6

Environmentally Sensitive Habitat Areas and Water Quality

Carlsbad is endowed with a rich array of natural resources, including the Pacific Ocean, three lagoons (Buena Vista, Agua Hedionda, and Batiquitos), and other waterways and natural habitat areas. These resources are vital components of the city's setting and provide habitat for wildlife and recreation opportunities. Protecting these natural resources is a high priority for residents and is consistent with the goals of the California Coastal Act. This chapter describes the natural coastal resources found in Carlsbad's Coastal Zone, which include environmentally sensitive habitat area (ESHA) and marine and coastal water quality. The chapter concludes with policies that guide the city in the protection of such resources.

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6.1 Introduction

The California Coastal Act includes extensive policies concerning the protection, use, and experience of the natural coastal environment. The Coastal Act provides for the protection of both land and marine habitats. It mandates that environmentally sensitive habitat area (ESHA) and marine resources are to be protected against significant disruption of habitat value and maintained, enhanced, and restored, as feasible. Coastal Act policies related to natural resource protection include the following:

Section 30107.5 *Environmentally sensitive area*
"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 developments.

Section 30121 *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.

Section 30230 *Marine resources; maintenance*
Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 *Biological productivity; water quality*
The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30233 *Diking, filling or dredging; continued movement of sediment and nutrients*
(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
(6) Restoration purposes.
(7) Nature study, aquaculture, or similar resource dependent activities.

b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where the improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Section 30240 *Environmentally sensitive habitat areas; adjacent developments*

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.
(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Section 30250(a) *Location; existing developed area*

(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing 37 developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

6.2 Environmentally Sensitive Habitat Area (ESHA)

Coastal Act Section 30240(a) requires that "environmentally sensitive habitat areas be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas." "Environmentally sensitive habitat area" is defined by Coastal Act Section 30107.5, as shown in Section 6.1.

Habitats and Natural Vegetation in Carlsbad

Habitat types within Carlsbad include grassland, coastal sage scrub, chaparral, woodland, riparian, marsh and other wetlands, and open water. A summary description of the natural habitat found within the Coastal Zone is provided below. More information about the habitat types in Carlsbad is provided in the Carlsbad Habitat Management Plan, which is a component of the city's Local Coastal Program.

Upland Habitat

Coastal Sage Scrub

Three types of coastal sage scrub exist within Carlsbad's Coastal Zone: Diegan coastal sage scrub, maritime succulent scrub, and coastal sage scrub-chaparral scrub. Coastal sage scrub is home to the federally threatened coastal California gnatcatcher, as well as the orange-throated whiptail (a California Species of Special Concern) and the federally listed plant species San Diego ambrosia. Coastal sage scrub is considered sensitive habitat under California regulations, but Diegan coastal sage scrub in particular is identified in the California Natural Diversity Database as a priority for monitoring and restoration. In Carlsbad, the largest remaining areas of Diegan coastal sage scrub are outside the Coastal Zone.

Chaparral

There are two categories of chaparral habitat in Carlsbad: undifferentiated (including southern mixed and chamise chaparral) and southern maritime chaparral. Both vegetation communities occur in a patchy distribution throughout the city and are located on wetter north- and west-facing slopes, alternating with coastal sage scrub, grasslands, and oak woodlands. Southern maritime chaparral is the most limited type of chaparral in the city and is considered a sensitive habitat. Sensitive plant and animal species that may be found in chaparral habitat are the wart-stemmed ceanothus (designated as sensitive by the California Native Plant Society), the federally and state-listed endangered Orcutt's spineflower, the California endangered short-leaved dudleya, and the California Watch List species Southern California rufous-crowned sparrow.

Grassland

There are native and non-native grasslands within Carlsbad's Coastal Zone. Native grasslands are considered a sensitive habitat under California regulations and are identified in the California Natural Diversity Database as priority areas for monitoring and restoration. Native grassland vegetation is extremely limited in Carlsbad. Non-native grassland is not considered a sensitive habitat; however, it may be a significant foraging habitat for raptors and the fully protected California white-tailed kite. Non-native grassland may also support sensitive animal and plant species such as the federally endangered Stephens' kangaroo rat and the federally and state listed San Diego thorn-mint and may serve as a habitat linkage for a number of wildlife species such as mule deer and scrub species such as California gnatcatcher.

Woodland

Two types of woodland occur within Carlsbad's Coastal Zone: oak woodland and eucalyptus woodland. In coastal southern California, oak woodland is dominated by coast live oak with scattered individuals of other tree species. Eucalyptus woodland is dominated by various species of planted eucalyptus. Sensitive species that may occur in oak woodlands include the Cooper's hawk (a California Watch List species), regionally sensitive Harbison's dun skipper, and Nuttall's scrub oak and Engelmann oak (designated as sensitive by the California Native Plant Society). Although eucalyptus woodland is a non-native community that does not support sensitive plant or wildlife species, it is often used for nesting by raptors and other birds or roosting by bats.

Wetland and Riparian Habitat

Wetlands

Wetland habitats within Carlsbad's Coastal Zone consist of southern coastal salt marsh, freshwater marsh, and cismontane alkali marsh, in addition to other wetland and aquatic habitat types, such as estuaries, freshwater/open water, and vernal pools.

