3.3

BIOLOGICAL RESOURCES

3.3.1 Introduction

This section describes the existing biological resources in the San Pedro Waterfront Project study area, outlines the applicable regulations, analyzes the potential impacts on biological resources for the proposed Project and alternatives, and describes appropriate mitigation measures. The study area for biological resources is illustrated in Figure 3.3-1 and encompasses the aquatic and upland environs from the Vincent Thomas Bridge south to the Federal Breakwaters. The entire upland component of the proposed Project is located on the west side of the Main Channel of the Los Angeles Harbor. The study area encompasses the combined footprints of each alternative including Inner and Outer Harbor aquatic areas. Outer Harbor study area limits considers an area up to 20 nautical miles from the entrance to the Los Angeles Harbor. The study area limits for terrestrial biological resources includes a 100-foot buffer to determine adjacent biological resources that may be indirectly impacted by development of the proposed Project. However, the biological resources are addressed in the context of the surrounding area and environmental setting, which may extend beyond the study area, as applicable.

The biological resources of the Los Angeles Harbor have been studied for many years and reported in the form of project EIRs or EISs (Jones & Stokes 2002; e2M Inc 2003; USACE and LAHD 1992) and baseline studies prepared for the Ports (MEC 1987, 2002). Older reports provide information that is useful in describing trends in environmental conditions that affect the biological communities in the study area (HEP 1980). This section summarizes information from these reports and other sources cited in the text as they apply to the proposed Project and its alternatives. Reconnaissance-level fieldwork was performed by ICF Jones & Stokes biologists in September, October, and November 2005, and February and March 2008 to review existing conditions reported in earlier documents. In addition to the reconnaissance-level work, a routine-level delineation of federal and state jurisdictional waters/wetlands was conducted in November 2005 at the northeast corner of 22nd Street and Crescent Avenue (i.e., 22nd Street/Old Tank Farm Land). The fieldwork was performed by Andy Wones, Tricia A. Campbell, and Kurt F. Campbell of ICF Jones & Stokes.

The data and descriptions of habitat conditions in the environmental setting section rely on a variety of reports and data collected over a number of years. The primary source of biological data is from the Port-wide biological surveys conducted in 2000 (MEC Analytical Systems 2002), augmented with more recent data as cited in this document. For these reasons, data and descriptions presented in the environmental setting section represent the baseline conditions for evaluation of impacts.

It should be noted that the main impetus on region-wide marine environmental changes are warm-water El Niño Southern Oscillation (El Niño) episodes and a rebound cold-water effect termed La Niña. These have far-ranging effects on marine species, shifting their centers of distribution and thereby affecting their populations in the Southern California Bight (Bight) by promoting warmer water species during El Niños and colder water species during La Niñas. The largest El Niño of the past century occurred in 1997-1998; it was followed by a fairly strong La Niña occurring in 1999-2000. The baseline survey of 2000 occurred just following the cold-water event. Several milder warm-water and cold-water events have occurred since (NOAA 2008). Marine environmental conditions in early 2008 are typical of a La Niña event. Although no comprehensive assessment has been made recently on the cumulative effects on marine biota from these warm-water and cold-water events during the past 7 years, it appears likely that environmental conditions affecting the harbor area are near that of average conditions, neither favoring warm- or cold-tolerant species.

3.3.2 Environmental Setting

The San Pedro Waterfront Project study area lies within the Port of Los Angeles/Los Angeles Harbor and, along with the Long Beach Harbor, comprises San Pedro Bay. This area has been an active port for approximately 100 years and has undergone significant physical changes as the area was converted to port use. These changes included constructing the San Pedro and Middle Breakwaters, deepening of navigational channels and basins, and construction of new land to support cargo terminals and other Port uses. These modifications have resulted in new, largely deeper water habitats and modified circulation patterns. In addition, the Los Angeles Harbor/study area is surrounded by industrial, commercial, and residential areas; therefore, the waters and habitats of the harbor are greatly influenced by these surrounding uses.

The Los Angeles Harbor is part of the Dominguez Channel watershed, which receives stormwater input from approximately 80 square miles in and around the Port. Discharges from the watershed, including the industrial, commercial, and recreational uses within the Port, have strongly defined the physical conditions of the Los Angeles Harbor, and have influenced water quality and sediment quality conditions. Even with these inputs, the Los Angeles Harbor is primarily marine with salinities rarely varying more than 1 part per thousand, although some reduction in salinities can be found immediately adjacent to storm drains and at the mouth of the Dominguez Channel. Prior to the 1980s, Los Angeles Harbor waters were significantly impaired by lack of circulation and unregulated discharges of runoff and

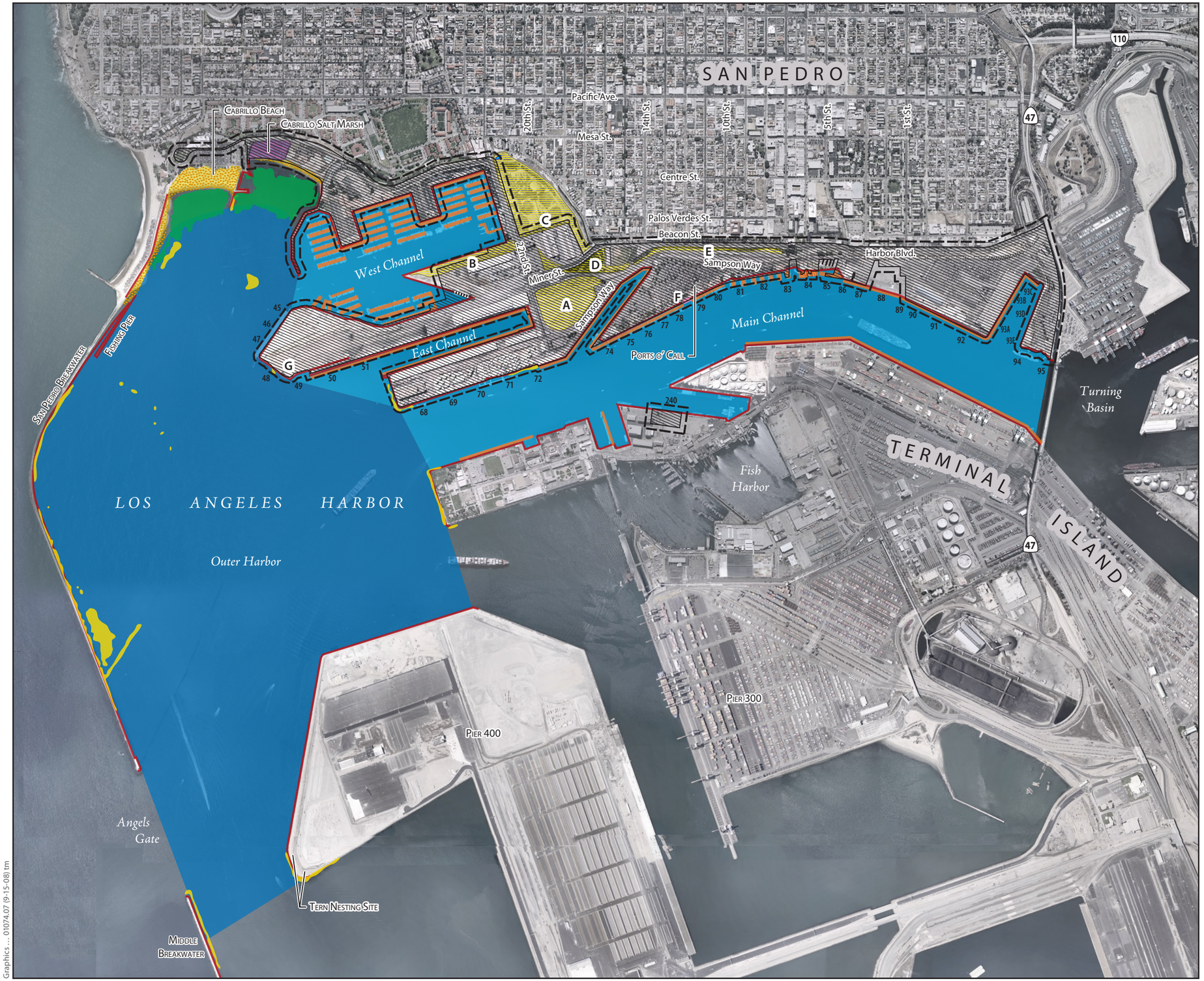

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Figure 3.3-1
Biological Resources in the San Pedro Waterfront Project Area

Legend

- Study Area *
- Project Area
- 45 Berth Numbers

HABITATS

- Ruderal
- Freshwater Marsh
- Beach
- Coastal Salt Marsh
- Vegetated (*Salicornia* sp.)
- Mudflat
- Riprap/Vertical Bulkhead
- Piling
- Eelgrass
- Kelp
- Channel
- Outer Harbor—Non-Channel

*Note: The Outer Harbor study area limits considers an area up to 20 nautical miles from the entrance to the Los Angeles Harbor. The study area limits for terrestrial biological resources includes a 100-foot buffer to determine adjacent biological resources that may be indirectly impacted by development of the proposed Project.

VACANT LANDS

- **A** 22nd Street at Sampson Way Land
- **B** 22nd Street at Cabrillo 22nd Street Restaurant Land
- **C** 22nd Street/Old Tank Farm Land
- **D** Miner Street/Bloch Ball Field Land
- **E** Sampson Way Vegetation
- **F** Berth 78 Mudflat
- **G** Rear Berth 49-51

N

0 1,000 2,000 3,000 4,000
feet

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process waters. Environmental studies of the harbor indicate water and sediment quality have improved over time with the advent of federal and state water quality regulations governing wastewater and stormwater management (i.e., the Clean Water Act and Porter-Cologne Water Quality Control Act, respectively) and industrial uses of the harbor (HEP 1980; MEC Analytical Systems 2002). Water and sediment conditions have improved dramatically since the 1950s. Implementation of water quality regulations and associated clean-up measures indirectly included dredging/removal of contaminated sediments from the harbor as part of channel deepening and land construction projects.

In response to the improved physical conditions in the harbor, the Los Angeles Harbor marine environment has also improved (MEC Analytical Systems 2002), and provides habitat to a variety of aquatic species. The protected environment and higher temperatures give the harbor value as a nursery area for juvenile fish, and provide a diversity of habitat that contrasts with exposed coastal habitat. The harbor is primarily tidal open water habitat with value to marine resources such as marine fish, birds, and the marine food chains that support these consumers. Harbor marine habitat includes rearing habitat for both pelagic and demersal marine species. The terrestrial/upland areas within the Port are heavily modified and/or developed and with some minor exceptions provide only highly disturbed and remnant or ruderal (weedy) habitats. A photomontage of existing conditions along the waterfront and undeveloped portions of the uplands in the study area is provided as Appendix E.1.

The existing terrestrial resources within the Port also are largely a by-product of Port activities over the last century. Within the study area, essentially all uplands have been heavily modified and/or developed. Consequently, existing terrestrial biological resources are considered to be low quality, localized, or absent in most areas.

3.3.2.1 Terrestrial Habitats

Within the study area, the terrestrial environment can be classified as either developed or vacant land. *Terrestrial* in this document is defined as land that lies outside of tidal influence, thus capturing uplands but also encompassing lands that may have freshwater influences. Data analyzed for terrestrial habitats included reconnaissance-level site visits, review of aerial photography, and review of current biological studies.

The most common flora species observed within the study area include sea rocket (*Cakile maritima*), tree tobacco, (*Nicotiana glauca*), Bermuda grass (*Cynodon dactylon*), puncture vine (*Tribulus terrestris*), and sow thistle (*Sonchus oleraceus*), all of which are nonnative to North America (SAIC 2004, 2007). Incidental pampas grass (*Cortaderia jubata*), a nonnative, as well as the native mule fat (*Baccharis salicifolia*), telegraph weed (*Heterotheca grandiflora*), western ragweed (*Ambrosia psilostachya*), and horseweed (*Conyza canadense*) also occur within the study area (SAIC 2007). Native plants sparsely occur throughout the study area. Native plant species were recorded in a small disturbed area at the rear of Berths 49–50 and at the 22nd Street Tank Farm site where coyote bush (*Baccharis pilularis*), four-winged saltbush (*Atriplex canescens*), and mule fat (*Baccharis salicifolia*) are found along

with several nonnative invasive species such as curly dock (*Rumex crispus*), crystal ice plant (*Mesembryanthemum crystallinum*), and pampas grass (*Cortaderia selloana*). Other native plants occur within the Salinas de San Pedro Salt Marsh, which are described in detail in Section 3.3.2.7.1. A list of terrestrial flora and fauna observed during the reconnaissance-level fieldwork is provided in Appendix E.2. All wildlife species having potential to occur and/or known to occur within the study area are adapted to human-disturbed landscapes. The majority of terrestrial birds (listed in Section 3.3.2.5) that may occur at the Port are migratory and would be present during fall, winter, and/or spring but are not expected to breed within the study area.

3.3.2.1.1 Developed Lands

The developed lands include a mix of commercial and industrial activities. Developed areas include maintenance and administrative buildings, parking areas, access roads, wharves, roadways, container storage yards, retail stores, restaurants, hotels, youth facilities, fish distribution markets, and the Cabrillo Marine Museum. Many of these buildings are surrounded by landscape plantings that provide some value to native and nonnative wildlife (i.e., birds) in the form of roosting and nesting habitat. Dominant bird species detected during the field work in these areas included black-crowned night heron (*Nycticorax nycticorax*), ring-billed gull (*Larus delawarensis*), California gull (*L. californicus*), western gull (*L. occidentalis*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), common raven (*C. corax*), European starling (*Sturnus vulgaris*), yellow-rumped warbler (*Dendroica coronata*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). Of these birds, rock pigeon, European starling, and house sparrow are nonnative species.

Black-crowned night heron nests have been observed in the past in nonnative ficus trees present at Berth 78–Ports O'Call and are also known to roost at this location. Surveys of black-crowned night heron conducted during June and August 2002 recorded four nests, four chicks, 10 young of the year, four first-year juveniles, three second-year juveniles, and 23 adults. For great blue herons (*Ardea herodias)*, these data recorded 21 nests, 16 chicks, and two adults (MBC Applied Environmental Sciences 2002). Additional surveys were conducted in May 2008, but resulted in negative findings for nesting black-crowned night heron and great blue heron (Appendix E.3). Details regarding these bird species are provided in Section 3.3.2.4, "Water Birds."

A single terrestrial mammal, domestic cat (*Felis catus*), was commonly observed within the study area. Other terrestrial mammals detected during the reconnaissance-level work include Norway rat (*Rattus norvegicus*), black rat (*R. rattus*), house mouse (*Mus musculus*), Virginia opossum (*Didelphis virginiana*), and common raccoon (*Procyon lotor*). Both species of rats and house mouse are nonnative.

3.3.2.1.2 Vacant Lands

The vacant lands within the study area all show signs of long-term man-made disturbances and thus have retained minimal habitat value. The types of disturbances detected include mechanical soil disturbance, soil deposition, soil compaction, gravel and/or broken asphalt/concrete deposition, and dominance of nonnative weedy (ruderal) vegetation. Figure 3.3-1 provides the locations of vacant lands that were evaluated for potential biological resource value and uses. These areas are located along 22nd Street between Sampson Way and Crescent Avenue and to the rear of Berths 49–51 and Berth 78–Ports O'Call.

22nd Street at Sampson Way Land (location A on Figure 3.3-1). The lot located at the northwest corner of 22nd Street and Sampson Way is compacted soils with a thin layer of gravel. Vegetation is sparse and composed of ruderal vegetation such as flax-leaved horseweed (*Conyza bonariensis*), Russian thistle (*Salsola tragus*), cheeseweed (*Malva parviflora*), Spanish brome (*Bromus madritensis*), and rip-gut brome (*B. diandrus*).

The only wildlife detected was Botta's pocket gopher (*Thomomys bottae*) and killdeer (*Charadrius vociferous*). Other wildlife could potentially occur, but likely include only species that are well-adapted to heavily modified human landscapes such as rock pigeon, European starling, house sparrow, and house finch. Based on the conditions at the site, this lot provides very little habitat value.

22nd Street at Cabrillo 22nd Street Restaurant Land (location B on Figure 3.3-1). This site is a rectangular-shaped piece of land located along the south side of 22nd Street and adjacent to the Cabrillo 22nd Street Restaurant. This land shows signs of mechanical disturbance and is dominated by nonnative ruderal vegetation such as white-stem filaree (*Erodium moschatum*), Russian thistle, smilo grass (*Piptatherum miliaceum*), bromes, Bermuda grass, knotweed (*Polygonum* sp.), cheeseweed, and Australian saltbush (*Atriplex semibaccata*). Wildlife detected and/or expected to occur are those well-adapted to highly disturbed human landscapes such as great blue heron, black-crowned night heron, American kestrel (*Falco sparverius*), killdeer, rock pigeon, Say's phoebe (*Sayornis saya*), Botta's pocket gopher, black rat, and Norway rat. None of these bird species are expected to nest at the location but could sparingly use it for roosting and foraging.

