California legless lizard	-	SSC	No	-	Coastal dunes, coastal washes and sandy coastal grasslands.
Aspidoscelis hyperythra beldingi	Orange-throated whiptail	-	SSC	Yes	-	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.
Crotalus ruber ruber	Red-diamond rattlesnake	-	SSC	No	-	Chaparral, coastal sage scrub, along creek banks, and in rock outcrops or piles of debris. Habitat preferences include dense vegetation in rocky areas.
Phrynosoma coronatum (*blainvillei*)	San Diego coast horned lizard	-	SSC	Yes	-	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.
Plestiodon skitonianus interparietalis	Coronado Island skink	-	SSC	No	-	Most commonly found in open areas, sparse brush, and in oak woodlands, usually under rocks, leaf litter, logs, debris, or in the shallow burrows it digs.
Salvadora hexalepis virgultea	Coast patch-nosed snake	-	SSC	No	-	A variety of habitats including coastal sage scrub, chaparral, riparian, grasslands, and agricultural fields. Prefers open habitats with friable or sandy soils, burrowing rodents for food, and enough cover to escape predation.

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Spea hammondii	Western spadefoot toad	-	SSC	No	-	Temporary ponds, vernal pools, and backwaters of slow-flowing creeks. Also upland habitats such as grasslands and coastal sage scrub where burrows are constructed.
Thamnophis hammondii	Two-striped gartersnake	-	SSC	No	-	Aquatic habitats, preferably rocky streams with protected pools, cattle ponds, marshes, vernal pools, and other shallow bodies of water lacking large aquatic predators.
Birds						
Accipiter cooperi	Cooper's hawk	-	WL	Yes	-	Inhabits broken woodlands, woodland edges, and streamside groves. Nests in open woodlands or in deciduous trees in riparian areas.
Accipiter striatus	Sharp-shinned hawk	-	WL	No	-	Found in forests and along forests edges, and are not found where trees are scarce or scattered, except on migration. They require dense forest, ideally with a closed canopy, for breeding.
Agelaius tricolor	Tricolored blackbird	-	SSC	Yes	-	Freshwater marshes with cattails and other emergent vegetation.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	-	-	Yes	-	Grassy or rocky slopes with open scrub at elevations from sea level to 2,000 feet. Occurs mainly in coastal sage scrub.
Ammodramus savannarum parpallidus	Grasshopper sparrow	-	SSC	No	-	Typically breeds in grassland, upland meadows, pastures, hayfields, and old field habitats, favoring open areas of over 100 acres in size.
Aquila chrysaetos	Golden eagle	-	FP	No	-	Found primarily in mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nests on cliffs and steep escarpments in grassland, chaparral, shrubland, forest, and other vegetated areas.
Artemisiospiza belli belli	Bell's sage sparrow	-	WL	No	-	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.
Athene cunicularia	Burrowing owl	-	SSC	Yes	-	Found mainly in grassland and open scrub from the seashore to foothills. Strongly associated with California ground squirrel (*Spermophilus beecheyi*) burrows.
Buteo regalis	Ferruginous hawk	-	WL	Yes	-	Breed in grasslands, sagebrush country, saltbush-greasewood shrublands, and edges of pinyon-juniper forests at low to moderate elevations. Their breeding habitat includes features such as cliffs, outcrops, and tree groves for nesting.
Buteo swainsoni	Swainson's hawk	-	ST	Yes	-	Favor open habitats for foraging. Forage in hay and alfalfa fields, pastures, grain crops, and row crops. Rely on scattered stands of trees near agricultural fields and grasslands for nesting sites.
Campylorhynchus brunneicapillus couesi	Coastal cactus wren	-	SSC	Yes	-	Coastal sage scrub with extensive stands of tall prickly pear or cholla cacti (*Opuntia* sp.).
Charadrius alexandrinus nivosus	Western snowy plover	FT	SSC	Yes	-	Nests on beaches, dunes, and salt flats in San Diego County, with the highest concentrations in two areas: Camp Pendleton and Silver Strand. Outside the breeding season, species is more widespread but not common along the county's coast.
Circus cyaneus	Northern harrier	-	SSC	Yes	-	Breeds predominantly in wetland habitats, but will also use upland habitats, grasslands, and agricultural fields. During migration and in winter, the same habitats are preferred.
Cistothorus palustris clarkae	Clark's marsh wren	-	SSC	No	-	Coastal wetlands and freshwater marsh.
Dendrocygna bicolor	Fulvous whistling-duck	-	SSC	No	-	Freshwater wetlands, especially shallow impoundments managed for rice. Also flooded grasslands and pasture.