Marsh habitats are considered sensitive and are regulated under federal and state regulations and policies. Sensitive species that may occur in salt marsh include the state-listed California black rail and Belding's savannah sparrow, as well as the federally listed Ridgway's rail. Plant species found in freshwater marsh include the state-listed spreading navarretia.

Estuarine habitat consists of a semi-enclosed body of water that has a free connection with the open ocean. Freshwater/open water habitat consists of lakes, ponds, and reservoirs and can be surrounded by freshwater marsh, salt marsh, or riparian habitat areas. Vernal pools are highly restricted wetlands that contain high numbers of endangered, sensitive, and endemic plant and animal species. Sensitive

species found in vernal pool habitats include state and federally listed endangered California Orcutt grass and San Diego button-celery, as well as the federally listed San Diego fairy shrimp.

Riparian Habitat

Riparian habitats are found along drainages and streams, where soils tend to be moist during all or part of the year. Riparian habitat located in Carlsbad's Coastal Zone consists of riparian scrub, riparian woodland, and riparian forest. Riparian habitats are all considered sensitive under federal and state regulations. Sensitive species that may occur in riparian habitats include the federally and state-listed endangered least Bell's vireo and willowy monardella. Sycamore-alder woodland supports nesting for a number of raptor species, including white-tailed kite and Cooper's hawk.

Sensitive Plant and Animal Species

A total of 56 sensitive plant and animal species have been recorded as occurring or potentially occurring within Carlsbad. Of these, 24 species are covered by the Carlsbad Habitat Management Plan, which means the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife consider that the species are adequately protected within the Carlsbad Habitat Management Plan preserve system. An additional 19 species could be considered for coverage by the Habitat Management Plan if additional funding becomes available for management in Carlsbad, or if other cities in north San Diego County have similar habitat management plans approved. Refer to the Carlsbad Habitat Management Plan for more information about sensitive species in Carlsbad.

Tree Habitat for Protected Bird Species

Most birds nest in trees. While not all trees in Carlsbad are considered ESHA, they may provide important breeding and nesting habitat for a sensitive/protected bird species. The policies of this chapter protect breeding, roosting, and nesting habitat for birds protected by the Migratory Bird Treaty Act and bird species listed by the federal or California Endangered Species Acts, California bird species of special concern, as well as owls and raptors, which have a valuable role in the overall coastal ecosystem.

Habitat Conservation and Management Plans

Multiple Habitat Conservation Program (MHCP)

Carlsbad and the Cities of Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista participated in the preparation of the MHCP, which was adopted and certified by the San Diego Association of Governments (SANDAG) in 2003. The MHCP is a comprehensive plan that addresses the needs of multiple plant and animal species in northwestern San Diego County, enabling cities to implement their portions of the MHCP through citywide subarea plans.

Habitat Management Plan for Natural Communities in the City of Carlsbad

The City of Carlsbad prepared a subarea plan as a part of the MHCP, called the Habitat Management Plan for Natural Communities in the City of Carlsbad (Habitat Management Plan). The Habitat Management Plan was approved by the Coastal Commission in June 2003 and is a component of the city's Local Coastal Program. The Habitat Management Plan identifies how the city, in cooperation with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife, will preserve the diversity of habitat and protect environmentally sensitive resources within Carlsbad, while allowing for additional development consistent with the city's Local Coastal Program and General Plan.

The Habitat Management Plan serves as a habitat conservation plan, as described in Section 10(a)(1)B of the Endangered Species Act, and natural community conservation plan, as authorized in the Natural Community Conservation Planning Act (Fish and Game Code Section 2800 et. seq.). Formal approval and adoption of the Habitat Management Plan occurred through issuance of a permit by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife, as well as execution of an implementation agreement between the City of Carlsbad and the wildlife agencies.

A primary objective of the Habitat Management Plan is to conserve a full range of vegetation community types, with an emphasis on sensitive habitat types. The types of habitat protected by the plan include grassland; coastal sage scrub; chaparral; southern maritime chaparral; oak woodland; eucalyptus woodland; riparian scrub, woodland, and forest; marsh, estuarine, freshwater, and other wetlands; and disturbed lands.

The Habitat Management Plan preserve system consists of the following, which are identified on Figure 6-1.

- Existing hardline preserve areas – these areas include both publicly and privately-owned land that has been committed to habitat conservation as a result of existing open space regulations, past development approvals, or other actions.
- Proposed hardline preserve areas – these areas include proposed (future) public and private projects for which proposed hardline design has been included in the Habitat Management Plan as future "proposed" hardline preserve areas. Take of habitat, as defined in the city's Habitat Management Plan, is authorized for the remaining portions of the projects. The general location of the proposed hardline areas is shown on Figure 6-1, while detailed boundaries and more information about the individual projects can be found in the Habitat Management Plan.

- Standards areas – in addition to hardline areas, the Habitat Management Plan includes conservation standards for specific areas where no hardline area is proposed. The standards are applicable to future development proposals and require conservation of sensitive species, sensitive habitat areas within core areas, and landscape linkages and movement corridors between core areas and with adjoining jurisdictions. To allow reasonable economic use of these properties, the standards allow at least 25 percent of the property to be developed, in the least environmentally damaging location, and the remaining site area is to be conserved. More information about the standards areas can be found in the Habitat Management Plan.

