

## 4.3 BIOLOGICAL RESOURCES

### INTRODUCTION

This section assesses the effects of the proposed project on the existing biological resources in the Marina. This section also addresses the proposed impacts to marine biological resources with consideration of local, State, and federal regulations and policies; provides recommended mitigation measures pursuant to the CEQA; and discusses Resource Agency permits and anticipated mitigation ratios/strategies required by the Resource Agencies. The biological resources impact analysis in this section is based on the following technical project-specific studies, which are contained in Appendix C:

- Marine Resources Environmental Assessment for the Alamitos Bay Marina Renovation Project (Coastal Resources Management [CRM], October 2009)
- Analysis of Potential Eelgrass Habitat Biotic and Abiotic Characteristics in Alamitos Bay Marina (CRM, October 2009)
- Waterbird Foraging and Nesting at Alamitos Bay Memo (LSA Associates, Inc., August 2009)
- Nesting Bird Survey for the Alamitos Bay Marina Memo (LSA Associates, Inc., July 2007; updated March 2009)

In addition to the project-specific reports listed above, the analysis in this section incorporates findings from the following studies:

- Alamitos Bay Marina Biological Evaluation (ESA, March 2007)
- Alamitos Bay Marina Redevelopment Preliminary Eelgrass and Caulerpa Dive Reconnaissance Survey (Weston Solutions, June 2007)

#### 4.3.1 EXISTING ENVIRONMENTAL SETTING

The area around Alamitos Bay was originally a marsh, with the San Gabriel River and the Bay sharing a common opening into the ocean. Naples Island was developed in 1908–1909, which was followed by the separation of the San Gabriel River and the Bay with the construction of a rock jetty (early 1920s), the dredging of the Marine Stadium in 1932, and the construction of the Alamitos Bay Marina Basins between the mid-1950s and the mid-1960s. Marina Basins 1–7 contain approximately 1,967 slips and 476,839 square feet (sf) of dock area in their current configuration.

Alamitos Bay Marina is comprised of eight basins located throughout Alamitos Bay. However, the proposed project includes renovations only to Basins 1–7; Basin 8 is not included in the project. The land uses surrounding the basins are primarily residential, but also include areas of commercial development, marine-related commercial uses, restaurants, a shipyard, yacht and sailing clubs, and public beaches.

#### **4.3.1.1 Land Side Environment**

The proposed project includes the Alamitos Bay Marina and the adjacent land side areas, which are currently developed with parking lots and restroom facilities. The project includes new asphalt paving for the parking lot surfaces adjacent to the Marina slips in Basins 1, 2, 3, 4, 6-North (6-N), and 6-South (6-S). The proposed project would not relocate or alter any landscaped islands within the parking lot. Site surveys (LSA Associates, Inc., June 29, 2007, and March 7, 2009) indicated that Basins 5 and 7 and the proposed eelgrass mitigation site are completely developed and have essentially no vegetation. Basins 1, 2, 3, 4, 6-N, and 6-S are sparsely landscaped with nonnative vegetation and have a scattering of ornamental trees and shrubs typically used in Southern California park landscaping.

The ornamental trees and shrubs in these basins may be used by a number of species as small as hummingbirds and as large as the great blue heron. A complete list of vertebrate bird species observed is included in the Nesting Bird Memo, attached in Appendix C.

**Water-Associated Birds.** Birds that occur in Alamitos Bay are primarily water-associated species; that is, they are dependent on the marine habitat for food and other essentials. The Bay provides a limited habitat of trees and shrubs for feeding, resting, and nesting. The great blue heron (*Ardea herodias*) is the only water bird known to nest at the Alamitos Bay Marina. Other species are unlikely to do so, with the possible exception of the great egret (*Ardea alba*), snowy egret (*Egretta thula*), and black-crowned night-heron (*Nycticorax nycticorax*), all of which occasionally nest in association with great blue herons.

Many species of waterbirds forage and roost at the Marina, including some classified as endangered, of special concern, or special animals. For most of these species, special status is conferred only at nesting sites or communal roost sites. Two species listed by the State and federal governments as endangered and known to frequent Alamitos Bay are the California brown pelican (*Pelecanus occidentals californicus*) and the California least tern (*Sternula antillarum browni*). The least tern and several other special-status species nest within the Seal Beach Naval Weapons Station, probably forage regularly in Marina waters, and may form small roosting associations on occasion (e.g., on the seawalls of the basins). The brown pelican does not nest locally, as there is not suitable habitat for nesting on site, but does forage and roost in the area. The least tern is present only in the Harbor area during its breeding season, April to September, while the brown pelican is present throughout the year.

Sizable concentrations of foraging birds of various species may develop in response to bait conditions in the Marina.

The least tern is a migratory species and nests from April through August along the coast of California from San Francisco Bay south to Baja California. Least terns nest on sparsely vegetated substrates, including sandy beaches, salt flats, and dredge spoil, in colonies of a few to several hundred nesting pairs. This species relies on sight for foraging and usually requires relatively clear water to locate its preferred baitfish food sources, northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis*), and jacksmelt (*Atherinopsis californicus*). Although there is some field evidence to suggest that least terns would forage in turbid waters to which fish are attracted, the majority of foraging occurs in clearer waters.

The double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), black-crowned night-heron (*Nycticorax nycticorax*), long-billed curlew (*Numenius americanus*), Caspian tern (*Hydroprogne caspia*), Foster's tern (*Sterna forsteri*), and elegant tern (*Thalasseus elegans*), all listed as California Special Animals, are known to forage in the Marina area. Although the Nesting Bird Survey found no evidence of active nesting by most of these species of concern, 10 active nests of the great blue heron (*Ardea herodias*) were observed in the tops of ornamental fan palms within Basins 1 and 2. At the time of the first survey (June 2007), all nests contained large young not yet capable of flight.

#### 4.3.1.2 Marine Environment

The Alamitos Bay project area intertidal habitats extend from the extreme low to extreme high water mark (-1.2 to +7.0 feet (ft) Mean Lower Low Water [MLLW]). The types of habitats in this zone include sandy intertidal, quarry rock (riprap), dock piles, and sloping cement bulkheads. Portions of or all of these shoreline types are exposed to both air and water during the tidal cycle. Habitats below the extreme low tide zone are "subtidal" and are never exposed. Project area subtidal habitats include unconsolidated soft bottom (sands and muds), which makes up the majority of the harbor's benthic (bottom) environment, portions of docks, pilings, bulkheads, and the water column. These habitats support marine plants, invertebrates, fishes, and birds.

**Intertidal Sandy Beach.** Sand beach habitat is found along the Alamitos Bay Peninsula and Bayshore Avenue, at Mothers Beach, End Beach in the Marine Stadium, and within the Cerritos Channel (Jack Dunster Marine Life Preserve). The sand beach environment is a low-energy environment that is affected primarily by wind waves and tidal action. Beaches along the Alamitos Bay Peninsula, Bayshore Avenue, and at Mothers Beach are groomed whereas the other sandy shorelines are not. The high intertidal portion of the groomed public beach supports few if any marine organisms in the sediments because of the infrequent tidal exposure and periodic cleaning and grooming. This higher elevation, however, provides resting habitat for

seabirds (gulls and pelicans). The middle and low intertidal zones provide more consistent tidal inundation and therefore support burrowing species of invertebrates (primarily clams, crustaceans, and polychaete worms). These organisms attract shorebirds to the beach, which utilize the invertebrates as their food sources.

**Subtidal Soft Bottom Habitat.** The subtidal soft bottom habitat supports communities of benthic infauna and epibenthic benthic organisms, as described below.

**Benthic Infauna.** The benthic (bottom-dwelling) invertebrate community of Bays and harbors is made up of a complex of species that live on the sediment surface (epibenthic) or in the soft bottom sediments (infauna). Bottom-feeding fishes and resident soft bottom-dwelling fishes (gobies, juvenile flatfish, and sand bass) rely upon these benthic organisms as food sources.

Common types of benthic organisms that are associated with Bay and harbor sediments include flat worms, amphipod crustaceans, crabs, snails, clams, polychaete worms (capitellids, spionids, cirratulids, and ophelliids), oligochaete worms, and brittle stars. Clam beds are found within Alamitos Bay, primarily in the mid-to-low tide zone of sandy beaches and shallow subtidal habitats. The most common species present are primarily Japanese littleneck clams (*Protothaca staminea*) “cockles” (*Chione californiensis* and *C. undatella*), and jackknife clams (*Tagelus* spp.) secondarily.

Clam beds are found within Alamitos Bay, primarily in the mid-to-low tide zone of sandy beaches and shallow subtidal habitats along the Peninsula, Bayshore Avenue, End Beach, Jack Dunster Marine Life Preserve, Mothers Beach and the inlet inshore of Basin 6-N on the Cerritos Channel.<sup>1</sup> The most common species present are primarily Japanese littleneck clams, and cockles, and secondarily, jackknife clams. A map of CRM’s project area and a listing of all species observed by CRM biologists during the dives and remote video surveys are provided as an attachment to the Marine Resources Report contained in Appendix C.

