4.3 BIOLOGICAL RESOURCES

INTRODUCTION

This section assesses the effects of proposed habitat and recreation improvements to the Colorado Lagoon (Lagoon) and adjacent areas on biological resources within the project study area. Documents reviewed and incorporated as part of this analysis include the Biological Resources Assessment prepared for the proposed project, which includes a jurisdictional delineation of waters and wetlands, survey reports, and the results of database research. The complete Biological Resources Assessment is contained in Appendix E. In addition, a survey of the underwater environment and associated intertidal areas of the Lagoon was performed in July 2004 by Chambers Group, Inc. (Chambers 2004) and is used to assess the existing setting of the Lagoon aquatic environment.

4.3.1 EXISTING ENVIRONMENTAL SETTING

The Lagoon, Marina Vista Park, and a small area of Marine Stadium (which comprise the proposed project area) consist of approximately 48.61 acres (ac) in the City of Long Beach (City). The Lagoon is located in a park setting and is owned and maintained as a City park by the City Department of Parks, Recreation, and Marine. Existing improvements include the Lagoon habitat, a wetland and marine science education center, picnic area, and play equipment. The Lagoon lies northwest of the mouth of the San Gabriel River and is north of Marine Stadium and Alamitos Bay. The entire project area is bound by East 6th Street to the north, East Appian Way and East Eliot Street to the south, Park Avenue to the west, and Monrovia Avenue to the east. The site is located at approximately latitude 33.7710°N, longitude 118.1334°W, primarily in Section 4 of Township 5 South and Range 12 West on the United States Geological Survey (USGS) *Long Beach, California* 7.5-minute series topographical quadrangle. Land uses adjacent to the project area are predominantly residential and recreation.

The topography in the project vicinity is relatively flat with a gently sloping transition from the Lagoon waters to upland areas. The project area is dominated by the Lagoon, an 11.7 ac tidal water body[1] that is connected through an underground tidal culvert to Marine Stadium, which in turn is connected to Alamitos Bay and the Pacific Ocean. The proposed project area includes the Lagoon as well as adjacent parkland areas. The historic Los Cerritos Wetlands were dredged in the 1920s to form the Lagoon, which has subsequently been used for a variety of public and private recreational events.

[1] LSA Associates, Inc. used a Geographic Information System (GIS) to estimate Colorado Lagoon water body acreage based on a 2006 aerial photo; however, the water body acreage will vary with the tides.

4.3.2 REGULATORY SETTING

United States Army Corps of Engineers

The United States Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and nonwetland bodies of water that meet specific criteria. Corps regulatory jurisdiction, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [USC] 403), regulates almost all work in, over, and under waters listed as "navigable waters of the U.S." Corps regulatory jurisdiction, pursuant to Section 404 of the Clean Water Act (CWA), is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (i.e., through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or indirect (i.e., through a nexus identified in the Corps regulations). The following definition of waters of the United States is taken from the discussion provided at 33 Code of Federal Regulations (CFR) 328.3:

> "The term waters of the United States means:
>
> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce…
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) the use, degradation or destruction of which could affect interstate or foreign commerce;
>
> (4) All impoundments of waters otherwise defined as waters of the United States under the definition; and
>
> (5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section."

The Corps and United States Environmental Protection Agency (EPA) define wetlands as follows:

> "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions."

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied.

In 2006, the United States Supreme Court further considered the Corps jurisdiction of "waters of the United States" in the consolidated cases Rapanos v. United States and Carabell v. United States (126 S. Ct. 2208), collectively referred to as Rapanos. The Supreme Court concluded that wetlands are "waters of the United States" if they significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as navigable. On June 5, 2007, the Corps issued guidance regarding the Rapanos decision. This guidance states that the Corps will continue to assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, relatively permanent nonnavigable tributaries that have a continuous flow at least seasonally (typically 3 months), and wetlands that directly abut relatively permanent tributaries. The Corps will determine jurisdiction over waters that are nonnavigable tributaries that are not relatively permanent

and wetlands adjacent to nonnavigable tributaries that are not relatively permanent only after making a significant nexus finding.

Furthermore, the preamble to Corps regulations (Preamble Section 328.3, Definitions) states that the Corps does not generally consider the following waters to be waters of the United States. The Corps does, however, reserve the right to regulate these waters on a case-by-case basis.

- Nontidal drainage and irrigation ditches excavated on dry land
- Artificially irrigated areas that would revert to upland if the irrigation ceased
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States

Under Section 10 of the Rivers and Harbors Act of 1899, Corps jurisdiction over tidal waters of the United States extends from the ordinary low tide 3 nautical miles seaward. Corps jurisdiction shoreward extends to the line on the shore reached by the mean high water. This jurisdiction extends to this edge even though portions of the water body may be extremely shallow and are thus considered "navigable in law" although they may not be navigable in fact (33 CFR 329.12).

Waters found to be isolated and not subject to CWA regulation are often still regulated by the Regional Water Quality Control Board (RWQCB) under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Regional Water Quality Control Board

The RWQCB has regulatory authority over waters of the United States pursuant to Section 401 of the CWA and waters of the State pursuant to the Porter-Cologne Act. The Corps cannot issue authorization for fill or discharge into waters of the United States without a Certification of Water Quality or waiver from the RWQCB. Additionally, isolated nonnavigable waters and wetlands excluded from Corps jurisdiction are subject to RWQCB authority as waters of the State, and any discharge of waste (RWQCB considers fill to be waste) may require a Report of Waste Discharge and may be subject to Waste Discharge Requirements by the RWQCB.

The RWQCB can require mitigation measures above and beyond those required by the Corps or California Department of Fish and Game (CDFG)[1]. However, the mitigation proposed to satisfy the

[1] The CDFG does not regulate tidal waters and will not have jurisdiction over the proposed improvements.

Corps and CDFG (discussed further below) typically meets RWQCB requirements to offset impacts to water quality.

United States Fish and Wildlife Service

The Federal Endangered Species Act (FESA) of 1973 sets forth a two-tiered classification scheme based on the biological health of a species. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range. Threatened species are those likely to become endangered in the foreseeable future; Special Rules under Section 4(d) can be made to address threatened species. Ultimately, the FESA attempts to bring populations of listed species to healthy levels so that they no longer need special protection.

Section 9 of the FESA prohibits the "take" of listed species by anyone unless authorized by the United States Fish and Wildlife Service (USFWS). Take is defined as "conduct which attempts or results in the killing, harming, or harassing of a listed species." Harm is defined as "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." Harassment is defined as an "intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding, or sheltering." Therefore, in order to comply with the FESA, any proposed project should be assessed prior to construction to determine whether the project will impact listed species or, in the case of a federal action on the project, designated critical habitats. If no federal action is associated with the proposed project, and the project will result in take of listed species, authorization from the USFWS in the form of a Section 10(a) take permit and an accompanying Habitat Conservation Plan (HCP) are required. If a federal action exists and the project may impact listed species or designated critical habitat, then consultation with the USFWS is required through Section 7 of the FESA. That consultation can result in an incidental take authorization through a Biological Opinion as explained below.

Section 7 of the FESA directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of federal lands as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of federal permits, licenses, or other actions.

Section 7(a)(2) of the FESA requires all federal agencies, in consultation with and with the assistance of the Secretary of the Interior, to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat. This includes any federal action including funding, licensing, permitting, authorizing, or carrying out activities under their jurisdictions. By law, Section 7 consultation is a cooperative effort involving affected parties engaged in analyzing effects posed by proposed actions on listed species or critical habitat(s).

California Department of Fish and Game

The CDFG, through Section 1602 of the California Fish and Game Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least an intermittent flow of water.

The CDFG regulates wetland areas only to the extent that those wetlands are a part of a river, stream, or lake as defined by CDFG. While seasonal ponds are within the CDFG definition of wetlands, if they are not associated with a river, stream, or lake, they are not subject to jurisdiction of CDFG under Section 1602 of the California Fish and Game Code.

The California Endangered Species Act (CESA; California Fish and Game Code Sections 2050–2098) was signed into law in 1984. It was intended to parallel the federal law. The CESA prohibits the unauthorized "take" of species listed as threatened or endangered under its provisions. However, a significant difference exists in the CESA definition of "take," which is limited to actually or attempting to "hunt, pursue, capture, or kill." CESA provisions for authorization of incidental take include consultation with a State agency, board, or commission that is also a State Lead Agency pursuant to the California Environmental Quality Act (CEQA); authorization of other entities through a 2081 permit; or adoption of a federal incidental take authorization pursuant to Section 2081.1. Similar to the FESA, actions in compliance with the measures specified as a result of the consultation process or 2081 permit are not prohibited.

California Coastal Commission

The California Coastal Commission (CCC), through provisions of the California Coastal Act, is empowered to issue a Coastal Development Permit (CDP) for many projects located within the Coastal Zone. In areas where a local entity has a certified Local Coastal Program (LCP), the CCC can issue a CDP only if it is consistent with the LCP. The CCC, however, has appeal authority for portions of LCPs and retains jurisdiction over certain public trust lands and in areas without an LCP.

The CCC's definition of wetlands, as defined in Section 30121 of the California Coastal Act and Title 14 Section 13577 of the CCC regulations, is distinctly different from the Corps definition of wetlands. According to CCC regulations, wetlands are 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." Both definitions focus on three fundamental wetland characteristics: hydrology, soils, and vegetation. However, while the Corps definition requires the existence of all three wetland characteristics for an area to be considered a wetland, the CCC definition of a wetland is based on the existence of only two characteristics: wetland hydrology and either a prevalence of hydrophytic vegetation or formation of hydric soils (exceptions include certain areas that lack wetland soils and vegetation). It is noted that, under certain circumstances, reliable indicators of all required characteristics are not necessarily apparent, and areas may be delineated as wetlands by the Corps on the basis of indicators of only two of the three characteristics. The CCC routinely makes jurisdictional wetland determinations based on the presence of one characteristic indicator (i.e., wetland soils or vegetation) unless there is substantial evidence that this indicator is not valid. Nevertheless, the presence of wetland hydrology during some portion of most years is fundamental to the existence of any wetlands. However, the CCC will typically assume the presence of wetland hydrology when there

is insufficient evidence to conclusively refute the presence of wetland hydrology and when there is a prevalence of hydrophytic vegetation or the formation of hydric soils.

Nesting Birds

The federal Migratory Bird Treaty Act (MBTA) regulations and portions of the California Fish and Game Code prohibit the "take" of nearly all native bird species and their nests. While these laws and regulations were originally intended to control the intentional take of birds and/or their eggs and nests by collectors, falconers, etc., they can nevertheless be applied to unintentional take (e.g., destroying an active nest by cutting down a tree). It is sometimes possible to obtain a permit for relocating or removing a nest.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) was authorized in 1996 and requires the National Marine Fisheries Service (NMFS) to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal Fisheries Management Plan (FMP). EFH is defined as the waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Specifically, the MSA requires: (1) federal agencies to consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that could adversely affect EFH; (2) NMFS to provide conservation recommendations for any federal or state action that could adversely affect EFH; and (3) federal agencies to provide a detailed response in writing to NMFS within 30 days of receiving EFH conservation recommendations.

The proposed project is located within an area designated as EFH for both the Coastal Pelagic Species and Pacific Coast Groundfish FMPs.

Essential Fish Habitat

The proposed project is located within an area designated as EFH by NMFS for both the Coastal Pelagic Species and Pacific Coast Groundfish FMPs. Of the 93 fish and 1 invertebrate species listed in these management plans, 2 species have been collected in the Lagoon based on fish sampling conducted in the Lagoon in 1968, 1971, 1973, and 2004 (Allen 1976; Chambers 2004). Northern anchovy (*Engraulis mordax*) is listed among the coastal pelagic managed fish species and has been collected multiple times in the Lagoon. Cabezon (*Scorpaenichthys marmoratus*), covered under the Pacific Coast Groundfish FMP, was reported in 1968 but not since then. Although not reported in sampling, several additional groundfish species have a low potential of occurring in the Lagoon based on occasional collections at similar sites, including: big skate (*Raja binoculata*), California skate (*Raja inornata*), leopard shark (*Triakis semifasciata*), California scorpionfish (*Scorpeana guttata*), English sole (*Parophrys vetulus*), and juveniles of some species of rockfish (*Sebastes* spp.).

Sea Turtles

All sea turtles are protected under FESA and are listed as either endangered or threatened. The USFWS and the NMFS are the federal agencies charged with the responsibility of enforcing the

provisions of the FESA. The FESA forbids the taking (including harassment, disturbance, capture, and death) of any sea turtles except as set forth in the Act. Therefore, none of the operational activities are legally permitted to disturb sea turtles or disrupt their activities or behavior in known migration routes, feeding areas, or breeding areas.

Marine Mammals

Marine mammals are protected by the Marine Mammal Protection Act of 1972 (MMPA) and, for those species listed as endangered or threatened, by the FESA. NMFS is the federal agency charged with the responsibility of enforcing the provisions of the MMPA. The MMPA forbids the taking (including harassment, disturbance, capture, and death) of any marine mammals except as set forth in the Act. Therefore, none of the construction activities are legally permitted to disturb marine mammals or disrupt their activities or behavior in known migration routes, feeding areas, or breeding areas.

Significant Ecological Area

The County of Los Angeles (County) has assigned the designation of Significant Ecological Area (SEA) to biologically important areas within Los Angeles County for the purpose of conserving biological diversity. SEAs are not preserves, but instead are areas where the County prioritizes balancing new development with resource conservation. The SEA program acts as a resource identification tool that aides in the conservation and management of biological resources. The SEA program is not enforced by the County on lands under the jurisdiction of incorporated cities.

Alamitos Bay, which is a proposed SEA, is connected to the Colorado Lagoon Restoration project area through a tidally influenced culvert. Alamitos Bay is one of two remaining salt marsh habitats within Los Angeles County and is in relatively good condition due to restrictions on public use. Estuaries and salt marshes are the interface between the terrestrial and marine worlds, and are important nutrient cycling centers for marine ecosystems. It is probable that the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) occurs in Alamitos Bay according to the draft SEA description for Alamitos Bay (County of Los Angeles 2008). This species is restricted to salt marsh habitat, and has been placed on the State endangered species list. The habitat within Alamitos Bay is also important as a wintering ground for migratory birds. The proposed SEA for Alamitos Bay does not place any restrictions on the proposed project activities in the Lagoon, and SEA regulations do not apply to areas within City boundaries (County of Los Angeles 2008).

Local Tree Protection

The City of Long Beach Municipal Code (Ordinance C-7642) requires that a permit be obtained from the Director of Public Works prior to removal of trees from City-owned property. The City also requires that the trees be identified, mapped, and measured prior to removal. The project will remove existing trees, including the Mexican fan palm trees (*Washingtonia robusta*) along the access road on the west side of the northern arm of the Lagoon as well as others at the Lagoon, Marina Vista Park and Marine Stadium. More information is provided below in Subsection 4.3.7, Impacts and Mitigation.

4.3.3 METHODOLOGY

Literature Review and Records Search

A literature review and database records search were conducted on January 12, 2008, to identify the existence or potential occurrence of special-interest biological resources (e.g., plant and animal species) in or within the vicinity of the project area, which is included as an appendix to the Biological Resources Assessment (Appendix E).

LSA Associates, Inc. (LSA) is aware of several biological studies that have been conducted on the Lagoon by other firms (e.g., Chambers, Keane Biological Consulting [Keane]). Previous biological reports prepared by other firms and wildlife data prepared by Friends of the Colorado Lagoon (FOCL) for the project area were reviewed as part of this analysis.

LSA conducted record searches in the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) electronic databases for species expected to occur within the vicinity of the project area. Current electronic database records reviewed by LSA included the following:

- CNDDB information (i.e., RareFind 3.0.5), which is administered by the CDFG. This database covers lists of special-interest animal and plant species, as well as sensitive natural communities that occur within California.
- CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik 1994), which identifies four specific designations, or "Lists," of special-interest plant species and summarizes regulations that provide for the conservation of special-interest plants. The following quote is excerpted from the CNPS Inventory section that deals with CEQA and special-interest plant conservation (see Table 4.3.A):

  > "The DFG recognizes that Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing [pursuant to CEQA Guidelines Section 15380], and the Department recommends they be addressed in Environmental Impact Reports (EIR)."

Table 4.3.A: California Native Plant Society Special-Interest Plant Species Designations

List	Classification
1A	Presumed Extinct in California
1B	Rare or Endangered in California and Elsewhere
2	Rare or Endangered in California, More Common Elsewhere
3	Need More Information
4	Plants of Limited Distribution

In addition to these resources, other special-interest species known by LSA to occur in the general area were also considered.