Table 6-1, *Habitat Management Plan Preserves Over 100 Acres in the Coastal Zone*

Preserve Name	Total Acres	Acres in Coastal Zone
Agua Hedionda Ecological Reserve	197	197
Aviara Master Association	197	197
Batiquitos Lagoon Ecological Reserve	564	564
Buena Vista Lagoon Ecological Reserve	140	140
Cabrillo Power	253	253
Crossings Golf Course	206	153
La Costa Glen	108	108

Source: City of Carlsbad, June 2019

When the Habitat Management Plan was approved in 2003, the plan identified 2,019 acres of "existing hardline" areas and 396 acres of "proposed hardline" areas. The plan also identified 252 acres of land classified as "standards areas." The exact number of acres conserved for "standards areas" is not determined until the time a development proposal is approved within a standards area.

Since 2003, 264 acres of "proposed hardline" area have been formally conserved (132 acres of "proposed hardline" areas remain) and 113 acres of "standards areas" have been conserved (69 acres of "standards" areas remain). As of June 2019, with the addition of conserved proposed hardline and standards areas, there are 2,396 acres of "existing hardline" areas (an increase of 377 acres since 2003).

Most of the sensitive habitat areas within the Coastal Zone are included in existing hardline preserves, including the diverse habitat areas surrounding the three lagoons. There are over 90 preserves in the city's Coastal Zone that range in size from one acre to 568 acres. Table 6-1 shows preserves in the Coastal Zone that are over 100 acres in size.

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CITY OF CARLSBAD
LOCAL COASTAL PROGRAM

Source: Michael Baker International, 2016; SANGIS, 2016; City of Carlsbad, 2019

8/9/2019 JN M:\Mdata\49652\GIS\MXD\Carlsbad_MXDs\LCP_2019\Chapter 6\Figure 6-1 HMP Preserves 11x17.mxd

LEGEND

- Coastal Zone
- City Limit
- Railroad

HMP Preserve System

- Existing Hardline
- Proposed Hardline
- Outside-Conserved
- Standards Area

FIGURE 6-1

2019 HABITAT MANAGEMENT PLAN HARDLINE PRESERVES AND STANDARDS AREAS

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The Habitat Management Plan and the Coastal Act

The city's Habitat Management Plan comprehensively protects ESHA by identifying and implementing an interlinked natural communities preserve system. The Habitat Management Plan establishes a long-range approach to habitat management and preserve creation and is intended to function at the citywide level, instead of focusing on impacts to individual properties. Implementation of this large-scale approach to habitat conservation allows some development to impact environmentally sensitive habitat in the least sensitive areas in order to preserve the largest and most valuable areas of contiguous habitat and their associated populations of sensitive species.

Coastal Act Section 30240(a) requires that "environmentally sensitive habitat areas be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas." When the Coastal Commission approved the city's Habitat Management Plan in June 2003, it identified that by allowing impacts to some environmentally sensitive areas the Habitat Management Plan conflicts with Coastal Act Section 30240, which protects against impacts to sensitive habitat. However, the Habitat Management Plan promotes the objectives of Coastal Act Section 30250, which requires new development to be concentrated in areas able to support it without significantly impacting coastal resources.

In the case of the city's Habitat Management Plan, Coastal Act Sections 30240 and 30250 conflict. To resolve the conflict, Coastal Act Section 30007.5 allows the Coastal Commission to determine the "manner which on balance is the most protective of significant coastal resources." In approving the Habitat Management Plan, the Coastal Commission determined that although the plan allows impacts to some sensitive resources, it is on balance the most protective option for ESHA because it protects large, contiguous blocks of sensitive habitat with the highest natural resource value, and directs development away from these areas.[1]

The comprehensive nature of the Habitat Management Plan's habitat preservation strategy sets it apart from other approaches that are not comprehensive and lack regional resource protection standards; these non-comprehensive approaches require more stringent limitations on sensitive habitat impacts for individual sites. By requiring clustering and concentration of development away from the most valuable sensitive habitat areas, the Habitat Management Plan provides a larger, more contiguous preserve area than if impacts from development were to be evaluated on a lot-by-lot basis.

[1] California Coastal Commission Staff Report City of Carlsbad Major Amendment No. 1-03B (Habitat Management Plan), dated May 22, 2003, https://documents.coastal.ca.gov/reports/2003/6/Th8d-6-2003.pdf.

The Habitat Management Plan and Figure 6-1 do not identify all habitat areas that meet the definition of ESHA per the Coastal Act. Per the policies of this chapter, a biological study and habitat protection may be required for development proposed on any site that may contain sensitive habitat.

6.3 Marine and Coastal Water Quality

Local Surface Waters

The San Diego region is divided into 11 hydrologic units, which flow from elevated regions in the east toward coastal lagoons, estuaries, bays, and the Pacific Ocean in the west. As shown in Figure 6-2, the Carlsbad hydrologic unit is approximately 210 square miles in area, extending from the headwaters above Lake Wohlford in the east to the Pacific Ocean in the west and from Vista and Oceanside in the north to Solana Beach, Escondido, and the community of Rancho Santa Fe to the south. The cities of Carlsbad, San Marcos, and Encinitas are entirely within this hydrologic unit. There are numerous important surface hydrologic features within the Carlsbad hydrologic unit, including four unique coastal lagoons, three major creeks, and two large water storage reservoirs.