**Epibenthic, Soft-Bottom Benthic Organisms.** The sediments in the Alamitos Bay Marina basins were uniformly silts with the exception of riprap lining the bulkheads. The most common species observed included large colonies of the ectoproct *Zoobotryon verticillatum*—a large, tree-like mass colonial species that is commonly found in high abundance during warm winter months attached to boat docks. However, when it breaks loose, it settles on the Bayfloor to form a “bolus” of biofouling debris. Other species that were observed but were not abundant included burrowing anemones (*Pachycerianthus*

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<sup>1</sup> R. Ware, pers. Observations.

*fimbriatus*), octopus (*Octopus bimaculatus*), California horn snail (*Cerithidea californica*), Gould's bubble snails (*Bulla gouldiana*), predatory sea slugs (*Navanax inermis*), and tunicates. Of these, only the ectoproct *Zoobotryon* and burrowing anemones were common in the Marina basins. A species-poor community of benthic epibiota is not uncommon in unvegetated environments compared to vegetated bayfloors (i.e., eelgrass), where the added structure of eelgrass above and beneath the sediment surface provides habitat and a food source for many invertebrates.

**Intertidal and Subtidal Hardscape Plants and Invertebrates.** Humanmade substrates (bulkheads, seawalls, docks, pilings, jetties) in Alamitos Bay are not particularly biologically sensitive habitats. However, hard substrate provides surface area for sessile marine animals and plants and mobile macro invertebrates that would not be present in the absence of these structures. The hardscape of these structures support mussels, barnacles, sponges, and other types of invertebrates and plants that constitute the "biofouling community." The undersides of boat floats and docks are commonly colonized by green algae, barnacles, mussels, limpets, polychaete worms, moss animals (*ectoprocts*), and sea squirts (*tunicates*). Bay fishes are attracted to the biofouling habitat because it a constant source of food.

Hardscape-associated organisms observed during dive and remote video surveys included green algae (*Ulva intestinalis* and *U. californica*), brown algae (*Colpomenia perigrinus* and *Sargassum muticum*), red algae (*Corallina* spp., *Caulacanthus* sp, *Rhodymenia* sp. and turf red algae complex), sponges (*Haliclona* sp.), green anemones (*Anthopleura sola*), angled unicorn whelk (*Acanthina spirata*), mussels (*Mytilus galloprovincialis*), oysters (*Ostrea conchilcola*), barnacles (*Balanus glandula*, *Chthamalus fissus/dalli*), ectoprocts (*Zoobotryon verticillatum*), sea stars (*Pisaster ochraceus*), and tunicates (*Botryllus/Botrylloides* complex, *Ciona intestinalis*, and *Styela plicata*).

In general, the biota of the boat basin docks and floats were comprised of a light-to-moderate mussel mass, and the diversity of marine life was lower within the Marina basins than outside of the Marina. Subtidal rock riprap in the basins were covered with a light coating of sediments that were colonized primarily by low numbers of species, including ascidian tunicates, brown algae, limpets (*Collisella* spp), crabs (*Pachygrapsus crassipes*), and barnacles.

**Water Column Biota.** The project area water column habitat supports a plankton and fish community of species that are common to the bays and harbors of Southern California, as discussed below.

Plankton consists of algae (phytoplankton) and animals (zooplankton) small enough to be suspended in the water column and drift through tidal and oceanic currents. The phytoplankton community off the California coast primarily consists of diatoms,

*dinoflagellates*, *silicoflagellates*, and *coccolithophores*, while the zooplankton are those animals that spend part (meroplankton) or all (holoplankton) of their life cycle as plankton. Fish eggs and larvae (ichthyoplankton) are an important component of the zooplankton community. With the exception of a few fish species (e.g., the embiotocidae or surfperches that bear live young), most fish that occur in Southern California are present as larvae or eggs in the plankton community. Plankton abundances and distributions are directly tied to water temperature, nutrients, upwelling, and current movements, and for zooplankton, the amount of phytoplankton food resources.

Common water column fish species in Alamitos Bay include northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis*), queenfish (*Seriphus politus*), and white croaker (*Genyonemus lineatus*). Several other sciaenids such as black croaker (*Cheilotrema saturnum*) and yellowfin croaker (*Umbrina roncadora*) are also reported to be present. Shiner surfperch (*Cymatogaster aggregata*), black perch (*Embiotoca jacksoni*) and white surf perch (*Phanerodon furcatus*) are common to abundant in the Bay (Coastal Resources Management, Inc. 2005).

**Fishes.** The types of fishes that commonly occur in the protected marinas and harbors of Southern California such as Alamitos Bay are a combination of species that are associated with soft-bottom habitat, hardscape of pilings, docks, cement bulkheads, and jetties, and open water (water column) species. In all, 46 species of fish are known to have been present in Alamitos Bay.

Bottom-dwelling species such as various gobies (*Gobiidae*), staghorn sculpin (*Leptocottus armatus*), sand bass (*Paralabrax nebulifer*), spotted sand bass (*P. maculatofasciatus*), California halibut (*Paralichthys californicus*), and diamond turbot (*Hypsopsetta guttulata*) are also representative of the soft-bottom Bay environment. Many of these species are also associated with eelgrass habitat, or the ecotone between the sandy bottom and vegetated eelgrass habitat.

Marinas provide additional structure (pilings, docks, and jetties) that attract different groups of fish. Hard substrate in marinas offer cover, protection, or sources of food for pile perch (*Damalichthys vacca*), pipefish (*Sygnathus* spp.), kelpfish (*Heterostichus* spp.), and opaleye (*Girella nigricans*), while the jetty riprap protecting Alamitos Bay provides a habitat for species such as kelp bass (*P. clathratus*), sargo (*Anisotremus davidsoni*), halfmoon (*Medialuna californiensis*), and cryptic species (blennies and sculpins).

Several previous marine surveys throughout the project area have been conducted.<sup>1</sup> The most common species previously observed in a Marine Stadium eelgrass survey included topsmelt (*Atherinops affinis*), black surfperch (*Embiotoca jacksoni*), shiner surfperch (*Cymatogaster aggregata*), unidentified gobies, round sting ray (*Urolophus halleri*), California halibut (*Paralichthys californicus*), and barred sand bass (*Paralabrax nebulifer*).

Fishes observed in the Colorado Lagoon included 12 species: topsmelt, arrow goby (*Clevelandia ios*), Bay pipefish, yellowfin goby (*Acanthogobius flavimanus*), shiner surfperch, shadow goby (*Quietula y-cauda*), round sting ray, California needlefish (*Stongylura exilis*), slough anchovy (*Anchoa delicatissima*), longjaw mudsucker (*Gillichthys mirabilis*), northern anchovy (2 individuals), and cheekspot goby (*Ilypnus gilberti*).

The results of the Haynes Generating Facility Study indicate seasonal variations in the plankton and ichthyofauna communities in Alamitos Bay. White croaker, queenfish, shiner surfperch (*Cymatogaster aggregata*), northern anchovy, and black perch (*Embiotoca jacksoni*) dominated fish collected near Basin 2. The study also sampled fish impinged on the pump chamber (intake) screens of each generating unit. The composition of the fish fauna collected on the intake screens at the plant differed somewhat from that collected near Basin 2. The species most commonly impinged and entrained were shiner surfperch, butterfish (*Peprilus simillimus*), white surfperch (*Phanerodon furcatus*), walleye surfperch (*Hyperprospon argenteus*), and topsmelt (*Atherinops affinis*). Most of these species are pelagic (commonly found in the near-surface water), and the perch are generally associated with pilings and other high-relief substrate.

During September 2007 dive surveys conducted for the proposed project, only a few fish species were observed within the Marina basins, or in the main channels of Alamitos Bay or the Cerritos Channel, in part due to poor water visibility. Those species observed included topsmelt (*Atherinops affinis*), black perch (*Embiotoca jacksoni*), unidentified flatfish, sand dabs (*Citharichthys stigmaeus*), and round sting ray (*Urolophus halleri*).

**Invasive Species.** The invasive algae *Caulerpa taxifolia* has a potential to cause ecosystem-level impacts on California's Bays and nearshore systems due to its extreme ability to outcompete other algae and seagrasses. *Caulerpa taxifolia* grows as a dense smothering blanket, covering and killing all native aquatic vegetation in its path when introduced in a nonnative marine habitat. Based on marine biological surveys conducted by Coastal Resources Management, Inc. in September 2007 and October 2008 (see Appendix C, Marine

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<sup>1</sup> Termino Avenue Drain Project Eelgrass Surveys (Coastal Resources Management, 2005); Colorado Lagoon Restoration Feasibility Study (Chambers Group, 2004); and the Haynes Generating Facility Entrainment/Impingement Study (Intersea Research Corporation, 1981), as referenced in the Alamitos Bay Marina Marine Biological Study (Appendix C).

