

CHAPTER 2 ENVIRONMENTAL SETTING

2.1 Site Conditions and Existing Land Use

The proposed Agua Hedionda South Shore Specific Plan for 85% Open Space and 15% Retail (Agua Hedionda 85/15 Specific Plan; Specific Plan) is located within the City of Carlsbad (City). The City is located on the coast of the Pacific Ocean in northwest San Diego County. In addition to the Pacific Ocean coastline along its western boundary, the City is surrounded by the cities of Oceanside to the north, Encinitas to the south, and Vista and San Marcos and unincorporated areas of San Diego County to the east.

The 203.4-acre Specific Plan area includes Assessor's Parcel Numbers 211-010-24-00 and the portion of 211-010-31-00 that is north of Cannon Road. The majority of the Specific Plan area is undeveloped; however, there is direct disturbance from past and current agricultural operations. Dirt roads provide access to the agricultural lands and utility structures on site. The Specific Plan area has been an important site for current and past agricultural operations. This ongoing use of the site for farming has created and defined many of the features found within the Specific Plan area today.

An active utility corridor crosses the site from west to east along its southern portion. The flatter upland areas along the western and southern portions of the Specific Plan area are actively cultivated as strawberry fields. The undeveloped lands along the northern and eastern portions of the site are dominated by disturbed habitat and coastal sage scrub, with scattered riparian and wetland habitats. The northern and eastern portions of the site are located within an existing hardline conservation area (City of Carlsbad 1999).

The Specific Plan area is within the City's Habitat Management Plan (HMP), which serves as the City's subarea plan under the North County Multiple Habitat Conservation Program. Additionally, the Specific Plan area is located in the Carlsbad coastal zone. The Agua Hedionda Lagoon (previously a salt marsh) borders the site to the north. The Agua Hedionda Lagoon was dredged and channelized in the 1950s and now includes mud flats, salt- and freshwater marsh, and deep water for recreational sports (i.e., boating, skiing, and other water sports). This lagoon is designated as an existing hardline conservation area (City of Carlsbad 1999). Residential development borders the lagoon and general area to the north. A mix of designated open space area and commercial development (including LEGOLAND) border the Specific Plan area to the east and south. Interstate 5 (I-5) borders the Specific Plan area along its western boundary and a San Diego Gas & Electric power plant is immediately west of I-5.

Topography

The Specific Plan area consists of a series of plateaus along the western and southern portions of the site that gently slope down toward the northern boundary of the site, bordering Agua Hedionda Lagoon. Elevations on site range from approximately 10 feet above mean sea level (amsl) along the northern boundary of the site to approximately 190 feet amsl along the southeastern boundary of the site. The relatively flat plateaus along the western and southern portions of the site consist of actively maintained agricultural lands; the remainder of the site is composed primarily of undisturbed natural habitat and fallow agricultural lands that have converted to disturbed habitat. Some grading and disturbance related to City and utility agency maintenance and access to the Specific Plan area has occurred. There are several erosion features on site, which serve to convey water to the lagoon, as well as manufactured berms for past agricultural operations. The eastern reach of the Specific Plan area is dominated by steep topography and a drainage to the Agua Hedionda Lagoon that supports mature riparian forest.

Climate

The Specific Plan area is approximately 0.45 mile east of the Pacific Ocean. The City has a semiarid Mediterranean climate with mild, wet winters and relatively mild summers. Fog is frequent when cold offshore currents prevail. August is the warmest month on average, with an average high temperature of 73.6 degrees Fahrenheit (°F), and January is the coolest month on average, with a low of 44.2°F (WRCC 2015). Rainfall occurs primarily between October and April, with the maximum average precipitation occurring in February. According to the Oceanside Marina weather station (046377) in San Diego County (WRCC 2015), the average annual rainfall for the region is approximately 10.54 inches.

Sensitive Biological Resources

Species richness in the Specific Plan area is moderate due to the property size, the amount of undeveloped land, and the diversity of habitats, including uplands, native grassland, wetlands, and riparian habitats. Species richness is generally increased with the presence of more habitat types and ecotones, and the number of species and the wildlife population levels (i.e., number of individuals) is typical for undeveloped areas in this region, particularly those areas that support multiple native habitat types.

Special-status wildlife species with the potential to occur in the Specific Plan area include coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and loggerhead shrike (*Lanius ludovicianus*). The eastern extent of the Specific Plan area, located in the HMP hardline conservation area, is in federally designated critical habitat for the coastal California gnatcatcher (USFWS 2014).

Vegetation communities (including disturbed forms) and land cover types in the Specific Plan area are based on general physiognomy and species composition, including native or naturalized vegetation types and non-native land covers. Riparian and wetland vegetation communities in the Specific Plan area include coastal brackish marsh, mulefat scrub, southern coastal salt marsh, southern arroyo willow riparian forest, and southern willow scrub. However, a majority of the Specific Plan area is fallow agriculture. Only a few trees in addition to the vegetation communities listed above, Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), and red willow (*Salix laevigata*), are present within the Specific Plan area in low numbers.

Hydrology

The Specific Plan area is located within the Carlsbad Hydrologic Unit (HU). The entire HU is a triangular area of approximately 203 square miles, extending from Lake Wohlford on the east to the Pacific Ocean on the west, and from the City of Vista on the north to Cardiff-by-the-Sea on the south. The Carlsbad HU includes the Cities of Oceanside, Carlsbad, Encinitas, Vista, and Escondido. The area is drained by Buena Vista, Agua Hedionda, San Marcos, and Escondido Creeks, and the Carlsbad HU contains three major coastal lagoons: Buena Vista, Agua Hedionda, and Batiquitos. The Specific Plan area is located within the Agua Hedionda Hydrologic Area.

Soils

Soils mapping for the Specific Plan are from the U.S. Department of Agriculture National Resources Conservation Service Soil Survey Geographic Database (USDA 2015). The soils in the Specific Plan area include Carlsbad gravelly loamy sand, 2% to 5% slopes and 15% to 30% slopes; lagoons of San Diego Area; Las Flores loamy fine sand, 15% to 30% slopes; Marina loamy coarse sand, 2% to 9% slopes; Salinas clay loam, 2% to 9% slopes; tidal flats; and terrace escarpments (Bowman 1973). The site is dominated by sandy soils, which helps explain the steep erosional features that characterize much of the drainages on site.

There are two soil mapping units recorded within the Specific Plan area that are listed on the National Hydric Soils List for the San Diego County Area, California (USDA 2010): Carlsbad gravelly loamy sand and tidal flats. Carlsbad gravelly loamy sand is found in the central region of the upper terrace, and tidal flats are mapped in the extreme eastern extent of the Specific Plan area.

Seismicity

The Specific Plan area is located in seismically active Southern California. The Newport-Inglewood–Rose Canyon Fault (offshore segment) is the closest active fault, with an approximate distance of about 4.5 miles to the west of the Specific Plan area. A maximum moment magnitude (Mw) earthquake of Mw 7.1 is estimated for the offshore segment of the Newport-Inglewood–Rose Canyon Fault.

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