22nd Street/Old Tank Farm Land (location C on Figure 3.3-1). This vacant area is located at the northeast corner of 22nd Street and Crescent Avenue and is colloquially known as the Old Tank Farm site. This roughly 25-acre lot includes all of the open land between Crescent Avenue and Miner Street. Unlike most of the open land remaining within the study area, this site has retained some natural components. The soils are saline and are vegetated by ruderal weedy species that are both native and nonnative, with nonnative species comprising the greatest percentage of cover. Soils in this area are disturbed. Based on the soils, this area was likely once the interface of freshwater and saltwater influences in the form of a freshwater/salt marsh complex with some tidal exchange perhaps in the first half of the 20th century. A small freshwater marsh (approximately 0.30 acre and 225 feet long by 50 feet wide) is located at the west end of this vacant lot. The soils contain hydric indicators (e.g.

oxidized rhizospheres) and standing water. The source of hydrology is a combination of direct precipitation, runoff from development, and seepage through the bluff from natural and/or municipal sources. Overall, this vacant lot provides open space that is used by common native and nonnative wildlife species for roosting and foraging.

A reconnaissance-level site visit conducted on January 10, 2005 by ICF Jones & Stokes biologists included a preliminary wetland delineation of a freshwater marsh area located in the far western corner of this portion of the proposed Project. This marsh appeared following the demolition of the 22nd Street Tank Farm. The results of the delineation, as preliminarily verified in a memorandum by USACE Regulatory Division staff in January 2007, supported the finding that this coastal freshwater marsh area would likely be considered an isolated wetland, and therefore, would not be regulated pursuant to Section 404 of the CWA. A copy of the memorandum is included as Appendix E.4. Furthermore, this area would be avoided by the proposed Project; thus, it would not be included in the Section 404 permit for fill issued for the proposed Project.[1]

Under the state Lake or Streambed Alteration Program (Sections 1602 of the California Fish and Game Code), the freshwater marsh is a state jurisdictional "lake" with adjacent riparian vegetation. The RWQCB can regulate isolated wetlands under the Porter-Cologne Water Quality Control Act. The total state jurisdictional area of this isolated wetland is 0.30 acre. The coastal freshwater marsh also meets the criteria for wetlands under the California Coastal Act. The total area of jurisdiction is congruent with Streambed Alteration Program jurisdiction in this case, and totals 0.30 acre.

None of the plants detected during the fieldwork in this location is rare or uncommon but rather are species highly adapted to human disturbances. The dominant plants noted included crystal ice plant (a common landscape species), white amaranth (*Amaranthus albus*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Picris echiodes*), wild radish (*Raphanus sativus*), big saltbush (*Atriplex lentiformis*), Australian saltbush, nettle-leaved goosefoot (*Chenopodium murale*), beet (*Beta vulgaris*), Russian thistle, alkali heath (*Frankenia salina*), white-stem filaree, cheeseweed, high mallow (*Malva sylvestris*), curly dock, prairie bulrush (*Scirpus maritimus*), bromes, Bermuda grass (a landscape species), salt grass (*Distichlis spicata*), smilo grass, slender cattail (*Typha domingensis*), and broad-leaved cattail (*T. latifolia*). Cattails are restricted to the small remnant coastal freshwater marsh located at the base of the hillside at the very corner of 22nd Street and Crescent Avenue. The location of the remnant coastal freshwater marsh is shown on Figures 3.3-1 and 3.3-2.

Wildlife detected and/or expected to use this area are adapted to heavily disturbed landscapes. The following species were detected during the site visit in November 2005: orange sulfur (*Colias eurytheme*), gulf fritillary (*Agraulis vanillae*), painted lady (*Vanessa cardui*), side-blotched lizard (*Uta stansburiana*), great blue heron, red-

[1] As a result of the U.S. Supreme Court's 2001 SWANCC decision (Solid Waste Agency of Northern Cook County v. U.S. Corps of Engineers, 531 U.S. 159 (2001) ("SWANCC")), hydrologically isolated, intrastate, nonnavigable waters and wetlands cannot be regulated based solely on presence of migratory birds (i.e., the presence of migratory birds is not a legally recognized interstate or foreign commerce connection).

Figure 3.3-2
San Pedro Waterfront—
Wetland Delineation

Legend

⊗ ***SP5*** Sample point

Jurisdictional area, state lake or streambeds (Section 1602), and California Coastal Commission wetlands

N

0 100 200 300 400 500
feet

Base map: www.terraserver-usa.com

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tailed hawk (*Buteo jamaicensis*), American kestrel, killdeer, rock pigeon, mourning dove, Anna's hummingbird (*Calypte anna*), rufous hummingbird (*Selasphorus rufus*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), loggerhead shrike (*Lanius ludovicianus*), American crow, horned lark (*Eremophila alpestris*), northern mockingbird *(Mimus polyglottos)*, European starling, yellow-rumped warbler, common yellowthroat (*Geothlypis trichas*), savannah sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), red-winged blackbird (*Agelaius phoeniceus*), western meadowlark (*Sturnella neglecta*), house finch, and house sparrow, Virginia opossum, Botta's pocket gopher, domestic dog (*Canis familiaris*), red fox (*Vulpes vulpes*), common raccoon, and domestic cat. The majority of these species are native to the region and are expected to use the site for foraging and roosting with most use expected during fall/spring and winter months as birds migrate through and/or over-winter in the region. Species of birds likely to breed in limited numbers at this location include killdeer, Anna's hummingbird, loggerhead shrike, western meadowlark, and house finch. All other bird species are expected to breed nearby or migrate from the region before summer (e.g., Say's phoebe, yellow-rumped warbler, savannah sparrow, and white-crowned sparrow).

Miner Street/Bloch Ball Field Land (location D on Figure 3.3-1). The vacant lot adjacent to Bloch Ball Field is covered in ruderal vegetation like that described above for the 22nd Street at Sampson Way Land. The lot is a mosaic of weedy nonnative vegetation and compacted soils. Wildlife detected and/or expected to occur in limited numbers include those well-adapted to urban settings such as killdeer, rock pigeon, mourning dove, black phoebe, Say's phoebe, American crow, common raven, horned lark, northern mockingbird, European starling, savannah sparrow, white-crowned sparrow, Brewer's blackbird, house finch, house sparrow, and Botta's pocket gopher.

Sampson Way Land (location E on Figure 3.3-1). This area is a narrow linear strip of open space that is vegetated by ruderal vegetation similar to that described above for the 22nd Street at Sampson Way Land. Wildlife detected and/or expected to occur in small numbers include those well-adapted to urban settings such as killdeer, rock pigeon, mourning dove, black phoebe, Say's phoebe, American crow, common raven, horned lark, northern mockingbird, European starling, savannah sparrow, white-crowned sparrow, Brewer's blackbird, house finch, house sparrow, and Botta's pocket gopher.

Mudflat at Berth 78–Ports O'Call (location F on Figure 3.3-1). Within the study area there are two locations where mudflats are found: a small (0.175-acre) area at Berth 78–Ports O'Call and a 0.87-acre area located within the Salinas de San Pedro Salt Marsh. The mudflat at Berth 78–Ports O'Call is essentially a low, flat area landward of shoreline protection rock that is tidally inundated and has been the site of fine sediment deposition. This area was created at the time of development of the adjacent fish retail market deck that extends over the intertidal area.

Rear Berths 49–51(location G on Figure 3.3-1). A small amount of weedy nonnative vegetation mixed with remnant coastal sage scrub species was observed in the rear of Berths 49–51. Native plant species include coyote bush, four-winged salt

bush, and mule fat interspersed with nonnative species such as curly dock, crystal ice plant, and pampas grass.

3.3.2.2 Benthic Environment

The benthic (bottom) environment includes benthic infauna (in the sediment) and the epibenthos (living on but not in the bottom sediments), sea floor, sediment-water interface, and associated organisms. The relevance of describing the separate components is that this section is inclusive of the epibenthic and infaunal communities and their environments. Benthic habitats were surveyed during 1986–1987 (MEC Analytical Systems 1988) and during 2000 (MEC Analytical Systems 2002). The Los Angeles and Long Beach Harbors (LA/LB Harbors) area has sediments that are predominantly sand/silt (HEP 1980; MEC Analytical Systems 2002), although the proportions and distributions vary according to area. Current velocity affects sediment sorting and deposition. Areas with the greatest proportion of sand are located in the Main Channel where currents are stronger. Weaker current velocities within the harbor (e.g., Inner Cabrillo Beach and the slips of Inner Harbor) tend to allow fine particles to settle, resulting in deposition of finer substrates. Clay makes up less than 25% of the sediment composition throughout Los Angeles Harbor. Clay and silt substrates accumulate primarily in areas of reduced current velocity and deeper basins that are protected from wave action.

3.3.2.2.1 Soft-Bottom Habitats

Organisms that live in (benthic infauna) and on (benthic epifauna) the soft-bottom habitats can be referred to as the benthic invertebrate community. These organisms not only live on the soft-bottom habitats, but also contribute to and modify the character of the soft-bottom habitats. Benthic organisms are involved in a number of sediment processes. They may ingest sediment, causing mechanical abrasion of the solid particles, which accelerates the dissolution of materials such as calcium carbonate. Ingestion also results in uptake of organic matter. Turning over superficial sediment layers by mud-eating and burrowing organisms aids in the interchange of water between the sediment and the overlying water. This results in oxygenation of the deeper sediment layers and enhancement of substrate for bacterial action.

Benthic marine organisms are also an important component of harbor food webs. Benthic invertebrates consume plankton and detritus and are in turn consumed by fish, crustaceans, and other benthic organisms.

Soft-bottom habitat supports both infaunal organisms that burrow in the substrate and epifaunal animals that live on the surface of the substrate. Epifaunal invertebrates (e.g., shrimp, crabs, scallops), which live on the soft-bottom habitat rather than within, are generally larger than infaunal (those animals that live within the sediments such as worms, clams, snails, anemones, and other species), also referred

to as macroinvertebrates. Epifaunal species feed directly or indirectly on the infauna, and many, in turn, are consumed by fish and other organisms.

In the 1950s, some portions of the benthic habitats in the harbor were devoid of macroscopic animal life due to high organic loading and low dissolved oxygen, and a subsequent elevation of hydrogen sulfide concentration (HEP 1976; HEP 1980; USACE and LAHD 1984). Data from the 1970s showed that the polychaete *Tharyx parvus* (a pollution-tolerant species) accounted for most of the benthic organisms identified to the species level from soft-bottom habitats (HEP 1976; USACE and LAHD 1980).

Improvements in water quality have contributed to the establishment of diverse assemblages of benthic animals in previously disturbed Inner Harbor and channel areas (USACE and LAHD 1980). Data from 1986, 1987, and 2000 indicated that polychaetes were still numerically dominant, with crustaceans, mollusks, minor phyla, and echinoderms present in decreasing order of abundance (MEC Analytical Systems 1988, 2002).

In 1986 and 1987, benthic invertebrates were sampled in the Inner Harbor for LAHD (MEC Analytical Systems 1988). There were 126 taxa collected. Of the 126 taxa, 26 were relatively abundant, indicating a moderately diverse assemblage. Some of the abundant species sampled are more commonly associated with bays, but 73% of the abundant species typically occur in open coastal habitats. Twenty-three percent of the abundant species are considered tolerant of pollution or environmental stress, and only one has been associated with relatively uncontaminated coastal habitats (MEC Analytical Systems 1988). These data indicate that the Inner Harbor supports a benthic invertebrate population that is a mixture of species that have an affinity for a variety of habitats, with a predominance of bay species. In comparison, benthic invertebrates found in the Outer Harbor were dominated by coastal species.

Studies performed in 1950 by Don Reish (Reish 1950) showed low species diversity and species composition that included high numbers of species considered to be pollution-tolerant organisms. Benthic surveys conducted in 2000 indicate that species diversity has increased since studies performed during 1950, and that there is less dominance by pollution-tolerant benthic infauna species (MEC Analytical Systems 2002).

As noted earlier, this improvement has resulted from regulation of industrial, domestic sewage, and storm drain discharges to the harbor. In addition, dredging to deepen navigation channels and turning basins in Los Angeles Harbor during the early 1980s removed a considerable amount of polluted sediment as well as the infauna. These dredged areas have been recolonized and a mature assemblage, which is biologically similar to non-dredged areas, has developed (MEC Analytical Systems 1988). Dredging has continued through recent years, including maintenance dredging at selected berths and capital dredging associated with wharf improvement projects and a wide-spread channel deepening project initiated in 2002.

In 2000, benthic invertebrates were sampled within the larger harbor complex. A total of 400 taxa representing at least 361 individual species were collected. The

greatest number of species (mean > 40 unique species) was collected in the Cabrillo and Pier 300 shallow-water habitats, deepwater habitat in the Outer Harbors, and the Main Channel of the Los Angeles Harbor. The fewest number of species (<25 unique species) was found at the Cabrillo Marina, northern channel between Piers 300 and 400, Fish Harbor, and Consolidated Slip in the Inner Los Angeles Harbor (MEC Analytical Systems 2002).

Inner to Outer Harbor gradients in physical and biological characteristics have created discrete faunal zones with distinct species complexes in the harbor area (HEP 1976). Bottom depth, sediment particle size, length of time since dredging/disposal, habitat quality, and various water quality parameters (in particular secchi depth and dissolved oxygen concentration) have been shown to correlate with diversity and number of taxa (taxonomic groups) of benthic invertebrates (MEC Analytical Systems 1988, 2002).

Soft-bottom upper intertidal habitat includes beaches and mudflats. There are two sand beaches (at Inner Cabrillo Beach and Cabrillo Beach Youth Camp) and two mudflat areas (at Berth 78–Ports O'Call and the Salinas de San Pedro Salt Marsh) in the study area. These areas are intermittently submerged (from tidal action) and support intertidal benthic species. The mudflat areas are protected from wave action and as a result are depositional areas for fine sediment. Benthic organisms in mudflats (e.g. polychaete worms, molluscs) are typically more tolerant of low oxygen conditions than invertebrates in higher energy habitats.

3.3.2.2.2 Hard-Substrate Habitats

Hard-substrate habitats provide substantial surface area for the attachment of algae and epifaunal invertebrates, which, in turn, support a diverse community of organisms. The fauna associated with riprap habitats form three major zones: upper intertidal, lower intertidal, and subtidal.

Riprap epifauna studies in the harbor during 1986 and 1987 included observations at 100 stations, including one station in the West Channel (MEC Analytical Systems 1988). Species of epifauna normally found in bays were the dominant species in the Inner Harbor, contrasted to the Outer Harbor where coastal species dominated. This trend was similar to the trend observed for benthic invertebrate species.

Studies in the Outer Harbor indicated that tidal elevation was the major variable that dictated species assemblages and that station location was the secondary variable. Distinct tidal zonation was observed with numbers of species increasing with increasing depth, but total epibenthic abundance was similar throughout the upper and lower intertidal and subtidal zones (MEC Analytical Systems 2002). In addition, the greater variety of species on riprap in the Outer Harbor relative to the Inner Harbor was consistent among recent and historical studies (MEC Analytical Systems 2002). Recolonization studies (MEC Analytical Systems 1988) indicated that recolonization rates were lowest and most variable in the upper intertidal zone, and highest in the subtidal zone. Complete recovery of the epibenthos was estimated to

require 37 months in the upper intertidal zone, 33 months in the lower intertidal zone, and 22 months in the subtidal zone (MEC Analytical Systems 1988).

When the riprap community was sampled in 2000, a total of 237 species of invertebrates was identified. Barnacles dominated the upper intertidal and were conspicuous in the middle to lower intertidal strata; the non-indigenous Mediterranean mussel (*Mytilus galloprovincialis*) was a dominant species in the lower intertidal and shallow subtidal. Tanaid and amphipod crustaceans also were dominant species in the shallow subtidal. Other commonly observed fauna included crabs, sea anemones, sea urchins, and starfish in lower intertidal and shallow subtidal zones (MEC Analytical Systems 2002).

Hard substrates dominate benthic habitat of the intertidal zone in the form of docks, piers, bank protection structures, and piles associated with Port facilities. The Salinas de San Pedro Salt Marsh was created in 1982 by the Port of Los Angeles as mitigation for the filling of a slip at Berth 232 on the Main Channel of the Los Angeles Harbor.