Biology Reports), no *Caulerpa taxifolia* is present within the project area, which precludes the potential spread of this species during construction and/or the operation of the facilities.

The Water Resources Board, through the National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG), requires that projects that have the potential to spread this species through dredging and bottom-disturbing activities conduct preconstruction surveys to determine whether this species is present. The surveys must use standard agency-approved protocols and must have been conducted by NMFS/CDFG Certified Field Surveyors (NMFS 2008).

An additional invasive species, the brown macrophyte *Undaria pinnatifida*, has been recorded in Long Beach Harbor and Anaheim Bay. This species was not observed during the survey of the Marina basins or the temporary dock area.

**Marine Mammals.** The occurrences of any cetacean, including gray whales (*Eschrichtius robustus*), would be uncommon within Alamitos Bay, although both bottlenose dolphins (*Tursiops truncatus*) and gray whales will occasionally be found in the Alamitos Bay entrance channel or the San Gabriel River mouth. California sea lions and harbor seals occasionally enter Alamitos Bay, although in very low numbers. Alamitos Bay is not considered a breeding habitat for pinnipeds but it is a potential secondary foraging area.

#### 4.3.1.3 Sensitive Species

**California Gray Whale (*Eschrichtius robustus*).** Two distinct populations of gray whales occur in the North Pacific Ocean, a western and an eastern stock. The eastern stock occurs along the eastern Pacific coastline and is known as the California gray whale. In June 1994, the eastern Pacific population was removed from the Federal Endangered Species list due to recovery of population numbers to near the estimated sustainable population size. Gray whales are observed commonly in the nearshore waters in the San Pedro Channel, but rarely do individual whales enter Alamitos Bay.

**Sea Turtles.** Several species of federally listed threatened and endangered sea turtles could potentially occur in the nearshore open water habitats surrounding Alamitos Bay. There are no known nesting beaches for these species in the United States, but they have been observed off the coast of Southern California (California State Lands Commission 1998). These include the endangered leatherback sea turtle (*Dermochelys coriacea*), threatened green sea turtle (*Chelonia mydas*), loggerhead sea turtle (*Caretta caretta*), and olive ridley sea turtle (*Lepidochelys olivacea*).

In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south. Occasionally, green sea turtles

have been found offshore of Orange County and Los Angeles County, north of their more common southerly range limit due to movement during warmer water El Niño periods. Green sea turtles have been reported in the San Gabriel River, where they encounter the warmer, discharged waters of the power-generating facilities located farther up the River. According to the Long Beach Lifeguards and Marine Bureau staff, green sea turtles have been seen in Alamitos Bay. However, no records are kept as to where they have been seen, the time of year or occurrence, or the numbers observed.

There is no evidence that these species breed in the project area. Because Alamitos Bay has a productive eelgrass system, green sea turtles may be utilizing the seagrass beds located throughout the Bay as one source of their nutritional requirements, which are found throughout Alamitos Bay, extending into the Cerritos Channel. Green sea turtles have been stranded in the Long Beach area. In October 2004, three green sea turtles were stranded in the Belmont Shore area and one green sea turtle was stranded in the Treasure Island Marina area. The green sea turtle strandings described above occurred within 2 miles (mi) of Marine Stadium, which is located north of the project site. The nearest recorded sighting was documented using a satellite transmitter. Based on these data, the sea turtle was present within Alamitos Bay in October and December 2006, residing most frequently in the Long Beach Marina area. The turtle appears to have entered the Marine Stadium area on multiple occasions.

### **Fishes.**

**California Grunion (*Leuresthes Tenuis*).** This fish species is not a formally listed species but is considered sensitive because of its beach-spawning activity and potential impacts from beach disturbances such as beach cleaning and beach nourishment. This species is also an important forage fish for several species that are protected or regulated. It uses the high intertidal sandy beach habitat of many Southern California beaches as spawning habitat. Grunion lay their eggs in the wet beach sands during the highest spring tides between late February or early March to as late as early September. The beaches on the ocean side of the Alamitos Bay Peninsula are known spawning areas; however, grunion are not know to utilize Alamitos Bay proper.

**Steelhead Trout (*Onchorynchus Mykiss*).** Steelhead trout are a federal endangered and California State species of special concern. The steelhead trout is an anadromous seagoing rainbow trout that lives approximately 2–4 years of its life (this period varies greatly) in the open ocean prior to returning to the stream where it was spawned. It is dependent on small clear-flowing but not rapid streams with gravel beds to complete its spawning cycle. The area must also have protective cover and an adequate food source. Steelhead populations are declining because of impacts on habitat such as dams, turbidity, and other habitat incursions.

Except for the colonization of a small population in San Mateo Creek in northern San Diego County, steelhead appear to have been completely extirpated from nearly all systems in the southern portion of the DPS range from Malibu Creek to the Mexican border.

**Tidewater Goby (*Eucyclogobius newberryi*).** The tidewater goby is a federally listed endangered species that has been expatriated from many Southern California creek mouths. It is currently found in shallow marine areas and lower reaches of streams between San Diego northward to Humboldt County waters, where salinity is less than 10 parts per thousand (ppt). The population of tidewater goby is depleted due to reduced or eliminated flows in the lower reaches of coastal streams, pollution, and the filling in, channelization, and other physical alterations of their habitats. The population disappeared from approximately 74 percent of the coastal lagoons from Morro Bay southward to San Diego. Habitat conducive to tidewater gobies is absent from Alamitos Bay.

**California Halibut (*Paralichthys californicus*).** Although it does not have a formal special status, the California halibut is considered a sensitive species by Resource Agencies because of its commercial value and a continued regionwide reduction of its nursery habitat in Bays and wetlands. California halibut spawn at sea, and its larval stages are planktonic. After several months, larval fish settle to the bottom and migrate into shallow coastal waters. Young-of-the-year fish (YOTY) prefer shallow waters between approximately -1.5 ft and -3.5 ft MLLW, whereas juveniles prefer deeper channel bottoms to a maximum depth of approximately -15 ft MLLW. After spending nearly 9 months in coastal embayments, juveniles move out into the open coastal environment. The species uses inshore waters of Bays, harbors, and estuaries as a nursery habitat. Juvenile to subadult halibut are known to occur through Alamitos Bay.

**Eelgrass.** While eelgrass is known to occur throughout many regions of Alamitos Bay and has been surveyed in many areas, eelgrass surveys were not conducted within the City of Long Beach Alamitos Bay Marina until CRM, Inc. mapped the distribution of eelgrass in 2007 for the proposed Alamitos Bay Marina Rehabilitation Project. In addition to the Marina basins and location of the proposed temporary/long dock, additional areas near the Marina but outside of the project site were surveyed. These locations include the shoreline north of the Davies Launch Ramp, the Marina Pacifica Side Channel, the west side of the Cerritos Channel south of Pacific Coast Highway (PCH) Bridge, and in the Cerritos Channel north of PCH Bridge.

The 2007 survey indicated that the amount of eelgrass for Basins 1–7 and the other locations that are not within the proposed project area resulted in a combined total of approximately 2.9 acres (ac) of eelgrass. Of this amount, only 1,373 sf (0.03 ac) of eelgrass vegetation is actually located within the project site in Basins 2, 4, and 6. The small patches of eelgrass in these three Basins grows on shoals at or near the maximum depth limit for eelgrass, where submarine light levels are low and near their limiting levels. Eelgrass within Basins 2, 4, and 6 occurs as low-density patches. Biologically, the value of these beds is very low. There is inadequate cover for cryptic species and invertebrates and very limited cover for food items for fishes that may utilize the eelgrass patches. There are no known species of Fisheries Management Plan (FMP) species of fish present within these Marina basins that would utilize either the vegetated or unvegetated sections of the Marina basins seafloor.

CRM conducted a second eelgrass survey in each of the Marina basins in October 2008 and determined that each of the areas mapped in 2007 was still vegetated with eelgrass, but there was no observable increase in areal cover, nor were there other areas in the Marina Basins where eelgrass had colonized. In addition, CRM surveyed the fairways within Basin 3 where some slips have been abandoned (due to safety issues) to determine whether a lack of vessel activity has resulted in any eelgrass colonization since the October 2007 survey. The results indicate that eelgrass has not colonized any of these areas, despite a range of depths (less than 8 ft) where eelgrass can grow, no limitations of light due to shading, or turbidity caused by vessel activities. The result of the 2008 survey concluded that the amount of eelgrass within the project site remained at 0.03 ac (1,373 sf), the same amount as mapped in 2007. While the Marina's initial design depths were below the depth limits known for eelgrass, shoaling in the Marina has resulted in depths that will support eelgrass and where light levels are sufficient to support eelgrass.