The habitat types or plant communities identified for the terrestrial natural communities are described in the CDFG *Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The habitat types or plant communities identified for nonnatural or water body communities is described in *Orange County Habitat Classification System* (County 1992), which was based on Holland (1986). Additional information regarding marine habitat types within the Lagoon is described in the Marine Resources Report included as an appendix to the Biological Resources Assessment (Appendix E). The sensitive plant and animal species known or with potential to occur in the project area are listed in the Biological Resources Assessment (Appendix E).

Field Surveys

The fieldwork supporting the Biological Resources Assessment (Appendix E) was conducted by LSA biologist Matt Teutimez with the assistance of FOCL member and biologist Eric Zahn on January 11, 2008, to determine the biological resources of the project area and to quantify and map existing habitat communities. The general survey was conducted on foot and included habitat community identification and a survey of biological resources within the project area. Resource mapping was accomplished by using a 2006 aerial photograph (scale: 1"=100') of the project area. The habitat communities were mapped on the aerial photograph and the locations of any species of interest were labeled. All wildlife and plant species observed directly or otherwise were separately noted, and the suitability of the habitat within the project area to support any special-interest wildlife species was considered.

During the course of the survey described above, LSA assessed the biological condition of the project area, including vegetation, wildlife, and suitability of habitat for the presence of various special-interest species. A list of the vascular plant species observed and a list of animal species observed are respectively attached as Appendices B and C of the Biological Resources Assessment (Appendix E). Protocol surveys for wildlife species (e.g., Belding's Savannah Sparrow) were not conducted. Similarly, a focused rare plant survey was not conducted, but a general plant and animal inventory was taken. More information regarding tree mapping surveys required by local ordinances is discussed below in Section 4.3.7, Impacts and Mitigation Measures.

The fieldwork for the jurisdictional waters evaluation was conducted by LSA biologists Jim Harrison and Elizabeth Delk on December 5, 2007, and by Elizabeth Delk and Matt Teutimez on February 4, 2008. The project area was surveyed on foot, and all areas of potential jurisdiction were evaluated according to Corps, CDFG, and CCC criteria. Data were recorded directly on the field maps. Field maps of the area to be surveyed were prepared using a 2006 aerial photograph (scale: 1"=100'). The jurisdictional delineation and data forms can be found in Appendix D of the Biological Resources Assessment (Appendix E).

The project site historically consisted of coastal salt marsh. The ecological health of the Lagoon has been deteriorating for several decades as a result of pollutant accumulation and heavy sediment deposition and marine growth, which has impaired the ability of the Lagoon to flush during low tides and has led to increased degradation of water quality. The Lagoon is listed on California's 303(d) list of impaired water bodies due to elevated levels of lead, zinc, chlordane, and polycyclic aromatic hydrocarbons (PAHs) in the sediment, and chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, and polychlorinated biphenyls (PCBs) in fish and mussel tissue. In addition, testing confirmed the presence of PCBs, cadmium, copper, mercury, and silver as secondary contaminants of

concern. Bacterial contamination of the Lagoon water is also a major issue, and beach advisory postings due to elevated bacteria levels are frequent. The original vegetative communities have been largely eliminated or degraded due to urban runoff that drains into the Lagoon from 11 storm water drains. The Lagoon is a natural low point in the watershed, and it accumulates pollutants deposited over the entire watershed that are conveyed by storm flows and dry weather runoff. Additionally, sediment deposition and marine growth have reduced the capacity of the culvert, resulting in a lack of tidal flushing at low tides and increased degradation of water quality. Some isolated stands of coastal salt marsh occur within highly degraded habitat along the shoreline of the Lagoon.

The Lagoon and associated vegetation has the potential to support special-interest habitat and associated special-interest (including special-status species that are federally or State-listed as threatened, endangered, or candidate) plant and animal species. Legal protection for special-interest species varies widely, from the comprehensive protection extended to listed threatened/endangered species to no legal status at present. The Lagoon provides shelter for migratory bird species as well as potential breeding habitat for many wildlife species, both common and special interest. One of the purposes of the project is to improve and enhance the existing habitat, including creation of low marsh areas consisting of mudflats and cordgrass (*Spartina foliosa*) habitat as well as transitional and upland native vegetation. Additionally, Bird Island will be created to provide additional protected roosting habitat for migratory bird species utilizing the area. These improvements are intended to benefit special-interest species and provide an overall improvement to the habitat functions and values of the Lagoon.

4.3.4 EXISTING BIOLOGICAL RESOURCES

Vegetation Communities and Habitat Types

As stated above, the Lagoon historically consisted of coastal salt marsh. The original vegetation communities have been eliminated or severely degraded due to the disturbances, steepness of the banks along the northern arm, the presence of invasive nonnative vegetation, and degraded water quality and pollutants in the Lagoon. A few isolated stands of coastal salt marsh occur within highly degraded habitat areas, such as areas dominated by Hottentot fig (*Carpobrotus edulis*) and other nonnative species. The project area supports two plant communities and four habitat types, as described in both Holland (1986) and County of Orange (1992). The plant communities within the project area include parks and ornamental plantings (approximately 23.61 ac) and southern coastal salt marsh (approximately 0.94 ac) (Holland 1986). The four habitat types within the project area include mudflats (approximately 0.83 ac), sandy beach (approximately 4.34 ac), developed land (approximately 5.18 ac), marine open water and subtidal (measured at high tide and including all subtidal and intertidal habitats) (approximately 13.12 ac) (County of Orange 1992). Eelgrass (*Zostera marina*) habitat occupies 1.25 ac within the marine open water and subtidal classification. Subtidal areas of the Lagoon provide habitat for marine resources including eelgrass, which occurs at depths between 4 feet (ft) and 7 ft below mean sea level (MSL). Eelgrass habitat is an important component of the Lagoon subtidal ecosystem and is therefore considered a separate habitat type for the purposes of this analysis as depicted in Table 4.3.B. Figure 4.3.1 illustrates the distribution of these areas within the project site. Mudflats are not described in the references above but are considered here as a habitat type due to its high resource value as an exceptionally productive biodiversity center for

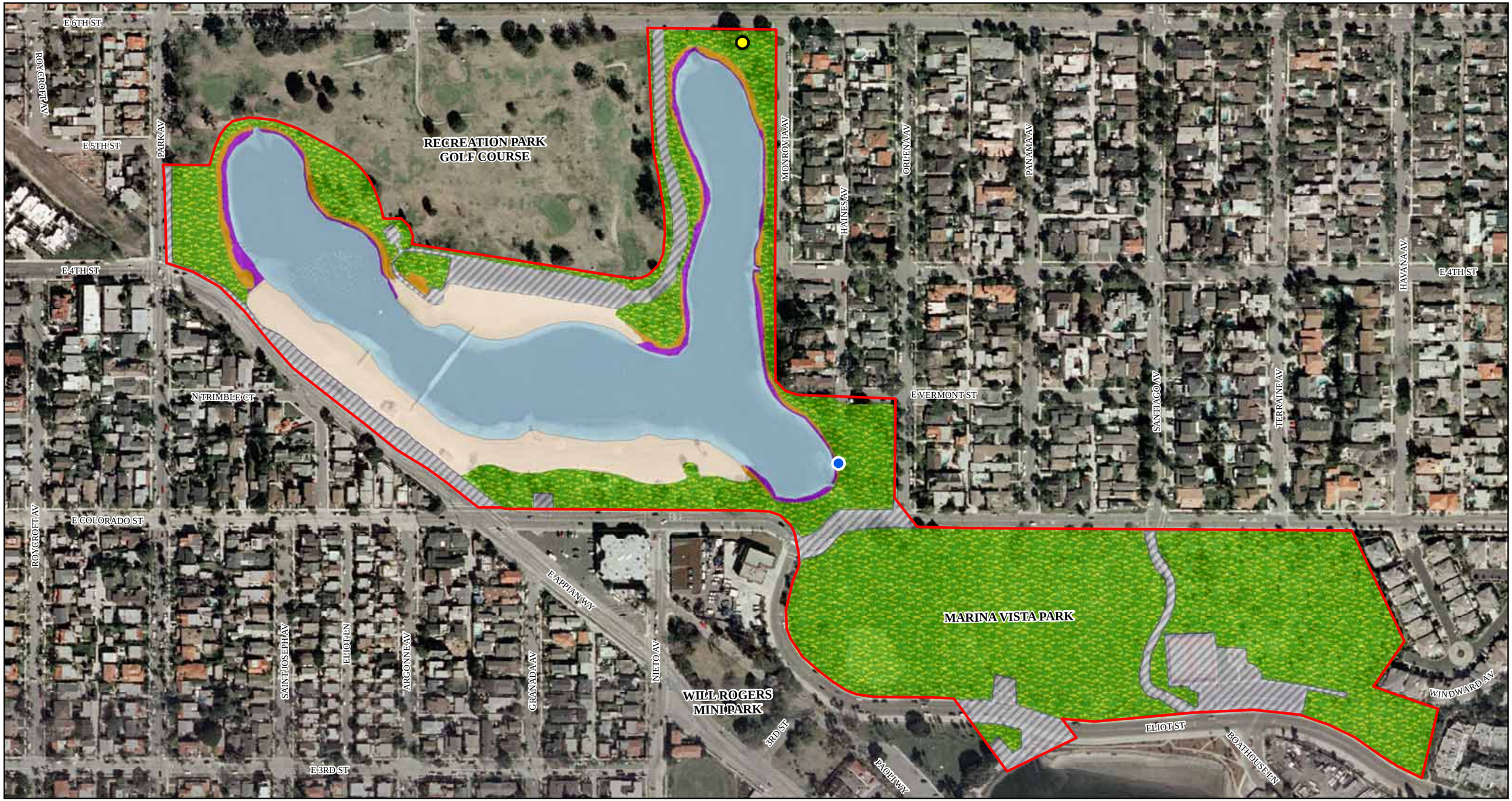

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FIGURE 4.3.1

LEGEND

Project Boundary

Habitat Type and Acreage within Project Boundary

- Sandy Beach - 4.338 ac
- Developed - 5.182 ac
- Mudflats - 0.834 ac
- Marine Open Water and Subtidal- (High Tide) - 13.122 ac
- Parks and Ornamental Landscaping - 23.612 ac
- Southern Coastal Salt Marsh - 0.942 ac

Sensitive Species

- Cooper's hawk nest *(Accipiter cooperii)*
- Estuary sea-blite *(Suaeda esteroa)*

N

0 125 250 Feet

SOURCE: Eagle Aerial (2007).

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Colorado Lagoon Restoration Project

Existing Vegetation Communities

Table 4.3.B: Summary of Vegetation Communities and Habitat Types

Terrestrial Vegetation Community/Habitat Type	Colorado Lagoon and Marina Vista Park (acres)
Parks and ornamental landscaping	23.61
Southern coastal salt marsh	0.94
Mudflats	0.83
Sandy beach	4.34
Developed land	5.18
Total marine open water and subtidal	13.12
• *Eelgrass habitat (subtidal range from 4 ft to 7 ft below MSL)*	*1.25*
• *Marine open water and remaining subtidal (includes intertidal areas)*	*11.88*
Total	**48.03**

Source: Biological Resources Assessment for Colorado Lagoon, LSA Associates, Inc., February 2008.
[1] Total may not equal sum due to rounding.

invertebrates, an important feeding habitat for wintering and migrating shorebirds and waterfowl, and its ability to dissipate wave energy to help reduce the risk of eroding salt marshes. The following five terrestrial habitat communities exist within the project area:

- **Parks and Ornamental Landscaping (approximately 23.61 ac):** This plant community is the dominant community within the project area. The dominant herbaceous plant is turf grass, which is a mixture of multiple nonnative grasses such as Bermuda grass (*Cynodon dactylon*) and annual bluegrass (*Poa annua*). Scattered throughout the project area are mature trees typically used in Southern California park landscaping. The dominant ornamental plant species are gum tree (*Eucalyptus* sp.), Canary Island pine (*Pinus canariensis*), carrotwood (*Cupaniopsis anacardioides*), Mexican fan palm (*Washingtonia robusta*), myoporum (*Myoporum laetum*), southern magnolia (*Magnolia grandifolia*), Peruvian pepper (*Schinus molle*), coral tree (*Erythrina* sp.), and European olive (*Olea europaea*). All trees that will be removed as part of the project will be identified, measured, and mapped in accordance with local policy and required by Mitigation Measure BIO-12. Some of the gum trees along the southern and eastern portions of the project area are known to support migrating monarch butterflies (*Danaus plexippus*) as a stop-over site according to members of FOCL, a community organization with the goal of preserving and enhancing the Lagoon. Ornamental trees are also used by perching and nesting birds including raptors. One of the ornamental trees in the northeast corner of the project area was a nesting tree for a pair of Cooper's hawks (*Accipiter cooperii*) that fledged three young in 2007 according to a personal communication between LSA biologist Matt Teutimez and FOCL members (Appendix E).

- **Southern Coastal Salt Marsh (approximately 0.94 ac):** Coastal salt marsh can be divided into distinctive zones that are more or less based upon vegetation patterns. These patterns are related to elevation and degree of inundation, and may be termed low, mid, and high marsh (Zedler et al. 1992; Zedler 2000). The lower marsh is usually characterized by cordgrass grading into pickleweed. Cordgrass, which may be up to 3 ft tall and half submerged, spreads through the habitat with buried rhizomes and less commonly from seed. Generally, pickleweed occurs in areas that are inundated by only the highest tides (United States Department of the Navy [USDoN] 1999). Normally, the middle marsh habitat is typified by the presence of saltwort,

pickleweed, estuary sea-blite (*Suaeda esteroa*), alkali heath, and arrow grass (*Triglochin concinna*) (Zedler et al. 1992). High marsh areas are generally characterized by glasswort, salt grass, and shore grass (Zedler et al. 1992). Salt marsh bird's beak (*Cordylanthus maritimus* spp. *maritimus*), a federally and State-listed endangered species, can occur in the High Marsh zone although this species is absent from the Lagoon project area.

The salt marsh at the Lagoon has degraded from a natural three-tier coastal salt marsh plant community described above, to a remnant strip of a middle marsh plant community dominated by common pickleweed (*Salicornia virginica*), saltwort (*Batis maritima*), and jaumea (*Jaumea carnosa*). These middle marsh plants are ecologically important to the Lagoon since this community is made up of remnant populations that have survived the decades of degradation.

The lower edge of the marsh that is inundated most often and would normally be characterized by cordgrass (*Spartina foliosa*) is absent, apparently a result of decades of polluted water and muted tidal fluctuations. The upper marsh, which would normally be characterized by glasswort (*Salicornia subterminalis*), alkali heath (*Frankenia* sp.), and sea-blite (*Suaeda* spp.), has been colonized by nonnative vegetation from the surrounding residential and park landscape and is not present in a functioning form. Some fragments of the upper marsh plant community still exist on site such as alkali heath (*Frankenia salina*), estuary sea-blite, saltgrass (*Distichlis spicata*), and shoregrass (*Monanthochloe littoralis*), but only within the elevation of the middle marsh plant community. In addition, even though the Lagoon receives fluctuating amounts of freshwater input, FOCL salinity measurements report an average salinity of 35 to 40 parts per thousand (ppt), which does not allow the Lagoon to support characteristic brackish marsh species such as sedges, cat-tails, or rushes (*Carex* sp., *Scirpus* sp., *Typhus* sp., or *Juncus* sp.) even around the freshwater source.

The coastal salt marsh surrounds the Lagoon in a thin band that is interrupted by two zones of machine-groomed sandy beach (Figure 4.3.1). Along the north arm of the Lagoon, the marsh plant community is the most diverse; however, the salt marsh is being outcompeted largely by Hottentot fig with other nonnative species present as well, such as common groundsel (*Senecio vulgaris*), rip-gut brome (*Bromus diandrus*), and cultivated grape (*Vitis vinifera*). The nonnative species have outcompeted the salt marsh community on the north arm to the edge of the Lagoon. The north shore of the west arm consists mainly of turf grass and slopes steeply to the mud bottom. However, the west arm provides mats of shoregrass and biologically diverse potholes of sufficient size to support multiple species, including sea lavender (*Limonium* sp.), sea-blight, alkaliweed (*Cressa* sp.), and saltgrass.

- **Mudflats (approximately 0.83 ac):** Mudflats, in general, support very little vegetation other than green algae. The mudflats of the Lagoon do not support any vegetation, but they do support invertebrate species such as mollusks, crustaceans, worms, California horn snail (*Cerithidea californica*), and tiger beetles (*Cicindelidae*). The mudflats form a contiguous strand around the Lagoon, with the most productive areas located around the north and west arms of the Lagoon, and with degraded mudflats in front of the sandy beaches. The Lagoon mudflats provide a consistent feeding area for many migrating and resident shorebirds and waterfowl such as marbled godwit (*Limosa fedoa*), American widgeon (*Anas americana*), and ruddy duck (*Oxyura jamaicensis*). The western edge of the west arm of the Lagoon has a concentrated area of productive mudflats that supports the known populations of tiger beetles at the Lagoon.