3.3.2.2.3 Marine Algae

Marine algae are primary producers (i.e. they use photosynthesis to capture light energy), providing a food source for herbivorous invertebrates and fish. With the availability of sufficient light and substrate for attachment, marine algae can develop dense stands providing food and habitat for various marine animals.

While nowhere within the harbor is algal diversity high, there is a general decline of algal diversity and cover from the outermost portions of the harbor to the innermost channel environments (MEC Analytical Systems 2002; USACE and LAHD 1984).

In the Inner Harbor, tidal flushing is reduced, wave surge and currents decrease, water temperatures and sedimentation increase, dissolved oxygen levels decline, and freshwater intrusion decreases salinity during the winter while evaporation increases salinity during the summer. Each of these factors can affect the potential species supported at a given location. Restrictions in tidal circulation tend to inhibit the highly productive macroalgae (kelp) such as *Egregia* and *Macrocystis*. As a result, *Sargassum*, *Ulva*, and *Colpomenia* were the dominant algal species consistently encountered along Inner Harbor transects where tidal flushing is greatly reduced. *Sargassum*, although an upright branching species, does not provide the same level of structure and colonizing space as the larger kelp species. *Ulva* and *Colpomenia* are smaller non-articulated forms that provide food for other organisms, but do not provide structure to the water column or a stable substrate for encrusting organisms (MEC Analytical Systems 2002).

Algal diversity is typically much higher in the Outer Harbor compared with the Inner Harbor. The greatest diversity has been observed along the San Pedro Breakwater (12 dominant species); diversity was also high where riprap was located (11 dominant species). However, only three species were observed on the Middle Breakwater and near the General American Transportation (GATX) Terminal in Los

Angeles Harbor due to sea urchin grazing and dominance of *Macrocystis*, respectively.

In general, *Macrocystis* and *Egregia* dominated the Outer Harbor. Understory species, such as the coralline red alga, *Corallina* spp.; the red alga *Rhodymenia*; and the brown algae *Dictyota* and *Colpomenia,* were also common in Outer Harbor habitat. In addition, the long-established but introduced alga, *Sargassum muticum*, was also present in some Outer Harbor locations (MEC Analytical Systems 2002).

3.3.2.3 Water Column Habitats

Water column habitats in the study area include mid-channel, pier and piling, eelgrass, riprap, and kelp forest habitats. The distribution of the vegetated and special-habitat types is described below in Section 3.3.2.7. For the purposes of determining the relative value of marine habitat for mitigation accounting, the Los Angeles Harbor is delineated into Inner Harbor and Outer Harbor areas. The location of Inner Harbor (channel) and Outer Harbor water column habitats is shown in Figure 3.3-3.

Mid-channel habitat includes deepwater areas of the Inner and Outer Harbor without adjacent physical structures and typically overlies a soft substrate. In the study area, this includes the portions of the Main Channel, West Channel, and East Channel. This habitat is somewhat protected from wave action but is subject to frequent boat and shipping traffic. Schooling fish and flatfish are commonly found in this habitat type.

Pier and piling habitat are prevalent all along the edges of harbor channels. Surfperch and rockfish are sometimes attracted to pier and piling habitat. Vertical structures found along piers and pilings often provide points of attachment for a variety of invertebrate species including barnacles, anemones, mussels, and worms.

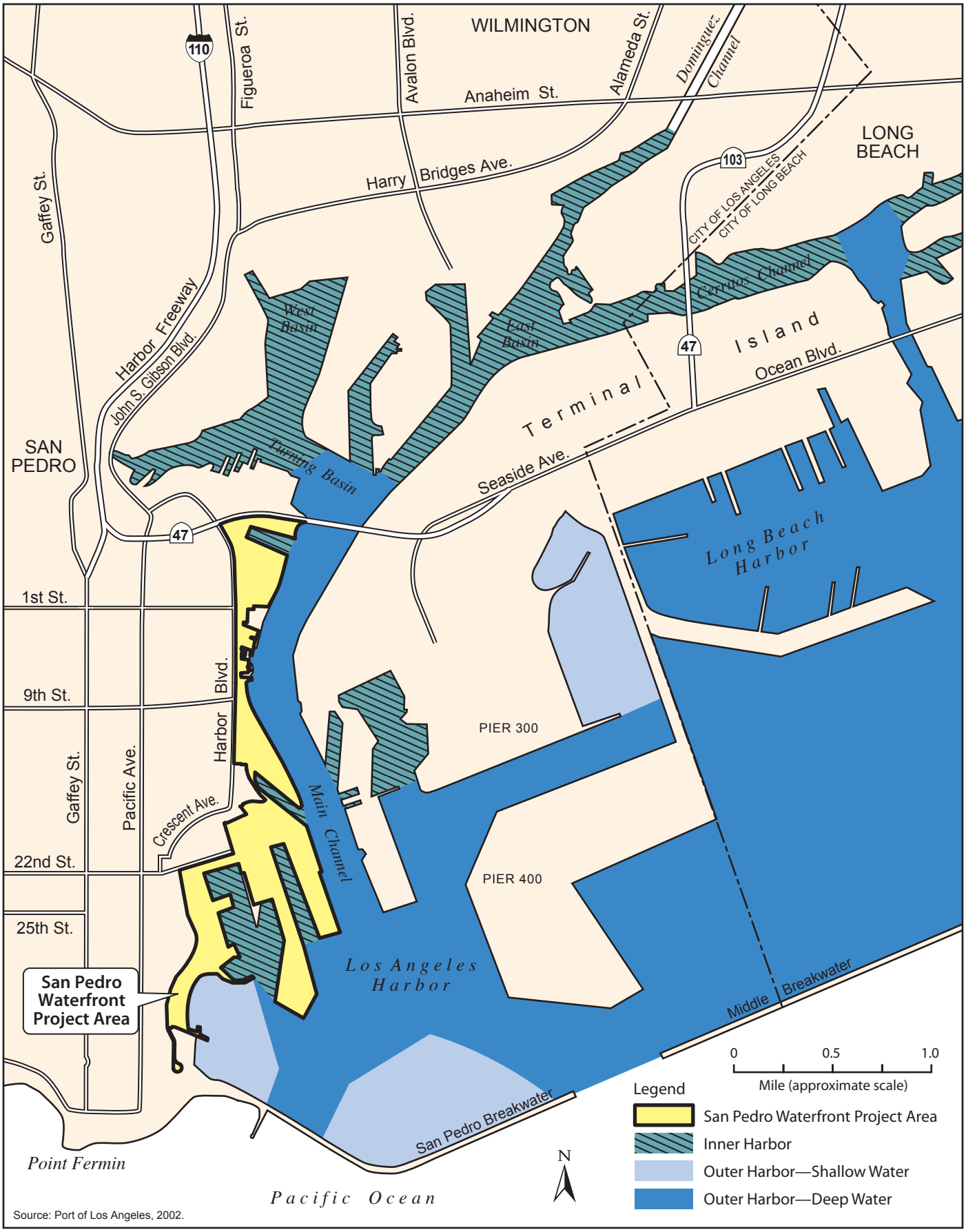
Rocky structures, such as the breakwater jetty, offer attachment sites for kelp and other macroalgae, as well as shelter areas favored by some rockfish species. Kelp forest habitat offers sheltered habitat for several fish species.

Water column habitat associated with eelgrass is an important source of cover for juvenile fish. The invertebrate community that inhabits eelgrass beds provides food for many fish species as well. These attributes make eelgrass an important nursery area for many fish species.

The plankton and fish communities occurring in the study area are discussed below.

3.3.2.3.1 Plankton

Plankton is comprised of non-motile or weak swimming organisms that drift with the currents. Photosynthetic plankton species (primarily single-celled algae) are termed



Source: Port of Los Angeles, 2002.

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Figure 3.3-3
San Pedro Waterfront—Location of Water Column Habitats in the Inner and Outer Harbors

phytoplankton, while planktonic animals are termed *zooplankton*. Plankton is important to estuarine and other marine ecosystems as they form the base of many food webs.

Phytoplankton and zooplankton in the LA/LB Harbors have been described in previous studies (Environmental Quality Analysts-MBC 1978; HEP 1976, 1979). In the Outer Harbor, seasonal phytoplankton patterns have been marked by diatom-dominated spring blooms and more intense dinoflagellate-dominated fall blooms. Phytoplankton blooms have occurred during previous dredging projects, including the Deep Draft Navigation Improvement Project. However, it is not possible to state conclusively whether the plankton blooms observed were a natural occurrence or if they were exacerbated by dredging activities that could have mobilized nutrients from bottom sediments. However, as these occurrences occurred throughout many areas of the Southern California Bight, it is likely the blooms were unrelated to the dredging. In 2004 and 2005, year-long plankton blooms were found up and down the coast of California; these harmful algal blooms (HABs) caused huge losses to the kelp beds in southern California.

Plankton species observed in the Los Angeles Harbor have been typical components of the Southern California Bight shelf plankton community (Barnett and Jahn 1987). Recent studies (MEC Analytical Systems 2002) have focused on the larval fish component of the zooplankton community (the ichthyoplankton).

3.3.2.3.2 Fishes

Fish surveys conducted in 2000 identified a total of 74 individual species from the combined sampling methods at all stations and seasons in the LA/LB Harbors during that year (MEC Analytical Systems 2002). Although fish populations of the entire harbor appear diverse and abundant, a large proportion of the harbor fish community is dominated by three species: white croaker (*Genyonemus lineatus*), northern anchovy (*Engraulis mordax*), and queenfish (*Seriphus politus*) (MEC Analytical Systems 2002). Four other species consistently rank high in abundance in all studies and are considered important residents of the harbor. These are white seaperch (*Phanerodon furcatus*), California tonguefish (*Symphurus atricaudus*), speckled sanddab (*Citharichthys stigmaeus*), and shiner perch (*Cymatogaster aggregata*) (MEC Analytical Systems 2002).

More recent investigations by MEC Analytical Systems (2002) of the entire harbor complex using a variety of sampling gear revealed similar dominance patterns for fish species. Using gear designed to capture demersal (trawls), pelagic (lampara nets), and nearshore fishes (beach seines), 74 species were collected. More species were collected in shallow-water (4–6 meter) locations than in deepwater (11–24 meter) locations.

Northern anchovy was the most abundant species collected with lampara net sampling (68%); white croaker, queenfish, topsmelt (*Atherinops affinis*), Pacific sardine (*Sardinops sagax*), shiner perch, and salema (*Xenistius californiensis*) also had high abundances. The five schooling species (northern anchovy, white croaker,

queenfish, topsmelt, and Pacific sardine) accounted for 90% of the total abundance. The five schooling species along with bat rays (*Myliobatis californica*) and California barracuda (*Sphyraena argentea*) accounted for 77% of the total biomass in lampara samples (MEC Analytical Systems 2002).

In 2000, trawl sampling collected 61 species. Similar to lampara catches, 3 species constituted 89% of the total catch. Trawl sampling collected mostly northern anchovy, with white croaker and queenfish also having high abundances. These three schooling species along with the California halibut (*Paralichthys californicus*), bat ray, and shovelnose guitarfish (*Rhinobatus productus*) accounted for 63% of the total biomass in trawl samples (MEC Analytical Systems 2002).

Beach seining was conducted at Inner Cabrillo Beach and at the beach at Pier 300 where, of the 17 species collected, topsmelt was the most abundant species; arrow goby (*Clevelandia ios*) and diamond turbot (*Pleuronichthys guttulatus*) were also commonly collected. These three species made up 95% of the total beach seine catch (MEC Analytical Systems 2002). California grunion (*Leuresthes tenuis*) spawn at the beach in the study area (NMFS 1991), but are generally only present in large numbers for a few hours at a time while spawning. When spawning, grunion may dominate local fish abundance of the spawning areas.

Harbor-wide (LA/LB Harbors) estimates of the total number of fish were made using recent trawl and lampara net sampling methods during the day and night. For all species combined (day and night sampling), 4.45 million fish were estimated to occupy both harbor areas. The top five species (northern anchovy, white croaker, queenfish, topsmelt, and Pacific sardine) account for nearly 92% of the total estimated fish abundance in the harbor complex. (MEC Analytical Systems 2002.)

The U.S. Fish and Wildlife Service (USFWS) estimated seasonal fish densities from data collected from 1972 through 1982 (LAHD 1993). There is a trend toward higher densities in the summer and fall, ranging from 40–55 fish per 100 m^2 of surface area, to lower densities in the winter ranging from 2–10 fish per 100 m^2 of surface area. Juvenile and adult individuals of most species are more abundant during the spring and summer than in winter (Horn and Allen 1981). The similarity of collections over the years suggests that there have been no long-term, large-scale changes in the harbor fish fauna (MEC Analytical Systems 2002).

The fish community in the Inner Harbor is dominated by a few species that make up a very high percentage of the total catch. The eight most abundant species collected in four surveys (summarized in USACE and LAHD 1984) are: white croaker, northern anchovy, bay goby (*Lepidogobius lepidus*), queenfish, California tonguefish, white seaperch, shiner perch, and Pacific pompano (*Peprilus simillimus*). Bay goby and Pacific pompano appear more abundant in the Inner Harbor than in the Outer Harbor community. Species richness and diversity decrease along a gradient from the Outer Harbor to the Inner Harbor (USACE and LAHD 1984; MEC Analytical Systems 2002).

In general, the habitat value for fish is highest in the Outer Harbor shallow areas followed by deep water in the Outer Harbor and diminishing as one proceeds into the

Inner Harbor and particularly blind slip areas (i.e., slips that are off of the Main Channel and therefore, have limited circulation). Based on review of the last biological baseline (MEC Analytical Systems 2002) by federal and state agencies and LAHD, Outer Harbor habitat values were determined to extend into historically Inner Harbor areas. Specifically, Outer Harbor fish assemblages can now be found up the Main Channel to the area of the Vincent Thomas Bridge (Figure 3.3-3).

Peaks in seasonal abundance and species richness in the Inner Harbor do not coincide with Outer Harbor trends. High abundance and richness in the Inner Harbor occur in winter and early spring, and low abundance and richness occur in summer and early fall. Abundance and species richness may vary seasonally and yearly in the Outer Harbor. Outer Harbor abundance and species richness are high in late spring and early fall, peak in summer, and begin to decrease in late fall to yearly low levels in winter. Seasonal peaks in the Outer Harbor appear to reflect juvenile/young of the year recruitment (Brewer 1983). Summer abundance peaks in the Outer Harbor may be enhanced by recruitment of Inner Harbor species (USACE and LAHD 1984).

Studies of fish larvae and fish spawning have identified trends in abundance, density, and occurrence that help to characterize the harbor in terms of spawning and nursery grounds (MBC 1984; MEC Analytical Systems 1988 and 2002). The harbor is a viable, productive habitat for commercially and recreationally valuable species. The northern anchovy appears to be a key component in the harbor ecosystem and is both a major consumer of zooplankton and a major forage food for fish of higher trophic levels. The northern anchovy uses the area inside and outside the breakwater for spawning, nursery, and adult habitat.

MEC Analytical Systems (2002) found that peaks in the abundance of larval fishes occur in spring and summer with a secondary peak in the fall. Brewer (1983) found a similarity between the abundance of fish larvae and juvenile adults in the harbor. A large number of fish larvae and juvenile adult species have been reported in the harbor (HEP 1979; MEC), which reflects the variety of nursery and adult habitats present.

Species composition of larval fishes varied among different areas and habitats in the harbor. Larval abundance was generally lower on the Los Angeles side of the harbor compared to the Long Beach side (MEC Analytical Systems 2002). Larvae of pelagic or demersal species found over sand and/or mud bottoms as adults generally had a wide dispersal pattern within the harbor complex. In addition, larvae of some species were strongly associated with deep-water habitats while others were strongly associated with shallow-water habitats. For example, bay goby larvae were more abundant at deep water locations. Larvae of flatfish generally had higher abundance in deep water habitats in the Outer Harbor, basins, and channels. Fish associated with aquatic vegetation and/or rocky substrate during some part of their life stage had a more localized larval distribution, which was associated with the Outer Breakwater, riprap around Pier 400, eelgrass beds in the Pier 300 shallow-water habitat, other locations near riprap, or nearby macroalgae beds (MEC Analytical Systems 2002).