## **4.3.2 REGULATORY SETTING**

### **4.3.2.1 United States Army Corps of Engineers**

**Section 404 of the Clean Water Act.** The United States Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the United States (U.S.). The term “waters of the U.S.” is defined at 33 Code of Federal Regulations (CFR) Part 328 and includes (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 and wetlands*, (3) *all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce*, (4) *all impoundments of waters mentioned above*, (5) *all tributaries to waters mentioned above*, (6) *the territorial seas*, and (7) *all wetlands adjacent to waters mentioned above*. Wetlands are defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.”

Waters found to be isolated and not subject to Clean Water Act (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), as discussed below.

**Section 10 of the Rivers and Harbors Act.** Section 10 of the Rivers and Harbors Act requires authorization from the Corps for the creation of any obstruction to the navigable capacity of any of the waters of the U.S. Corps approval is necessary to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the U.S. In addition, Corps approval is necessary to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of any port, roadstead, haven, harbor, canal, lake, harbor of refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the U.S.

#### **4.3.2.2 Regional Water Quality Control Board (RWQCB)**

Waters subject to the provisions of Section 404 of the CWA also require Water Quality Certification from the RWQCB pursuant to Section 401 of the CWA. Waters that do not fall under the jurisdiction of the RWQCB pursuant to Section 401 of the CWA may require authorization through application for waste discharge requirements (WDRs) or through waiver of WDRs, pursuant to the Porter-Cologne Act (California Water Code, Division 7).

#### **4.3.2.3 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.

If a federal action exists and the project may impact listed species or designated critical habitat, consultation with the United States Fish and Wildlife Service (USFWS) is required through Section 7 of the FESA. By law, Section 7 consultation is a cooperative effort involving affected parties engaged in analyzing the effects posed by proposed actions on listed species or critical habitats. The FESA prohibits the “take” of listed species by anyone unless authorized by the 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.

#### **4.3.2.4 California Department of Fish and Game**

The CDFG, through Sections 1600–1603 of the California Fish and Game Code, is empowered to regulate all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” The CDFG regulates wetland areas only to the extent that those wetlands are 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 CDFG jurisdiction under Section 1602 of the California Fish and Game Code. No Streambed Alteration Agreement (SAA) is required for the proposed project.

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.”

#### **4.3.2.5 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), such as the City of Long Beach, 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 regulates the diking, filling, and dredging of wetlands within the Coastal Zone. The Coastal Act Section 30121 defines wetlands as lands “within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.” The waterside facility improvements associated with the proposed project are regulated and reviewed by the CCC.

Similarly, the placement of dredged material at federally managed ocean disposal locations such as the project's proposed use of the LA-2 ocean-dredged material disposal site (ODMD) requires issuance of a Federal Consistency Determination (FCD).

#### **4.3.2.6 National Marine Fisheries Service**

The National Oceanic and Atmospheric Administration Marine Fisheries Services (NOAA Fisheries [NMFS]) receives its ocean stewardship responsibilities under many federal laws, including the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Most important are the FESA, which protects species determined to be threatened or endangered; the Marine Mammal Protection Act (MMPA), which regulates interactions with marine mammals; the Lacey Act, which prohibits fish or wildlife transactions and activities that violate State, federal, Native American tribal, or foreign laws; the Fish and Wildlife Coordination Act, which authorizes NOAA Fisheries to collect fisheries data on environmental decisions that affect living marine resources; and the federal Power Act, which allows NOAA Fisheries to minimize effects of dam operations on anadromous fish, such as prescribing fish passageways that bypass dams. Many other statutes, international conventions, and treaties also guide NOAA Fisheries activities.

**Magnuson-Stevens Fishery Conservation and Management Act.** The Magnuson-Stevens Fishery Conservation and Management Act (MSA) was amended in 1996 and requires the NMFS to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal FMP. The 1996 amendments to the MSA set forth a number of new mandates for the NFMS, eight regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The councils, with assistance from NMFS, are required to delineate EFH for all managed species. 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.

**Essential Fish Habitat.** The proposed project is located within a general area designated as EFH by two Fishery Management Plans (FMPs), the Coastal Pelagic and the Pacific Coast Groundfish FMPs. Species managed under the Highly Migratory Species FMP may have EFH within the project area, but EFH has not been designated for these species under the MSA. In addition, because these are highly mobile species, these species are likely to be transient rather than stationary at the project site. Salmonids have designated

EFH within another FMP, but because it is highly unlikely they would occur in the project area, they are not addressed further in this EIR.

Of the 86 species managed under all of the FMP, four are known to occur in the San Pedro Channel area and potentially within Alamitos Bay. Northern anchovy, the only Coastal Pelagic Management Plan species known to occur within Alamitos Bay, comprise a significant portion of nearshore otter trawl catches and contribute moderately to the nearshore fish biomass of the nearshore area of San Pedro Bay. Northern anchovy comprise a portion of the commercial bait fishery in San Pedro Bay. This species is a planktivore, and is preyed upon by larger fish and seabirds. Larvae of northern anchovy are also part of the Alamitos Bay ichthyofauna and ichthyoplankton community.

Eight Pacific Groundfish FMP species have a potential to be present in Alamitos Bay. Of these, three species, the leopard shark, California sculpin, and *Sebastes* spp. have been reported within Alamitos Bay, each with very low occurrences. The potential presence of the Pacific Groundfish species occurring within the Alamitos Bay Marina project area is low due to a lack of suitable habitat. Of the three species that may occur in the project area, all are expected to be rare within the Marina habitat.

#### **4.3.2.7 Species Protection under Regulatory and Local Policies**

**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.

**Sea Turtles.** All sea turtle species listed under FESA 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. 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.** All marine mammals are protected by the MMPA. In addition, some marine mammal species are 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.

**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. Landscape ornamental trees require replacement on a 1:1 basis, per the City's Tree Removal Ordinance.

### 4.3.3 METHODOLOGY

The potential impacts listed below were analyzed using results from project-specific marine biological assessments, bird surveys and field surveys. CRM conducted marine biological surveys in Alamitos Bay in support of an environmental assessment focused on eelgrass (*Zostera Marina*), an EFH analysis, and a comprehensive Marine Resources Environmental Assessment for the project. The eelgrass assessment was updated and expanded in May 2009. The CRM marine biological reports are contained in Appendix C.

The fieldwork supporting the Nesting Birds Survey Memo (Appendix C) was conducted by LSA Associates, Inc. on January 11, 2008, and updated by a revisit to the site in March 2009 to identify any species potentially nesting in the Marina project area. Lists of the bird species observed are included as an attachment to the Nesting Birds Survey Memo.

### 4.3.4 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 Habitat Conservation Plan (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.

#### 4.3.4.1 Less Than Significant Impacts

##### Impacts to Sensitive Species.

**Marine Mammals.** All marine mammals are protected by the MMPA. The MMPA prohibits the intentional taking, import, or export of marine mammals without a permit. Several of the species that occur within the Southern California Bight (SCB) are also protected under the FESA. A species that is listed as threatened or endangered under FESA is categorized as depleted under the MMPA.

Vessel traffic related to the proposed construction of the project and the dredging program coming in and going out of Alamitos Bay (barges, tugs, work vessels) would be transiting to and from offshore waters where California sea lion, Pacific harbor seal, California gray whale, bottlenose dolphin, and other marine mammals occur. Work vessels transiting to and from Alamitos Bay Marina could collide with marine mammals (and sea turtles), or could expose these species to contaminants and interfere with foraging. However, marine mammals are mobile and are generally capable of avoiding boat traffic, especially at the slow speeds the vessels will likely be moving. Also, marine mammals in the local waters have likely habituated to vessel traffic since vessels commonly transit in and out of the harbor. Vessel operators are also trained to recognize the presence of marine mammals and avoid collisions, which reduces the potential for adverse impacts.

A total of 620 concrete production piles averaging 15 inches in diameter will be driven into the sediments. The use of concrete piles is an environmentally superior method (in terms of acoustic impacts) to the use of steel piles since it produces less noise from individual pile strikes (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009). However, pile extraction and pile driving will still result in the production of some underwater noise and vibrations within Alamitos Bay that marine mammals may be

capable of sensing. The initiation of pile driving could potentially result in a minor startle response from nearby marine mammals, and they would be expected to either move away from or avoid the immediate vicinity. Over time, marine mammals would acclimate to the noise.

If pinnipeds or cetaceans were present in Alamitos Bay, they would likely be located nearer to the entrance of the Alamitos Bay entrance channel (nearer to Basin 5) than within the other Alamitos Bay Marina basins. Although they would likely be able to “sense” pile-driving noise, the magnitude and intensity of the source sounds are unlikely to result in any significant changes in behavior. Such types of sounds and their intensity levels are common throughout the range in which these marine mammals live.

Pile-driving noise could cause sea lions to temporarily move farther away from these activities, although the sea lions are anticipated to adapt to noise. Breeding would not be affected because sea lions do not breed in Alamitos Bay.