- **Sandy Beach (approximately 4.34 ac):** Within the project area, there are two areas located along the north and south portions of the Lagoon that are sandy beaches. There is no vegetation growing on these beaches since they are frequently machine groomed. The sandy beaches are used by the public for various recreational activities and as a roosting site for gulls and resting waterfowl. The area has a high recreation value, but due to constant use and grooming, there is little habitat value in these areas for native flora or fauna.

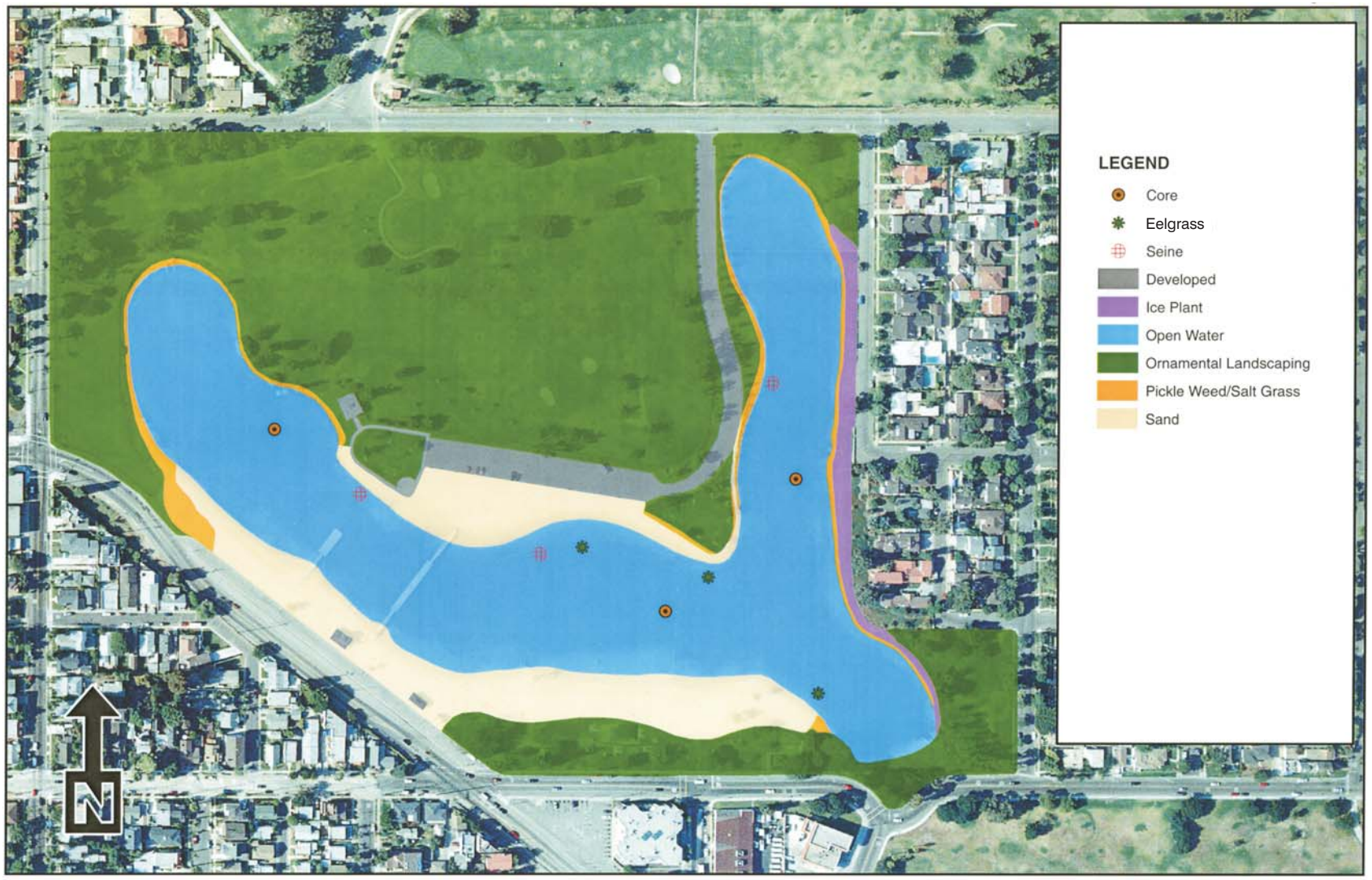
- **Developed Land (approximately 5.182 ac):** This land use is present at the parking lot on the north side of the Lagoon and the driveway entrance from East 6th Street to the parking lot. The only vegetation within the developed area consists of some individuals of nonnative turf grass, mainly Bermuda grass, growing in the cracks of the asphalt. This area does not support any native vegetation and has little to no habitat value for native flora or fauna.

The vegetation communities present on the project site are summarized in Table 4.3.B and shown in Figure 4.3.1.

Marine Communities

Aquatic vegetation in the Lagoon has been described in Chambers (2004), which included taking core samples of sediment and seining for fish. Sediment core and seining locations are depicted on Figure 4.3.2 along with the vegetation communities and eelgrass locations documented by Chambers in 2004. This past documentation by Chambers shows that the majority of the Lagoon substrate is soft mud with a heavy cover of algae. Temperature and salinity levels stay relatively constant throughout the year, but oxygen and nutrient levels vary. The species composition is dominated by introduced species tolerant of disturbance and freshwater. Dominant species in the northern arm of the Lagoon included gut weed (*Enteromorpha intestinalis*) and sea lettuce (*Ulva lobata*), while red algae (*Gracilaria* sp.) dominated benthic areas of the western arm of the Lagoon. A few scattered eelgrass plants were observed during the 2004 surveys at a depth of about 9 ft below MSL as depicted in Figure 4.3.2 from Chambers (2004). The two marine habitat types at the Lagoon are described below.

- **Marine Open Water and Subtidal Habitat (approximately 13.12 ac at high tide):** This habitat type represents the open water in the Lagoon and comprises the most acreage within the project limits. Due to the reduced capacity and perching of the culvert to Marine Stadium, the tidal flushing is greatly reduced, and water levels do not fluctuate substantially. The deeper water is used by a variety of species, including vertebrates, invertebrates, and plants. Phytoplankton and zooplankton populations are an important component of the deep subtidal range because they are the primary food source for many organisms within this habitat. Plankton movements and distribution are totally dependent on currents and tides (USDoN 1999). Many invertebrates, birds, and fish utilize the plankton as a primary food source. Thus, an important function of the deep subtidal environment is the transport and distribution of plankton into and out of the Lagoon. This habitat in the Lagoon is currently functionally limited by the muted tidal exchange through the culvert. This effect has contributed to the degradation of the Lagoon and the reduction of the Lagoon's original habitat. However, the Lagoon still provides habitat for adult fish and their young as a shelter and nursery as well as providing foraging opportunities for migratory birds, including the federally listed as endangered California least tern (*Sternula antillarum brownii*) and brown pelican (*Pelecanus occidentalis*). Moderate depths ranging from 7 to 15 ft below MSL support similar habitat functions as the deeper waters described above. In addition, the



LSA

FIGURE 4.3.2

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FEET

SOURCE: Chambers Group, Inc.

Colorado Lagoon Restoration Project

Location of Eelgrass within the Lagoon

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endangered California least tern and brown pelican forage in these areas. This category also represents the lower extent of eelgrass habitat (USDoN 1999). Both California least terns and brown pelicans have been observed at the Lagoon (Keane 2004). Subtidal habitats in the Lagoon (e.g., deep subtidal, moderate subtidal) are described in the Marine Resources Report, which is included as an appendix to the Biological Resources Report (Appendix E).

- **Eelgrass Habitat (subtidal depths ranging from 4 to 7 ft below MSL):** This habitat type is a subset of the marine open water and subtidal classification, but is being presented here due to its status as a special interest community. The shallow eelgrass habitats within the Lagoon are approximately 1.25 ac within the marine open water and subtidal area. Eelgrass beds are a productive source of food and shelter for a wide variety of marine life. Habitat for eelgrass is generally characterized as soft substrate at depths from about 4 to 7 ft below MSL, but eelgrass can also occur in slightly deeper waters. Eelgrass is a flowering marine plant that grows within soft sediments of estuaries and bays. Eelgrass canopies grow up to 3 ft in height and attract invertebrates and fish that live on the shoots, within the canopy, or in the soft sediments that cover the roots and rhizomes. The vegetation also serves a nursery function for many juvenile fishes, including species of commercial and/or sports fish value such as California halibut (*Paralichthys californicus*) and barred sand bass (*Paralabrax nebulifer*). Eelgrass beds are critical foraging centers for seabirds (e.g., the endangered California least tern) who seek out baitfish such as juvenile topsmelt (*Atherinops affinis*) that are attracted to the eelgrass cover. Additionally, eelgrass beds help to disperse wave action, decrease erosion, and prevent resuspension of fine sediments back into the water column (USDoN 1999). Finally, eelgrass is an important contributor to the detrital (decaying organic) food web of bays, as the decaying plant material is consumed by many benthic invertebrates (such as polychaete worms) and reduced to primary nutrients by bacteria. Eelgrass has been mapped in both the Lagoon (Figure 4.3.2) and the neighboring Marine Stadium (Chambers 2004; County of Los Angeles 2007). Eelgrass habitat supports an abundant biomass of fish. Consequently, the majority of migratory birds and water birds use these areas for foraging more than other subtidal categories. This habitat is continually submerged and is characterized by a soft substrate that shifts in response to tides, winds, currents, and disturbance by humans and wildlife. Eelgrass is one of the few plant species adapted to utilize such a substrate, and eelgrass primarily occurs at these depths. A very important and productive benthic habitat in bays and lagoons is formed by beds of eelgrass. Eelgrass habitats rank among the most productive habitats in the ocean due to a rapid growth rate and great diversity of associated invertebrate and fish fauna (USDoN 1999). Additionally, the Marine Resources Report (included as an attachment to the Biological Resources Assessment in Appendix E of this EIR) provides detailed information on marine resources in the project area.

The surrounding land uses and habitat within the Lagoon have not changed since the 2004 study (Chambers 2004). The habitat characterization of the subtidal and tidal portions of the project area remains essentially unchanged. Dominant invertebrates included the gelatinous colonial bryzoan (*Zoobytron verticullatum*) and the solitary tunicate (*Styela plicata*). Clam species collected during the July 2004 survey included smooth chione (*Chione fluctifraga*), common littleneck (*Protothaca staminea*), California jackknife clam (*Tagelus californianus*), and Philippine cockle (*Venerupis philipinarum*).

The benthic community is relatively diverse in the northern arm and central portion of the Lagoon. However, the biodiversity of benthic organisms in the western arm of the Lagoon is diminished,

which may be due to several factors including but not limited to poor water quality, low dissolved oxygen, sediment contamination, or a combination of these factors. The available data is not sufficient to determine if the low diversity is caused by contaminated sediment.

Dominant fish species included topsmelt, arrow goby (*Clevelandia ios*), and California killifish (*Fundulus parvipinnis*). Conditions at the Lagoon and surrounding areas have not changed since this baseline was determined.

The current bathymetry of subtidal and intertidal water depths is discussed in the Marine Resources Report (included as an appendix to the Biological Resources Assessment in Appendix E of this EIR) and below.

Although considered somewhat degraded, the aquatic habitat of the Lagoon supports some eelgrass and several important plant and animal species (e.g., tiger beetles and foraging birds) within intertidal areas. For the purposes of analyzing the existing subtidal and intertidal habitats, several depth categories are used based on the research done for the Port of San Diego (USDoN 1999). However, the species and functions associated with these depth categories frequently overlap. Habitats in the Marine Open Water and Subtidal portions of the project area are arranged by depth as they relate to mean sea level and are defined in the Marine Resources Report included as an appendix to the Biological Resources Assessment (Appendix E). The shallow subtidal areas within the Lagoon that are suitable for eelgrass total approximately 1.952 ac.

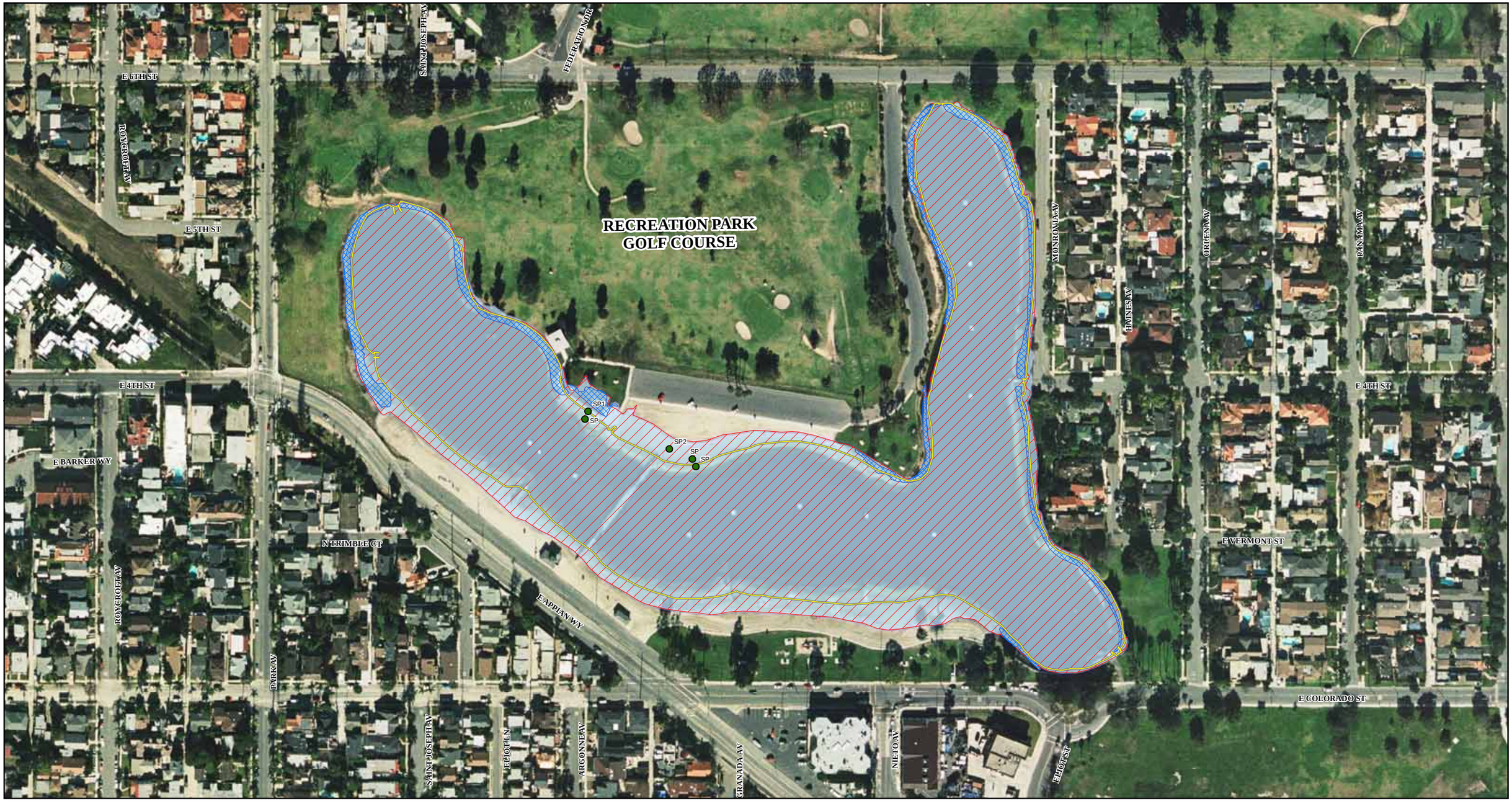
Waters and Wetlands

The entire study area is located within the San Gabriel River Watershed. The watershed is bordered by the San Gabriel Mountains to the north, San Bernardino/Orange County to the east, the Los Angeles River to the west, and the Pacific Ocean to the south. The watershed is comprised of approximately 640 square miles of land spanning over 37 cities. The average annual rainfall for the project area is 12.94 inches.