3.3.2.4 Water Birds

The Los Angeles Harbor provides valuable foraging, nesting, and roosting habitats for a diverse group of birds. Water birds in this report are defined as species that rely on marine aquatic environs for their lifecycle requirements. These species can range from those that occur in both freshwater and marine water (e.g., herons) to those that are restricted to estuarine/marine waters (e.g., surf scoter). The most recent comprehensive study of the water birds inhabiting the Los Angeles Harbor was conducted in 2000 and included both LA/LB Harbors (MEC Analytical Systems 2002). These studies were performed across a calendar year to capture the temporal and spatial use of these harbors by both resident and migratory bird species. This study documented 67 species of birds considered dependent on marine aquatic habitats. Appendix E.5 provides a list of all bird species recorded within the Los Angeles Harbor during the 2000 study. (MEC Analytical Systems 2002). Of those species detected, two are federally and state endangered—California brown pelican (*Pelecanus occidentalis californicus*) and California least tern (*Sternula antillarum brownii*)—with both species a common occurrence within the harbor at the proper season.

Qualitatively, open water, riprap, dock/pilings, and boat/barges are the most abundant habitat types available to water birds within the harbors with mudflat habitat and sand beach being the least available. Within the study area, mudflat habitat is limited to two locations: 1) Berth 78–Ports O'Call adjacent to the fish market and 2) the Salinas de San Pedro Salt Marsh area. Sand beach occurs at Inner Cabrillo Beach and along a portion of the San Pedro Breakwater. Although sand beaches can still be found along much of the southern California coastline, these areas are generally degraded as bird habitat due to trash, mechanical raking, petroleum tar, and heavy human recreational use. In contrast, mudflat habitat has declined dramatically over the last 100 years in southern California and is now limited to a small number of protected estuaries along the coastline.

The most well-represented bird groups found within the harbors are gulls (e.g., Heermann's gull [*Larus heermanni*], ring-billed gull, California gull, western gull), terns (i.e., California least tern, Forster's tern [*S. forsteri*], elegant tern [*Thalasseus elegans*], royal tern [*T. maximus*], Caspian tern [*Hydroprogne caspia*]), black skimmer (*Rynchops niger*), California brown pelican, and waterfowl (e.g., western grebe [*Aechmophorus occidentalis*], Brandt's [*Phalacrocorax penicillatus*], double-crested cormorants [*Phalacrocorax auritus*], surf scoter [*Melanitta perspicillata*], and bufflehead [*Bucephala albeola*]), which when foraging would feed on fish and invertebrates. While shorebirds and wading/marsh birds occur in low abundances, those species regularly occurring include surfbird (*Aphriza virgata)*, black-bellied plover (*Pluvialis squatarola)*, western sandpiper (*Calidris mauri)*, willet (*Tringa semipalmata)*, black oystercatcher (*Haematopus bachmani)*, great blue heron, and black-crowned night heron. Within the harbor, herons and egrets (wading/marsh birds) feed along the water's edge for fish and invertebrates as well as in uplands for small mammals such as Botta's pocket gopher and house mouse. Shorebirds that occur at the Los Angeles Harbor are limited to horizontally placed riprap (e.g., San Pedro Breakwater), beach habitats available at Cabrillo Beach, and the small area of intertidal mudflat located at Berth 78–Ports O'Call and at the mudflat located at

Salinas de San Pedro Salt Marsh. An exception to this is killdeer, a shorebird that is well-adapted to both aquatic and upland habitats and can be regularly found on the vacant lands within the study area.

In the Outer Harbor near Pier 400 (north, west, and south sides), aerial foragers and gulls were the most abundant bird guilds with waterfowl also common. The western gull was common all year while Heermann's gull was common from June through January. Western grebes were also present throughout the year. Four species of terns and black skimmers were observed in the summer. The Caspian tern nested on Pier 400 in 1997 through 2005 (Keane Biological Consulting 2007a, 2007b). Great blue herons were present along the riprap of Pier 400 all year but more abundant in fall and winter. The California least tern and black skimmer are discussed below in Section 3.3.2.7, "Special-Status Species." The elegant tern was present in the harbor year round in 2000, but numbers were greatest during the summer nesting season from late April through August (MEC Analytical Systems 2002). Elegant terns consistently nest at four locations in North America: Bolsa Chica, the San Diego Saltworks, and two islands (Isla Raza and Isla Montague) in the Gulf of California, Mexico (Collins 2006a). Approximately 90–97% of the world population of this species nests on Isla Raza. In addition, elegant terns, predominantly from Bolsa Chica (Collins 2006a), nested in the 12-acre area adjacent to the west side of the least tern nesting area in 1998 and 2000 through 2005, with observations of 166 nests in 2001 to 10,170 in 2004 (Keane Biological Consulting 2005b). This area had been cleared of vegetation through 2004 to provide additional nesting habitat for the California least tern. Approximately 2,700 elegant tern nests were present in 2005, but the terns abandoned the site after a nocturnal predator visited the site, probably moving to Bolsa Chica (Keane Biological Consulting 2005b), and did not nest there in 2006 or 2007 (Keane Biological Consulting 2007a, 2007b). The number breeding at each of the southern California locations has shifted considerably between years (Collins 2006a).

During April 2002, black-crowned night herons were recorded nesting at Berth 78–Ports O'Call. These data recorded 10 roosting adults, two used nests, and one active nest at this location. Black-crowned night heron were also recorded utilizing the Salinas de San Pedro Salt Marsh. Six adults and eight first-year birds were recorded roosting, foraging, and wading near the Cabrillo Boat Launch Ramp, including two adult black-crowned night herons, one banded as a 3-week old chick on July 2, 1996. Surveys for black-crowned night heron conducted during June and August 2002 recorded four nests, four chicks, ten young of the year, four first-year juveniles, three second-year juveniles, and 23 adults. (MBC 2002.) Surveys conducted at Berth 78–Ports O'Call and surrounding vicinity in May 2008 did not identify any active black-crowned night heron nests at this location; however, one Mexican fan palm located at the entrance of Berth 78–Ports O'Call shows evidence of a non-active nest (Appendix E.3). Several trees at Berth 78–Ports O'Call apparently still serve as roosts for this species. Signs of black-crowned night heron roosting (large areas of bird droppings on the ground) were seen at only three trees: one at the south end of the Berth 78–Ports O'Call parking lot, another at the southern-most building, and the third at a large Indian laurel (*Ficus microcarpus*) tree near the SP Slip, where fishing boats are docked.

Surveys conducted for great blue heron in 2000 recorded 21 nests, 16 chicks, and two adults. A pair of great blue herons has also constructed a nest on the high mast lighting standards at Berths 49–51, and a small rookery for both black-crowned night heron and great blue heron has been recorded at the Coast Guard Station at Reservation Point, approximately 0.5 mile from the study area. (MBC 2000.)

During the 2000 baseline MEC study, the majority of bird use within the harbors was in the form of roosting (77%) followed by transiting (12%; i.e., flying over), foraging (11%), courting (0.2%), and nesting (0.1%). The majority of the water birds identified within the harbor likely forage in the Outer Harbor shallow-water habitat and outside the breakwaters in nearshore and offshore waters, and take refuge on the sheltered waters and riprap within the harbors. Within the study area, the Main Channel and the Cabrillo Beach area (encompassing the shallow-water habitat) had the greatest amount of water bird use during the 2000 baseline MEC study.

3.3.2.5 Common Terrestrial Birds

A number of common terrestrial bird species may be found in the study area and adjacent buffer areas. Common species include rock pigeon, mourning dove, American crow, common raven, European starling, yellow-rumped warbler, Brewer's blackbird, house finch, rough-winged swallow (*Stelgidopteryx serripennis*), cliff swallow (*Petrochelidon pyrrhonota)*, barn swallow (*Hirundo rustica)*, and house sparrow. Of these birds, rock pigeon, European starling, and house sparrow are nonnative species. These common species are adapted to urban and disturbed habitats.

3.3.2.6 Common Marine Mammals

Common marine mammals have not been well-studied within Los Angeles Harbor, however, both pinnipeds and cetaceans have been recorded including California sea lion (*Zalophus californianus*), harbor seal (*Phoca vitulina*), Pacific bottle-nose dolphin (*Tursiops truncatus*), common dolphin (*Delphinus delphis*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), Risso's dolphin (*Grampus griseus*), Pacific pilot whale (*Globicephala macrorhynchus*), and gray whale (*Eschrichtius robustus*) (LAHD and Jones & Stokes 2003). The most common marine mammal to the harbor is California sea lion, which can be seen throughout the year foraging within the harbor or resting on buoys, docks, and the breakwaters of the Outer Harbor. Sea lions are commonly found on the Main Channel adjacent to the commercial fish markets and around sport fishing boats at Berth 78–Ports O'Call. Harbor seals are less common than sea lions but individuals can be found sporadically throughout the year either foraging within the harbor or resting on riprap and buoys. Occasional observations of dolphins occur within the harbor, but sightings of whales are rare. (USACE and LAHD 1979.)

3.3.2.7 Special-Status Species

All plant and wildlife species and natural communities in California that have special regulatory or management status were evaluated for potential to occur within the study area. Those that include the study area within their currently known general range and for which suitable conditions exist or may exist in the study area, or that otherwise may be affected by the proposed Project, are listed in a Special-Status Species Information Table in Appendix E.6. The table in Appendix E.6 includes both plant and wildlife species and was developed from a database and literature review using the following steps.

1. The California Natural Diversity Database (CNDDB) (CDFG 2008) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPS 2008) were checked to determine if the known range of special-status species occurred within the USGS 7.5-minute San Pedro, California quadrangle (which includes the study area) and surrounding eight quadrangles.
2. Species were added to these inventories, as appropriate, based on personal knowledge, experience with prior projects in the area, ICF Jones & Stokes internal databases, and published and unpublished references.
3. A review was performed of key publications on regulatory status and/or distribution for species relevant to the region, along with miscellaneous recent publications (e.g., Federal Register), agency announcements, popular and technical news sources (e.g., Endangered Species and Draft Jurisdictional Delineation Report), and frequent communications with other professionals.

3.3.2.7.1 Plants

A total of 18 special-status plants were identified in the literature review as having potential to occur within the geographic vicinity of the study area. The species are: aphanisma (*Aphanisma blitoides*), south coast saltscale (*Atriplex pacifica*), Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), Lewis's evening primrose (*Camissonia lewisii*), southern tarplant (*Centromadia parryi* ssp. *australis*), Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*), salt marsh bird's-beak (*Cordylanthus maritimus* ssp. *maritimus*), Catalina crossosoma (*Crossosoma californicum*), beach spectaclepod (*Dithyrea maritima*), island green dudleya (*Dudleya virens* ssp. *insularis*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), Santa Catalina Island desert thorn (*Lycium brevipes* var. *hassei*), prostrate navarretia (*Navarretia prostrata*), coast woolly-heads (*Nemacaulis denudata* var. *denudata*), Lyon's pentachaeta (*Pentachaeta lyonii*), Brand's phacelia (*Phacelia stellaris*), and estuary seablite (*Suaeda esteroa*).

Of the 18 species of plants reviewed, none of these species has potential to occur within the study area. This determination is based on a combination of factors, including the species' requirements for some combination of soils, hydrology, habitats, elevation range, and/or disturbance tolerance, along with consideration of

the proposed project area condition and observed resources. Refer to the Special-Status Species Information Table in Appendix E.6 for details by species.

3.3.2.7.2 Wildlife

A total of 39 special-status wildlife species were identified in the literature review as having potential to occur within the geographic vicinity of the study area. Of these 39 species, 23 special-status, state, and federally listed threatened or endangered wildlife species are known to be present, at least seasonally, within the study area. Factors considered in determining a species' potential for occurrence included presence of potentially suitable habitat; geographic location of the study area relative to a species' range; direct observation of the species within the study area; combination of soils, hydrology, habitats, elevation range, and/or disturbance tolerance; consideration of the proposed project area condition and observed resources; and existing site disturbances.

Based on these above considerations the following species were determined to have no potential to occur within the study area: Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*), monarch butterfly (*Danaus plexippus*), tidewater goby (*Eucuclogobius newberryi*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), Olive Ridley sea turtle (*Lepidochelys olivacea*), San Diego coast horned lizard (*Phrynosoma coronatum blainvillei*), bald eagle (*Haliaeetus leucocephalus*), light-footed clapper rail (*Rallus longirostris levipes*), tufted puffin (*Fratercula cirrhata*), coastal California gnatcatcher (*Polioptila californica californica*), tricolored blackbird (*Agelaius tricolor*), big free-tailed bat (*Nyctinomops macrotis*), Pacific pocket mouse (*Perognathus longimembris pacificus*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

Presented in Table 3.3-1 are special-status wildlife species that have potential to occur within the study area. Refer to the Special-Status Species Information Table located in Appendix E.6 for all species listed in the literature review and for additional details by species.

Table 3.3-1. Special-Status Wildlife Species with Potential to Occur within the Study Area

Common Name	*Scientific Name*	*Status*		*Habitat Use*
		Federal	*State*	
Green Sea Turtle	*Chelonia mydas*	FT	--	Infrequent visitor; has been observed in Alamitos Bay and in the San Gabriel River.
Common Loon	*Gavia immer*	--	SSC	Uncommon winter and migrant visitor to harbor waters; no breeding potential in study area.
California Brown Pelican	*Pelecanus occidentalis californicus*	FE	SE	Common all year; roosts on the breakwaters and forages over harbor waters; nests on the Channel Islands and in Baja California,

Common Name	Scientific Name	Status		Habitat Use
		Federal	State	
				Mexico. Occasionally observed within the harbor.
Double-Crested Cormorant	*Phalacrocorax auritus*	--	SSC	Common all year; rests on open waters and breakwaters.[1]
Cooper's Hawk	*Accipiter cooperii*	--	SSC	Fairly common-to-infrequent in uplands, primarily wooded and brushy areas; unlikely to nest at harbor. Within study area is likely to occur sporadically as a migrant.
Sharp-Shinned Hawk	*Accipiter striatus*	--	SSC	Infrequent winter and migrant visitor in wooded and brushy uplands.
White-Tailed Kite	*Elanus leucurus*	--	CFP	Rare visitor in open uplands; no breeding potential in study area.
American Peregrine Falcon	*Falco peregrinus anatum*	--	SE, CFP	Rare; nests on Vincent Thomas Bridge within 1 mile of the harbor and forages in the harbor area.
Merlin	*Falco columbarius*	--	SSC	Rare winter and migrant visitor, all habitats; prefers wetlands and extensive grasslands next to trees.
Northern Harrier	*Circus cyaneus*	--	SSC	Infrequent winter and migrant visitor to upland and nearshore waters. Foraging habitat present; no breeding potential in study area.
Osprey	*Pandion haliaetus*	--	SSC	Infrequent winter and migrant visitor to all waters and high overhead. Confirmed as migrant and wintering resident nonbreeder.[1]
Western Snowy Plover	*Charadrius alexandrinus nivosus*	FT	SSC	Infrequent visitor to harbor; confirmed as nonbreeder; observed on Pier 400.[1]
Long-Billed Curlew	*Numenius americanaus*	--	SSC	Infrequent visitor to harbor; confirmed as nonbreeder; migrant/winter visitor.[1]
California Gull	*Larus californicus*	--	SSC	Common winter/migrant visitor in harbor area; confirmed as nonbreeder.
Elegant Tern	*Thalasseus elegans*	--	SSC	Common; nested on Pier 400 in 1998-2005; present all year; confirmed as breeder in some years; forages over water near nests.[1]
Black Skimmer	*Rynchops niger*	--	SSC	Common; nested unsuccessfully on Pier 400 in 1998–2000 and 2004; forages over water near nests; confirmed as breeder. Fledgling census suggested reproductive success was low during these years due to chick mortality.[2] Present all year.[1]
California Least	*Sternula antillarum*	E	SE,	Fairly common; breeds on Pier 400, present from about April to early September;

Common Name	Scientific Name	Status		Habitat Use
		Federal	State	
Tern	*brownii*		CFP	forages preferentially over shallow waters; confirmed as breeder.[1]
Vaux's Swift	*Chaetura vauxi*	--	SSC	Fairly common, widespread migrant (aerial only).
Burrowing Owl	*Athene cunicularia*	--	SSC	Rare non-breeder in open areas; observed at Pier 400 during 2007.[2]
Loggerhead Shrike	*Lanius ludovicianus*	--	SSC	Rare non-breeder in open areas.
Western Yellow Warbler	*Dendroica petechia brewesteri*	--	SSC	Fairly common, widespread migrant in uplands; no breeding at harbor.
Belding's Savannah Sparrow	*Passerculus sandwichensis beldingi*	--	SE	Rare; inhabits pickleweed in salt marsh and adjacent uplands; transient visitor to harbor.[1]
California Western Mastiff Bat	*Eumops perotis californicus*	--	SSC	Rare or infrequent; possibly roosts in large buildings or tall trees at harbor; foraging would likely be low over uplands.