As stated above, few, if any, individual sea lions or marine mammals would be expected to be present with the Alamitos Bay Marina during dredging or pile replacement activities. In addition, the noise and vibration effects would be of short duration for each pile. The size of the piles to be driven for the project (average of 15-inch diameter pilings) is smaller in diameter than those typically used for commercial port shipping operations. In addition, the project proposes the use of cement production piles, which will produce less noise than steel piles.

Studies conducted for the Los Angeles Harbor Pacific LA Marine Terminal Project, in response to comments from the NMFS<sup>1</sup> regarding the effects of noise on pinnipeds relative to pile driving, determined that marine mammals could experience noise approaching harassment levels at around 330 ft from the pile driving. However, the pile-driving noise levels for the LA Marine Terminal Project accounted for the use of 48- to 54-inch steel piles and the power of the hammer that would be required to drive them.<sup>2</sup> Therefore, because significantly smaller 15-inch concrete production piles (and not steel piles) will be used for the proposed project, the sound intensity produced, the area of noise reaching harassment noise levels, and the potential level of impact from pile-driving operations for the Alamitos Bay Marina project will be less than that of the Port of Los Angeles project. Because marine mammals would likely leave the area of disturbance, and because harassment noise levels will be localized to the immediate area of construction activity, potential noise impacts due to project dredging and pile replacement is considered less than significant.

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<sup>1</sup> Pacific L.A. Marine Terminal LLC Crude Oil Terminal Final SEIS/SEIR Response to [NMFS] Comments (Port of Los Angeles 2008).

<sup>2</sup> [http://www.portoflosangeles.org/EIR/PacificLAMarine/SEIR/2\\_Project\\_Description.pdf](http://www.portoflosangeles.org/EIR/PacificLAMarine/SEIR/2_Project_Description.pdf), accessed September 26, 2009.

Because noise marine mammals are not expected to occur within areas where noise reaches harassment levels, and noise impacts on marine mammal are expected to be less than significant, an application to the NMFS for an Incidental Harassment Authorization, under Section 101 of the Marine Mammal Protection Act will not be necessary.

Noise from dredging activities would occur for an average of 50 days out of each 6-month construction phase and would be spread out over a 6-year period. Similar to pile driving, the dredging work would be conducted in different locations and at different times. The measured sound exposure levels of a clamshell dredge are estimated to range between 75–88 A-weighted decibels (dBA) at 50 ft. Animals have been observed flushing from dredging sites at a sound exposure level of less than 100 dBA, and it is possible that marine mammals may modify their behavior as a result of the noise produced by the pile-driving and dredging operations (NMFS 2009). However, similar to pile-driving noise, marine mammals are not expected to occur within the immediate areas of construction, and dredging operations are not expected to result in significant noise effects on sea lions or other marine mammals.

**California Gray Whale (*Eschrichtius Robustus*).** The gray whale is not anticipated to be in the immediate areas where pile removal and replacement will occur in the harbor and will not suffer any direct mortality resulting from pile removal or pile replacement. As discussed above, work vessels transiting to and from Alamitos Bay Marina could collide with marine mammals, such as the gray whale. However, marine mammals are mobile and are generally capable of avoiding boat traffic, especially at the speeds the vessels will likely be moving. Also, marine mammals in the local waters have likely habituated to vessel traffic since vessels commonly transit in and out of the harbor. Although it is unlikely, in the event a single gray whale is killed as consequence of a collision, the impact would be a locally significant impact, but it would not result in a population-level impact. Additionally, an occasional individual may be in close proximity to construction, but would leave the area if disturbed. Therefore, impacts to this marine mammal are considered to be less than significant.

**California Grunion (*Leuresthes Tenuis*).** The beaches on the ocean side of the Alamitos Bay Peninsula are known spawning areas for grunion; however, they are not known to utilize Alamitos Bay proper. Therefore, no construction-related impacts will occur to this species or its habitat. No mitigation is required.

**Tidewater Goby(*Eucyclogobius newberryi*).** Tidewater gobies are not known to occur within Alamitos Bay Marina, and therefore, no construction-related impacts will occur to this species or its habitat. No mitigation is required.

**Steelhead Trout (*Onchorynchus mykiss*).** There are no known populations of this species in Alamitos Bay, and therefore, no construction-related impacts on steelhead trout will occur to this species or its habitat. No mitigation is required.

**California Halibut (*Paralichthys californicus*).** Juvenile California halibut are found in many areas of Alamitos Bay, and they will potentially be present within the Marina basins. During pile installation, any juveniles in the immediate area of pile-driving activity will swim to areas outside the immediate impacted zone. No mortality is anticipated as a result of construction activities, and no mitigation is required.

#### **4.3.4.2 Impacts to Riparian Habitat and Natural Communities**

The land side portion of the project site is currently developed with parking lots and restroom facilities and is sparsely landscaped with nonnative landscape and ornamental vegetation. Because the proposed project does not increase capacity, long-term operations at the renovated Marina would result in conditions similar to the existing setting and would not have impacts on wildlife or habitat from ongoing Marina operations. However, construction activities could affect several species in the project area, as further discussed below.

#### **4.3.4.3 Impacts Related to Local Policies and Ordinances**

The proposed project would be constructed within an existing Marina that contains ornamental landscaping and nonnative vegetation. The City's Department of Parks, Recreation, and Marine has an adopted Tidelands Area Tree Trimming policy that provides guidelines and procedures for trimming trees within the Tidelands area. The guidelines contained in the policy restrict tree trimming within 100 ft of any tree containing an active nest or nesting activity during the period from January 15 to September 1. Although the project site is located within the Tidelands area identified in the pending policy, the procedures are intended for tree trimming activities. The proposed project does not include tree trimming; however, the renovations to the restroom facilities as currently planned would result in the removal of some ornamental trees. In accordance with the City's Municipal Code, Chapter 14.28, a ministerial permit from the Director of Public Works would be required before the removal of any trees on City-owned property. The tree removal permit would be obtained prior to any demolition or construction activities. Landscape ornamental trees require replacement on a 1:1 basis, per the City's Tree Removal Ordinance. Therefore, impacts related to this issue are considered less than significant, and no mitigation is required.

#### **4.3.4.4 Impacts Related to Adopted Habitat Conservation Plans**

The proposed project is located within the Coastal Pelagics Species and the Pacific Coast Groundfish Fishery FMPs. Three Pacific Groundfish FMP species, the leopard shark, California sculpin, and *Sebastes* spp. have been reported within Alamitos Bay, each with very low occurrences; all three are expected to be rare within Marina habitat due to a lack of suitable habitat. Because the potential for Pacific Groundfish species to be present within the Alamitos Bay Marina project area is low, impacts to these species are considered less than significant, and no mitigation would be necessary.

Northern anchovy is the only Coastal Pelagics FMP species known to occur within Alamitos Bay. Project activities that could affect the northern anchovy include increased water turbidity caused by the demolition and replacement of docks and bulkheads and dredging activities proposed for the project. These impacts could result in the northern anchovy temporarily avoiding the project areas and a minimal potential for mortality of larval anchovy. An increase in the suspended sediment load would temporarily increase the exposure of these species to potentially harmful levels of contaminants and clog their gills, resulting in a reduced ability to feed.

The numbers of northern anchovy within individual Marina basins of Alamitos Bay are not expected to be a major part of the northern anchovy population. The majority of the anchovy population is expected to occur both in the main water body of Alamitos Bay and outside of Alamitos Bay, in San Pedro Bay, at depths greater than 12 ft. Based upon these determinations, the proposed Marina Rehabilitation Project is unlikely to have adverse effects on populations of the northern anchovy species. Therefore, impacts to identified FMP species are expected to be less than significant, and no additional mitigation measures would be necessary.

#### **4.3.4.5 Impacts Substantially Reducing the Habitat, Population, or Range of Fish, Wildlife, or Plant Species**

##### **Marina Construction Activities–Dredging Operations.**

**Benthic Community.** Dredging will result in the temporary loss (mortality) of all benthic infauna and epibenthic species within the dredge footprint. The affected species are typical of other Bay and estuarine environments in Southern California and are dominated by species adapted to constant environmental stresses. Following the completion of dredging, benthic invertebrates will begin the recolonization process. Within 1–3 years, the benthic community in the dredge zone would be expected to recover to preimpact levels of species diversity and abundance, assuming successful recruitment and recolonization and assuming water quality and adequate flushing are maintained. Therefore, no long-term reductions in the amount of benthic soft-bottom

habitat or populations of benthic invertebrates would occur as a consequence of dredging, and project impacts are considered less than significant.

Dredging will generate temporary increases in turbidity, reductions in dissolved oxygen, and possible localized increases in the dissolved concentrations of sediment-bound contaminants. The City will implement the required dredging water quality monitoring plan as set forth by the RWQCB. Mitigation Measures 4.7-5 and 4.7-6 (as outlined in Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging Best Management Practices (BMPs) are incorporated into the project to ensure that impacts related to the effects of turbidity, construction dredging, and piling replacement are reduced to a less than significant level. Implementation of these measures will ensure that any localized increases in turbidity, decreases in dissolved oxygen, and/or increases in dissolved concentrations of some contaminants are temporary and less than significant. No additional mitigation is required. Water quality will return to baseline conditions once dredging is completed.