United States Army Corps of Engineers Jurisdiction. Areas satisfying the Corps jurisdictional criteria for waters and wetlands of the United States are subject to regulations of the CWA. Detailed information is included in the Jurisdictional Delineation (Appendix D). Each of the areas shown in Figure 4.3.3 has a direct connection to a designated navigable water of the United States. Therefore, the Corps will likely verify that a "significant nexus determination" is not required to determine the jurisdictional status of the Lagoon. Under Corps guidance, the agency will assert jurisdiction over traditional navigable waters and their adjacent wetlands, where adjacent is defined as "bordering, contiguous, or neighboring." Therefore, finding a surface connection is not required to determine adjacency under this definition.

There is a total of 17.68 ac of waters potentially subject to Corps jurisdiction, of which 0.94 ac is wetland waters and 16.74 ac are nonwetland waters of the United States.

California Department of Fish and Game Jurisdiction. CDFG regulates wetland areas only to the extent that those wetlands are a part of a river, stream, or lake as defined by CDFG. None of the areas



LSA

FIGURE 4.3.3

LEGEND

CCC Wetlands

ACOE Jurisdiction

Non-Wetland Waters of the U.S.

Wetland Waters of the U.S.

Mean High Water (2.1 amsl)

Soil Pit

0 87.5 175 Feet

SOURCE: EagleAerial (2006).

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Colorado Lagoon Restoration Project

Potential Jurisdiction

identified within the project site are rivers, lakes, streams, or their associated riparian habitat. All potential wetlands on the site are associated with a coastal salt marsh system. Salt marshes are typically not regulated under the California Fish and Game Code. Thus, there are no potential CDFG jurisdictional areas within the project site.

California Coastal Commission Jurisdiction. All of the areas satisfying the Corps jurisdictional criteria for waters and wetlands of the United States, as described above, are also subject to CCC jurisdiction as wetlands pursuant to the California Coastal Act. See Figure 4.3.3 for the extent of CCC wetland jurisdiction. There is a total of 17.76 ac potentially subject to CCC wetland jurisdiction. Because CCC employs a one-parameter approach to delineating jurisdictional wetlands, CCC wetlands usually tend to be more inclusive and extensive than wetlands regulated by the Corps. LSA biologists delineated potential CCC jurisdictional wetlands using this one-parameter approach. Because tidal fluctuation varies throughout the year, CCC jurisdiction was extended to the limits of the highest high water mark where wetland vegetation and soils were lacking. In addition, CCC wetland jurisdiction was mapped where wetland vegetation extended beyond the limit of the highest high water mark. There were no hydric soils that extended beyond the limit of the highest high water mark. A summary of potential jurisdictional areas is provided in Table 4.3.C.

Table 4.3.C: Summary of Potential Jurisdictional Areas

Agency	Colorado Lagoon (acres)
Corps Potential Jurisdictional Waters Total	17.68
• *Corps Nonwetland Waters*	*16.74*
• *Corps Wetland Waters*	*0.94*
CDFG Potential Jurisdictional Areas	0
CCC Potential Jurisdictional Areas	17.76

CCC = California Coastal Commission
CDFG = California Department of Fish and Game
Corps = United States Army Corps of Engineers

Wildlife

Wildlife species occurring within the project site are characteristic of those found in residential and developed areas. Overall, 2 invertebrate, 1 reptile, 47 bird, and 4 mammal species were observed or otherwise detected in the project area during the field survey, and an additional 24 species were documented by other consulting biologists or FOCL members but not observed during the field survey. Natural vegetation within the project area was moderately used by wildlife, with the majority of species occurring in ornamental plantings and within the open water of the Lagoon. All vertebrate species observed or detected on or flying over the site are listed in the Biological Resources Assessment (Appendix E) of this EIR.

Wildlife Movement and Habitat Fragmentation

Wildlife movement and habitat fragmentation are important issues in assessing impacts to wildlife. Habitat fragmentation occurs when a proposed action results in a single, unified habitat area being divided into two or more areas, such that the division isolates the two new areas from each other.

Isolation of habitat occurs when wildlife cannot move freely from one portion of the habitat to another or from one habitat type to another. An example is the fragmentation of habitats within and around clustered residential development. Habitat fragmentation can also occur when a portion of one or more habitats is converted into another habitat (e.g., when scrub habitats are converted into annual grassland habitat because of frequent burning).

The result of fragmentation is that the amount of habitat available to local wildlife populations is reduced. In general, a reduction in available habitat is followed by a reduction in wildlife populations because the remaining areas are too small to support prefragmentation population levels. If the fragmentation is too great, wildlife populations will not be able to persist, and some or all of the species in a fragmented habitat area will disappear. This can occur on a local or regional scale, depending upon the degree and type of fragmentation occurring. Fragmentation is particularly critical for species that occupy already limited habitats, such as coastal sage scrub. If various stands of coastal sage scrub are too fragmented to provide sufficient continuous cover, or are too isolated from each other for an animal to freely move among various stands, that particular portion of the overall habitat may be lost to use by certain species.

Although the project site is used for local movement of marine and terrestrial wildlife movement, the site is isolated from larger expanses of native habitat, open space, and other potential wildlife movement areas. The culvert that connects the Lagoon to other bodies of water, including the Pacific Ocean, is partially blocked and flows are restricted. The extensive recreational and residential development surrounding the project area contributes to isolation of the Lagoon and decreased habitat function and values. Therefore, the project area currently does not function as a high quality wildlife movement corridor.

Special-Interest Species

Special-interest species include “listed species,” which have a listing as threatened, endangered, or candidate by the USFWS or CDFG, as well as nonlisted species. Nonlisted special-interest species include California Species of Concern (CSC), California Fully Protected (CFP) species, as designated by the CDFG, as well as plant species on CNPS Lists 1 and 2, which include species that are rare or endangered in California and animals protected by other federal or state laws, such as marine mammals. Other species that are designated as rare or declining by local agencies or in local or regional plans, or that are on other watch lists, may also be considered special-interest species.

The CDFG maintains additional information for species with the designations of “Special Animal” (SA) and “Special Plant” (SP). These designations do not afford specific protection for the species and are not indicators of the sensitivity or rarity of the species. Additionally, the CNPS maintains List 3 (species about which more information is needed) and List 4 (a watch list). These lists also do not afford any specific protection or status to the species. These species are not considered to be special-interest species, but known and probable occurrences are documented in this report for purposes of full disclosure.

Inclusion in the special-interest species analysis for this project is based on satisfying at least one of the following criteria: (1) direct observation of the species in the project area during one of the biological surveys conducted for this report; (2) sighting by other qualified and reputable observers

(e.g., FOCL); (3) record reported by the CNDDB and the CNPS; or (4) observation of appropriate habitat within the project area and location within the known range of a given species.

Some of the special-interest species identified in the literature review are not expected to occur due to the absence of suitable habitat or conditions on site or the distant location of the site from a species' known distribution. These species are excluded from further discussion in this report. The Biological Resources Assessment (Appendix E) contains detailed information regarding special-interest plant and animal species observed or potentially present within the project area, including species habitat and distribution, activity period, State and federal status designations, and probability of occurrence.

Special-Interest Wildlife Species. Several special-interest species have been documented from the project area in previous surveys (Chambers 2004; Keane 2004; FOCL ongoing). Observation of noteworthy species have included the California least tern and brown pelican, both of which are listed as State and federally endangered and are CFP species. These species have been documented at the Lagoon in previous consulting firm reports and by FOCL members. In the summer of 2004, Keane conducted a total of 20 surveys at the Lagoon and Marine Stadium for California least terns and brown pelicans. Based on the results of the Keane study, the Lagoon was considered to support foraging least terns and foraging and roosting brown pelicans rarely (Keane 2004). However, there are two breeding colonies of California least terns (i.e., Seal Beach National Wildlife Refuge and Los Angeles Harbor Pier 400) and communal roosts of brown pelicans (e.g,. Long Beach Harbor breakwater) located less than 5 miles (mi) from the Lagoon, so ongoing use of the Lagoon by these species is expected.

FOCL members and LSA biologists have documented use of the project area and vicinity by raptors. Nesting raptors are protected by the MBTA and by Section 3503 of the California Fish and Game Code. The high number of large trees on site and elsewhere in the vicinity create good foraging, perching, and nesting habitat for raptors. In 2007, FOCL member Taylor Parker observed and documented a nesting pair of Cooper's hawk in the northeast corner of the Lagoon in an ornamental tree. The pair successfully fledged three young (T. Parker, personal communication). Other raptors that are present in the area include red-tailed hawk (*Buteo jamaicensis*) and osprey (*Pandion haliaetus*). Suitable habitat is present for great horned owls (*Bubo virginianus*) in the mature gum trees surrounding the Lagoon, but there have been no observations to date.

FOCL members have documented the use of the mudflats along the western arm by two species of tiger beetles. The beetles have only been observed within the southwest edge of the west arm. There have been two separate species recorded at the Lagoon; however, this does not represent a full inventory of tiger beetles that may be present. The tiger beetles recorded on site include S-banded tiger beetle (*Cicindelidia trifasciata sigmoidea*) and Wet Salts tiger beetle (*Cicindelidia hemorrhagica hemorrhagica*) (Appendix E). The natural history of these tiger beetles is not well known at the Lagoon or in general. Tiger beetles are predatory insects that feed on small insects and other arthropods. Tiger beetles exhibit two different general life cycles: (1) spring/fall species that emerge from pupae in the fall, spend the winter as adults, and are active again in the spring; and (2) summer species that emerge from pupae in the spring, are active in the summer, and die in the fall. The Lagoon contains both life cycles. The tiger beetles identified in the project area are not listed on the CNDDB list (i.e., *C. hirticollis gravida*, *C. latesignata latesignata*, and *C. senilis frosti*) but are considered to be potential special-interest species given that these populations have survived the

degradation of the Lagoon and are now isolated from other populations. As a result, these isolated populations of tiger beetles are a remnant of the original salt marsh ecosystem and may be an important component of the Lagoon's natural diversity.

Fiddler crabs were reported to occur in the Lagoon by Chambers (2004) but were not observed during the site survey. Fiddler crabs occur on sand and mudflats in the high and middle intertidal of bays and estuaries (Morris et al. 1980). These crabs dig permanent burrows marked by the presence of mud or sand pellets near the entrance. Only the males have the single enlarged claw that they utilize to attract females and in contests with other males. The crabs feed by transferring sediments to their mouths with their small claws where the organic material is removed and the remaining sediment is rejected as a pellet. Although fiddler crabs are not considered a special-interest species, they are fairly rare in Southern California, chiefly as a result of the loss of the species' habitat (Jensen 1995). The fiddler crab population would benefit from an enhancement of mudflat habitat in the Lagoon.

FOCL members have also documented use of the project area and vicinity by monarch butterflies. From August to October each year, groups of monarchs migrate from Canada and the United States to overwinter from mid-October through February in coastal Southern California. Females lay their eggs along the migratory route, which takes up to three generations to complete, ending at their destination of central Mexico. The first generation begins their migration by flying to wintering locations along the California coast. At wintering sites, many will cluster in gum tree groves and mate in late January, then leave for their spring migration by March. A known wintering site is located within 2 mi of the Lagoon at El Dorado Regional Park in south Long Beach. The Lagoon contains many mature gum trees that provide roosting opportunities for monarch butterflies.

Several special-interest species are expected to occur within the project area, as well as CSC species and SA species. The following CSC species have a moderate or high occurrence probability or were observed within or adjacent to the project area: osprey, Allen's hummingbird (*Selasphorus sasin*), double-crested cormorant (*Phalacrocorax auritus*), lark sparrow (*Chondestes grammacus*), California gull (*Larus californicus*), western mastiff bat (*Eumops perotis californicus*), and western yellow bat (*Lasiurus xanthinus*). A table of detailed information regarding special-interest plant and wildlife potential to utilize the project area is contained in the Biological Resources Assessment (Appendix E).

Special-Interest Plant Species. One special-interest plant species, estuary sea-blite, was observed within the project area during the site visit. Spring surveys were not conducted for the project area; however, most of the expected special-interest plants probably would have been detectable during the site visit. This species is a CNPS List 1B species that was not detected in the 2004 study of the project area; however, a single plant is known to occur in the southeast portion of the Lagoon, close to the culvert inlet (specimen observed during site visit) (Figure 4.3.1).

A few scattered eelgrass plants, which are considered a special-interest plant community, have been previously recorded in the Lagoon and are discussed above under existing marine communities. The locations of eelgrass plants documented by Chambers (2004) are depicted in Figure 4.3.2.

The special-interest species summary table included in the Biological Resources Assessment (Appendix E) describes the special-interest plant species that were found in the literature search that

are known to occur (or were observed) in the vicinity, their associated habitat types, and their probability for occurring on site. Most species were designated as having a low probability of occurring on site. This designation reflects the fact that the species has been known to occur in the vicinity but either habitat is marginal within the project area or the project area is outside the known range. Any others that were found in the literature search are considered to be absent from the site and so were not included in the table, since suitable habitat is lacking or they are not expected to occur.

4.3.5 THRESHOLDS OF SIGNIFICANCE

The thresholds for biological resources used in this analysis are consistent with Appendix G of the State CEQA Guidelines. The effects of the project on biological resources may be considered significant if the proposed project:

- Would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-interest species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS.
- Would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Would conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.
- Would conflict with the provisions of an adopted HCP, Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.
- Has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

4.3.6 PROPOSED PROJECT

The effects of the proposed project are evaluated below to determine whether they will result in a significant adverse impact on the environment. Using the results from the biological resources report, jurisdictional delineations, and focused surveys, this section evaluates the project's consistency with local and regional plans and the impact significance criteria below. The project consists of several components that are described in detail in Section 3.5 of this EIR and listed below.

- **Improvements Benefiting Water and Sediment Quality**
  - Clean culvert, remove tidal gates, and remove sill/structural impedances
  - Build open channel between the Lagoon and Marine Stadium
  - Remove contaminated sediment in the western arm of the Lagoon
  - Remove sediment in the central Lagoon
  - Storm drain upgrades
  - Replace local hard drain outlets in the Lagoon with a vegetated bioswale
- **Habitat Improvements**
  - Removal of north parking lot and access road, side slope recontouring, and revegetation
  - Import and plant eelgrass in the Lagoon
  - Develop Bird Island
- **Recreational Improvements**
  - Construct a walking trail around the Lagoon and open channel
  - Reconfigure the sports fields in Marina Vista Park
- **Operational Components**
  - Implement trash management protocols
  - Implement bird management protocols
  - Modify sand nourishment practices
- **Planning Components**
  - LCP Amendment
  - Zoning Code Amendments

4.3.7 PROJECT PHASING

It is anticipated that Phase 1 would involve the improvements at the Lagoon and to the existing culvert connecting the Lagoon and Marine Stadium, and Phase 2 would involve improvement within Marina Vista Park. Specifically, the improvements within Marina Vista Park are anticipated to occur at least 1 year following the commencement of Lagoon improvements, depending upon the availability of funding. Construction of Phase 1 improvements are estimated to take approximately 10 months, and construction of Phase 2 improvements are estimated to take approximately 15 months, plus an additional 6 months for turf reestablishment on the sports fields in Marina Vista Park. The project components of each phase are listed below.

- **Phase 1: Lagoon Improvements**
  - Clean culvert and remove tidal gates, sill, and other structural impedances at the culvert.
  - Dredge the western arm and central Lagoon areas.
  - Implement storm drain upgrades, including the development of a storm water diversion system and bioswales.
  - Remove the north parking lot and access road, and the restroom on the north shore of the Lagoon.
  - Recontour Lagoon side slopes, develop Bird Island, revegetate land areas, and plant eelgrass.
  - Develop the walking trail and viewing platform at the Lagoon.
- **Phase 2: Marina Vista Park Improvements**
  - Construct two roadway bridges spanning the open channel at East Colorado Street and East Eliot Street. Demolish and replace two public restrooms. Build the open channel between the Lagoon and Marine Stadium.
  - Develop the walking trail on the eastern side of the open channel and vegetation buffers on both sides of the channel.

This section analyzes temporary impacts that may result from the Improvements to Water and Sediment Quality component, and Habitat Improvements component. These project components include the Culvert Cleaning/Removal of Tidal Gates/Structural Impedances, Construction of the Open Channel, Contaminated Sediments Removal, Storm Drain Upgrades, and Replacement of Local Hard Drain Outlets with a Bioswale, Removal of North Parking Lot and Access Road, Side Slope Recontouring, and Habitat Restoration, and Import and Planting of Eelgrass in the Lagoon. The remaining project components are not analyzed below because they do not have any substantial biological constraints and are not expected to impact biological resources. The habitat improvement components are discussed below to demonstrate that the overall project will be beneficial to biological resources by creating additional native communities in areas that were previously developed or ornamental. Recreation improvements will not have any impacts on biological resources. The walking trail will be constructed after recontouring of the slopes takes place. The alignment is not anticipated to impact any natural communities or habitat types. Portions of the trail that will be installed in areas not subject to recontouring currently exist in areas that are ornamental or developed.