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Dendroica petechia brewsteri	Yellow warbler	-	SSC	No	-	A fairly common summer breeding resident found along mature riparian woodlands consisting of cottonwood, willow, alder, and ash trees. Restricted to this increasingly patchy habitat.
Elanus leucurus	White-tailed Kite	-	FP	No	-	Commonly found in savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields. Generally avoids areas with extensive winter freezes, but rainfall and humidity vary greatly throughout this bird's range. Hunts over lightly grazed or ungrazed fields where there may be larger prey populations than in more heavily grazed areas.
Empidonax traillii extimus	Southwestern willow flycatcher	FE	SE	Yes	-	Restricted to a few colonies in riparian woodlands scattered throughout southern California. Riparian forests are integral to this species' persistence.
Falco peregrinus anatum	American peregrine falcon	-	FP	Yes	-	Open areas from tundra, moorlands, steppes, and seacoasts to mountains and open forested regions, especially where there are suitable nesting cliffs.
Ixobrychus exilis	Least bittern	-	SSC	No	-	Marsh habitats or large emergent wetlands with cattails (*Typha* sp.) and tules.
Lanius ludovicanus	Loggerhead shrike	-	SSC	No	-	Uncommon year-round resident of San Diego County. Found in grassland, chaparral, desert, and desert edge scrub, particularly near dense vegetation that it uses for concealing and protecting the nest.
Laterallus jameicensis coturniculus	Black rail	-	ST; FP	No	-	Found in southern California coastal marshes.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	-	SE	Yes	-	Locally common in open grassy or weedy areas throughout San Diego County.
Polioptila californica californica	Coastal California gnatcatcher	FT	SSC	Yes	-	Diegan coastal sage scrub dominated by California sagebrush (*Artemisia californica*) and flat-topped buckwheat (*Eriogonum fasciculatum*) below 2,500 feet elevation in Riverside County and below 1,000 feet elevation along the coastal slope; generally avoids steep slopes above 25% and dense, tall vegetation for nesting.
Progene subis	Purple martin	-	SSC	No	-	Found throughout the United States but is rare in San Diego County. Restricted to mountain region of San Diego County. Nests in isolated snags with holes.
Rallus obsoletus levipes	Light-footed Ridgway's rail	FE	SE; FP	Yes	-	Found in southern California in coastal salt marshes, especially those dominated by cordgrass. The Tijuana River estuary is an especially important site.
Sternula antillarum browni	California least tern	FE	SE; FP	Yes	-	A ground nesting bird that requires undisturbed stretches of beach and coastline. Adults are highly philopatric to natal colonies, and forage in bays and estuaries near their colonies.
Strix occidentalis occidentalis	California spotted owl	-	SSC	No	-	Mature forests and rocky canyons.
Vireo bellii pusillus	Least Bell's vireo	FE	SE	Yes	-	Riparian woodland with understory of dense young willows or mulefat and willow canopy. Nests often placed along internal or external edges of riparian thickets.
Mammals						
Chaetodipus californicus femoralis	Dulzura California pocket mouse	-	SSC	No	-	Slopes covered with chaparral and live oaks.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	-	SSC	No	-	Inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities.
Choeronycteris mexicana	Mexican long-tongued bat	-	SSC	No	-	In San Diego County, this bat species occurs primarily in urban areas. In Arizona and Mexico, the species is found in deep canyons and in the mountains, foraging in riparian, desert scrub, and pinyon-juniper habitats, in particular on *Yucca* sp.

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Corynorhinus townsendii	Townsend's big-eared bat	-	SC	No	-	Use a variety of habitats, almost always near caves or other roosting areas. They can be found in pine forests and arid desert scrub habitats. When roosting they do not tuck themselves into cracks and crevices like many bat species do, but prefer large open areas.
Euderma maculatum	Spotted bat	-	SSC	No	-	Occurs in foothills, mountains, grasslands, and deserts in southern California.
Eumops perotis californicusyuma	California (western) mastiff bat	-	SSC	No	-	Chaparral, live oaks, and arid, rocky regions. Requires downward-opening crevices.
Lasiurus blossevillii	Western red bat	-	SSC	No	-	Feeds over grasslands, shrublands, open woodlands, forests, and croplands. Roosts primarily in trees and at times, shrubs, often in edge habitats along streams, fields, or urban areas.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	-	SSC	No	-	Typical habitats include early stages of chaparral, open coastal sage scrub, and grasslands near the edges of brush.
Neotoma lepida intermedia	San Diego desert woodrat	-	SSC	No	-	Common to abundant in Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats.
Nyctinomops femorosaccus	Pocketed free-tailed bat	-	SSC	No	-	Rugged cliffs, rocky outcrops, and slopes in desert shrub and pine oak forests.
Nyctinomops macrotis	Big free-tailed bat	-	SSC	No	-	Pinyon-juniper and Douglas fir forests, chaparral and oak forests in rugged, rocky habitats, low-lying arid areas.
Perognathus longimembris pacificus	Pacific pocket mouse	FE	SSC	No	-	Plant communities suitable for the species consist of shrublands with firm, fine-grain, sandy substrates in the immediate vicinity of the ocean. These communities include coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces.
Taxidea taxus	American badger	-	SSC	Yes	-	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.

[1] Federal Status: FPT= federally proposed threatened; FC=federal candidate; FT=federally threatened; FE=federally endangered.
[2] State Status: SE=state endangered; ST=state threatened; SC=state candidate; SR=state rare; SSC=species of special concern; FP=state fully protected; WL=state watch list;
[3] Species with a "yes" are included on the City of San Diego's Multiple Species Conservation Program (MSCP) covered species list (City of San Diego 1997)
[4] Other Status: California Native Plant Society (CNPS) Rare Plant Ranks (RPR):
1A: Plants presumed extirpated in California and either rare or extinct elsewhere
1B: Plants rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California, but more common elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which more information is needed (Review List)
4: Plants of limited distribution (Watch List)