Notes:
FE = federally endangered
FT = federally threatened
SE = state endangered
SSC = state species of special concern
CFP = California fully protected species
-- = no special status

Common: typically present in substantial numbers
Fairly Common: reliably present, but in small numbers
Infrequent: not usually present, but of regular occurrence
Rare: from a single record to a small number of individuals each year

Sources:
[1] LAHD and USACE 2007.
[2] Keane 2000.

California Least Tern

The California least tern was federally listed as endangered in 1970 and state listed as endangered in 1971. Loss of nesting and foraging habitat due to human activities caused a decline in the number of breeding pairs (USFWS 1992). The biology of this species in the harbor area has been described in the Biological Assessment for the Channel Improvement and Landfill Development Feasibility Study (USACE 1990), Biological Opinion for the Los Angeles Harbor Development Project (1-6-92-F-25), Channel Deepening EIS/EIR (USACE and LAHD 2000), and Deep Draft Navigation Improvement EIS/EIR (USACE and LAHD 1992). Extensive monitoring of the least tern nesting site has been conducted by LAHD since the mid-1990s. The following is a summary of information on least tern use of the Los Angeles Harbor.

The California least tern is a migratory species that is present and breeds in California from April through August. The species has been nesting during the summer on Terminal Island (including Pier 300) since at least 1973 (Keane Biological Consulting 1999a). In 1979, LAHD began providing nesting habitat for the species and entered into a Memorandum of Agreement (MOA) with the USACE, USFWS, and CDFG for management of a 15-acre least tern nesting site in 1984. The MOA sets forth the responsibilities of the signing parties for management of the designated least tern nesting site within the harbor, and it is renewed every 3 to 5 years. A new MOA was approved by the Board of Harbor Commissioners in June 2006. The MOA also allows the designated nesting site to be relocated under specific conditions. The location of this nesting site has changed over time due to Port development activities, and it is now on the southern tip of Pier 400 (Keane Biological Consulting 2003). Least tern nesting in the harbor has been monitored annually since 1973 (Keane Biological Consulting 2003). The number of nests in the harbor varied from 0 to 134 between 1973 and 1994 and then steadily increased, from 16 in 1995 to 565 in 2000, with decreases in 2001 and 2002 and increases to 963 in 2003, 1,071 in 2004, and 1,322 in 2005 (Keane Biological Consulting 2005b). The number of nests decreased to 906 in 2006 (Keane Biological Consulting 2007a) and further decreased to 710 in 2007 (Keane Biological Consulting 2007b). Most of the 2003, 2004, and 2005 nests were within the 15.7-acre fenced nesting site although 67 nests in 2003, 29 in 2004, and 25 in 2005 were located in the adjacent area to the west (part of the proposed Pacific L.A. Marine Terminal project's Tank Farm Site 1).

A comparison of the Los Angeles Harbor 1998 nesting success with that from other areas in Los Angeles and Orange Counties showed that the harbor produced 19% of the total number of fledglings and the highest number of fledglings per pair (Keane Biological Consulting 1999a). In 2003, the harbor produced 55% of the total number of fledglings in Los Angeles and Orange Counties and 25% of the statewide fledglings (Keane Biological Consulting 2003). In 2005, these numbers increased to 71.4% of the total fledglings in Los Angeles and Orange Counties and 45% of the statewide number of fledglings (Keane Biological Consulting 2005b). The number of fledglings produced on Pier 400 in 2006 decreased to 44.3% of those in Los Angeles and Orange Counties and 20% of the state total (Keane Biological Consulting 2007a). In 2007, the number of fledglings at the Pier 400 nesting site decreased further to 20.8% of those in Los Angeles and Orange Counties and 8% of the state total (Keane Biological Consulting 2007b). Nesting success at the Pier 400 site is dependent on a number of factors, many of which are unrelated to LAHD activities. These factors include annual variations in abundance and distribution of prey (primarily anchovies) within and adjacent to the harbor, as influenced by changes in oceanographic conditions (e.g., water temperature and upwelling).

Several foraging studies have been conducted in the harbor. The 1982, 1984, and 1985 surveys found that least terns foraged over shallow water (generally less than 20 feet deep) in the Outer Harbor, especially near the Pier 400 least tern nesting site, but not in the Inner Harbor (Keane Biological Consulting 1997). Surveys using radio-telemetry and observations in 1986 and 1987 showed that the least terns foraged both inside and outside the harbor during egg incubation. More foraging occurred near the breakwaters than adjacent to Terminal Island during incubation but this reversed after the eggs hatched (Keane Biological Consulting 1997). Based on the 1994–1996

surveys, least terns foraged around the east and south sides of Pier 300 with greater use of the Seaplane Lagoon in 1996 than in the other 2 years. After the south side of Pier 300 was dredged to deepen the water, use of this area by the terns declined. The Cabrillo Beach and Salinas de San Pedro Salt Marsh areas were used to varying degrees (Keane Biological Consulting 1997). A study in 1997 and 1998 found that least terns used the West Basin of Long Beach Harbor as well as the Pier 300 shallow-water habitat, Seaplane Lagoon, and the Gap (area between Naval Mole and Pier 400 Transportation Corridor). The foraging frequency (dives per acre) varied among locations and between years. This variation may be related to changes in availability of prey and to distance from nest sites (Keane Biological Consulting 1998). A foraging study in 2001–2003 in Los Angeles Harbor (Keane Biological Consulting and Aspen Environmental Group 2004) found that foraging varied among locations and between years. Both shallow and deep water areas were used, probably in response to localized fish abundance within the size range suitable for least terns. These studies showed that shallow-water areas (less than 20 feet deep) provide important foraging areas for the least tern.

Foraging by least terns at the Pier 300 shallow-water habitat has increased in recent years. This suggests that least tern prey were more abundant than the period from 1994 to 1998. Thus, the increase in nesting may be related to increases in both the amount of suitable nesting habitat and prey. Foraging by least terns in 1998 also occurred in the shallow waters of the then incomplete Pier 400 Phase 2 fill area to the north of the Phase 1 area (Keane Biological Consulting 1999a). In 1999, least tern foraging was again very high in the Pier 300 shallow-water habitat with much of the activity in waters immediately adjacent to Pier 300 (Keane Biological Consulting 1999b). Foraging was also very high there in 2001 and 2003, but in 2002 the highest foraging was on the north side of Pier 400 adjacent to the causeway (west side) and near Cabrillo Beach (Keane Biological Consulting and Aspen Environmental Group 2004). Foraging showed three peaks in 2003: early-to mid-May (egg-formation period), mid-June (chick hatching period), and early-to-mid-July (fledging period). In 2003, foraging outside the harbor increased relative to that of the previous 2 years.

California Brown Pelican

The California brown pelican was federally listed as endangered in 1970 and was state listed as endangered in 1971. The USFWS published a 90-day finding for the California brown pelican delisting petition, initiated a status review to determine if delisting is warranted (see 71 FR 29908 dated 24 May 2006), and has now proposed to delist the species (USFWS 2008). Low reproductive success attributed to pesticide contamination that caused thinning of eggshells was the primary reason for their listing in 1970/1971. After the use of DDT was prohibited in 1970, the population began to recover (USACE and LAHD 1992). Surveys in 1973 found the California brown pelican comprised only 3.8% of the total bird observations in the LA/LB Harbors (HEP 1980). Abundance of this species increased to 9.5% in 2000 (MEC and Associates 2002). The only breeding locations in the U.S. are at West Anacapa Island and Santa Barbara Island, although a few have begun nesting at the south end of the Salton Sea (NMFS 1991; Patten et al. 2003). Breeding also occurs at offshore islands and along the mainland of Mexico.

This species has been described in the Biological Opinion (1-6-92-F-25) for the Los Angeles Harbor Development Project (USFWS 1992), Biological Assessment for the Channel Improvement and Landfill Development Feasibility Study (USACE 1990), and Navigation Improvement EIS/EIR (USACE and LAHD 1992).

California brown pelicans use the harbor year-round, but their abundance is greatest in the summer when post-breeding birds arrive from Mexico. The highest numbers are present between early July and early November, when several thousand can be present (MBC 1984). Pelicans use all parts of the harbor, but they prefer to roost and rest on the harbor breakwater dikes, particularly the Middle Breakwater (MBC 1984; MEC 1988; MEC and Associates 2002). They forage over open waters for fish such as the northern anchovy. Brown pelicans were observed adjacent to Pier 400 throughout the year during the 2000 baseline surveys.

Western Snowy Plover

The Pacific Coast population of the western snowy plover (*Charadrius alexandrines nivosus*) was federally listed as threatened in 1993 (USFWS 1993). This small shorebird nests on coastal beaches from southern Washington to southern Baja California and winters along the coast of California and Baja California (NatureServe 2005). The birds forage on invertebrates (crustaceans and worms) along the shore in or near shallow water (Bent 1929). Western snowy plovers were observed on Pier 400 during least tern nesting surveys in 2003 through 2007. The plovers were not nesting but appeared to be utilizing this area during migration for foraging (Keane Biological Consulting 2003, 2005a). Critical habitat was designated for this species in September 2005 (USFWS 2005) and included four locations within coastal Los Angeles County, none of which is in the LA/LB Harbors area.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is considered a state species of special concern. Burrowing owls were observed on Pier 400 during the least tern surveys in 2003 through 2007 (Keane Biological Consulting 2003, 2005a, 2005b, 2007a, 2007b). In 2003, one burrowing owl was trapped and relocated to a raptor rehabilitation center in Orange County (Keane Biological Consulting 2003). Another burrowing owl was trapped and relocated in 2004 (Keane Biological Consulting 2005a), and five were trapped and relocated in 2007 (Keane Biological Consulting 2007b). The individuals observed were likely present to prey on California least tern adults and chicks (Keane Biological Consulting 2007b). Although no evidence of burrowing owl nesting on Pier 400 has been observed during the California least tern monitoring, it is possible that nesting could occur (Keane pers. comm. 2008). The nesting season for this species is February through August (California Burrowing Owl Consortium). Based on this, the burrowing owls observed during these studies could be nesting or post-nesting individuals.

Other Special-Status Bird Species

The California gull, common loon (*Gavia immer*), double-crested cormorant, long-billed curlew (*Numenius americana*), and elegant tern are all marine species that are known to use the harbor for at least part of the year. The elegant tern began nesting on Pier 400 in 1998 and 1999, and 10,170 nests were observed in 2004 (Keane Biological Consulting 2005a). The California gull, common loon, double-crested cormorant, and long-billed curlew do not nest in the harbor. Common loons have been observed in the Outer Harbor during winter, but no nesting occurs in the region.

The black skimmer is a migratory species that has been extending its breeding range northward in recent years and is protected by the federal Migratory Bird Treaty Act (MBTA) (Whelchel et al. 1996). The species nests along the Atlantic and Gulf coasts to southern Mexico and along the coast of southern California, as well as at the Salton Sea (Collins 2006b). While previously observed in the San Pedro Bay, the species was first reported nesting in the Port in 1998. Black skimmer is a California species of special concern (at nesting sites only). It was present in the harbor all year in 2000, but numbers were greatest during the summer nesting season (MEC and Associates 2002). Black skimmers nested on Pier 400 in 1998 to 2000 (range of 10 to 115 nests) with poor success (Collins 2006b) and in 2004 (about 25 nests) (Keane Biological Consulting 2005b). Black skimmers feed by flying just above the surface of the water and snatching up fish swimming just below the surface. This restricts the species to feeding in very calm waters, such as those in enclosed bays.

The black oystercatcher is protected by the MBTA. A nesting colony of black oystercatchers was observed within the riprap along the entire length of the Outer Breakwater of the harbor during baseline studies conducted during 2000 (MEC Analytical Systems 2002). The species has been present since at least 1973, and was observed in all but one survey date during the 2000–2001 investigations (MEC Analytical Systems 2002). Black oystercatchers typically nest along rocky shores and islands along the Pacific coast of North America. The nesting colony within the Port is considered unusual (MEC Analytical Systems 2002).

The American peregrine falcon (*Falco peregrinus anatum*) was removed from the federal endangered species list in 1999 (but is still state-listed as endangered). Peregrine falcons are known to nest in the harbor area (Vincent Thomas and Schuyler F. Heim Bridges) (Keane Biological Consulting 1999a, 2003) and thus may periodically forage in the harbor area. In a natural setting, this species nests almost exclusively on cliff ledges that are associated with suitable foraging areas, which include areas of concentrated bird use. In heavily urbanized areas, they nest on man-made structures and exhibit nest site fidelity from year to year. In 2000, a pair of peregrines attempted to nest in container cranes in the West Basin area of the Inner Harbor.

Other special-status raptor species such as red-tailed hawk, American kestrel, Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipter striatus*), white-tailed kite (*Elanus leucurus*), merlin (*Falco columbarius*), and northern harrier (*Circus cyaneus*) have been observed in the harbor and have been recorded as infrequent visitors. Osprey (*Pandion haliaetus*) has been confirmed as a wintering

resident nonbreeding species in the harbor (MEC 2002). Very limited foraging habitat (e.g. open grassland or ruderal areas) exists for these raptor species within the study area, and there is no potential breeding habitat for white-tailed kite or northern harrier.

In the open ruderal area near 22nd Street/Old Tank Farm , a single loggerhead shrike was recorded during reconnaissance surveys conducted during 2005 (Campbell pers. comm.). It is likely that this individual was nesting in the brush lining the adjacent bluffs. Loggerhead shrikes have been observed at Pier 400, but no breeding habitat for this species is present on Pier 400.

Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) inhabits pickleweed salt marshes exclusively (USACE and LAHD 1992) and has been sporadically identified within the harbor. While pickleweed (*Salicornia virginica*) exists at the Salinas de San Pedro Salt Marsh, no nesting Belding's savannah sparrows have ever been identified at this location (Chilton pers. comm.).

Within the study area, western yellow warbler (*Dendroica petechia brewsteri)* is expected to be limited to a few migrants during spring and summer. This species is protected under the Migratory Bird Species Act. The study area lacks suitable breeding habitat for this species.

A number of special-status bat species may be found in the proposed project area, including long-legged myotis (*Myotis volans*), long-eared myotis (*Myotis evotis*), Yuma myotis (*Myotis yumanensis*), and California western mastiff bat (*Eumops perotis californicus*). While none of these species specifically is known to be associated with marine habitats, some species may forage over urban, developed areas; aquatic habitats including the harbor; and open, vacant parcels. Roosting requirements vary by species. Within the harbor area, roosting habitat may include crevices or compartments in buildings or warehouses, under or within compartments in bridge structures, or in any natural or man-made compartment, bridge, or alcove. Maternity colonies typically are formed in April and May; young are weaned and flying by July and August (Barkley 1993).

Sea Turtles and Marine Mammals

Sea Turtles

Several sea turtle species are found in the northeastern Pacific Ocean, including green (*Chelonia mydas*), loggerhead, leatherback, and Olive Ridley sea turtles. Loggerhead sea turtles, federally listed as threatened, are found in all temperate and tropical waters throughout the world and are the most abundant species of sea turtle found in U.S. coastal waters (NMFS 2007a). Additionally, several species have regional distributions in southern California. Therefore, it is possible that sea turtles may occasionally enter the Outer Harbor areas. A brief summary of sea turtles that have or could potentially be observed in the study area is presented below.

With the exception of the green sea turtle, no other sea turtles have been observed within the LA/LB Harbors during more than 20 years of biological surveys (MEC Analytical Systems1988, 2002; Keane pers. comm.).

Green sea turtles, federally listed as threatened, are found in all temperate and tropical waters throughout the world. They primarily remain near the coastline and around islands and live in bays and protected shores, especially in areas with seagrass beds. In the northeastern Pacific, green turtles have been sighted from the coast and within the gulf of Baja California to southern Alaska, but most commonly occur from San Diego south (NMFS 2007a). They are rarely observed in the open ocean. Green sea turtles have been observed infrequently in Alamitos Bay and in the San Gabriel River, possibly attracted to the warm thermal effluent from two upstream generating stations (Curtis pers. Comm. 2008a). The most recent green sea turtle sighting was a single individual observed in Alamitos Bay during September 2006. There were additional sightings within San Gabriel River in 1999 and 2002, and three green sea turtles were observed in the river during 2004 (Curtis pers. Comm. 2008b).

Loggerhead sea turtles, federally listed as threatened, are circumglobal, occurring throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. Loggerheads nest on ocean beaches, generally preferring high energy beaches (i.e., beaches with substantial wave action) that are relatively narrow, steeply sloped, and coarse-grained (Lohmann and Lohmann 1996).

Leatherback sea turtles, federally listed as endangered, are the most widely distributed of all sea turtles and are found worldwide with the largest north and south range of all the sea turtle species. The Pacific Ocean leatherback population is generally smaller in size than that in the Atlantic Ocean (NMFS 2007a).