Operational components are not analyzed below because they will not negatively affect any biological resources. Trash management protocols will reduce refuse in the water and adjacent areas, especially during summer months, when the Lagoon is utilized most by picnickers. The objective of the Bird Management component is to reduce direct contribution of bird feces (bacteria) into the Lagoon, thereby improving water quality. This component would prohibit the release of domestic birds such as ducks and geese and involve installing signs to discourage people from feeding any birds. This will not have any direct or indirect impacts on any individual birds or bird species that utilize the Lagoon. Sand nourishment practices will be modified to limit sand nourishment to the south shore and utilize appropriate grain size to reduce the erosion of beach sand into the Lagoon.

Temporary impacts to biological resources will occur as the result of construction, excavation, removal of sediment, debris and marine growth associated with cleaning the 900 ft long underground box culvert, removal of the tidal gates and sill/structural impediments, and sediment removal in the central and western arm of the Lagoon. Additional temporary impacts will result from construction activities to repair and upgrade storm drains. Permanent impacts to biological resources will occur as a result of replacing the existing underground box culvert with a naturalized engineered open water channel between the Lagoon and Marine Stadium and replacing the hard drain outlets with a vegetated bioswale. The result will be an increase in useable special-interest habitats, improved water quality, and improved ecological function of the Lagoon in general.

4.3.8 IMPACTS AND MITIGATION MEASURES

Less Than Significant Impacts

Special-Interest Species. Special-interest species listed in the Biological Resources Assessment (Appendix E) appeared in the literature search. Most have a low probability of occurrence, but some have moderate to high potential or were observed within or adjacent to the project area. Habitat in the project area is small in size and marginal in quality for most of these species. However some special-interest terrestrial animal species are known to use the project area. The California least tern, and California brown pelican, which are both State and federally listed as endangered and CFP species, are known to use the project area. These species are not expected to be significantly adversely affected as a result of the Lagoon improvements since the Lagoon is a poor quality foraging site and higher quality foraging sites are available short distances up or down the coast. The Lagoon has been used as a roosting site for small groups of brown pelicans in the past. However, daytime Lagoon improvements are not expected to impact roosting pelicans since there are other available roosting sites located short distances up or down the coast. Therefore, impacts to these two species are expected to be less than significant and temporary.

Aquatic communities within the culvert will be temporarily impacted during the culvert cleaning portion of the proposed project. The culvert cleaning will be conducted in a dry state by dewatering the culvert prior to work. The work will be conducted in an enclosed space (without tidal flow) and sediment, trash and marine growth will be removed via excavator and hauled off site. Therefore, no impacts to the subtidal or terrestrial communities adjacent to the culvert openings will result. However, mortality of algae, and sessile benthic organisms will result from the culvert cleaning activities. Impacts to the algae and benthic organism populations will be temporary in nature because benthic organisms and algae will quickly re-establish within the improved portions of the Lagoon and Marine Stadium. Benthic organisms that will be removed as a result of culvert cleaning do not include any special-interest plants or animals. Therefore, these impacts will be less than significant.

Construction impacts resulting from all portions of the project involving earth moving equipment will cause a temporary reduction in population numbers of sessile benthic organisms and algae as well as create temporary turbidity due to construction. However, Best Management Practices (BMPs) will be incorporated into project implementation as outlined in Table 4.7.B in Section 4.7: Hydrology and Water Quality. With the incorporation of BMPs, the potential impacts from the construction phase of the project will result in less than significant impacts to aquatic communities, algae, and benthic organisms.

Culvert cleaning, demolition of the existing concrete culvert, and construction of the open channel will eliminate the tidal connection during those activities. This may lead to stagnation and water quality problems that could affect recreation, habitat, fish and wildlife. In order to provide a tidal connection during the construction period, the culvert cleaning, demolition, and open channel construction will be done in sections/stages along their lengths between the Lagoon and Marine Stadium, and the channel will be periodically opened as discussed below. The current residence time of the water in the Lagoon is approximately 8.5 days. Periodic opening of the culvert or other means of ensuring water exchange during construction is recommended to ensure tidal exchange, temperature and salinity regulation, and limit stagnation of the water in the Lagoon. Dissolved oxygen (DO) levels in the Lagoon are essential for biological resources. When levels of DO become too low, fish and many other aquatic organisms cannot survive. DO levels in the Lagoon should be maintained at a minimum of 3 milligrams per liter (mg/L) during summer months and a minimum of 5 mg/L during the rest of the year to maintain existing DO concentrations and survival of biological resources within the Lagoon. To maintain water quality in the Lagoon during construction, the culvert will be opened once every 2 weeks of construction during the period of the greatest tidal fluctuations within each 2-week interval for 2 to 3 days to allow for maximum exchange. If culvert opening is deemed impracticable, then other means of ensuring water exchange will be implemented. Culvert cleaning is expected to take place during summer months, at times when storm water runoff flows through the culvert are minimal. However, construction of the open channel may take place during wet months, which may require the channel to be opened more frequently. The culvert should be opened in anticipation of any storm events and should remain open for the duration of the storm or at least 2 to 3 days during wet weather. In addition to coordination with the tidal regime, two subsurface aeration systems will be installed and utilized during construction that closes off the culvert. Implementation of these water quality features will result less than significant impacts to habitat in the Lagoon.

The open channel will be constructed by excavating the soil above and along the sides of the concrete culvert. The culvert would remain operational during this period. Following soil excavation, the culvert would be plugged to prevent water flow through it, and water would be removed from inside the culvert via a pump. After the water is drained from the culvert, the culvert demolition would begin in the center of the culvert. The culvert would be demolished, debris removed, and the underlying soil would be excavated. That particular section of the channel would be fully built (erosion control blankets and riprap). After one section is complete, construction of the channel would move outward toward each end, demolishing the culvert and building the channel until both ends were reached. During the construction period, the ends of the culvert will be opened or some other means to accomplish water exchange will be implemented periodically during spring tides (a period of higher than average tidal swing [i.e., high-high and low-low tides]) to convey flows from/to the Lagoon through the remaining culvert sections and newly constructed open channel stretch. Following this tidal flushing, the culvert ends would be closed again, water pumped out, and culvert demolition/open channel construction would continue along a new section. This process would repeat until both ends are reached. The remaining culvert end sections would be demolished, the channel ends breached (at low tide), and the new tidal connection would be established.

Dredging, excavating, recontouring and filling will all result in a temporary loss of subtidal benthic habitat. The benthic community, those species that are associated with the bottom including invertebrates such as worms, clams, and small arthropods as well as some fish, such as gobies, will be disturbed and many lost during construction and dredging. However, these species reproduce quickly

and in large numbers and are well adapted to repopulate an area following disturbance. Recruits from other areas of the Lagoon or Marine Stadium will rapidly recolonize the benthic habitat after completion of sediment modifications. The community is expected to be colonized by a similar suite of species that is currently found in the area and construction will not result in a permanent loss. Similarly, construction-related reduction in area or water quality of the EFH of the Lagoon will be temporary, with project improvements resulting in an enhancement of water quality and an increase in area of open water available to managed fisheries species.

There are two methods related to dredging and disposing of the contaminated sediment within the western arm of the Lagoon. The dry dredge method would install a temporary cofferdam just west of the footbridge to isolate the west arm of the Lagoon for dredging. The dredge area would be drained of water, and the bottom sediment would be dewatered. An excavator would be used to remove the dry sediment, which would be temporarily stockpiled in the parking lot along the Lagoon's north shore. Plastic tarps and containment structures would be placed under and around the stockpile area to minimize runoff back into the Lagoon and surrounding areas. Due to the contamination levels within the western arm of the Lagoon, the dredge materials from this Lagoon location would be hauled to a Class I hazardous waste disposal facility or an approved Port of Long Beach site via truck.

The wet dredge method would not require dewatering the west arm of the Lagoon prior to dredging. The dredge area would be isolated by a silt curtain to maintain water quality. Clamshell/bucket-type dredging equipment would be used, and temporary shore-perpendicular berms or piers would be built into the Lagoon to allow the dredger to access depths not within its reach from the Lagoon's shores. Similar to the first method, the dredged material would be temporarily stockpiled in the parking lot along the northern shore and on the southwest shore until it was drained and loaded onto trucks. Plastic tarps and containment structures would be placed under and around the stockpile areas to minimize runoff back into the lagoon and surrounding areas.

The sediments in the central Lagoon contain levels of lead, mercury, silver, DDT, and chlordane that are not hazardous per State standards. This project component would remove sediment and sand that has eroded and been deposited into the Lagoon waters over the years and create a larger subtidal area. Approximately 5,500 cubic yards of sediment would be removed from the central Lagoon utilizing the wet dredge method discussed previously. Because the sediment from the central Lagoon is not considered hazardous, it could be reused on site for landscaping at the Lagoon.

While "dry" excavation may result in a larger initial loss based on area impacted, it will also recover following inundation by seawater. Other temporary impacts associated with construction include physical disturbance, noise and releases of excavated sediments and water into the local environment. No physical disturbance of local resources other than the benthic habitat is anticipated. These impacts will be temporary, lasting for the duration of project construction. Temporary impacts to water quality and marine resources could occur through the unintentional release of excavated sediments and water into the local environment. Turbidity from dredging can interfere with filter-feeding subtidal organisms and introduce contaminants into areas not previously impacted. Implementation of BMPs, such as the use of silt curtains, will minimize impacts associated with turbidity and sediment redistribution and will be required for all construction phases to minimize impacts. Therefore, due to the temporary nature of the impacts and the ability of benthic communities to recover rapidly following disturbance, impacts to benthic communities are anticipated to be less than significant.

Riparian Habitat and Natural Communities. The majority of the project site consists of ornamental landscaping as well as developed areas, sandy beaches, and open water, which do not warrant conservation efforts because these habitats are common and do not support special-interest species. Impacts resulting from grading to vegetation communities and habitat types present in the Lagoon and Marina Vista Park are listed in Table 4.3.D.

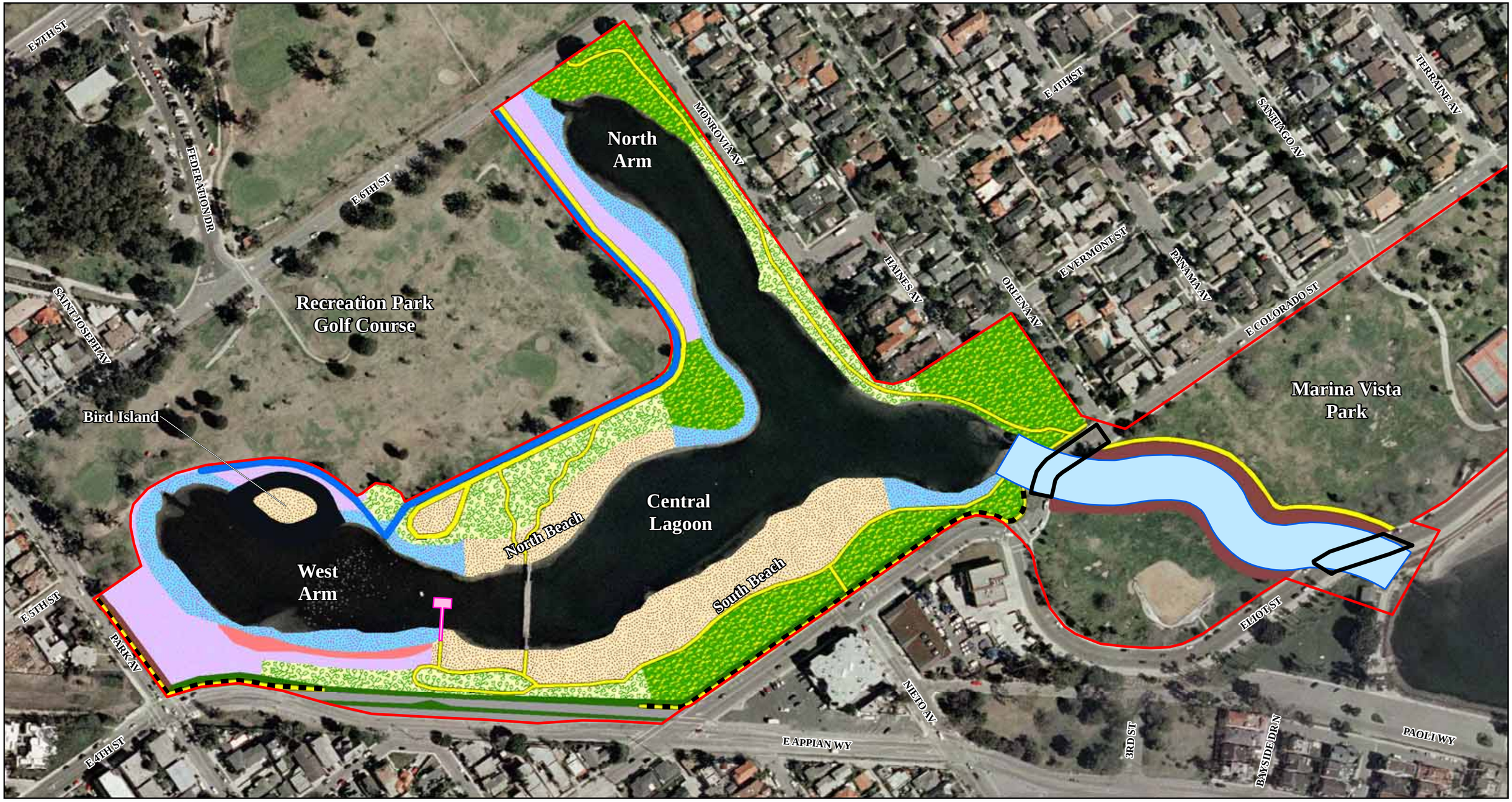
Table 4.3.D: Grading Impacts to Vegetation Communities and Habitat Types

Vegetation Communities and Habitat Types	Grading Impacts to Colorado Lagoon (acres)	Grading Impacts to Marina Vista Park (acres)
Parks and ornamental landscaping	1.45	2.29
Southern coastal salt marsh	0.42	n/a
Mudflats	0.28	n/a
Sandy beach	1.30	n/a
Developed	0.72	0.36
Marine Open Water and Subtidal	5.61	
• *Eelgrass Habitat*	*1.25*	n/a
• *Open Water/Remaining Subtidal Habitat*	*4.36*	n/a
Total Grading Impacts[1]	9.87	2.64

[1] Total may not equal sum due to rounding.
n/a = not applicable

Riparian habitat does not exist on site. However, southern coastal salt marsh, a designated special-interest natural community as described in Section 4.3.3, does occur on the project site. Recontouring the Lagoon during the Habitat Improvements project component would result in 0.42 ac of temporary impacts to southern coastal salt marsh habitat. However, upon completion of the project, southern coastal salt marsh habitat will increase to 3.97 ac. Southern coastal salt marsh occurs in a thin band that is interrupted by two zones of machine-groomed sandy beach. The plants associated with this remnant strip of middle salt marsh have survived the long history of degradation to the Lagoon and represent a remnant population of plants that are uniquely adapted to living at the Lagoon. In order to retain the same genetic resilience as the parent population, cuttings and/or propagules will be collected from these plants for use in the restoration effort as described in Section 3.5. A habitat restoration plan based on the conceptual plan shown in Figure 4.3.4 will be prepared and submitted to applicable regulatory agencies during the permit application process.

Mudflats, another designated sensitive natural habitat type, will be impacted by the recontouring of the Lagoon and construction of the open water channel. However, impacts resulting from recontouring are temporary and result from project improvements, which will create more salt marsh and mudflat habitat as discussed in Section 3.5. No impacts to mudflat habitat resulting from construction of the open water channel are expected; however, recontouring side slopes will impact the mudflats but will be offset by the habitat improvements, which include creation of new mudflat areas as discussed in Section 3.5. The project improvements will create 3.97 ac of salt marsh habitat of which approximately 1.86 ac of low marsh (including cordgrass and mudflats) will be created as shown in Table 4.3.E, resulting in a net increase of approximately 3.03 ac of coastal salt marsh habitat and an increase in mudflat habitat (low marsh) of approximately 1.026 ac, a portion of which will be colonized by cord grass.



LSA

0 100 200 Feet

LEGEND

- Project Boundary
- Low Marsh (Coastal Salt Marsh, Cordgrass, Unvegetated Mud Flats)
- Mid Marsh
- High Marsh/Upland
- Native Upland CSS Vegetation
- Park
- Parking/Road
- Sand
- Shrubs
- Trail (Decomposed Granite)
- Vegetated Buffer/Berm
- Proposed Bioswale
- Existing Sidewalk
- Proposed Bridge
- Proposed Open Channel (Top of Channel 100')
- Proposed Viewing Platform

SOURCE: Air Photo USA (2007), Moffat & Nichol (2007), Thomas Bros. (2007).