In Carlsbad, surface flow of water is often channeled through streams and ephemeral drainages. A stream is a topographical feature with a clear bed and bank that periodically conveys water. Ephemeral drainages and ephemeral streams are topographic features that convey water, but only during and shortly after rainfall events in a typical year. Most of the surface flow comes from precipitation runoff and storm events. Precipitation occurs predominantly during the winter and spring months, and as a result, streamflow is highest during this period. Surface flows during the summer and fall months are typically low and consist of urban runoff, agricultural runoff, and surfacing groundwater.

Surface Water Quality

Impacts to the Carlsbad hydrologic unit include surface water quality degradation, sewage spills, sedimentation, habitat degradation and loss, invasive species, and eutrophication (i.e., excessive nutrients in a body of water, usually resulting from runoff from land, which causes a dense growth of plant life and death of animal life from lack of oxygen). Pollutant conditions in the Carlsbad hydrologic unit include bacterial indicators, eutrophic conditions, nutrients, sediments, sulfates, nitrates, and phosphates. The sources of these pollutants are varied and include urban runoff, agricultural runoff, sewage spills, livestock/domestic animals, and other natural sources. Key water quality issues in the city's principal surface water bodies are described below.

Buena Vista Lagoon

Buena Vista Lagoon is a 220-acre freshwater lagoon managed as an ecological reserve by the California Department of Fish and Wildlife. The principal water quality issues in the watershed relate to the lagoon, which is identified on the 2012 California Clean Water Act Section 303(d) list as impaired due to the presence of pollutants (nutrients, indicator bacteria, and sedimentation/siltation). Waters on the Section 303(d) list are those that do not meet water quality standards and parameters for pollutants. Buena Vista Creek, which feeds into the lagoon, is also listed as impaired for sediment toxicity and

selenium. The City of Vista has installed a series of check dams and a detention basin to assist in the removal of sediments traveling through Buena Vista Creek.

The lagoon is protected from tidal influence by a beach berm and a weir located at the lagoon mouth. The existing weir maintains a minimum water level within the lagoon at an elevation of 5.6 feet National Geodetic Vertical Datum (NGVD). Sedimentation from the watershed upstream of the lagoon has accumulated within the lagoon basins, leading to decreasing water depths and increasing nutrient levels. Sedimentation and water quality issues have raised questions about Buena Vista Lagoon's long-term ecological health. Over time, the increased sediment and nutrient loading from urban development, sewage spills, and restricted circulation from highway and railroad bridges and the weir have degraded the lagoon. These conditions have diminished the lagoon's value to fish and wildlife, as well as human use.

In July 2012, the San Diego Association of Governments (SANDAG) began an environmental review process for the Buena Vista Lagoon Enhancement Project, which includes evaluation of three enhancement alternatives (freshwater, saltwater, and a saltwater/freshwater hybrid regime) and a no project alternative. In July 2019, SANDAG, property owners and other stakeholders agreed to pursue a modified hybrid saltwater enhancement option.

Agua Hedionda Lagoon

Agua Hedionda Lagoon encompasses three interconnected lagoons, divided by Interstate 5 and a railroad bridge. The Agua Hedionda Ecological Reserve was acquired in 2000 by the California Department of Fish and Wildlife and consists of 186 acres of wetland at the eastern end of the lagoon. Although Agua Hedionda Lagoon is not listed as impaired, Agua Hedionda Creek, which feeds into the lagoon, is listed on the 2012 California Clean Water Act Section 303(d) list as impaired for enterococcus, fecal coliform, manganese, phosphorus, selenium, total dissolved solids, total nitrogen as N, and toxicity.

A significant threat to the lagoon's water quality was discovered in June 2000 when Caulerpa taxifolia algae was found growing in the lagoon. The algae are extremely fast growing (more than an inch a day), and if allowed to become permanently established, can destroy and replace coastal marine life such as kelp forests, which are home to a wide variety of fish, marine mammals, and seabirds. Action was taken to remove the threatening algae and in July 2006 Caulerpa taxifolia was declared eradicated from the lagoon.

Algerian Sea Lavender was also discovered in the lagoon's salt marshes and restoration efforts to remove it began in 2017. Algerian Sea Lavender pushes out native vegetation that is important to

nesting birds and the survival of juvenile fish species. As of the date of this Local Coastal Program, the Agua Hedionda Lagoon Foundation and the California Department of Fish and Wildlife were continuing restoration efforts.

Agua Hedionda Lagoon also contains plants, like eelgrass, that help improve water quality. Eelgrass produces food and oxygen for marine life and improves water quality by filtering polluted runoff and absorbing excess nutrients.

Batiquitos Lagoon

Batiquitos Lagoon was originally open to the ocean, but the construction of transportation corridors and other development resulted in sediment closing off the lagoon over time. In the mid-1990s, the Batiquitos Lagoon Enhancement Project restored the lagoon to regular tidal influence, as it exists today (2017). The California Department of Fish and Wildlife is responsible for ongoing maintenance and monitoring of the lagoon, as required by Section 10 of the 1987 "Memorandum of Agreement for the Enhancement of Batiquitos Lagoon," which is an agreement between the City of Carlsbad, U.S. Fish and Wildlife Service, California Department of Fish and Game (as it was known in 1987), California State Lands Commission, and the City of Los Angeles that sets forth the roles and responsibilities for the restoration of Batiquitos Lagoon.