Piling organism biomass will be initially reduced with the removal of 808 piles. However, recolonization will begin immediately upon placement of 620 new piles, with full recovery expected within 1–6 years. Phasing of the work over the 6-year construction schedule will assist in reducing the impact to piling organisms. In addition, a reduction in the number of piles planned for the proposed project (808 existing piles to be replaced by 620 new piles) will result in a net increase of 293.38 sf soft-bottom benthic habitat and an increase of benthic biomass. This is a long-term beneficial impact.

The repair of approximately 8,200 linear feet of seawall will result in temporary impacts to hardscape species that will, however, fully recover following the completion of the repair work. Seawall repairs will not impact soft-bottom habitat. Other than eelgrass (discussed below in Section 4.3.6), there are no sensitive benthic species that will be affected by the project. There are no sensitive piling or riprap associated species. Furthermore, the reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface.

**Marine Mammals.** Dredging operations could disturb sediments containing contaminants that are potentially harmful to marine mammals. Exposure to contaminants that could cause acute toxicity or bioaccumulation to marine mammals, sea turtles, and sea birds would be avoided by implementation of standard conditions of the Corps permits requiring Section 401 water quality certification by the RWQCB. Mitigation Measures 4.7-5 and 4.7-6 (as outlined in Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging BMPs are incorporated into the project to ensure that impacts related to the effects of turbidity and dissolved concentrations of some contaminants are temporary and less than significant.

Implementation of these measures will ensure that any impacts to marine mammals related to contamination effects from dredging would be less than significant. No additional mitigation is required.

**Water Column Biota–Plankton.** Living in bays and harbors, with constant sources of turbidity from runoff and other sources, this community of marine organisms has acclimated, to some degree, to turbid conditions that might arise from pile removal and replacement. Increased turbidity will temporarily reduce the amount of submarine light levels, resulting in a short-term reduction of plankton productivity. Because plankton drift with the currents and turbidity is expected to be localized, there will be only short-term, less than significant impacts to the plankton community.

Mitigation Measures 4.7-5 and 4.7-6 (Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging BMPs are incorporated into the project to ensure that impacts related to the effects of turbidity and any localized increases in turbidity, decreases in dissolved oxygen, and/or increases in dissolved concentrations of some contaminants are temporary and less than significant. Implementation of these measures will ensure that any impacts to these species due to contamination effects from dredging would be less than significant. No additional mitigation is required. Water quality will return to baseline once dredging is completed.

The reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface. Consequently, there will be a greater surface area of unshaded open water that will locally increase plankton production within each Marina basin. No long-term impacts to the plankton due to construction activities are expected, and no additional mitigation is required.

**Fishes.** There may be limited direct mortality of open water (schooling) fishes due to dredging. Water column fishes will avoid the immediate work area due to an increase in underwater pressure and noise levels from work equipment, but may be attracted to biofouling debris that is removed from piles that settles on the harbor floor. No mortality of bottom-dwelling species such as gobies is anticipated due to the mobile nature of fishes.

Secondary impacts of increased water turbidity due to dredging on fishes will be less than significant. A greater than ambient suspended sediment load related to higher turbidity may temporarily reduce the ability of both visual foraging fishes (i.e., surfperch and halibut) and planktivores (i.e., topsmelt, anchovy, juvenile surfperch, and juvenile sciaenid). Phasing of the dock and pile replacement over 6 years will allow fish to find

sources of food on nearby hard substrata not affected by turbidity. Due to the mobile nature of fishes, they will avoid areas of turbidity and find other sources of food.

Turbidity and water column-dissolved oxygen concentrations would temporarily be affected due to the resuspension of organically enriched sediments. These impacts would physiologically stress the fish in the area and result in their movement out of the area to feed. Because fish will likely move out of the immediate zone of turbidity, their exposure to elevated levels of contaminants is expected to be minimal. Turbidity will return to ambient levels upon cessation of construction activities. Overall, potential impacts arising from dredging will result in less than significant impacts to the fish community.

Mitigation Measures 4.7-5 and 4.7-6 (Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that Dredging BMPs are incorporated into the project to ensure that impacts related to the effects of turbidity and any localized increases in turbidity, decreases in dissolved oxygen, and/or increases in dissolved concentrations of some contaminants are temporary and less than significant. Implementation of these measures will ensure that any impacts to fish from dredging would be less than significant. No additional mitigation is required. Water quality will return to baseline once dredging is completed.

**Potential Eelgrass Habitat.** Potential eelgrass habitat as defined by the Southern California Eelgrass Mitigation Policy (SCEMP, as amended 1991) defines potential eelgrass habitat as “areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc.” It should be noted that there is no conclusive scientific basis for why eelgrass grows in some locations and not in others. It can be attributed to a combination of any of the environmental conditions listed above.

Further, in response to recent concerns regarding the interpretation of the SCEMP, correspondence between Rodney R. McInnis, Regional Administrator for the NMFS, and Mr. Jack Peveler, President of the California Association of Harbor Masters and Port Captains (contained in the Eelgrass Analysis Report, Appendix C), clarified that the potential eelgrass clause has been implemented only where “clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g., previous eelgrass surveys documenting presence).”

The eelgrass surveys conducted by CRM for the proposed project (contained in Appendix C) identified both the existing amount of eelgrass identified in the project area, the amount of existing eelgrass potentially affected by project-related dredging, and the

amount of potentially suitable soft-bottom habitat within the project area, relative to both biological and abiological features of the Marina's environment.

For the purpose of the EIR analysis, "potential eelgrass habitat" is defined as unshaded, unvegetated soft-bottom sediments within the depth range known to support eelgrass in Alamitos Bay Marina, meeting associated abiotic factors (i.e., water temperature, light, salinity) within basins where eelgrass may be expected (based on the historic or current presence of vegetation).

Because no dredging has occurred in the Marina, the depth levels in the basins are a result of shoaling over the past 50 years. Therefore, historically there was no eelgrass present within the Marina. However, because shoaling over the years has resulted in depths 8 ft and less, depth-suitable habitat areas have been created. Eelgrass surveys conducted in 2007 and 2008 by CRM are the only known eelgrass surveys conducted within the Marina Basins, and those surveys indicated that eelgrass was present only Basins 2, 4, and 6.

Therefore, it can be presumed that eelgrass can be expected to occur only within Marina Basins 2, 4, and 6 due to the defined environmental conditions considered conducive to supporting eelgrass. Further, because eelgrass vegetation only exists in seven fairways within these basins, those seven fairways are considered to be the only areas where depth suitable habitat exists.

During preparation of an Initial Study/Mitigated Negative Declaration for the proposed project, comments were received from the CDFG and NMFS indicating that "potential eelgrass habitat" should be included in the project impacts.<sup>1</sup> During coordination conducted with the CDFG, and based on surveys in the Bay indicating that depth limit for eelgrass was approximately -8 MLLW, the City was directed to survey all soft-bottom habitat within the affected basins that was less than 8 ft deep.

The amount of soft-bottom habitat was subsequently calculated (CRM 2008) for areas meeting the following conditions in the Alamitos Bay Marina: within the project's dredging footprint; water depths less than -8 ft MLLW; where no shading occurs; and fairways where eelgrass already exists but is currently unvegetated (Basins 2, 4, and 6). The area mapped under these parameters was calculated to be 1.47 ac. However, CRM's remote video surveys in October 2008 concluded that each of the areas mapped in 2007 was still vegetated with eelgrass, but that there was no observable increase in areal cover, and eelgrass had not colonized in any other areas in the Marina.

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<sup>1</sup> Letter from CDFG is attached to Analysis of Potential Eelgrass Habitat Biotic and Abiotic Characteristics Report prepared by Coastal Resources Management and contained in Appendix C.

Therefore, based on these two (and only available) surveys indicating that eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically have been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging. Therefore, impacts to potential eelgrass habitat are considered less than significant, and no mitigation is required.

#### **4.3.4.6 Marina Construction Activities–Dock and Pile Removal and Replacement**

**Intertidal and Subtidal Hardscape Plants and Invertebrates.** The removal of docks and dock pilings will result in an initial loss of biofouling (pile dwelling) associated flora and fauna on each of the 808 piles and the 476,839 sf of dock space. Because the Marina redevelopment will occur over several phases, losses will be site-specific and will not occur throughout the harbor at the same time, limiting the overall impact to a particular area within each phase over a 6-year period. Some of the biofouling cover will be dislodged during the pile removal process, creating a zone of organic debris on the harbor bottom in the immediate vicinity of the docks. However, most of the biofouling organisms will be removed and transported off site to a proper disposal area, eliminating a significant localized impact related to an accumulation of decaying organic material on the harbor seafloor. Removal of the pilings is unlikely to result in the release of a significant amount of contaminants; most contaminants present on the pilings would be bound up within the tissues of the organisms being removed.