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FIGURE 4.3.4

Colorado Lagoon Restoration Project

Proposed Habitat Improvements

Table 4.3.E: Proposed Habitat Improvements

Vegetation Community/Land Use	Proposed Project Improvements (Acres)
Bioswale	0.62
Bird Island	0.17
Eelgrass Habitat (subtidal areas between 4 ft and 7 ft below MSL)	2.70
High Marsh/Upland	1.90
Low Marsh (includes mudflats and cordgrass)	1.86
Mid Marsh	0.21
Native Upland Coastal Sage Scrub Vegetation	2.58
Park	3.80
Parking/Road	0.54
Sand	3.21
Shrubs	0.65
Trail	1.69
Vegetated Buffer/Berm	0.82
TOTAL[1]	**20.73**

[1] Total may not equal sum of figures due to rounding.
MSL = mean sea level

Coastal dunes are currently not present on the project site, nor are they proposed as a habitat improvement. True coastal dune communities occur on sandy beaches along the coast. Since this project area is removed from the coastline, a true coastal dune community is not feasible. However, a sand area will be installed in an upland area that can be planted with experimental coastal dune plant species as an educational feature of the Lagoon.

Additionally, a long-term maintenance plan will be prepared to ensure success of the native habitat through removal of invasive and exotic species. The areas restored with native habitat will be monitored and maintained by a qualified biologist on behalf of the City to be compliant with the environmental permit conditions to be issued by the CCC, the Corps, and the RWQCB. As part of the environmental permit processing, the City will be required to submit a compensatory habitat maintenance plan that describes the types of habitat to be created, restored, and enhanced to the resource agencies for approval. The maintenance plan will include target and ultimate performance criteria and will likely require a minimum of 5 years of monitoring and maintenance before the resource agencies will release the City from further maintenance and monitoring obligations. The maintenance plan will address all the habitat areas associated with the Colorado Lagoon Restoration project, including the open channel between the Lagoon and Marine Stadium. The maintenance plan will address requirements for establishment of target native habitat communities and maintenance criteria (e.g., maximum percent vegetative cover on nonnative weed species, maintenance guidelines, herbicide use guidelines, specifications and details for installation of native trees, shrubs, forbs, and seed).

Therefore, because the net increase of salt marsh and mudflat habitat is proposed as a project component, there are no permanent adverse impacts to native vegetation communities and impacts are considered less than significant.

Wetlands and Waters. All impacts to jurisdictional areas are considered less than significant due to the temporary nature and the net increase in jurisdictional areas that will result from the project implementation. These impacts are listed below in Table 4.3.F.

Proposed project improvements will result in the creation of additional wetland areas. The exact proposed acreages of wetland habitat will be determined after the recontouring phase of the project. No CDFG jurisdictional areas exist on the project site. Impacts to CCC jurisdictional (wetland) areas will be offset by a net gain in CCC/Corps jurisdictional areas. Therefore, impacts to jurisdictional areas are considered less than significant.

Table 4.3.F: Impacts to Potentially Jurisdictional Areas

Jurisdiction	Impact (acres)
Potential Corps Jurisdictional Area	17.61
• *Potential Corps Jurisdictional Non-Wetland Waters*	*16.73*
• *Potential Corps Jurisdictional Wetland Waters*	*0.88*
Potential CDFG Jurisdictional Area	0
Potential CCC Jurisdictional (Wetland) Area	17.67

CCC = California Coastal Commission
CDFG = California Department of Fish and Game
Corps = United States Army Corps of Engineers

Adopted Conservation Plans. No conservation plans exist for the project site. Therefore no impacts to the provisions of any adopted conservation plan are expected.

Substantially Reduce the Habitat, Population, or Range of Fish, Wildlife or Plant Species. The tiger beetle populations within the mudflats on the western arm of the Lagoon will be impacted during recontouring of the mudflat slopes. Two species of tiger beetles have been observed at the Lagoon. An undescribed species of tiger beetle was discovered at the last natural remnant of Los Cerritos Wetlands nearby and is currently being genetically tested for distinctiveness by David L. Pearson, PhD, at Arizona State University according to the Biological Resources Assessment (Appendix E). The status of the undescribed tiger beetle is unknown at this time. It has not been observed at the Lagoon; therefore, it is not anticipated that the recontouring of mudflat habitat within the Lagoon will impact this population. Other tiger beetles on site are common species and known to exist nearby (Pearson 2001; Nagano 1980). The recontouring of the Lagoon will likely impact the current resident populations; however, recolonization at the Lagoon is highly likely and within the dispersal range of both species. Tiger beetle habitat will be increased as shown in Figure 4.3.4 and Table 4.3.E, and tiger beetles are expected to repopulate the area. Therefore, impacts to resident populations of tiger beetles are anticipated to be less than significant.

Potentially Significant Impacts

Special-Interest Species. One special-interest plant species is expected in the project area. Nearly all of the plants that appeared in the literature search have a low probability for occurrence due to lack of

habitat. Estuary sea-blite appeared in the literature search for the project area, is listed as a CNPS List 1B.2 plant, and is considered an SP by the CDFG. This species has been observed in the project area and is located along the edge of the Lagoon in the southeast portion of the project area (Figure 2). Recontouring of the slopes of the north arm of the Lagoon would impact this plant, and avoidance and/or propagation would be necessary. Incorporation of Mitigation Measure BIO-1 will reduce impacts to a less than significant level.

The western mastiff bat and western yellow bat have not been identified within the project area by previous consulting biologists or FOCL members; however, focused surveys have not been conducted for either species. The western mastiff bat favors large bodies of water for foraging and has been known to colonize tall buildings. If the bat occurs at the Lagoon, the improvement activities will not impact any roosting or colonization activities, but could have a potential temporary impact on foraging activities. However, the close proximity of other large bodies of water (e.g., Marine Stadium, Alamitos Bay, and Anaheim Bay), decreases the potential for impacts on foraging activities and is considered less than significant. The western yellow bat is thought to be noncolonial, and individuals usually roost in trees, hanging from the underside of a leaf. They are commonly found roosting in the skirt of dead fronds in both native and nonnative palm trees as well as cottonwoods. If the bat occurs at the Lagoon, the removal of Mexican fan palms from the access road on the west side of the northern arm of the Lagoon as well as other trees in the Lagoon and Marine Stadium could have an impact on roosting bats. If construction is proposed during the bat breeding season (February 1 through August 31), the project could result in adverse impacts to breeding bats. As specified in Mitigation Measure BIO-2, the presence or absence of western yellow bats should be investigated by a qualified biologist prior to the removal of any palms or cottonwoods from the project area.

Disturbance to the subtidal environment through wet dredging and fill activities may indirectly contribute to the propagation of the invasive seaweed *Caulerpa* (*Caulerpa taxifolia*). Therefore measures to identify and remove the invasive algae will be incorporated as Mitigation Measure BIO-3 and will reduce impacts to a less than significant level. In the event that *Caulerpa* is detected, disturbance shall not be conducted until the risk of spread is eliminated. Dry dredging techniques would likely meet the requirements to eliminate contamination from the project.

Dredge and fill activities may also result in a temporary loss of eelgrass and/or subtidal eelgrass habitat. There are small patches of eelgrass currently existing in the Lagoon that would be supplemented by planting additional eelgrass and creating eelgrass beds. Eelgrass loss will need to be mitigated by transplanting eelgrass into the area at a minimum 1.2:1 ratio as described below in Mitigation Measures BIO-4 through BIO-7. Additionally, the project proposes to increase eelgrass habitat (subtidal areas between 4 ft and 7 ft below MSL) by recontouring the Lagoon subtidal and intertidal areas as part of the habitat improvements planned at the Lagoon. The recontouring component will result in 2.70 ac of eelgrass habitat as a component of the subtidal area shown in Figure 4.3.4 and described in Table 4.3.E.

Marine mammals and sea turtles have not been reported from the Lagoon and are highly unlikely to be found in the Lagoon. Foraging marine mammals and sea turtles have the potential to occur in the neighboring Marine Stadium. However, these animals are highly mobile and capable of dispersing away from any disturbances. Construction disturbances in the Lagoon are unlikely to affect marine mammals or sea turtles that have the potential to occur in Marine Stadium because the minor

disturbances, such as turbidity and equipment noise, within Marine Stadium will be confined to the culvert opening and will be temporary. Such types of disturbances and their intensity levels are common throughout the range in which the local marine mammals occur. No breeding or nesting habitats for marine mammals and sea turtles exist in the Lagoon or Marine Stadium. To ensure that foraging marine mammals and sea turtles are not impacted by project activities, a qualified biological monitor is recommended to be present during construction activities that may have the potential to affect these species. Incorporation of Mitigation Measures BIO-8 through BIO-11 will ensure minimization of potential adverse impacts on marine mammal and sea turtle populations.

Wildlife Movement and Nursery Sites. The proposed project site is not currently a highly functioning movement corridor for wildlife species. Areas that may be impacted by the proposed project are substantially disturbed and subject to frequent intense human activity under current conditions. Because the impacts would not directly affect any existing high-quality habitat and because the project improvements will improve the quality of the habitat that can be used for wildlife cover, movement, and breeding, the project will have a less than significant impact on wildlife movement and the use of the Lagoon as a wildlife nursery site.

Eelgrass beds provide nursery habitat for some species of invertebrates and fish. The existing eelgrass identified in preconstruction surveys of the Lagoon and portions of Marine Stadium, as required by the Southern California Eelgrass Mitigation Policy (SCEMP) and described below in Mitigation Measure BIO-4, will be supplemented by the creation of additional eelgrass habitat and transplanting as discussed above and in the project components in Section 3.5. Any loss of eelgrass within the Lagoon or Marine Stadium during construction, recontouring, or removal of sediment will be offset through implementation of Mitigation Measures BIO-4 through BIO-7. Therefore, impacts to potential aquatic nursery sites are less than significant.

Avian species, including raptors, may nest in suitable trees and shrubs throughout the Lagoon and adjacent habitat. The Cooper's hawk pair that was observed nesting in an ornamental tree on the northeast corner of the project site is not expected to be significantly adversely affected, unless construction activity occurs near the nest or the nest is removed during the breeding season. There is a large quantity of available mature trees in the surrounding park and urban landscape that can provide suitable alternative nest sites for the pair. Therefore, if construction is proposed during the nesting season (February 1 through August 31), the project could result in adverse impacts to nesting birds. Impacts that result in nest failure (either directly through nest removal or indirectly due to disruption from human-induced activities) are potentially significant. By incorporating Mitigation Measure BIO-12, the impacts to nesting birds will be reduced to a less than significant level.

Local Policies and Ordinances. The County of Los Angeles has assigned the designation of SEA to biologically important areas within Los Angeles County for the purpose of conserving biological diversity. Since the proposed project site is located outside of the SEA designation, no impacts are expected.

The City of Long Beach Municipal Code (Ordinance C-7642) requires that a permit be obtained from the Director of Public Works prior to removal of trees from City-owned property. The City also requires that the trees be identified, mapped, and measured prior to removal. The project will remove

existing trees, including but not limited to the Mexican fan palm along the access road on the west side of the northern arm of the Lagoon, as well as others in the Lagoon and Marine Stadium. Incorporation of Mitigation Measure BIO-13 will ensure compliance with the City of Long Beach tree protection ordinance, and impacts will be reduced to a less than significant level.

Mitigation Measures

The proposed project's impact on biological resources is potentially significant before mitigation.

The following mitigation measure is recommended to preserve a special-status species of plant.

BIO-1 The Director of Parks, Recreation, and Marine shall ensure that the project biologist work with the contractor to preserve the one specimen of estuary sea-blite on site, if feasible. If the original plant cannot be preserved, then cuttings and/or any other propagules of the plant shall be collected from this specimen or a close genetic source (e.g., Seal Beach National Wildlife Refuge) prior to the removal of the specimen. These cuttings and/or propagules shall be used in the revegetation process for the project.

BIO-2 The Director of Parks, Recreation, and Marine shall ensure that the presence or absence of western yellow bats is investigated by a qualified biologist prior to the removal of any palms or cottonwoods from the project area. If bats are present, a memo shall be submitted to the CDFG to determine appropriate action.

The following mitigation measures are proposed for marine biological resources.

BIO-3 The Director of Parks, Recreation, and Marine shall ensure that a field survey to investigate the presence of the invasive algae *Caulerpa taxifolia* is conducted 30 to 60 days prior to commencement of construction by qualified divers certified by the California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) to conduct such surveys. The preconstruction *Caulerpa* surveys will be conducted according to the accepted criteria of the Southern California *Caulerpa* Action Team (SCCAT) for conducting surveys for the invasive algae and in accordance with the NMFS and CDFG *Caulerpa* survey protocols. In accordance with the recommendations of the SCCAT and according to the NMFS *Caulerpa* Control Protocol (Version 3, adopted March 12, 2007 [NMFS 2007]), a survey must be conducted in harbor areas that may be disturbed. In areas that are expected to be free of *Caulerpa*, such as Colorado Lagoon, a 20 percent visual Surveillance Level survey is required prior to any dredging. The survey will also identify any other marine vegetation in the proposed construction area, including eelgrass. The Director of Parks, Recreation, and Marine, or his/her designee, will transmit the survey results via *Caulerpa* Survey Reporting Form to NMFS and the CDFG within 48 hours of completion of the survey. If *Caulerpa* is identified in the project area, the City, NMFS, and CDFG will be notified within 24 hours of completion of the survey. In the event that *Caulerpa* is detected, disturbance shall not be conducted until such time as the infestation has been isolated, treated, or the risk of spread from the proposed disturbing activity is eliminated in accordance with Section F of the *Caulerpa* Control Protocol.

BIO-4 The Director of Parks, Recreation, and Marine shall ensure that a preconstruction eelgrass survey is conducted of the entire Lagoon and within 100 ft from the opening of the culvert into Marine Stadium during the period of March through October. The survey is considered valid by NMFS for a period of no more than 60 days, with the exception that surveys conducted in August through October will be valid until the following March 1. Preconstruction survey results will be provided by the Director of Parks, Recreation, and Marine to NMFS and the CDFG in an appropriate data format for the information to be mapped on the project drawings.

BIO-5 The Director of Parks, Recreation, and Marine shall ensure that a post-construction survey is conducted within 30 days of the cessation of construction activities to determine the actual area of eelgrass affected for mitigation purposes. If loss of eelgrass is noted in the post-dredge survey, the City of Long Beach will be required to mitigate the loss of eelgrass in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP). As per SCEMP Revision 11 (NMFS 1991), the loss of eelgrass habitat must be mitigated at a minimum 1.2:1 ratio.

BIO-6 The Director of Parks, Recreation, and Marine shall ensure that eelgrass mitigation be initiated within 135 days of project inception. Projects requiring more than 135 days to complete may result in additional mitigation. A mitigation plan with a schedule is required 30 days prior to any construction or dredge activities. The amount of mitigation necessary will be determined by the difference between a preconstruction and postconstruction survey.

BIO-7 The Director of Parks, Recreation, and Marine shall ensure that an eelgrass transplant report is completed following construction (Initial Report) and monitoring reports conducted at 6, 12, 24, 36, 48, and 60 months post-transplant. The Director of Parks, Recreation, and Marine shall ensure that project achievement of specific milestones and criteria for success, as directed in the SCEMP along with guidelines for remedial actions, are documented. If the success criteria are not met, construction of a Supplementary Transplant Area and monitoring for an additional 5 years may be required by NMFS.

Prior to issuance of any demolition or construction permits, the Director of Parks, Recreation, and Marine shall verify that the following measures have been incorporated into project plans in order to further reduce any potential impacts to sea turtles and marine mammals. The following measures are part of the Corps permitting process under Section 404 of the CWA, and are above and beyond those required under CEQA to mitigate biological resource impacts to a less than significant level.

BIO-8 A qualified biologist shall be on site during the construction period to monitor the presence of sea turtles and marine mammals. The on-site biological monitor shall have the authority to halt construction operations if it is determined that sea turtles or marine mammals are present and may be adversely affected, and the monitor shall determine when construction operations can proceed.

BIO-9 Construction crews and work vessel crews shall be briefed on the potential for marine mammal and sea turtle species to be present and the legal protection of these species, and will be provided with identification characteristics of these animals.