Although Batiquitos Lagoon is not listed as impaired, two of the creeks that feed into Batiquitos Lagoon are listed on the 2012 California Clean Water Act Section 303(d) list as impaired—Encinitas Creek is impaired for selenium and toxicity, and San Marcos Creek is impaired for DDE (dichlorodiphenyldichloroethylene), phosphorus, sediment toxicity, and selenium.

Like Agua Hedionda Lagoon, Batiquitos Lagoon also contains eelgrass, which helps improve water quality, as described above.

Water Pollution

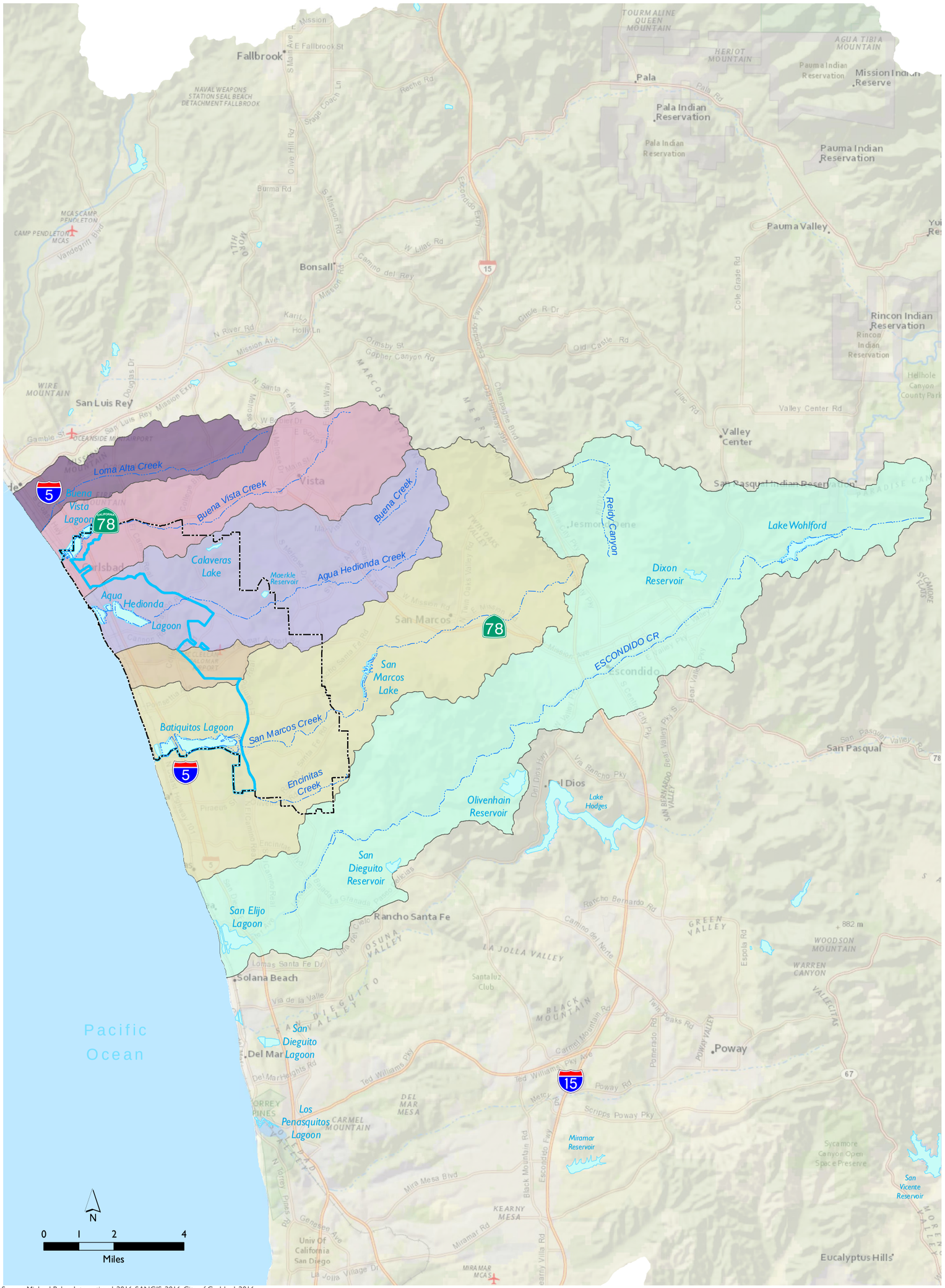
As additional development occurs in Carlsbad and other communities within the Carlsbad hydrologic unit, the placement of roads, parking lots, buildings, and other infrastructure may increase impervious surfaces. Impervious surfaces reduce the amount of water infiltration into the ground and increase direct runoff into the city's creeks, lagoons, and the ocean; also, increased pollution can be generated from the daily activities of new residents and businesses. The increased direct runoff and daily activities could result in further water quality degradation and flooding concerns. In addition, if not controlled, development activities have the potential to cause soil erosion and sedimentation, which may increase rates of surface runoff, decrease water quality, and cause related environmental damage.

Certain types of development, referred to as "priority development projects" (PDPs), pose a greater risk of adverse impacts to water quality and hydrology due to the amount of impervious surface area, size of the project, type of land use, proximity to coastal waters, lagoons, or storm drain systems that lead to coastal waters. PDPs are defined in the city's National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) permit, as shown in Table 6-2 (as of 2018).