Once the new piles and docks are reinstalled, they will be recolonized by similar types of organisms that were initially removed. The conceptual project plans include removal of 808 piles to be replaced by 620 concrete piles, averaging 15 inches in diameter. The process of recolonization will begin immediately upon placement; however, reestablishment of mature communities on the 620 new piles will be phased over a period of 1–6 years. Therefore, removal and replacement of pilings and docks will have a temporary but less than significant impact on the biofouling community. There are no sensitive species associated with the piling community that would be impacted by Marina renovations. Furthermore, the reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface.

Repairs made to the 8,250 linear feet of seawall and riprap will result in short-term reductions of hard-bottom associated species such as mussels, barnacles, limpets, sea squirts, and algae. Marine organisms will begin to repopulate the seawall and riprap upon completion of seawall repairs, with no expected long-term impacts to hard-bottom benthic algae, invertebrate, or fish populations. Consequently, seawall repairs will have a temporary but less than significant impact on these resource groups. All repairs will be made within the existing footprint of the hardscape of the riprap and will not impact soft-bottom ESH habitat.

New piles will be driven into the sediments. These activities could increase the levels of water turbidity, including sediment-bound contaminants, as each phase of the project is being conducted. Higher turbidity is expected to be limited to the specific basin where dock improvements will be made, and the turbidity plume will dissipate as a function of tidal exchange within the basins. While the impact is expected to be short term and have a less than significant impact on water quality within each specific phase, the project will be conducted over a period of 6 years. Thus, site-specific turbidity levels may be above ambient levels within a portion of Alamitos Bay for an extended period. Mitigation Measure 4.7-6 (Section 4.7, Water Quality and Hydrology) requires adherence to BMPs for all dredging activities, including the use of silt curtains where feasible, and would reduce impacts to water quality and prevent the spread of any turbidity plume out of the area. Implementation of this measure would reduce the level of water degradation and ensure that potential construction turbidity impacts on marine resources are less than significant. No additional mitigation is required.

#### **4.3.5 POTENTIALLY SIGNIFICANT IMPACTS AND MITIGATION MEASURES**

##### **4.3.5.1 Impacts to Sensitive Species**

**California Brown Pelican (*Pelecanus occidentalis*).** Construction activities may disturb the California brown pelican, if present during such activities. However, construction will be achieved in approximately 12 phases extending over 6 years and will disturb small areas of the Marina at any one time, leaving available other open water areas for this species. In addition, there are no nesting sites within the vicinity of the proposed project activities. Therefore, due to the lack of nesting sites, and because construction is temporary and will be phased over 6 years and not impact the entire Marina at any one time, potential impacts to California brown pelicans are considered less than significant. However, to ensure that any potential impacts remain less than significant, mitigation has been proposed requiring a qualified biologist to monitor special-status waterbirds prior to any significant construction activities. Implementation of Mitigation Measure 4.3-1 would ensure that impacts to these species remain less than significant.

Due to the reduction of dock area, project implementation will result in an additional 2,600 sf of open-water foraging habitat for the endangered California brown pelican. This is considered a beneficial effect of project implementation.

**California Least Tern (*Sterna antillarum browni*).** Construction activities may disturb the California least tern, if present during such activities. However, construction will be achieved in approximately 12 phases extending over 6 years and will disturb small areas of the Marina at any one time, leaving available other open water areas for this species. The least tern may choose to avoid the immediate construction work area. Shallow water foraging areas for the

least tern would be available in other areas of the Harbor, as construction will be phased at each of the eight basins at separate times. Further, the area affected by pile-driving noise would be a small portion of the Bay waters, and installation of the piles may or may not occur when the least terns are present. No individuals would be lost, and their populations would not be adversely affected by construction activities. Therefore, due to the phased construction plans and because of the temporary nature of construction activities, potential impacts to California least terns are considered less than significant due to the phased construction plans and the temporary nature of construction. However, to ensure that any potential impacts remain less than significant, mitigation has been proposed requiring a qualified biologist to monitor least terns and other special-status waterbirds prior to any significant construction activities. Implementation of Mitigation Measure 4.3-1 would ensure that impacts to these species remain less than significant.

Due to the reduction of dock area, project implementation will result in an additional 2,600 sf of open water foraging habitat for the endangered California least tern. This is considered a beneficial effect of project implementation.

**Sea Turtles.** Construction activities associated with the Marina basins would occur in the mid-region of Alamitos Bay, where reports from the Marine Department indicate that sightings of green sea turtles occur. In addition, dredge disposal barge activity entering and leaving Alamitos Bay would be transiting the area in which green sea turtles also enter and leave Alamitos Bay. Therefore, there is a potential that green sea turtles may be in the general project area when Marina renovations are occurring, phased over a 6-year period.

Although an occasional green turtle may be in Alamitos Bay at the time of Marina renovations, the likely potential for adverse impacts to an individual is low. Dredging, dock reconstruction, vessel movements, and construction of the temporary dock near the Long Beach Yacht Club could potentially result in a behavioral modification to this species that would include a likely change in swimming behavior to avoid excessive noise, turbidity, or the vessel movements. Sea turtles forage in Alamitos Bay outside the Marina basins due to the availability of larger, higher-quality eelgrass beds as compared to those in Basins 2, 4, and 6. No mortality would be expected to occur as a result of the proposed project, and no operational impacts to green sea turtles would occur as a result of normal Marina operations.

However, due to the potential for sea turtles to be present in the project area during the Marina renovation, Mitigation Measure 4.4-2 has been proposed, requiring a biologist to monitor the site during construction and be empowered to stop construction to avoid negative effects on sea turtles. Implementation of Mitigation Measure 4.4-2 would reduce potential construction impacts to sea turtles to a less than significant level.

**Eelgrass.** Project-related dredging to depths of -10 ft MLLW in Basins 2, 4, and 6 would result in removing eelgrass and deepening the basins to depths beyond the normal depth ranges for eelgrass survival. Removal of this eelgrass through dredging will result in a long-term but mitigatable impact on EFH.

Dredging will remove approximately 0.03 ac (1,373 sf) of eelgrass. Project plans have avoided and minimized impacts to eelgrass to the maximum extent practicable, but in order to return the Marina to its original design depth, and provide safe navigation, some impacts to existing eelgrass will occur during dredging. The loss of eelgrass is considered a localized, significant impact that can be mitigated to a less than significant level with the successful transplantation of eelgrass within Alamitos Bay at a mitigation ratio of 1.2 to 1. Anticipated impacts from current surveys show that 0.03 ac (1,373 sf) of eelgrass will be removed, resulting in a need for 1,648 sf to be successfully transplanted. A 5-year monitoring program will be completed to ensure the survival of at least the minimum amount of eelgrass to be mitigated. The total eelgrass mitigation amount will be determined from preconstruction, postconstruction and control site surveys, according to the Southern California Eelgrass Mitigation Policy (NMFS 1991, as amended). The City has designated an eelgrass mitigation site adjacent to the northern end of Marine Stadium. Several other sites within and outside of Alamitos Bay were analyzed and determined to be unsuitable. See Section 5.0, Alternatives, for a description of these rejected mitigation sites.

Based upon site surveys of where eelgrass occurs and does not occur in Alamitos Bay and on historical eelgrass survey information for Alamitos Bay, the City has identified a site at the northeast end of Marine Stadium to create an open water habitat for eelgrass mitigation. The proposed eelgrass mitigation site involves abandoning a portion of a City-owned storage yard. An area of 218 x 105 ft would be excavated to a depth of -2 to -3 ft MLLW. The existing rock revetment along Marine Stadium would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel (see Figure 3.14 in Section 3.0, Project Description). A wave attenuator (nonaccessible dock with pilings) would be installed to protect the habitat area and to delineate the edge of Marine Stadium, while allowing for sufficient tidal flushing of the habitat site.

Mitigation Measure 4.3-2, requiring 1,648 sf of eelgrass vegetation to be successfully transplanted in accordance with the SCEMP, is proposed to reduce potential impacts to eelgrass marine resources to a less than significant level. Implementation of Mitigation Measure 4.4-2 will reduce impacts related to eelgrass to a less than significant level.

The proposed project also includes components that will benefit EFH, including the reduction in overwater coverage by 2,600 sf and the reduction in the total number of piles by 188. Reducing overwater coverage will reduce shading in the project area and result in a net increase in productivity. A reduction in the number of piles will reduce the fill area and expand uncovered benthic habitat. These are considered beneficial impacts related to the proposed project.

#### **4.3.5.2 Impacts To Wildlife Movement and Nursery Sites**

The proposed project site is not currently a highly functioning movement corridor for wildlife species and does not contain any significant high-value nursery habitat sites, as reported in project marine biology reports conducted by CRM (Appendix C). Areas that may be impacted by the proposed project are substantially disturbed and subject to frequent intense human activity under current conditions. Eelgrass beds provide nursery habitat for some species of invertebrates and fish. Impacts related to eelgrass habitat were previously addressed.