BIO-10 In the event a sea turtle is sighted within 500 meters (m) of the construction zone, all construction activity shall be temporarily stopped until the sea turtle is safely outside the 500 m buffer zone. In the event that a marine mammal is sighted within 500 m of the construction zone, all construction activity shall be temporarily stopped until the marine mammal is safely outside the 500 m buffer zone. The on-site biological monitor shall have the authority to halt construction operation, and the monitor shall determine when construction operations can proceed.

BIO-11 The on-site biological monitor shall prepare an incident report of any marine mammal or sea turtle activity in the project area, and the monitor shall advise the construction manager to make his crews aware of the potential for additional sightings. The report shall be provided within 24 hours to the CDFG and the NMFS.

The following mitigation measure is proposed to avoid and minimize impacts to nesting birds subject to the protection of the MBTA and California Fish and Game Code.

BIO-12 The Director of Parks, Recreation, and Marine will endeavor to conduct vegetation clearing and grading outside of the nesting season. If construction is proposed between February 1 and August 31, the Director of Parks, Recreation, and Marine shall ensure that a qualified biologist familiar with local avian species and the requirements of the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code shall conduct a preconstruction survey for nesting birds no more than 1 week prior to construction. The survey will include the area of impact and suitable habitat up to 300 feet from the area of impact (as appropriate, given the anticipated nature of project impacts). The results of the survey will be recorded in a memo and submitted to the City of Long Beach within 48 hours. If the survey is positive and the nesting species are subject to the MBTA or California Fish and Game Code, the memo shall be submitted to the CDFG to determine appropriate action. If the survey is negative or inconclusive, either due to ambiguous behavior by birds or overly dense vegetation, a qualified biologist shall be retained to monitor the site during initial vegetation clearing and grading, as well as during other activities that would have the potential to disrupt nesting behavior. The monitor shall be empowered by the City to halt construction work in the vicinity of the nesting birds if the monitor believes the nest is at risk of failure or the birds are excessively disturbed.

The following mitigation measure is proposed to ensure compliance with the City of Long Beach Tree Ordinance (Ordinance C-7642) and to ensure further enhancement of the restored areas within the Lagoon and Marina Vista Park.

BIO-13 The Director of Parks, Recreation and Marine shall ensure that the Project Biologist identifies, maps, and measures all trees that will be removed as a result of project activities. Ornamental trees removed as a result of open channel construction and reconfiguring of the sports fields within Marina Vista Park will be replaced on a 1:1 basis with California (or western) sycamores (*Platanus racemosa*). The replacement trees to be installed will be incorporated into the areas used as native upland restoration areas for the overall project improvements. The Director of Parks, Recreation, and Marine will obtain

the services of a qualified biologist to monitor and document the mitigation effort. Over the 5-year period following tree installation, the following performance standards shall be included in the compensatory habitat maintenance plan for the Colorado Lagoon Restoration project, which will be prepared concurrent with permit applications and subject to agency approval:

- Increase in height by a minimum of 24 inches per year for the first 5 years.
- Trees determined to be in good health annually by an International Society of Arboriculture (ISA) certified arborist for the first 5 years following installation.

4.3.9 CUMULATIVE IMPACTS

The study area taken into account for cumulative impacts considers seven projects in the vicinity of the Lagoon. The projects that are most likely to contribute to cumulative impacts to biological resources include the Alamitos Bay Marina Rehabilitation project and the Termino Avenue Drain Project (TADP) as shown in Table 4.3.G. The remaining projects are unlikely to affect biological resources in a way that would result in cumulative impacts with the proposed project.

Table 4.3.G: Cumulative Projects

Project	Size	Description
2080 Obispo Avenue	106 units (single-family homes)	Residential development project
4200 East Anaheim Street	29 units (condominiums)	Residential development project
5116 Anaheim Road	64 units (attached townhomes)	Residential development project
2930 East 4th Street	6,200 square feet	Commercial expansion project (Ralph's Supermarket)
Alamitos Bay Marina Rehabilitation Project	n/a	Marina reconstruction project
Termino Avenue Drain	n/a	Storm drain expansion project
Home Depot, 400 Studebaker Road	175,000 square feet	Commercial Development

n/a = not applicable

The City of Long Beach is preparing to renovate the Alamitos Bay Marina dock system and conduct dredging in the Alamitos Bay marina basins. The project will be conducted within seven marina basins, and phased over a 6-year period beginning in 2008. The Alamitos Bay project includes dredging, rehabilitation of existing restrooms, repairs to the sea wall, and dock and piling replacement as indicated in the Marine Biological Assessment prepared by Coastal Resources Management, Inc (CRM) prepared in December 2007 (CRM 2007). Alamitos Bay is adjacent to the Lagoon and contains 7 mi of inland waterways for recreational water-related uses, private dock and slip facilities, guest slips, a fuel dock, and federal anchorage areas. Impacts due to construction-related turbidity will be mitigated to a less than significant level, and no special-interest species or communities will be significantly impacted by the renovation (CRM 2007). Because BMPs and mitigation measures are being incorporated for both the Alamitos Bay project and the Colorado Lagoon Restoration project, no cumulatively considerable adverse impacts to biological resources are expected to result from the restoration efforts at the Lagoon.

The Los Angeles County Department of Public Works is proposing to replace and reroute the Termino Avenue Drain that currently drains to the Lagoon. The proposed project would involve the construction of a storm drain mainline, six lateral drains, low-flow treatment pump station, catch basin screens, and an outlet to Marine Stadium in the City. The proposed TADP would contain two key components: the storm drain to Marine Stadium and the diversion system to the County Sanitation District sewer line. The construction would be initiated in the summer of 2009 and continue over a period of 18–24 months. The Termino Avenue Drain is a major outfall structure that consists of two side-by-side storm water drainage lines. The project would extend and reroute the drain to empty into Marine Stadium, thereby bypassing the Lagoon. The Termino Avenue Drain has been identified as a primary source of the contamination detected in the Lagoon. The TADP would also intercept three additional drain pipes that currently discharge into the Lagoon. The combined effects of these projects would benefit water quality within the Lagoon. The additional measures included within this proposed project would provide long-term benefits to water quality, habitat restoration, and recreation. Impacts to biological resources resulting from the construction phase of the TADP include potential impacts to nesting birds as a result of tree removal, potential impacts to eelgrass in Marine Stadium as a result of permanent removal and turbidity related to construction, potential impacts to native landscaping, potential impacts to intertidal and benthic invertebrate species due to turbidity and sediment loading, permanent loss of benthic invertebrate biomass and goby biomass within the footprint of the outlet structure, and potential impacts to green sea turtles, California sea lion, and Pacific harbor seals. Operational impacts are minimal, but have the potential to improve salinity by stabilizing salinity levels within Marine Stadium and the Lagoon. The TADP proposes to mitigate the loss of eelgrass by replacing eelgrass at a 1.2:1 ratio in accordance with the SCEMP within portions of Marine Stadium and Alamitos Bay as determined by a qualified biologist. These potential impacts all have associated mitigation measures to reduce the impacts to a level below significance, and the combined effects of the TADP and the Colorado Lagoon Restoration project are not anticipated to exceed any significance threshold. The TADP recirculated Draft EIR (County of Los Angeles 2008) has determined that the TADP will not have any cumulative impacts associated with biological resources. Therefore, cumulatively, the projects will not have a significant impact on biological resources.

The project's impacts to disturbed ruderal and ornamental vegetation are not cumulatively considerable, although other projects in the area may result in similar impacts, because these habitats are common, not regionally sensitive, and do not support special-interest species. The proposed project's impact to salt marsh and mudflat habitats is small, incremental, and temporary, and the project results in a net gain of these habitats. Because the net result of the project will be an increase in sensitive natural communities, it is not expected to result in cumulative adverse impacts.

Impacts to wildlife and plant species will not result in significant contributions to cumulative impacts on any species. Impacts to all species and habitats as a result of project construction and grading will be temporary, and the net result of the project will be to increase and improve habitat for these species. Mitigation for eelgrass impacts is required (see Mitigation Measures BIO-2 through BIO-5). The mitigation measures to address impacts to eelgrass habitat will provide a contribution in addition to other mitigation sites in Alamitos Bay for eelgrass restoration efforts as part of the Alamitos Bay Marina Rehabilitation project. Therefore, overall adverse impacts to eelgrass communities will not be cumulatively significant. Rather, the combined restoration efforts for projects with impacts to eelgrass will benefit the species in the long term. The overall effect will be beneficial to natural habitats and the special-interest species they support within the Lagoon itself and for neighboring Alamitos Bay

and Marine Stadium. Additionally, the cumulative effects of restoration in Alamitos Bay and the Lagoon, as well as improvements to the Termino Avenue Drain, will be beneficial to residents in the vicinity and those that use the areas for recreation.

4.3.10 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the above mitigation measures, all impacts to biological resources for project impacts and cumulative impacts will be reduced to a level below significance.

4.4 CULTURAL AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

This section provides a discussion of the existing cultural, scientific, historic, archaeological, and paleontological resources on the site and an analysis of potential impacts from implementation of the proposed project. The cultural, historic, and archaeological resource sections include the results of: (1) two archival reviews to identify previously recorded cultural resource sites and areas sensitive for potentially important cultural resources, as well as (2) a field survey of the project area to identify previously unrecorded cultural resources. This cultural resource section is based on a locality search conducted within a 0.25-mile (mi) radius of the project site. The purpose of the locality search was to establish the status and extent of previously recorded paleontological resources within and adjacent to the project area. With this knowledge, in combination with the history of the project site being dredged with an area of fill, an informed assessment was made of the potential effects of the proposed project on paleontological resources and the kinds of resources that might be expected to be encountered during ground-disturbing activities.

4.4.1 EXISTING ENVIRONMENTAL SETTING

The project site is generally flat and surrounded by a developed urban area of the City of Long Beach (City). The project site includes the Colorado Lagoon (Lagoon) and adjacent parkland areas, including Marina Vista Park. The Lagoon is an approximately 11.7-acre (ac) tidal water body that is connected to Alamitos Bay and the Pacific Ocean through an underground tidal culvert to Marine Stadium.

Project Area History

The Colorado Lagoon was once a part of the historic Los Cerritos Wetlands. In 1923, the low-lying tidelands of Alamitos Bay were dredged of more than 7 million cubic yards (cy) of sand, silt, and mud to create the Lagoon and Marine Stadium. Since their development, the Lagoon and Marine Stadium have been utilized for recreational and competitive diving and rowing, including various Olympic events. Marine Stadium is unique in its design, accommodating four competing rowing teams in one heat.

The City purchased the Lagoon area and Recreation Park in the 1920s through general revenue bond funding. The 1932 Los Angeles Olympic Committee chose the Lagoon for diving trials. High diving was performed from a three-story structure that was floating in the Lagoon. To prepare for the diving trials, the Lagoon was separated from Marine Stadium by a tide gate, which was installed to maintain adequate diving depth in the Lagoon.

The 1932 Olympics also utilized Marine Stadium for rowing events. During these games, the United States rowing team won the gold medal in Marine Stadium. In 1968, the City remodeled Marine Stadium and constructed the current boathouse for the Olympic rowing and canoeing team trials. The

boathouse that was used during the 1932 Olympics still remains (located on the southeast corner of E. Colorado and Neito Avenue). This building is noteworthy due to the Olympic history; however, it has been extensively remodeled and is not listed as a historical landmark.

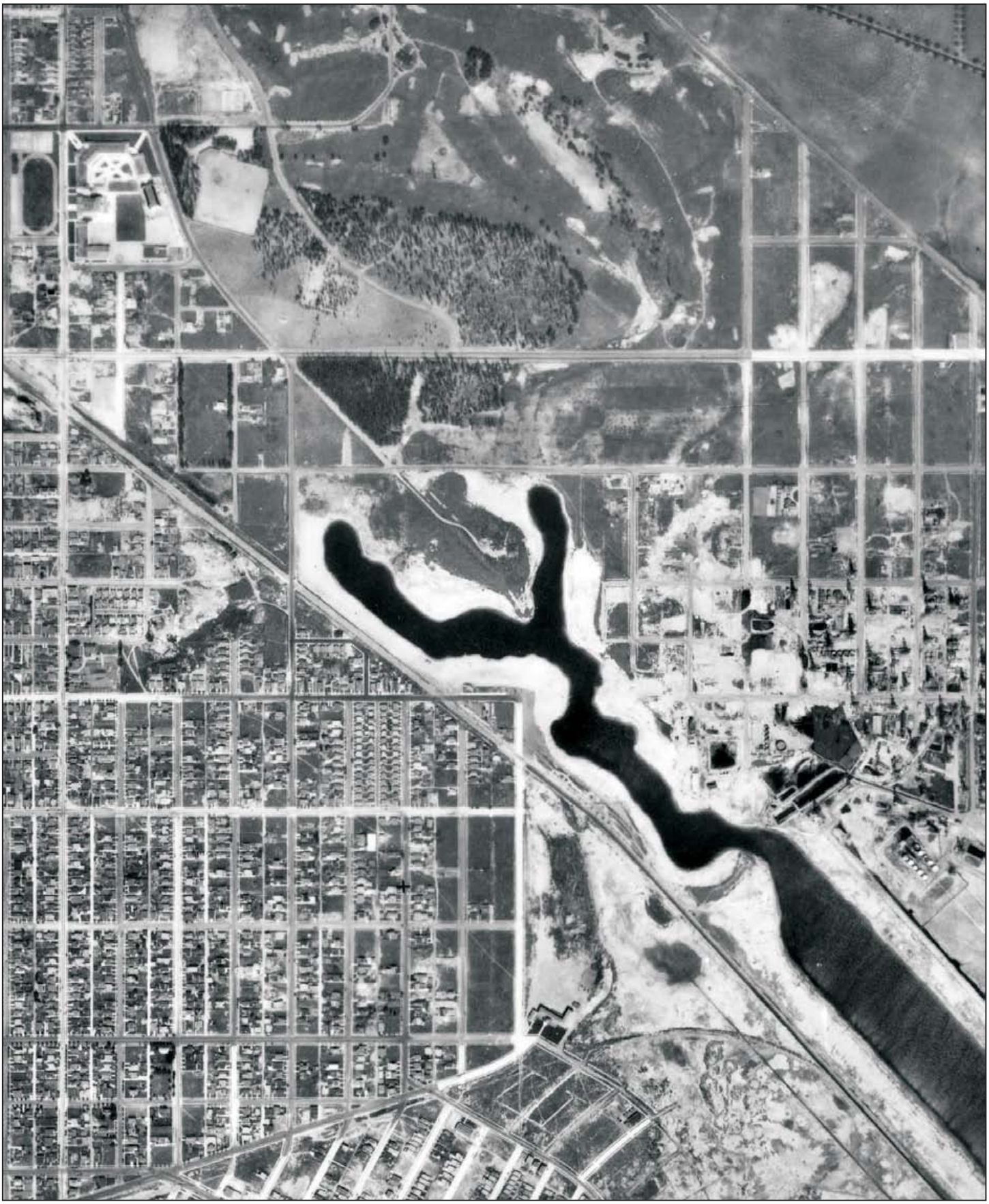
In the late 1960s, the area between what is now the north end of Marine Stadium and the south end of the Lagoon (which was also the end of the original Olympic course) was filled and the existing underground box culvert constructed, thereby further separating the Lagoon from Marine Stadium. This was done as part of the construction for the then-proposed Pacific Coast Freeway. The freeway was never built and the "filled" area is now Marina Vista Park. Figures 4.4.1 through 4.4.3 provide historical aerials that show the dredge and fill areas within the project site.

Despite the fill, which relocated the Olympic course's finish line, Marine Stadium still provides 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing. Marine Stadium is the only rowing venue specifically built for the sport in the United States and it continues to be a center for training United States Olympic Rowing Teams. In 1984, the Women's Olympic Sculling trials were held in the Marine Stadium. Marine Stadium is also the location from which aviators Clyde Schlieper and Wes Carroll set off when they set a world record for longest sustained flight (30 days) in 1939. In addition, Marine Stadium is significant because it and the Los Angeles Coliseum are the only two surviving 1932 Olympic structures. For these reasons, Marine Stadium was designated a California Registered Historical Landmark (#1014) on April 29, 1995.

Historical/Paleontological/Archaeological Resources

Record searches and an archaeological survey have been conducted to determine the known existence and assess the potential existence of cultural resources within the project area. No cultural resources were identified during the archaeological survey. The survey found that soil in the project area is loamy sand and that marine shell was observed over the majority of the project area and is consistent with previous dredging and fill of tidal areas, as shown in the historic aerials (Figures 4.4.1 through 4.4.3).

The record search found that seven resources have been previously identified within the 0.25 mi radius of the project area, including six archaeological sites and one historic resource. None of the archaeological sites are located within the project area; however, the historic resource, as identified previously, is located partially within the project area. This resource is the Long Beach Marine Stadium (CA-LAN-056) and is determined to be a significant Point of Historical Interest. The stadium is listed on the California Register of Historical Resources (California Register), the California Historical Landmarks (CHL; No. 1014), and the California Points of Historical Interests (PHI; No. 19-186115).