Table 6-2, *Priority Development Projects (PDPs)*

Ref. #	Project Type
1	New development that creates 10,000 square feet or more of impervious surfaces collectively over the entire project site.
2	Redevelopment creating and/or replacing 5,000 square feet or more of impervious surface collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surface
3	New development or redevelopment that creates and/or replaces 5,000 square feet or more of impervious surface collectively over the entire project site and supports one or more of the following: a. Restaurants b. Auto repair shops c. Retail gasoline outlets that are 5,000 square feet or more in size and generate an average daily traffic of 100 or more vehicles d. Development on any natural slope that is 25 percent or greater e. Parking lots f. Any impervious paved surface used for vehicle transportation (streets, roads, highways, freeways, and driveways)
4	New development or redevelopment that creates and/or replaces 5,000 square feet or more of impervious street, road, highway, freeway or driveway surface collectively over the entire project site.
5	New development or redevelopment that creates and/or replaces 2,500 square feet or more of impervious surface collectively over the entire site, and discharges directly to an "environmentally sensitive area" (ESA), as defined by the city's BMP Design Manual Appendices. "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e., not commingled with flows from adjacent lands).
6	New development or redevelopment that results in the disturbance of one or more acres of land and is expected to generate water pollutants post construction.

The City of Carlsbad employs various measures, including best management practices (BMPs), to prevent pollutants and hazardous materials from entering municipal stormwater conveyance systems (for all development, including PDPs). As storm drains are not connected to sanitary sewer infrastructure, water conveyed to these drains is not treated prior to discharging into creeks, lagoons, and the ocean. Therefore, pollutants must be reduced and/or removed before entering urban conveyance systems. The city's Storm Water Protection Program covers all phases of development through planning, construction, and existing development and educates and monitors developers, businesses, municipal facilities, residents, school children, and the general public to help prevent pollutants and other hazardous materials from entering storm drains.



Source: Michael Baker International, 2016; SANGIS, 2016; City of Carlsbad, 2016

8/7/2019 J:\N M\Misc\149652\GIS\MXD\Carlsbad_MXDs\LCP_2019\Chapter 6\Figure 6-2 Carlsbad Hydrologic Unit 11x17.mxd

LEGEND

- Coastal Zone
- City Limit
- Creeks

Major Sub-Basins/Watersheds

- Loma Alta Creek
- Buena Vista Creek
- Aqua Hedionda Creek & Buena Creeks
- Encinas Creek
- San Marcos Creek
- Escondido Creek

FIGURE 6-2

CARLSBAD HYDROLOGIC UNIT

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6.4 ESHA and Water Quality Policies

The following policies provide additional direction to ensure that development in the Coastal Zone is consistent with Coastal Act requirements related to protection of natural coastal resources. Some of the following policies are directly related to the Coastal Act sections described in Section 6.1 of this chapter; reference to those Coastal Act sections is noted at the end of the applicable policies. The use of the term "environmentally sensitive habitat area (ESHA)" in the policies of this chapter shall mean an "environmentally sensitive area" of habitat, as defined in Coastal Act Section 30107.5.

Environmentally Sensitive Habitat Area (ESHA)

LCP-6-P.1 Maintain and implement the Coastal Commission certified "Habitat Management Plan for Natural Communities in the City of Carlsbad" (Habitat Management Plan) as a component of the Local Coastal Program. Any changes to the Habitat Management Plan that affect land within the coastal zone (including, but not limited to, changes to hardline preserve boundaries or mitigation requirements) shall be certified by the Coastal Commission as Local Coastal Program amendments prior to becoming effective.

LCP-6-P.2 Protect ESHA against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. Development in areas adjacent to an ESHA shall be sited, designed, and maintained to prevent significant degradation of the ESHA. Impacts to ESHA may be allowed only pursuant to the policies of this chapter and the provisions of the Habitat Management Plan [related to Coastal Act Section 30240].

LCP-6-P.3 Ensure protection of sensitive habitat by implementing the requirements of the Habitat Management Plan including, but not limited to, the conservation standards specified in section D.7 and the adjacency standards in section F.3 of the plan. The requirements of the Habitat Management Plan shall be applicable to [related to Coastal Act Sections 30233 and 30240]:

A. Existing hardline, proposed hardline, and standards areas identified by the Habitat Management Plan, and

B. ESHA located outside the "existing hardline," "proposed hardline," and "standards areas" identified by the Habitat Management Plan.

LCP-6-P.4 Continue participation in regional planning efforts to protect ESHA.

LCP-6-P.5 Maintain functional wildlife corridors and habitat linkage to contribute to regional biodiversity and the viability of rare, unique, or sensitive biological resources throughout the city.

LCP-6-P.6 Require that, at the time of any discretionary approval, any land identified as open space for its habitat value have an appropriate easement and land use and zoning designation placed on it for resource protection.

LCP-6-P.7 Require a site-specific biological report, conducted by a qualified biologist, for any development project (i.e., grading, clearing, grubbing, construction, etc.) that requires a discretionary or ministerial permit, in the following circumstances:

A. The project could directly or indirectly impact ESHA; or

B. The project could directly or indirectly impact lands identified in the Habitat Management Plan as existing hardline, proposed hardline, or standards area; or

C. There is no clear evidence that ESHA does not exist on the project site.

D. The biological report shall identify the location and quantities of all habitat on the project property and any off-site work area; the location of sensitive species; and the location of any off-site wetland, riparian habitat, oak woodland, nesting raptors, or narrow endemic species located within 100 feet of the property. The report shall also identify disturbed areas adjacent to or within sensitive habitat areas; the applicant shall provide information that identifies how the area became disturbed (i.e., natural causes or human actions; and if a coastal development was required and obtained to authorize the disturbance of the sensitive habitat).