The project includes relocation of several trees to accommodate the restroom renovations. In addition, construction activities could cause the potential abandonment of nests by migratory birds. The great blue heron is considered a California Special Animal at colonial nesting sites such as Alamitos Bay. Construction activities associated with the proposed project may result in some temporary disruptions to the roosting activities of these species. In addition, the renovations to the restroom facilities and parking lot areas have the potential to cause a direct loss of nesting trees or the abandonment of nests in those trees. However, the great blue herons currently nesting within the Alamitos Bay Marina are considered a loose colony using multiple trees throughout the harbor for nesting and roosting. Although some of the great blue herons may be disturbed by construction activities, there are many trees within the colony's existing area that could provide alternative nesting and roosting habitat. The great blue herons present in the project area are currently coexisting with Marina users and are accustomed to human intrusion and noise. However, to ensure that potential impacts to the great blue heron as well as other California species of concern listed above are reduced to a less than significant level, Mitigation Measure 4.4-5 has been proposed, restricting the removal of trees and vegetation during the nesting season and requiring surveys, as necessary, prior to construction. Implementation of Mitigation Measure 4.4-5 would ensure that potential impacts to migratory birds are reduced to a less than significant level.

#### **4.3.5.3 Impacts Degrading the Quality of the Environment or Substantially Reducing the Habitat, Population, or Range of Fish, Wildlife, or Plant Species**

**Invasive Species.** The potential spread of the *Caulerpa taxifolia* invasive species during construction and/or operation of the facilities is not anticipated since no *Caulerpa taxifolia* was present within the project area at the time project-specific surveys were conducted. However, although this species was not observed, a *Caulerpa taxifolia* algae survey will be required according to the NMFS *Caulerpa* Control Protocol prior to construction to confirm that this species is not present, as outlined in Mitigation Measure 4.3-6. If this species is found, then protocols for the eradication of *Caulerpa taxifolia* will be implemented to remove this species from the project area.

*Undaria pinnatifida* does not currently exist in Alamitos Bay. There are no accepted procedures for the eradication of this species at the current time. In the event this species is found during preconstruction and postconstruction surveys, the CDFG and the MMFS will be consulted to determine if, and how to deal with any infestation.

*Zostera japonica* will not be impacted by this project. There are no accepted procedures for eradication of this species at the current time. In the event this species is found during preconstruction and postconstruction surveys, the CDFG and the NMFS will be consulted to determine if and how to deal with any infestation.

The other invasive species, brown macrophyte (*Undaria pinnatifida*), was not observed during the survey of the Marina basins or the temporary dock area; therefore, it is unlikely to be spread as a consequence of the renovation of the Marina. No additional mitigation is required.

#### **4.3.6 MITIGATION MEASURES**

Implementation of the following mitigation measures will ensure that potential impacts to biological resources resulting from project implementation would be reduced to less than significant levels.

The following measure is proposed to ensure that potential impacts to special-status water birds remain less than significant.

**4.3-1** Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that a qualified biologist has been retained and shall be on site to assess the roosting (and foraging) behavior of waterbirds at the Marina immediately prior to any major construction disturbance. In the event of an imminent threat to a special-status species, the monitor shall immediately contact the Construction Manager. In the event the Construction Manager is not available, the monitor shall have the authority to redirect or halt construction activities if determined to be necessary.

The following mitigation measure is proposed to reduce potential impacts to green sea turtles to a less than significant level.

**4.3-2** Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract in order to further reduce any potential impacts to green sea turtles:

- A qualified marine biologist shall be on site during the construction period to monitor the presence of endangered species. The on-site biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.
- Construction crews and work vessel crews shall be briefed on the potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.
- In the event that a sea turtle is sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle is safely outside the outer perimeter of construction. The on-site biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.
- The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his/crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS).

The following mitigation measure is proposed to reduce potential impacts to eelgrass marine resources to a less than significant level.

- 4.3-3** Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall ensure that an Eelgrass Mitigation Plan has been included in the contract for construction. The Plan shall require that any direct losses to eelgrass will be mitigated at a ratio of 1.2:1 according to the Southern California Eelgrass Mitigation Policy (SCEMP) requirement. According to current surveys, eelgrass to be impacted by the project is 1,373 square feet (sf), which would result in 1,648 sf to be mitigated at the 1.2:1 mitigation ratio. As detailed in the SCEMP, the actual amount of eelgrass to be mitigated shall depend on preconstruction surveys, postconstruction surveys, and surveys at a control site at the appropriate time prior to the beginning of project activities. The preferred mitigation area is located adjacent to the northeast end of Marine Stadium on a City of Long Beach-owned storage site. A qualified biologist shall monitor the successful establishment of the eelgrass mitigation site for a period of 5 years, in accordance with the Southern California Eelgrass Mitigation Policy.

The following mitigation measures are proposed to avoid potential impacts to marine biological resources.

**4.3-4** Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall provide verification that the following provision has been included in the contract for project construction: that a qualified biologist has been retained to implement the following measures, which shall be incorporated during all phases of construction in order to minimize impacts on eelgrass and other biological resources:

- Impacts to eelgrass beds shall be avoided where practical and feasible. A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone. To assist the construction crew in avoiding unnecessary damage to eelgrass, the project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques.
- Barges and work vessels shall avoid impacts to eelgrass beds in Basins 2 and 4. Barges and work vessels shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.
- A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality best management practices (BMPs) are implemented and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within 30 days after the project is completed, a post-construction marine biological survey shall be conducted to determine the extent of any construction impacts on eelgrass habitat. The survey report will be completed within 30 days and shall be submitted to the California Coastal Commission and the United States Army Corps of Engineers.

**4.3-5** Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract. The construction contractor shall be responsible for ensuring that the following measures are implemented during all phases of construction in order to minimize impacts on biological resources:

- No construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil. Any construction debris within the temporary cofferdam area shall be removed from the site at the end of each construction day.

- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. Such measures include deployed oil booms and a silt curtain around the proposed construction zone at all times to minimize the spread of any accidental fuel spills, turbid construction-related water discharge, and debris. Other measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits.
- All trash shall be disposed of in the proper trash receptacles at the end of each construction day. Any construction debris shall be removed from the site.
- During construction, floating booms shall be used to assist in containing debris discharged. Any debris discharged shall be removed as soon as possible but no later than the end of each day.
- If turbid conditions are generated during construction, including dredging or pile driving, a silt curtain shall be utilized to control turbidity. The City of Long Beach shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column.
- Construction methods shall be used that are the least damaging to benthic sediments and organisms.
- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. The City of Long Beach shall have adequate equipment available to contain such spills immediately.

The following mitigation measure is proposed to avoid and minimize impacts to nesting birds subject to the protection of the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.

**4.3-6** Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall ensure that the following provisions are incorporated into the final project plans and construction contract for the purpose of protecting nesting birds within the study area during construction:

- Tree and vegetation removal shall be restricted to outside the likely active nesting season (January 1–September 1) for those bird species present or potentially occurring within the project area. That time period is inclusive of most other birds' nesting periods, thus maximizing avoidance of impacts to any nesting birds. If construction must be completed during the breeding season listed above, surveys for nesting birds shall be conducted

at least 15 days prior to construction. Should an occupied nest be detected, the City will consult with the California Department of Fish and Game (CDFG) to determine an appropriate means for reducing impacts to nesting birds prior to tree removal. If nesting birds are observed within the vicinity, a buffer from the nest shall be established. The size of the buffer is dependent on the species and shall be determined by a qualified biologist. The buffer shall be delineated by roping the boundaries of construction and shall remain in place until the nest is abandoned or the young have fledged.

- 4.3-7** The Marine Bureau Manager 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*, 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 Marine Bureau Manager, 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.

#### **4.3.7 CUMULATIVE IMPACTS**

The cumulative study area for this project would be the project area, the Greater Alamitos Bay area, and Southern California coastal marine environs. The proposed project has the potential to result in a cumulative impact due to the loss of eelgrass habitat. However, Mitigation Measure 4.3-2, requiring successful transplanting of eelgrass, will reduce potential impacts to eelgrass habitat to a less than significant level. The creation of a specific eelgrass mitigation site will be beneficial to natural habitats and the special-interest species

they support within Alamitos Bay as well as adjoining marine environments. Therefore, overall adverse impacts to eelgrass communities will not be cumulatively significant.

Impacts to all species and habitats as a result of project construction and implementation will be temporary. No other project effects on marine, estuary, or avian habitats will occur, nor will there be any contribution to area or regional cumulative effects on habitat or sensitive species. Therefore, the proposed project would not contribute to cumulative losses of sensitive species or habitat, and no significant cumulative biological impacts would occur as a result of implementation of the proposed project.

#### **4.3.8 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS**

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.