Olive Ridley sea turtles, federally listed as threatened, are found in tropical regions of the Pacific, Indian, and Atlantic Oceans. They typically forage offshore in surface waters or dive to depths of 500 feet to feed on bottom dwelling crustaceans.

Marine Mammals

All marine mammals are protected under the Marine Mammal Protection Act (MMPA) of 1972, and some are also protected by the federal Endangered Species Act (ESA) of 1973. As discussed in Section 3.3.2.6, pinnipeds (sea lions and seals) and cetaceans (whales and dolphins) have been recorded within Los Angeles Harbor, including California sea lion, harbor seal, Pacific bottle-nose dolphin, common dolphin, Pacific white-sided dolphin, Risso's dolphin, Pacific pilot whale, and gray whale (LAHD and Jones & Stokes 2003). The most common marine mammal occurring in the harbor is the California sea lion. Harbor seals are less common than sea lions but individuals can be found sporadically throughout the year. Dolphins are seen occasionally, and sightings of whales are rare (USACE and LAHD 1979). No marine mammal species breed in Los Angeles Harbor. None of the pinnipeds found within the harbor are endangered, and there are no designated significant ecological areas for the two species within the harbor. Additionally, there are no designated Marine Protected Areas (MPAs) within the confines of the harbor. The nearest

designated marine life refuge is Point Fermin Marine Life Refuge, which extends towards the harbor to the north edge of Outer Cabrillo Beach.

Outside the breakwater, a variety of marine mammals use nearshore waters. These include the gray whale that migrates from the Bering Sea to Mexico and back each year, blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), sperm whale (*Physeter catodon*), gray whale, minke whale (*Balaenoptera sp.*), and killer whale (*Orcinus orca*). The blue whale, fin whale, humpback whale, sperm whale, gray whale, and killer whales are all listed as endangered under the ESA, although the Eastern Pacific grey whale population was delisted in 1994. Species of baleen whales generally are found as single individuals or in pods of a few individuals. Toothed whales, and particularly dolphins, can be found in larger groups of up to a thousand or more (Leatherwood and Reeves 1983). Several species of dolphin and porpoise are commonly found in coastal areas near Los Angeles, including the Pacific white-sided dolphin, Risso's dolphin, Dall's porpoise (*Phocoenoides dalli*), bottlenose dolphin, northern right whale dolphin (*Lissodelphis borealis*), and common dolphin, with the common dolphin being the most abundant (Forney et al. 1995).

Vessel Collisions with Marine Mammals and Sea Turtles

Ship strikes involving marine mammals and sea turtles, although uncommon, have been documented for the following listed species in the eastern North Pacific: blue whale, fin whale, humpback whale, sperm whale, southern sea otter (*Enhydra lutris*), loggerhead sea turtle, green sea turtle, Olive Ridley sea turtle, and leatherback sea turtle (NOAA Fisheries; USFWS 1998a, 1998b, 1998c, 1998d; Stinson 1984; Carretta et al. 2001). Ship strikes have also been documented involving gray, minke, and killer whales. Determining the cause of death for marine mammals and sea turtles that wash ashore dead or are found adrift is not always possible, nor is it always possible to determine whether propeller slashes were inflicted before or after death. In the case of a sea otter for example, wounds originally thought to represent propeller slashes were determined to have been inflicted by great white sharks (Ames and Morejohn 1980). In general, dead specimens of marine mammals and sea turtles showing injuries consistent with vessel strikes are not common.

Whale Strikes

While vessel collisions with all marine mammals and sea turtles have been reported, the majority of incidents involve whales. The National Marine Fisheries Service (NMFS) has records of vessel strikes with whales in U.S. coastal waters for 1982 through 2007 (NMFS 2007b). Of the recorded strikes in the NMFS database, most of the identified species were gray whales (42%) and blue whales (15%) with a few fin whales and humpback whales. The number of strikes per year ranged from none to seven and averaged 2.6, but the actual number is likely to be greater because not all strikes are reported. The type of vessel(s) involved often was not known but does include freighters/container vessels going to the LA/LB Harbors.

In southern California, potential strikes to blue whales are of the most concern due to the fact that the migration patterns of blue whales north and south along the

California coast at times run perpendicular to the established shipping channels in and out of California ports and that blue whale population numbers are low relative to historic numbers. Blue whales normally pass through the Santa Barbara Channel en route from breeding grounds in Mexico to feeding grounds further north. Blue whales were historically a target of commercial whaling activities worldwide, but are now protected from whaling. In the North Pacific, the pre-whaling population size is estimated at approximately 4,900 blue whales, the current population estimate is approximately 3,300 blue whales (NMFS 2008). Along the California coast, blue whale abundance has increased over the past two decades (Calambokidis et al*.,* 1990; Barlow 1994; Calambokidis 1995). However, the increase is too large to be accounted for by population growth alone and is more likely attributed to a shift in distribution. Incidental ship strikes and fisheries interactions are listed by NMFS as the primary threats to the California population. According to NMFS records, the average number of blue whale mortalities in California attributed to ship strikes was 0.2 per year from 1991 to 1995 and from 1998 to 2002. September 2007, however, saw an unusual number (3) of blue whale mortalities. These mortalities were confirmed to be caused by ship strikes in the Santa Barbara Channel but declared to be part of an "Unusual Mortality Event" (NMFS 2007b). The cause(s) of the unusual mortality event is undeclared at this time but may have associated with biotoxins from harmful algal blooms along the southern California coast.

Vessel speed does seem to influence whale/ship collision incidences. The Jensen and Silber Whale Strike Database (Jensen Silber 2004) reports that there are 134 cases of known vessel strikes in U.S. coastal waters. Of these 134 cases, 14.9% (20) involved container/cargo ships/freighters, and 6.0% (8) involved tankers. The remaining incidents involved Navy vessels (17.1% or 23 cases), whale-watching vessels (14.2% or 19 cases), cruise ships/liners (12.7% or 17 cases), ferries (11.9% or 16 cases), Coast Guard vessels (6.7% or 9 cases), recreational vessels (5.2% or 6 cases), and fishing vessels (3.0% or 4 cases) with one collision (0.75 %) reported from each of the following: dredge boat, research vessel, pilot boat, and whaling catcher boat. Of the 134 cases, vessel speed was known for 58 cases. Of these 58 cases, most vessels were traveling in the ranges of 13–15 knots, followed by speed ranges of 16–18 knots and 22–24 knots.

According to a report from NMFS, which was based on information in the Jensen and Silber (2004) whale strike database and Laist et al. (2001), the majority of vessel collisions with whales occurred at speeds between 13 and 15 knots. Specifically, NMFS recommends:

> Overall, most ship strikes of large whale species occurred when ships were traveling at speeds of 10 knots or greater. Only 12.3% of the ship strikes in the Jensen and Silber database occurred when vessels were traveling at speeds of 10 knots or less. While vessel speed may not be the only factor in ship/whale collisions, data indicate that collisions are more likely to occur when ships are traveling at speeds of 14 knots or greater. This strongly suggests that ships going slower than 14 knots are less likely to collide with large whales. Therefore, NOAA Fisheries recommends that speed restrictions in the range of 10-13 knots be used, where appropriate, feasible, and effective, in areas where reduced speed is likely to reduce the risk of ship strikes and facilitate whale avoidance. (NOAA 2008.)

3.3.2.8 Essential Fish Habitat

Throughout their life cycle, marine fish use many types of habitats—including sea grass, salt marsh, coral reefs, kelp forests, and rocky intertidal areas—for foraging and reproduction. Various activities on land and in water can alter these habitats. NMFS, regional fishery management councils, and federal and state agencies address these threats by identifying essential fish habitat (EFH) for each federally managed fish species.

In accordance with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), of the fish species managed under the MSA, four pelagic and 15 groundfish (demersal) species are found in the Los Angeles Harbor and are assumed to occur in the study area. These species are listed below in Table 3.3-2. The proposed Project is located within an area designated as EFH for two fishery management plans (FMP), the Coastal Pelagics and Pacific Groundfish FMPs (NMFS 1997). Four of the five species in the Coastal Pelagics FMP are well represented in the proposed project area. In particular, the northern anchovy is the most abundant species in Los Angeles Harbor, representing over 80% of the fish caught (MEC 1988; MEC 1999), and larvae of the species are also a common component of the ichthyoplankton (MEC 1988). It is generally held that this species spawns outside the harbor. There is a commercial bait fishery for northern anchovy in the Outer Los Angeles Harbor. The Pacific sardine is currently one of the most common species in the harbor, ranking second behind northern anchovy at some locations (MEC 1988). This species is not known to spawn in the harbor. Sardines are also a component of the commercial bait fish harvest in the harbor. Both sardines and northern anchovies are important forage for piscivorous fish. The two other coastal pelagic species, the Pacific and jack mackerels, are common but not overly abundant as adults in the harbor. The Pacific mackerel's main forage fish in the harbor is very likely northern anchovy.

Of the species present from the Pacific Groundfish FMP, only two—the olive rockfish and the scorpionfish—can be considered common in the harbor. The olive rockfish has been found largely as juveniles associated with the kelp growing along the inner edge of the Federal Breakwater (MEC 1988). The scorpion fish is not a major component of the fish present in the harbor (MEC 1988) but may be under-represented in the catch due to its nocturnal habits.

Table 3.3-2. MSA-Managed Species Occurring in the Port of Los Angeles and Port of Long Beach Harbors

Common Name	*Species*	*Potential Essential Fish Habitat in Study Area*	*Abundance during 2000 Fish Survey* [1]
Pelagic Species (Coastal Pelagics)			
Northern Anchovy	*Engraulis mordax*	Open water throughout.	Abundant throughout harbor in 2000.[1]
Pacific Sardine	*Sardinops sagax*	Open water throughout.	Abundant throughout harbor in 2000.[1]

Common Name	*Species*	*Potential Essential Fish Habitat in Study Area*	*Abundance during 2000 Fish Survey* [1]
Pacific (Chub) Mackerel	*Scomber japonicus*	Open water, primarily in Outer Harbor; juveniles off of sandy beaches and around kelp beds.	Common throughout harbor in 2000.[1]
Jack Mackerel	*Trachurus symmetricus*	Near breakwater and Inner to Middle Harbor. Young fish over shallow rocky banks. Young juveniles sometimes school under kelp. Older fish typically further offshore.	Common in Inner to Middle Harbor, uncommon in Outer Harbor; primarily in deep water.[1]
Demersal (Bottom) Species (Pacific Groundfish)			
English Sole	*Parophrys vetulus*	On bottom throughout. Benthic dwelling on sand or silt substrate.	Rare; two collected in Outer Harbor in 2000.[1]
Pacific Sanddab	*Citharichthys sordidus*	Primarily Outer Harbor. Benthic on sand or coarser substrate.	Rare; primarily Outer Harbor deep water.[1]
Leopard Shark	*Triakis semifasciata*	Primarily in Outer Harbor. Over sandy areas near eelgrass, kelp, or jetty areas.	Rare; three collected in 2000, all in shallow water.
Big Skate	*Raja binoculata*	Primarily in Outer Harbor. Over variety of substrates generally at >3 meter depth.	Uncommon; primarily in shallow water.
Black Rockfish	*Sebastes melanops*	Primarily Cabrillo shallow-water habitat. Along breakwater and deep piers and pilings. Associated with kelp, pilings, eelgrass, high-relief rock.	Rare; four collected in deep Inner and Middle Harbor waters.[1]
California Scorpionfish	*Scorpaena gutatta*	Common in rock dikes and breakwaters. Soft bottom at night.	Common on rock dikes and breakwaters, also on soft bottom at night[1-4]
Grass Rockfish	*Sebastes rastrelliger*	Along breakwater and in eelgrass off of beach areas. Associated with kelp, eelgrass, jetty rocks.	Rare; two collected in Pier 300 shallow-water habitat in 2000, one in Long Beach Harbor.
Vermilion Rockfish	*Sebastes miniatus*	Primarily along breakwater. Typically near bottom and associated with kelp, along drop offs, and over hard bottom.	Rare; four collected in deep Inner and Middle Harbor waters in 2000.
Cabezon	*Scoraenichthys marmoratus*	Primarily shallow waters, along breakwater and eelgrass areas. Benthic and use a variety of substrates including kelp beds, jetties, rocky bottoms, and occasionally eelgrass beds and sandy bottoms.	Rare; shallow water.[1]
Ling Cod	*Ophiodon elongatus*	Primarily along breakwater and especially near Angels Gate. Typically on or near bottom over soft substrate near current-swept reefs.	Rare; shallow water.[1]
Bocaccio	*Sebastes*	Typically found in deeper water near	Uncommon; juveniles in

Common Name	*Species*	*Potential Essential Fish Habitat in Study Area*	*Abundance during 2000 Fish Survey* [1]
	paucispinis	hard substrate, kelp, and algae.	kelp around breakwater.[2]
Kelp Rockfish	*Sebastes atrovirens*	Found in association with kelp along the breakwaters.	Rare; in kelp along breakwater.[2]
Olive Rockfish	*Sebastes serranoides*	Found in association with kelp along the breakwaters.	Common; juveniles in kelp around breakwater.[2]
Calico Rockfish	*Sebastes dalli*	Typically found in deeper water near hard substrate, kelp, and algae.	Rare; one collected in Long Beach Harbor [4], shallow water.[1]
California Skate	*Raja inornata*	Usually associated with hard substrate. Found along breakwater and deep piers and pilings. Associated with kelp, pilings, eelgrass, and high-relief rock.	Uncommon; Outer Harbor in shallow water.[1]

Notes:
Potential habitat use from McCain et al. 2005. Species occurrence in LA and/or LB Harbors recorded from MEC Analytical Systems and SAIC studies.

Abundant: among 10 most abundant species collected.
Common: not one of the 10 most abundant, but at least 100 individuals collected.
Uncommon: between 10 and 100 individuals collected.
Rare: less than 10 individuals collected.
Pelagic and benthic sampling employed in the 2000 surveys (MEC 2002) did not sample rocky breakwater and kelp habitat that could potentially be occupied by some of the species.

Sources:
[1] MEC 2002
[2] MEC 1999
[3] MEC 1988
[4] SAIC and MEC 1997

3.3.2.9 Special Aquatic Habitats

3.3.2.9.1 Eelgrass Beds

Eelgrass beds are present in the Outer Harbor in shallow water adjacent to Inner Cabrillo Beach and extend to the southerly perimeter of Cabrillo Marina (Merkel & Associates 2005). Eelgrass is an important component of estuarine ecosystems and is considered a special aquatic site under the federal Clean Water Act (CWA) (40 CFR 230). It provides food and habitat for many birds, fish, and invertebrates. It also serves as habitat structure for other primary producers such as diatoms and algae. Eelgrass distribution is limited to nearshore areas with sand and silt bottom as a substrate, limited wave exposure, relatively low current velocities and adequate light (Thom et al. 1998; Greve and Krause-Kensen 2005). Eelgrass habitat surveys conducted during summer of 2005 indicate that eelgrass (*Zostera marina*) beds are

present in the Outer Harbor in shallow water adjacent to Inner Cabrillo Beach and extend to the southerly perimeter of Cabrillo Marina (Merkel & Associates 2005).

Eelgrass coverage varies over time and undergoes seasonal variations. This pattern of expansion and contraction of eelgrass habitat is typical in marginal habitat areas. The general location of eelgrass beds in the study area is shown in Figure 3.3-1. Surveys of the harbor in 2000 found eelgrass beds along Cabrillo Beach and in the Pier 300 shallow-water habitat (MEC and Associates 2002). At Inner Cabrillo Beach, eelgrass coverage was 25 acres in 1996, 55 acres in October 1999, 22 acres in March 2000, 42 acres in August 2000 (MEC Analytical Systems 2002), and 27.4 acres in 2005 (Merkel & Associates 2005). MEC Analytical Systems (2002) found that the greatest expanse of dense eelgrass and the greatest total area of eelgrass of these sites was located offshore of the Cabrillo Beach Youth Camp. In 2000, eelgrass offshore of the Cabrillo Beach Youth Camp expanded from 16.0 acres in March to 22.5 acres in August, while eelgrass at Inner Cabrillo Beach expanded from 5.6 acres in March to 19.7 acres in August (MEC Analytical Systems 2002). A survey of these areas in August 2005 (Merkel & Associates 2005) showed that the Inner Cabrillo Beach eelgrass bed covered approximately 11.4 acres and the bed adjacent to the youth facility covered approximately 16.0 acres, similar to the 2000 coverage. This indicates a certain amount of inter-annual as well as seasonal variation in eelgrass coverage. Some area of the eelgrass beds is expected to be present throughout all seasons. Eelgrass bed studies are conducted during the growing season (March through October) because eelgrass beds typically contract in size during the winter as they go into dormancy. For that reason, the *Southern California Eelgrass Mitigation Policy* (1991) does not certify eelgrass surveys conducted between October and March (NMFS 1991).