LCP-6-P.8 Ensure that Buena Vista, Agua Hedionda, and Batiquitos Lagoons and surrounding wetland habitat remain protected as hardline preserve areas pursuant to the Habitat Management Plan and the policies of this chapter.

LCP-6-P.9 Ensure that consultation with and review by relevant state and federal agencies occurs prior to any bottom-disturbing activities (e.g., dredging) in Agua Hedionda Lagoon or Batiquitos Lagoon. The purpose of the consultation shall be to determine the required permitting process and measures to avoid, protect, and mitigate impacts to eelgrass beds throughout the lagoons.

LCP-6-P.10 Support the California Department of Fish and Wildlife in its responsibility to maintain and operate Buena Vista Lagoon and Batiquitos Lagoon as ecological reserves. In regard to Batiquitos Lagoon, the Department of Fish and Wildlife is responsible for maintaining the lagoon pursuant to Section 10 of the 1987 "Memorandum of Agreement for the Enhancement of Batiquitos Lagoon."

LCP-6-P.11 Ensure that a maximum of two access crossings (Calle Barcelona and Levante Street) are maintained across the Green Valley riparian corridor (south of La Costa Avenue and west of El Camino Real). The crossings provide access to the development on the west side of the corridor. Maintenance of the crossings shall comply with the habitat protection requirements of the Habitat Management Plan and this Local Coastal Program.

LCP-6-P.12 Require that tree trimming or removal, which is conducted as part of city tree maintenance or the construction of new development or redevelopment, comply with the following to protect the breeding, roosting, and nesting habitat of birds protected by the Migratory Bird Treaty Act and bird species listed by the Federal or California Endangered Species Act, and California bird species of special concern, as well as owls and raptors.

A. Tree trimming or removal of any tree that, as determined by a qualified biologist, is used for breeding and nesting by a bird species listed above, shall be undertaken in compliance with all applicable codes or regulations of the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the Migratory Bird Treaty Act, and shall be subject to the following:

    1. Tree trimming or tree removal shall be avoided during the breeding and nesting season of the protected/sensitive bird species (January through September) unless the tree causes danger to public health and safety, as determined by the city in consultation with a qualified arborist. A health and safety danger shall be considered to exist if a qualified arborist determines that a tree or branch is dead, diseased, dying, or injured and said tree or branch is in imminent danger of collapse or breaking away.

    2. If trimming cannot be avoided during the breeding season, a pre-work nesting bird clearance survey shall be conducted by a qualified biologist no more than three days prior to the trimming/removal activity.

3. Trees or branches with an existing nest of a bird species listed above shall not be removed or disturbed until all young have successfully fledged from the nest, as determined by a qualified biologist, unless a health and safety danger exists.

4. Removal of a tree, when permitted, shall be mitigated at a 1:1 ratio. The mitigation ratio may be reduced when multiple trees must be removed due to the health of the trees (e.g., infestation of a tree disease), as determined by a qualified biologist. A planting plan for each tree replacement/transplant shall be developed to specify the replacement/transplant location; tree type and size (minimum 15-gallon container size); planting specifications; and a cyclical five-year monitoring program with specific performance standards.

B. If an active nest of a bird species listed above is found, construction activities within 300 feet (500 feet from any identified raptor nest) shall not exceed noise levels of 65 dB peak until the nest(s) is vacated and juveniles have fledged and there is no evidence of a second attempt at nesting. Surveys for the above bird species during their breeding season shall be conducted by a qualified professional prior to commencement of construction.

Marine and Coastal Water Quality

LCP-6-P.13 Maintain, enhance, protect, and, where feasible, restore the quality and biological productivity of coastal waters consistent with Coastal Act Sections 30230 and 30231. Coastal waters include the ocean, rivers, streams, wetlands, estuaries, lakes, and groundwater.

LCP-6-P.14 Ensure that any diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes is conducted in accordance with Coastal Act Section 30233.

LCP-6-P.15 Ensure that all development occurs in accordance with the requirements of the city's Grading and Erosion Control Ordinance, Stormwater Management and Discharge Control Ordinance, Drainage Master Plan, Engineering Standards Volume 4 SWPPP Manual and Volume 5 BMP Design Manual, Jurisdictional Runoff Management Program (JRMP), and the additional requirements contained herein.

LCP-6-P.16 Ensure that development is sited and designed to a) minimize the transport of pollutants in runoff into coastal waters, and b) minimize post-development changes in the site's runoff flow regime (i.e., volume, flow rate, timing, and duration) to preserve

the pre-development hydrologic balance and prevent adverse changes in the hydrology of coastal waters (i.e., hydromodification).

LCP-6-P.17 Address runoff management early in site design planning and alternatives analysis, integrating existing site characteristics that affect runoff (such as topography, drainage patterns, vegetation, soil conditions, natural hydrologic features, and infiltration conditions) in the design of strategies that minimize post-development changes in the runoff flow regime, control pollutant sources, and, where necessary, remove pollutants.

LCP-6-P.18 Require the use of pollutant source control BMPs, which can be operational actions or structural or nonstructural features, in all development to minimize the transport of pollutants in runoff from the development.