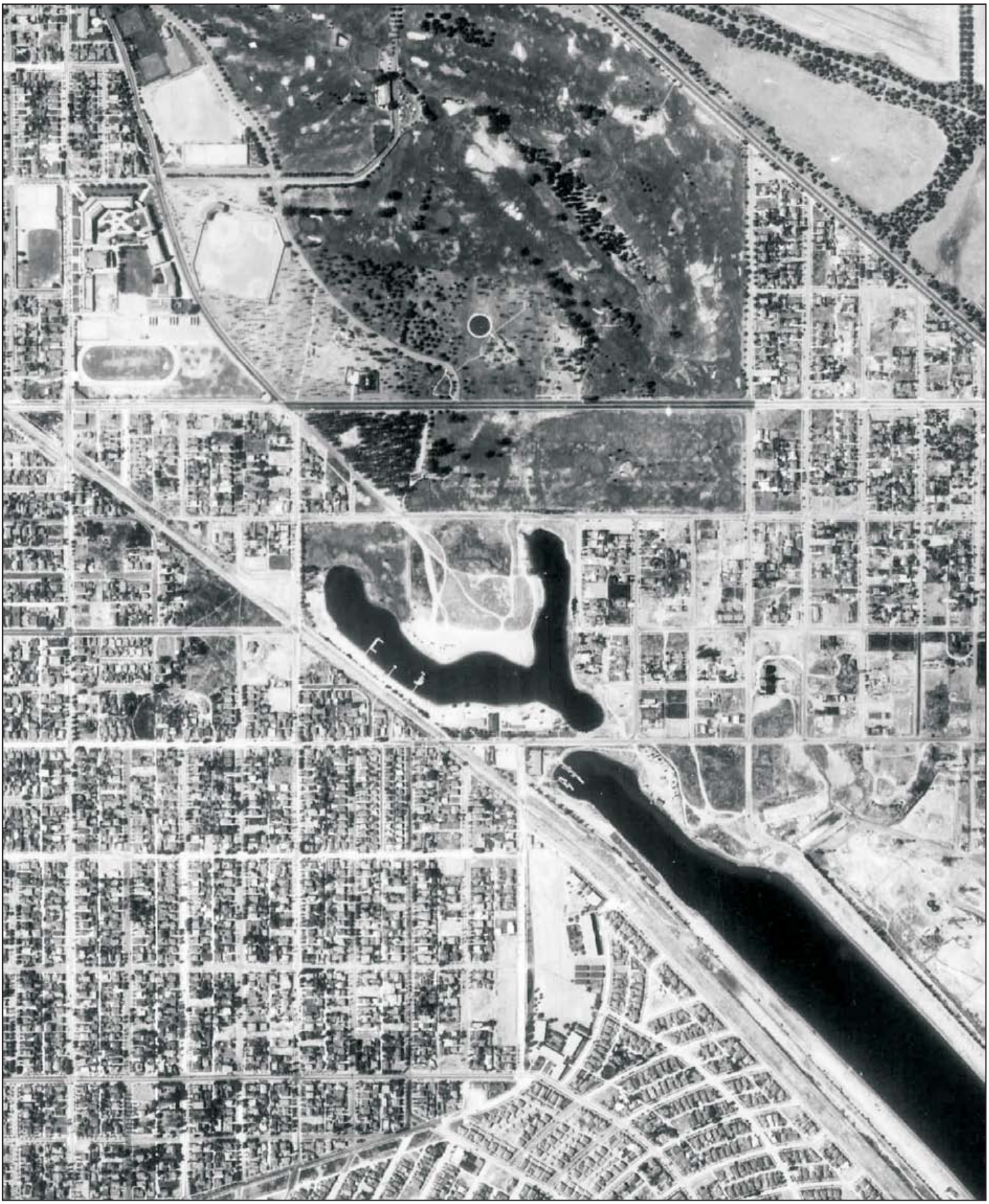
LSA

FIGURE 4.4.1

Colorado Lagoon Restoration Project

Historic Aerial of the Colorado Lagoon, 1928

I:\CLB0702\G\Aerial-1928.cdr (1/28/08)



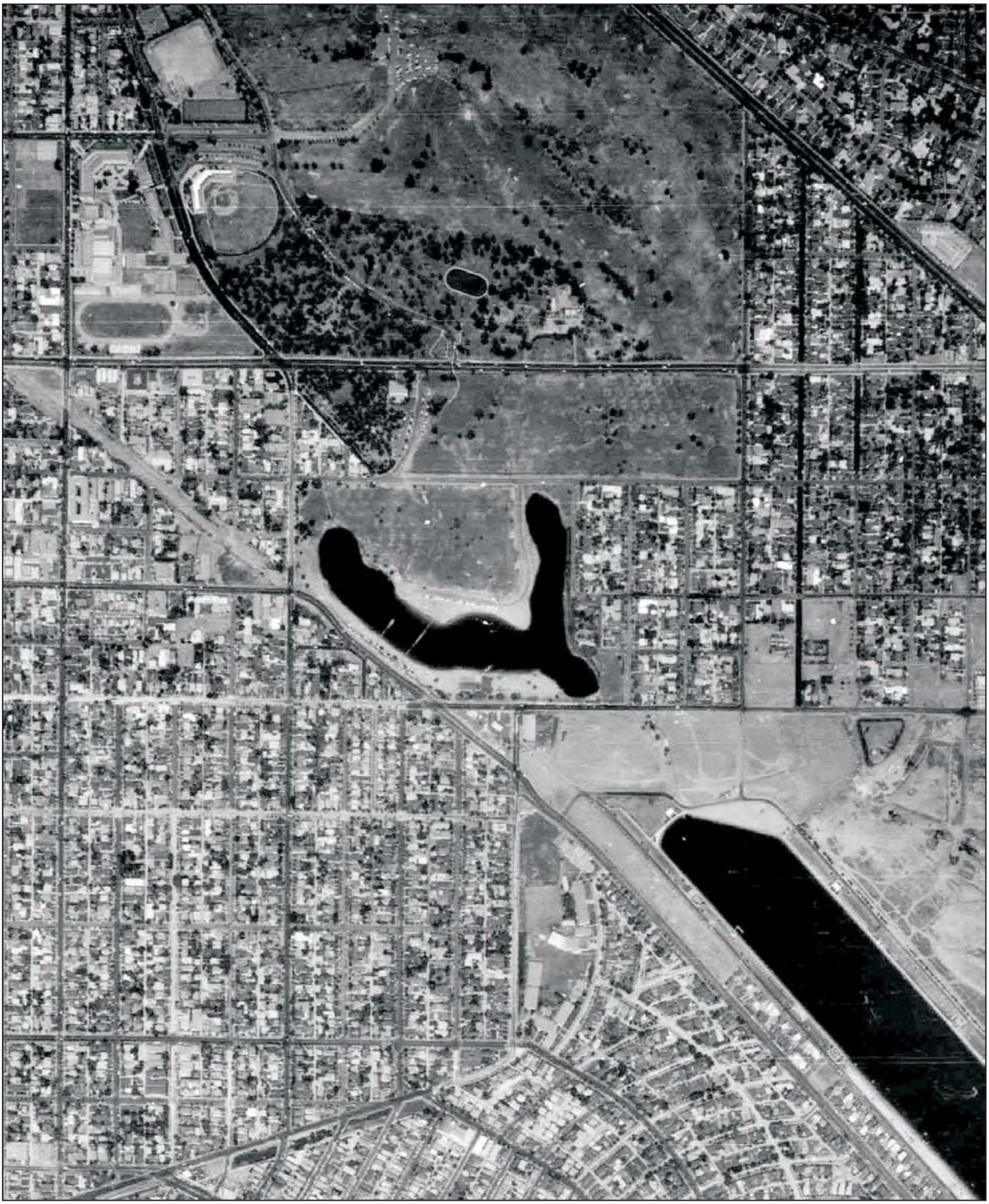
LSA

FIGURE 4.4.2

Colorado Lagoon Restoration Project

Historic Aerial of the Colorado Lagoon, 1947

I:\CLB0702\G\Aerial-1947.cdr (1/28/08)



LSA

FIGURE 4.4.3

Colorado Lagoon Restoration Project

Historic Aerial of the Colorado Lagoon, 1968

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4.4.2 METHODOLOGY

Cultural Resources Records Search

On September 27, 2007, a record search was conducted at the South Central Coastal Information Center of the California Historical Resources Information System (CHRIS), located at California State University, Fullerton. It included a review of all recorded cultural resources located within a 0.25 mi radius of the project area, as well as a review of known cultural resource survey and excavation reports. In addition, the PHI, the CHL, the California Register, the National Register of Historic Places (National Register), and the California State Historic Resources Inventory (HRI) listings were reviewed. The following historic maps of the project area were also reviewed: *Downey, California* 15-minute United States Geological Survey (USGS) quadrangle (1896 and 1942) and *Long Beach, California* 6-minute USGS quadrangle (1932). Additionally, several historic aerials of the project location were reviewed.

Field Survey

A field survey was conducted that consisted of a visual inspection of all areas where ground surface was exposed. The project area was surveyed by walking parallel transects spaced 10 m apart over the entire project area (Colorado Lagoon and Marina Vista Park). Soil profiles and rodent backdirt were examined for evidence of cultural remains. Photographs were taken of the surveyed area as well as the surrounding areas, including the Marine Stadium. The purpose of this survey was to identify any archaeological or paleontological resources that may be impacted by the proposed project.

Paleontological Locality Search

A paleontological locality search was conducted through a review of historical aerial photographs of the project area and paleontological records. It included a review of the location of the previous dredge and fill areas in comparison to the proposed project improvements. The purpose of the locality search was to establish the status and extent of previously recorded paleontological resources within and adjacent to the project area and any potential resources that could be encountered during excavation activities.

Native American Consultation

Native American consultation was performed by the City as required by Senate Bill 18 (SB 18: Burton) following the guidelines of the California Office of Planning and Research (OPR; November 14, 2005). As written in 2004, SB 18 addresses the potential environmental impact of projects on California Native American Cultural Places. SB 18 requires planning agencies such as the City to consult with California Native American tribes during the preparation, updating, or amendment of General/Specific Plans. The purpose of the consultation is to identify and preserve specified places, features, and objects located within the City's jurisdiction that have a unique and significant meaning to California Native Americans.

Consultation was initiated in November 2007 by the City in a letter to the Native American Heritage Commission (NAHC). The letter requested a Sacred Lands File (SLF) search to determine if cultural or traditional resources significant to a California Native American tribe are present in the project

area. In a letter response dated November 15, 2007, the NAHC stated that the results of the SLF search were negative; however, the NAHC also recommended that seven groups be contacted that may have knowledge of cultural resources that could be affected by the project. The City contacted each group by letter dated December 10, 2007. At the request of the City, follow-up phone calls were made by LSA to the seven groups to ensure that their input in the project would be included. Details of the consultation are provided in Appendix F.

4.4.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Section 15064.5 of the California Environmental Quality Act (CEQA), a project may have a significant effect on the environment if the project may cause substantial adverse change to a historic, archaeological, or paleontological resource. An impact may be considered significant if it can be reasonably argued that the project would:

- Cause a substantial adverse change in the significance of a historic resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those found outside of formal cemeteries.

4.4.4 IMPACTS AND MITIGATION MEASURES

Both the Lagoon and Marina Vista Park will continue to operate as public parks after project implementation. Therefore, this discussion is limited to potential impacts to archaeological resources during construction as the proposed project would not involve operational activities that would disturb or destroy underlying archaeological or paleontological remains or other cultural/scientific resources.

Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and determined to be less than significant.

Historic Resources. As detailed above, the Marine Stadium has been identified as a historical resource and is listed on the California Register, the CHL (as No. 1014), and the PHI (as No. 19-186115), and is determined to be a significant Point of Historical Interest. The proposed project includes alteration of the existing tidal connection between Marine Stadium and the Lagoon. This would physically alter the Marine Stadium by: (a) removing impedances at the Marine Stadium opening of the culvert, and (b) developing an open channel through Marina Vista Park that connects to Marine Stadium. The open channel would end at the location of the existing headwall between Marine Stadium and Marina Vista Park.

The removal of impedances and construction of the open channel would not detract from the integrity of any historical, structural, or operational elements of Marine Stadium that contribute to its being a historical resource or continued use for competitive rowing competitions. Therefore, the physical alteration caused by the proposed project would not result in a substantial adverse change in the significance of Marine Stadium as a locally designated historic resource. No other historic resource or potential historic resource is located within or adjacent to the project site. Therefore, no substantial adverse change in the significance of a historic resource as defined in Section 15064.5 would occur.

Archaeological Resources. As detailed previously, the records search identified six archaeological sites within a 0.25 mi radius of the project area, but none within the project site. The project site was developed as a water body through dredging, and later the Marina Vista Park land area was developed through fill. Because of this, the soils within the project area have been highly disturbed and some are nonnative, such as the "fill soils" that compose Marina Vista Park. In addition, much of the proposed dredge material within the Lagoon consists of sediment that has been deposited via the storm drains and nonnative replenishment beach sand that has eroded into the Lagoon. The archaeological survey results, which are consistent with the history of the site, indicate that soil in the project area is loamy sand and that marine shell was observed over the majority of the project area. These are conditions consistent with an area of dredge and fill.

Implementation of the proposed project includes dredging portions of the Lagoon, developing an open channel, and constructing bioswales and storm drain treatments, which require excavation and trenching. However, all of these project components are within the previous dredging and/or fill areas and depths. Therefore, implementation of the proposed project would not disturb sensitive archaeological soils, and an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 would not occur.

Paleontological Resources. As detailed previously, the project site was developed as a water body through dredging and then later the Marina Vista Park area was developed through fill. Therefore, the soils of the project area have been highly disturbed and some are nonnative, such as those within Marina Vista Park. In addition, most of the dredge material within the Lagoon consists of sediment that has been deposited via the storm drains and nonnative beach replenishment sand that has eroded into the Lagoon. Because of this, sensitive paleontological sediments that contain fossil remains are not likely to exist on site. Excavation and trenching for the various components of the proposed project would occur within the previous dredge and fill areas. Therefore, implementation of the proposed project would not directly or indirectly destroy a unique paleontological resource, site or unique geologic feature, and impacts are less than significant.

Human Remains. The project area does not contain any formal cemeteries. Archival research and the archaeological survey in connection with the proposed project did not indicate the presence of any previous or existing known human remains in the project area. As discussed above, the project site has undergone extensive ground disturbance associated with dredge and fill. The project site has been used continually as a public park since the fill activities. As a result, the proposed project is not anticipated to disturb any human remains, including those outside of formal cemeteries.

Potentially Significant Impacts

No potentially significant impacts to cultural resources that would result from the proposed project have been identified.

Mitigation Measures

The proposed project will not result in significant or potentially significant impacts to cultural or paleontological resources; therefore, mitigation is not required. Precautionary mitigation measures have been included as a result of Native American consultation and in the event that unanticipated archaeological resources or human remains are discovered.

CULT-1 In conjunction with the submittal of applications for rough grading permits, the Director of Development Services, shall verify that a Los Angeles County certified archaeologist has been retained, shall be present at the pregrading conference, and shall establish procedures for temporarily halting or redirecting work if unrecorded archaeological resources are discovered during grading to permit the sampling, identification, and evaluation of archaeological materials as appropriate. If archaeological materials are identified during construction, standard professional archaeological practices shall be initiated to characterize the resources and mitigate any impacts to those resources. Included within this approach will be the development of a curation agreement for the permanent care of materials collected from the project. This agreement would be negotiated with a suitable repository.

CULT-2 If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

CULT-3 In accordance with the recommendations of the Gabrielino Tongva Indians of California Tribal Council and the Gabrielino/Tongva San Gabriel Band of Mission Indians, monitoring by a qualified Native American from either one or both of these groups shall take place when, and if, ground-disturbing activities occur in undisturbed native soil. The project archaeologist will notify the Director of Development Services immediately upon exposure of native soils, so that a qualified Native American monitor can be retained to monitor further excavation and/or grading.

4.4.5 CUMULATIVE IMPACTS

The cumulative impact area for cultural and paleontological resources is the City of Long Beach and the Southern California region. The proposed project would not adversely affect any cultural resources. Likewise, the cumulative effects of the proposed project are less than significant as no resources exist on the project site, and the proposed project will not contribute to the cumulative effects of other past, present, or reasonably foreseeable future projects related to undiscovered archaeological and paleontological resources.