No eelgrass beds are present in the vicinity of the proposed harbor cuts, wharves, docks, piers, bulkheads, or rock placement areas. The Main Channel does not provide habitat for eelgrass due to water depths and absence of suitable soft-bottom habitat. Eelgrass typically requires sand and/or silt substrate. Shallow-water habitats that receive enough light to support eelgrass but have primarily hard substrates are unsuitable for eelgrass. However, recent surveys identified eelgrass within the Salinas de San Pedro Salt Marsh and just outside the inlet to the salt marsh.

Surveys were conducted along the inlet to the Salinas de San Pedro Salt Marsh and within the 3.25-acre area in July 2008 (Appendix E.7). Survey results show that eelgrass is growing at the entrance to the Salinas de San Pedro Salt Marsh and is scattered throughout the inlet itself. Coverage was not 100% and large holes were found within the areas covered by eelgrass. However, a portion of the eelgrass at the inlet to the salt marsh would be affected as a result of the placement of a rock groin that is part of the proposed expansion and enhancement of the salt marsh area. Surveys within the 3.25-acre salt marsh area also identified eelgrass present along the margins of the island located in the middle of the salt marsh. Most of the eelgrass in this area would be affected as a result of the proposed expansion and enhancement activities, which include removal of the island in the salt marsh, as well as the sediment that has accumulated within the salt marsh as a result of inadequate tidal circulation and flushing.

3.3.2.9.2 California Cord Grass

California cord grass (*Spartina foliosa*) is an endemic perennial grass found in central and southern California coastal salt marshes. It grows to about 5 feet tall, and generally grows shorter in southern California. This species is typically found in the upper- to mid-intertidal portions of salt marshes. Cord grass tends to grow in patches and spreads chiefly by vegetative reproduction via rhizomes. It provides structure, protection, and forage for numerous species and specifically provides habitat and nesting sites for the endangered light-footed clapper rail. (Zedler 1993.) A small area of cord grass (~100 square feet) has recently appeared on the eastern edge of the Salinas de San Pedro Salt Marsh area (Appy pers. comm.).

3.3.2.9.3 Kelp Beds

The occurrence of giant kelp within the harbors is relatively recent according to reports made in prior investigations. Studies conducted during the last biological baseline study demonstrated a tremendous productivity of giant kelp along the Outer Breakwater; however, the surveys conducted in 2000 did not attempt to quantify the distribution of kelp or other macroalgal flora. However, it is apparent that kelp distribution has increased in Los Angeles Harbor; in 1986–1987, the kelp was restricted to the San Pedro Breakwater, but studies conducted in 2000 mapped additional kelp along portions of the Middle Breakwater, Pier 400, on a submerged dike at the Cabrillo shallow-water habitat, and other riprap shorelines in outer Los Angeles Harbor (MEC Analytical Systems 2002). In 2006, giant kelp along the breakwaters of LA/LB Harbors was recorded from quarterly aerial surveys to be 121.2 acres (MBC 2007). Based on recent surveys conducted by MBC Applied Environmental Sciences, little or no kelp (predominantly *Egregia* and *Macrocystis*) exists between Berths 74 and 92 or Berths 70–72 (Central Region Kelp Survey Consortium 2008). Small patches of kelp occur along the Outer Harbor (Berths 68–69) and between Outer Harbor Berths 47–49. Feather boa (*Egregia menziesii*) is a common kelp species in the harbor and is present in the Project area (Appy pers. comm.). Kelp distribution varies seasonally and annually; the kelp canopy estimate declined along the breakwaters of LA/LB Harbors in 2007, but appears to be increasing again in 2008 and was found fringing the perimeter of the shallow-water habitat seaward of Pier 400 late 2007 (MBC 2008). In March 2008, *Macrocystis* was observed just offshore of Berths 70 and 71 near the mouth of the Main Channel. Kelp has also been reported to be present at Berth 48.

Small kelp beds are present in the Outer Harbor along the breakwater and on the containment dike for the Cabrillo shallow-water habitat (MEC and Associates 2002). Kelp beds in the study area provide shelter for a variety of fishes, including several species of rockfish (*Sebastes* sp.) found along the breakwaters and jetties as well as senorita (*Oxyjulis californicus*), blacksmith (*Chromis punctipinnis*), surf perch (*Embiotocids*), opaleye (*Girella nigricans*), halfmoon (*Medialuna californiensis*), and kelp bass (*Paralabrax clathratus*) found in and amongst the kelp in the middle and upper water column. No kelp beds are known to be present in the vicinity of the proposed harbor cuts, wharves, docks, piers, bulkheads, or rock placement areas.

However, scattered kelp located at Berth 49 could be affected from placement of solid docks for cruise ship berths. Harbor channel habitat does not provide habitat for kelp due to water depths, vessel traffic, and limited tidal flushing. In the study area, some isolated giant kelp are found attached to subtidal riprap, but more well-developed kelp beds are found only along the breakwaters.

3.3.2.9.4 Depleted Natural Communities

A *natural community* is an assemblage of populations of different species, interacting with one another. The CNDDB tracks the occurrence of what CDFG terms natural communities that are "considered rare and worthy of consideration by CNDDB" (CDFG 2008).

Three types of depleted natural communities were identified within the study area during reconnaissance surveys: mudflat, coastal freshwater marsh, and southern coastal salt marsh. These three community types are considered depleted natural communities with respect to number and extent, as well as value for habitat. In addition, mudflats are regulated under the CWA as special aquatic sites (40 CFR 230). Coastal freshwater marsh and southern coastal salt marsh are considered wetlands, and are therefore, also regulated as special aquatic sites. The definition of wetlands varies among state and federal agencies, but the USACE uses a three-parameter method that includes assessing vegetation, hydrology, and soils. The three community types observed in the study area are discussed below. Detailed descriptions of these habitat types are available in the Special-Status Species Information Table in Appendix E.6.

Mudflat

Mudflat is considered a special aquatic site pursuant to the Section 404(b)(1) Guidelines (40 CFR 230). Within the study area, unvegetated mudflat habitat is limited to two locations—Berth 78–Ports O'Call adjacent to the fish market (0.175 acre) and within the Salinas de San Pedro Salt Marsh (0.87 acre). Small polychaete and oligochaete worms, peracarid crustaceans, and insects are common within unvegetated mudflat habitat. These invertebrate species serve as prey for shorebirds that forage at the mudflats within the proposed project area.

Coastal Freshwater Marsh

The coastal freshwater marsh within the study area comprises approximately 0.30 acre and is located within the 22nd Street/Old Tank Farm Land open space. This area is highly disturbed vacant land at the base of a bluff. Species often associated with coastal freshwater marsh and observed in this area include salt grass, slender cattail, broad-leaved cattail, wild radish, nettle-leaved goosefoot, cheeseweed, and curly dock. The USACE Regulatory Division staff preliminarily determined that this coastal freshwater marsh area would be considered an isolated wetland, and

therefore, would not be regulated pursuant to Section 404 of the CWA (Appendix E.4). Furthermore, this area would be avoided by the proposed Project, and thus, it would not be included in the Section 404 permit for fill issued for the proposed Project even if it were included in the USACE's geographic jurisdiction.

Although the coastal freshwater marsh area is to be avoided, as discussed earlier, this area is considered a state jurisdictional water and, as such, may be regulated by CDFG. Additionally, the RWQCB regulates isolated wetlands under the Porter-Cologne Water Quality Control Act. The coastal freshwater marsh also meets the criteria for wetlands under the California Coastal Act.

Southern Coastal Salt Marsh

The Salinas de San Pedro Salt Marsh comprises approximately 3.25 total acres of southern coastal salt marsh community, and was created as mitigation in 1982 for impacts associated with construction of Berth 232. Wetlands commonly present in estuarine-to-marine habitats are salt marshes dominated by pickleweed and other salt tolerant plant species, such as salt grass and saltbush. Currently, the salt marsh is not functioning optimally because of its muted tidal exchange. As part of the mitigation for the proposed Project, LAHD is proposing to expand and enhance the salt marsh by excavating, recontouring, revegetating, and monitoring this area.

3.3.2.10 Wildlife Movement Corridors

Corridors provide specific opportunities for individual animals to disperse or migrate among other areas. These other areas may be very extensive but otherwise partially or wholly separated regions. Appropriate cover, minimum physical dimensions, and tolerably low levels of disturbance and mortality risk (e.g., limited night lighting and noise, low vehicular traffic levels) are common requirements for corridors. Resources and conditions in corridors may be quite different than in the connected areas, but if used by the wildlife species of interest, the corridor would still function as desired. Corridors adequate for one species may be quite inadequate for others. In evaluating corridors, it is important to consider the biology of those species to be addressed (Beier and Loe 1992).

The study area occurs at the edge of dense urban development and open water and no natural terrestrial corridors (topographic or habitat pathways) transect the study area. The harbor does not provide opportunities for terrestrial wildlife movement because of the existing development within the study area. However, some marine fish species move into and out of the harbor for spawning or for nursery areas. Marine mammals, such as the gray whale, migrate along the coast, and migratory birds are visitors to the Port. The study area provides movement of migratory birds in the harbor area, but this activity would not be affected by proposed Project facilities because no movement corridors would be blocked.

3.3.2.11 Invasive Terrestrial and Marine Species

An *invasive species* is defined as a species 1) that is nonnative (or non-indigenous) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., microbes). Human actions are the primary means of invasive species introductions.

3.3.2.11.1 Terrestrial

Based on the current field work for the proposed Project, a total of nine invasive plant species was detected. The invasive plant species are crystal ice plant, fennel (*Foeniculum vulgare*), tocalote (*Centaurea melitensis*), black mustard (*Brassica nigra*), Australian saltbush, castor-bean (*Ricinus communis*), giant reed (*Arundo donax*), pampas grass, and Spanish brome. These species are relatively common to the remaining vacant lands illustrated in Figure 3.3-1 as well as along the cliff adjacent to Via Cabrillo Marina.

3.3.2.11.2 Marine

Biological baseline monitoring (MEC Analytical Systems 2002) has shown that non-indigenous species have become well-established in the harbor benthic and epibenthic invertebrate communities. In surveys of 2000, a total of approximately 46 non-indigenous species were present in the harbor (ref). Approximately 30% of infaunal species are non-indigenous. The polychaete worm *Pseudopolydora paucibranchiata* and the bivalve mollusc *Theora lubrica* comprise 26% of total infaunal abundance. The epibenthic New Zealand bubble snail (*Philine auriformis*) is another notable non-indigenous species, as it preys on other infauna and epifauna. Other exotic species of invertebrates collected in 2000 included amphipods, a clam species, mussels, and several polychaete worm species (MEC Analytical Systems 2002). The presence of these species undoubtedly has an impact on the interactions of the species in this environment. It is not possible, however, to state definitively how these species affect ecosystem processes.

Only one exotic fish species, the yellowfin goby (*Acanthogobius flavimanus*), was collected during the 2000 baseline biological survey of the LA/LB Harbors (MEC Analytical Systems 2002). This species is thought to have been introduced from Asia with ballast water of trans-oceanic ships (Nico and Fuller 2007). It is not known how the presence of the yellowfin goby is affecting other species in the Los Angeles Harbor. However, there is concern that at some locations this species could out-compete some native species, altering fish community composition (Nico and Fuller 2007).

At least three nonnative species of brown algae (all from Japan or Asia) have become established in the harbor. Two species of sargassum, (*Sargassum muticum*) and (*Sargassum filicinum*), have been present in the harbor for varying time periods.

Sargassum muticum has been established in California since at least the 1930s, while *Sargassum filicinum* was only found in 2003, but has since been found at Santa Catalina Island and Point Loma, indicating the rapidity of propagation by spores. Another species of brown alga, *Undaria pinnatifida,* was first found during baseline studies of the LA/LB Harbors in 2000. It has since spread throughout the harbor and along the coast. All three are thought to be the result of ballast water introductions. Species like the Japanese oyster (*Crassostrea gigas*) and several species of mussels, including the bay mussel (*Mytilus galloprovincialis*), are invasive species that have been established so long that few would be recognized as alien to southern California.

Another species of great concern is *Caulerpa* (*Caulerpa taxifolia*); it is an invasive, nonnative green macro-alga that grows rapidly from small fragments, out-competes native species, and carpets the bottom of affected areas. *Caulerpa* infestations are thought to originate from aquarium specimens released into the natural environment (NMFS 2003). *Caulerpa* infestations can alter benthic habitat and cause serious adverse effects on nearshore marine ecosystems. This species has been observed in two locations in California (Agua Hedionda Lagoon in northern San Diego County, and Huntington Harbor, Orange County [NMFS and CDFG 2007]). Since the 1980s, *Caulerpa* infestations in the Mediterranean Sea have expanded to cover large areas and may now be too widespread to eradicate. In California, *Caulerpa* distribution has been localized, and has been successfully eradicated from Agua Hedionda Lagoon in northern San Diego County and Huntington Beach Harbor in Orange County (Paznokas pers. comm.). Therefore, NMFS and CDFG have established *Caulerpa* control protocols for the detection and eradication of this alga from California waters (NMFS and CDFG 2007). Bays, inlets, and harbors between Morro Bay and the U.S./Mexico border are potential habitat and need to be surveyed for *Caulerpa* presence prior to potentially disturbing activities such as dredging in order to ensure that no *Caulerpa* is present. *Caulerpa* has not been observed in Los Angeles Harbor (Prickett pers. comm.) despite more than 30 surveys conducted in the harbor since 2001 (SCCAT 2008).

3.3.2.12 Significant Ecological Area

Significant ecological areas (SEAs) were established in 1976 by Los Angeles County to designate areas with sensitive environmental conditions and/or resources. The County developed the concept in conjunction with adoption of the original general plan; therefore, SEAs are defined and delineated in conjunction with the Land Use and Open Space Elements for the Los Angeles County General Plan.

A small portion of the Port has been designated as an SEA by the County of Los Angeles. The *L.A. CEQA Thresholds* include consideration of "habitat of a locally designated species or a reduction in a locally designated natural habitat or plant community" as a threshold for determining significance. (City of Los Angeles 2006). The SEA within the Port is located along the northern portion of the jetty separating the harbor from the open ocean along the sandy beach on the ocean side of the jetty adjacent to Cabrillo Park. Grunion (*Leuresthes tenuis*) spawn in spring on nights of high tides following a full moon along this stretch of beach (City of Los Angeles

2006). Cabrillo Park and Cabrillo Beach are outside of the construction area for the proposed Project. Furthermore, in-water construction activities would not occur along Cabrillo Beach in spring or summer (April through August) in consideration of nesting California least tern foraging that may occur in the shallow water habitat in this vicinity; therefore, this SEA would not be affected by the proposed Project.

The Los Angeles County Department of Regional Planning is currently updating the SEA portion of the general plan. Pier 400 on Terminal Island is a proposed SEA in the pending update by the County of Los Angeles and is anticipated for adoption in late 2009 (County of Los Angeles 2008) because of the breeding population of California least tern that has been present at various Terminal Island locations since at least 1974 (Keane Biological Consulting 1999). The biology for this species has been summarized in the previous Section 3.3.2.7, "Special-Status Species." A 15-acre nesting site is maintained on Pier 400 by LAHD and managed under an interagency agreement among LAHD, USFWS, CDFG, and the USACE (Jones & Stokes 2002). The site is protected by fencing and is designated a "no-trespassing" area during the nesting season.

Uses normally allowed in the corresponding classification in areas adjacent to SEAs would continue to be permitted unless a finding is made by the County that the proposed Project would have an adverse effect on the resource values of the SEA, which would not be the case for the proposed Project.

3.3.3 Applicable Regulations

This section provides summary background information regarding the applicable regulations for protecting biological resources.

3.3.3.1 Federal Clean Water Act

The federal CWA's purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Discharges of dredged or fill material into waters of the United States are regulated under Section 404 of the CWA. Waters of the United States include: 1) all navigable waters (including all waters subject to the ebb and flow of the tide and/or that are, were, or may be susceptible to 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, or natural ponds, 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 above. For projects requiring a standard individual permit to authorize discharges of dredged or fill material into waters of the United States, a Section 404(b)(1) alternatives analysis must be conducted (40 CFR 230). This analysis includes consideration of impacts on special aquatic sites (e.g., sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle and pool complexes).

Of these six types, wetlands, mud flats, and vegetated shallows occur in the study area.