LCP-6-P.19 Give precedence to a low impact development (LID) approach to stormwater management in all development. LID integrates preventive site design strategies with small-scale, distributed BMPs to replicate the site's pre-development hydrologic balance through infiltration, evapotranspiration, harvesting, detention, or retention of stormwater close to the source. All development shall incorporate the following site design practices, where applicable and technically feasible:

A. Restore hydrologic features such as stream corridors, drainage swales, topographical depressions, groundwater recharge areas, floodplains, and wetlands.

B. Preserve or enhance non-invasive vegetation to achieve water quality benefits such as transpiration, interception of rainfall, pollutant uptake, shading of waterways to maintain water temperature, and erosion control.

C. Maintain or enhance on-site infiltration of runoff, where appropriate and feasible, to reduce runoff and recharge groundwater.

D. Minimize the installation of impervious surfaces, especially directly-connected impervious areas, and, where feasible, increase the area of pervious surfaces in redevelopment to reduce runoff.

LCP-6-P.20 Require that in areas adjacent to an ESHA development shall be sited and designed to protect the ESHA from any significant disruption of habitat values resulting from the discharge of stormwater or dry weather runoff flows.

LCP-6-P.21 Avoid construction of new stormwater outfalls and direct stormwater to existing facilities with appropriate treatment and filtration, where feasible. Where new outfalls cannot be avoided, plan, site, and design outfalls to minimize adverse impacts to coastal resources from outfall discharges, including consolidation of existing and new outfalls where appropriate.

LCP-6-P.22 Implement appropriate protocols, including conditions of approval for all coastal development permits, to manage BMPs (ongoing operation, maintenance, inspection, and training) in all development, to protect coastal water resources for the life of the development.

LCP-6-P.23 Minimize water quality impacts during construction by minimizing the project footprint, minimizing and phasing grading activities, implementing soil stabilization and pollution prevention measures, preventing unnecessary soil compaction, or through other BMPS that minimize runoff and pollutant discharge.

LCP-6-P.24 Require approval of a "weather triggered" action plan that identifies how a construction site will be protected to prevent water quality impacts during storm events. The plan shall identify BMPs that will be installed a minimum of 48 hours prior to a predicted storm event (i.e., a 40-percent or greater chance of rain within a 5-day National Weather Service forecast).

LCP-6-P.25 Require the following, in addition to the policies above, for priority development projects (PDPs), as described in Table 6-2 and defined by the city's municipal separate storm sewer system (MS4) permit.

A. Early in the development planning and design stage, a qualified licensed professional shall prepare a pollutant runoff and hydrologic site analysis and document the expected effectiveness of proposed BMPs.

B. Size LID, runoff control, and treatment control BMPs to infiltrate, retain, or treat, at a minimum, the runoff produced by the 85th percentile 24-hour storm event for volume-based BMPs, or two times the 85th percentile 1-hour storm event for flow-based BMPs.

C. Use a LID approach that gives priority to preventive site design strategies to minimize post-development changes in the site's stormwater flow regime, supplemented by structural BMPs to retain on-site (by means of infiltration,

evapotranspiration, or harvesting for later use), at a minimum, the runoff produced by the 85th percentile 24-hour design storm, to the extent appropriate and feasible.

D. Conduct an alternatives analysis to demonstrate that there are no appropriate and feasible alternative project designs that would substantially improve runoff retention, if a proposed development will not retain on-site the runoff produced by the 85th percentile 24-hour design storm using a LID approach.

E. Use a treatment control BMP (or a suite of BMPs) to remove pollutants of concern from any portion of the runoff produced by the 85th percentile 24-hour design storm that will not be retained on-site, or if additional pollutant removal is necessary to protect coastal waters.

F. If a proposed development will add a net total of more than 10,000 square feet of impervious surface area, and any portion of the runoff produced by the 85th percentile 24-hour design storm will not be retained on-site, use a structural runoff control BMP to minimize adverse post-development changes in the runoff flow regime.

LCP-6-P.26 Consult the city's MS4 permit to verify the most current definition of PDPs. The PDP definitions in Table 6-2 shall apply in the coastal zone, unless the MS4 permit definitions include additional project types or more restrictive impervious area limitations, in which case those additional project types and more restrictive impervious area limitations shall apply in the coastal zone.

LCP-6-P.27 Determine that no Local Coastal Program amendment is required for the following minor revisions to the city's Engineering Standards Volume 4 SWPPP Manual and Volume 5 BMP Design Manual:

A. Addition of new BMPs found to be more protective of water quality than current BMPs

B. Removal of BMPs found to be ineffective (this does not include removal of BMPs on the basis that they are infeasible)

C. Addition of new development categories as PDPs

D. Addition of new coastal waters considered to be "environmentally sensitive areas"

E. Reductions in the area of impervious surfaces used to designate a specific category of PDP

The minor changes listed above may be made, provided the city finds that the changes will better protect coastal water quality. The city shall notify the Executive Director of the Coastal Commission in writing of any of the above-listed changes.

LCP-6-P.28 Limit access on the eastern end of the Agua Hedionda Lagoon (east of Bayshore Drive) to passive vessels only (e.g., paddleboards and kayaks); no power boats or other motorized watercraft shall be permitted.

LCP-6-P.29 Encourage and support efforts to educate the community about the potential water quality impacts resulting from development.