3.3.3.2 Rivers and Harbors Appropriations Act of 1899

The Rivers and Harbors Appropriation Act of 1899 (RHA) (33 USC 403), commonly known as the Rivers and Harbors Act, prohibits construction of any bridge, dam, dike, or causeway over or in navigable waterways of the U.S. without congressional approval. Under Section 10 of the RHA, the USACE is authorized to permit structures or work in navigable waters. Building wharfs, piers, jetties, and other structures in or over the waters of the Port of Los Angeles requires USACE approval (Section 10 permit). When reviewing applications for Section 10 permits, the USACE reviews proposals for consistency with maintaining established navigation channels.

3.3.3.3 Marine Protection, Research, and Sanctuaries Act of 1972

Transportation of dredge spoils to ocean disposal sites is regulated under Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA). Subject to the provisions of Section 103, the Secretary of the Army may issue permits, after notice and opportunity for public hearings, for the transportation of dredged material for the purpose of dumping it into ocean waters, where the Secretary determines that the dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological system, or economic potentialities. Disposal of dredge spoils at designated ocean disposal sites LA-2 or LA-3 would be conducted only if the dredged material met the permitted volume and quality requirements for these sites (EPA and USACE 2005). Dredge disposal at these sites was evaluated prior to approval of these sites and was determined to cause insignificant effects on the biological environment (EPA and USACE 2005).

3.3.3.4 Federal Endangered Species Act

The ESA protects plants and wildlife that are listed as endangered or threatened by USFWS and NMFS. Section 9 of ESA prohibits the taking of endangered wildlife, where *taking* is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under Section 7 of ESA, federal agencies are required to consult with USFWS or NMFS, as applicable, if their actions, including permit approvals or funding, could

adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity provided the action would not jeopardize the continued existence of the species. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency informally consults with USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse, and concurrence from USFWS and/or NMFS concludes the informal process. Without concurrence, the federal agency formally consults to ensure full compliance with the ESA.

3.3.3.5 Federal Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation Act as revised by Public Law 104-267, the Sustainable Fisheries Act, requires fisheries management councils to describe essential fish habitat (EFH) for fisheries managed under the this law and requires federal agencies to consult with NMFS on actions that may adversely affect EFH. *Essential fish habitat* is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

3.3.3.6 Federal Marine Mammal Protection Act of 1972

The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. Congress passed the MMPA based on the following findings and policies: 1) some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities; 2) these species of stocks must not be permitted to fall below their optimum sustainable population level (depleted); 3) measures should be taken to replenish these species or stocks; 4) there is inadequate knowledge of the ecology and population dynamics; and 5) marine mammals have proven to be resources of great international significance.

The MMPA was amended substantially in 1994 to provide for: 1) certain exceptions to the take prohibitions, such as for Alaska Native subsistence and permits and authorizations for scientific research; 2) a program to authorize and control the taking of marine mammals incidental to commercial fishing operations; 3) preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; and 4) studies of pinniped-fishery interactions. NMFS and USFWS administer this act. Species found in the harbor are under the jurisdiction of NMFS.

3.3.3.7 Executive Order 13112

On February 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. The Executive Order requires that a council of departments dealing with invasive species be created. Currently there are 12 departments and agencies on the council. The constitution and the laws of the U.S., including NEPA, as amended (42 U.S.C. 4321 et seq.); Non-Indigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.); Lacey Act, as amended (18 U.S.C. 42); Federal Plant Pest Act (7 U.S.C. 150aa et seq.); Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.); ESA, as amended (16 U.S.C. 1531 et seq.); and other pertinent statutes, are to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

Each federal agency whose actions may affect the status of invasive species will, to the extent practicable and permitted by law:

1) identify such actions;

2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to (a) prevent the introduction of invasive species; (b) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (c) monitor invasive species populations accurately and reliably; (d) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (e) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (f) promote public education on invasive species and the means to address them; and

3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

3.3.3.8 Migratory Bird Treaty Act and State Fish and Game Code (Sections 3503.5 and 3800)

Most bird species found within the vicinity of the proposed Project area are protected under the federal MBTA of 1918 (16 USC 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Sections 3503, 3503.5, and 3800 of the California Fish and Game Code similarly prohibit the take, possession, or destruction

of native birds, their nests, or eggs. MBTA effectively requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (February 1 through August 31, annually). Disturbance that causes nest abandonment or loss of reproductive effort (e.g., killing or abandonment of eggs or young) is considered "take" and is potentially punishable by fines and/or imprisonment.

3.3.3.9 California Coastal Act

The California Coastal Act of 1976 recognizes the Port of Los Angeles, as well as other California ports, as primary economic and coastal resources and as essential elements of the national maritime industry. Decisions to undertake specific development projects, where feasible, are to be based on consideration of alternative locations and designs in order to minimize any adverse environmental impacts.

Under the California Coastal Act, water areas may be diked, filled, or dredged when consistent with a certified port master plan only for specific purposes, including the following:

- construction, deepening, widening, lengthening, or maintenance of ship channel approaches, ship channels, turning basins, berthing areas, and facilities that are required for the safety and the accommodation of commerce and vessels to be served by port facilities; and
- new or expanded facilities or waterfront land for port-related facilities.

The water area proposed to be filled is to be the minimum necessary to achieve the purpose of the fill, while minimizing harmful effects on coastal resources, such as water quality, fish or wildlife resources, recreational resources, or sand transport systems, and minimizing reductions of the volume, surface area, or circulation of water.

The act also encourages the protection and expansion of facilities for the commercial fishing industry, water-oriented recreation, and recreational boating interests. Marine resources are to be maintained, enhanced, and where feasible, restored. The biological productivity and the quality of coastal waters appropriate to maintain optimum populations of marine organisms and for the protection of human health are to be maintained. Protection against the spillage of hazardous substances and effective containment and cleanup facilities and procedures are to be provided.

Under the California Coastal Act, LAHD has had to develop for the California Coastal Commission (CCC) certification a Port Master Plan (PMP) that addresses environmental, recreational, economic, and cargo-related concerns of the Port and surrounding regions. The proposed action would necessitate amendments of the Los Angeles PMP and a Coastal Development Permit from the CCC, which would include a federal consistency determination.

3.3.3.10 Coastal Zone Management Act

Section 307 of the Coastal Zone Management Act requires that all federal agencies with activities directly affecting the coastal zone, or with development projects within that zone, comply with the state coastal acts (in this case, the California Coastal Act of 1976) to ensure that those activities or projects are consistent to the maximum extent practicable. The CCC review for the Coastal Development Permit (mentioned above under the California Coastal Act) would include a federal consistency determination.

3.3.3.11 California Fish and Game Code (Section 1602)

Under Fish and Game Code Section 1602, the CDFG has authority to regulate work that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all non-federal projects.

A *stream* is defined in current CDFG regulations 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 a surface or subsurface flow that supports or has supported riparian vegetation."

Water features such as vernal pools and other seasonal swales, where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features, are generally not asserted to fall within state jurisdiction. The state generally does not assert jurisdiction over man-made water bodies unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

3.3.3.12 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the CDFG, and prohibits the taking of such species without authorization by CDFG under Section 2081 of the Fish and Game Code. State lead agencies must consult with CDFG during the CEQA process if state-listed threatened or endangered species are present and could be affected by the proposed Project. For projects that could affect species that are both state and federally listed, compliance with the federal ESA will satisfy CESA if CDFG determines that the federal incidental take authorization is consistent with CESA under Fish and Game Code Section 2080.1.

3.3.3.13 Ballast Water Management for Control of Non-Indigenous Species

The Non-Indigenous Species Act of 1990 (P.L. 101-646) identified ballast water as a significant environmental issue. In 1996, the act was reauthorized (P.L. 104-332) and the Secretary of Transportation was directed to develop national guidelines to prevent the spread and introduction of non-indigenous aquatic species through the ballast water of commercial vessels. Subsequently, the International Maritime Organization developed Guidelines for the Control and Management of Ship's Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens (International Maritime Organization (IMO) Resolution A.868 (20), which was adopted November 1997). In 2004, the U.S. Coast Guard published requirements for mandatory ballast water management practices for all vessels equipped with ballast water tanks bound for ports or places within the U.S. or entering U.S. waters (69 FR 44952-44961).

California PRC Section 71200 et seq. requires ballast water management practices for all vessels, domestic and foreign, carrying ballast water into waters of the state after operating outside the Exclusive Economic Zone (EEZ). Specifically, the regulation prohibits ships from discharging ballast water within harbor waters unless they have performed an exchange outside the EEZ in deep, open ocean waters. Alternatively, ships may retain water while in port, discharge to an approved reception facility, or implement other similar protective measures. Each ship must also develop a ballast water management plan to minimize the amount of ballast water discharged in the harbor. The act also requires an analysis of other vectors for release of nonnative species from vessels. Rules for vessels originating within the Pacific Coast region took effect in March 2006. Ships must now exchange ballast water on coast-wise voyages. Regulations currently under consideration for future years (2009–2022) will require phase-in of ballast water treatment performance standards, first for newly constructed ships and then for existing ships. An important distinction between the federal ballast water guidelines and those specified in the California code is that the California code mandates certain best management practices for managing ballast water to reduce introductions of non-indigenous species.

3.3.3.14 State Authority under the Federal Clean Water Act, Sections 401 and 402

Through the authority of the State Water Resources Control Board (SWRCB) as handled by the various Regional Water Quality Control Boards (RWQCBs), the state administers requirements and permitting under Sections 401 and 402 of the federal CWA through agreement with the EPA. If an activity may result in the discharge of dredge or fill material into a waterbody, the 401 process is triggered and state water quality certification (or waiver of certification) that the proposed activity will not violate state water quality standards is required.

In addition to Section 401 requirements, some projects will be subject to compliance with Section 402 of the CWA in accordance with the National Pollutant Discharge Elimination System (NPDES). The process for compliance with this provision is normally perfunctory with notification and fee payment under the State General Permit for Construction Period discharges. However, construction activity must conform to best management practices in accordance with a written Stormwater Pollution Prevention Plan (SWPPP), which may be subject to City of Los Angeles review prior to issuance of grading permits.

Dischargers whose construction projects disturb one or more acres of soil, or whose project disturbs less than one acre but is part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit 99-08-DWQ). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The construction general permit requires the development and implementation of a SWPPP. Section A of the construction general permit describes the elements that must be contained in a SWPPP.

3.3.3.15 California Fully Protected Species

The state of California first began to designate species as fully protected prior to the creation of the CESA and the ESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, mammals, amphibians and reptiles, and birds. Most fully protected species have since been listed as threatened or endangered under CESA and/or ESA. The regulations that implement the Fully Protected Species Statute (Fish and Game Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

3.3.3.16 Porter-Cologne Water Quality Act

Under the state Porter-Cologne Water Quality Control Act, SWRCB and RWQCBs assert jurisdiction over many discharges into waters of the state. Where resources are subject to both state and federal regulations, Porter-Cologne compliance is coordinated with CWA Section 401 water quality certification. For situations not also subject to federal regulation under the CWA, an activity impacting waters of the state may require issuance of individual Waste Discharge Requirements (WDRs), or coverage under the General WDRs (SWRCB Water Quality Order No. 2004-0004-DWQ) for small volume fill and dredge projects.

3.3.4 Impacts and Mitigation Measures

3.3.4.1 Methodology

The current biological setting, described above, was based on the biological surveys reported in a number of other documents including the TraPac Berths 136–147 Terminal EIS/EIR (LAHD and USACE 2007), Cabrillo Marina Phase II Development Project Supplemental EIR (Jones & Stokes 2002), baseline studies in Los Angeles Harbor (MEC Analytical Systems 1988), Long Beach Harbor (MEC Analytical Systems 1994), and Year 2000 Surveys of San Pedro Bay (LA/LB Harbors) (MEC Analytical Systems 2002), as well as reconnaissance-level biological resource fieldwork and a wetlands delineation performed by ICF Jones & Stokes in 2005. Impacts on species, communities, and habitats expected to occur as a result of proposed project implementation were identified by examining the proposed project description in view of the existing biological setting.

Impacts on biota were assessed by estimating the amount of habitat that would be gained/lost or disturbed by the proposed Project and its alternatives. Mitigation for impacts on marine biological resources has been developed by LAHD in coordination with NMFS, USFWS, and CDFG through agreed-upon mitigation policies (City of Los Angeles et al. 1984; 1997). These policies define the value of different habitats within the harbor relative to a system of mitigation credits accrued by creating or enhancing habitat in the harbor and at offsite locations. The current mitigation policy is "No net loss of in-kind habitat value, where 'in-kind' refers to coastal, marine, tidally-influenced habitat with value to fish and birds." (USACE and LAHD 1992.)

3.3.4.1.1 CEQA Baseline

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the NOP. These environmental conditions would normally constitute the baseline physical conditions by which the CEQA lead agency determines whether an impact is significant. For purposes of this draft EIS/EIR, the CEQA baseline for determining the significance of potential impacts under CEQA is 2006. As discussed above, conditions representing the status of biological resources as of the CEQA baseline were evaluated using data from numerous studies conducted over several years. CEQA baseline conditions are described in Section 3.3.2, "Environmental Setting." Additional description may be included in other sections. However, for some biological resources, such as local nesting populations of special-status birds, considerable variability can occur from year to year for a variety of reasons. Thus, using only 1 year as the baseline, such as the year the NOP was issued, may not be representative of conditions expected to be present when the proposed Project would be implemented. Consequently, for birds that nest or have nested in the study area, such as the California least tern, elegant tern, great blue heron, and black-crowned night heron, baseline studies were conducted starting in 1998 and subsequent data were

collected through spring 2008. These data were considered when determining representative baseline conditions.

The CEQA baseline represents the setting at a fixed point in time, with no project growth over time, and differs from the No-Project Alternative (discussed in 2.5.16) in that the No-Project Alternative addresses what is likely to happen at the site over time, starting from the baseline conditions. The No-Federal-Action Alternative (discussed in 2.5.15) allows for growth at the proposed project site that would occur without any required additional federal approvals.

3.3.4.1.2 NEPA Baseline

For purposes of this EIS/EIR, the evaluation of significance under NEPA is defined by comparing the proposed Project or other alternative to the NEPA baseline scenario, which for this project is equivalent to the No-Federal-Action Alternative (Alternative 5). The NEPA baseline includes construction and operation of all upland elements that can be constructed without any improvements within the harbor waters. This includes all upland elements except the Outer Harbor Cruise Terminals and associated parking, which would not be constructed absent in-water activities requiring USACE authorization. The NEPA baseline also does not include any dredging; filling of the North Harbor, Downtown Harbor, or 7th Street Harbor; berth or terminal development in the Outer Harbor; or any other wharf construction or upgrades that would require permits from the USACE under Section 10 of the RHA, Section 404 of the CWA, or—for any transportation of dredged material for ocean disposal—Section 103 of the MPRSA.

3.3.4.2 Thresholds of Significance

Thresholds of significance for biota and habitats are based on the *L.A. CEQA Thresholds* (City of Los Angeles 2006). The thresholds guide does not specifically address aquatic habitats within the harbor; therefore, LAHD has developed harbor-specific significance criteria for permanent loss of biological habitats. The following factors are used to determine significance of an impact on biota or habitats in the proposed project area.

BIO-1: A project would have a significant impact if it would result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, or candidate species, or a species of special concern, or the loss of federally listed critical habitat.

BIO-2: A project would have a significant impact if it would substantially reduce or alter a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

BIO-3: A project would have a significant impact if it would interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

BIO-4: A project would have a significant impact if it would substantially disrupt local biological communities (e.g., from construction impacts or the introduction of noise, light, or invasive species).

BIO-5: A project would have a significant impact if it would result in a permanent loss of marine habitat.

3.3.4.3 Impacts and Mitigation

3.3.4.3.1 Proposed Project

Construction Impacts

Impact BIO-1a: Construction of the proposed Project would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Listed and other sensitive species in the harbor that could use the water surface and shoreline and potentially be displaced or affected during construction include the California least tern, California brown pelican, American peregrine falcon, double-crested cormorant, black skimmer, elegant tern, Caspian tern, western snowy plover, black-crowned night heron, great blue heron, and all other native avian species included under the MBTA. California sea lions are common in the harbor and harbor seals occasionally can be seen resting on riprap or buoys in various locations throughout the harbor. The brown pelican, black skimmer, and common loon are common in the harbor while the other species vary seasonally (MEC Analytical Systems 2002). Established roosting areas for birds and the occasional harbor seal occur along the breakwaters, particularly the Middle Breakwater, which is isolated from human access. The proposed Project would not affect these locations as work is proposed well away from them (a distance of 0.1 to 2.6 miles with the closest proposed project activity being located at the south end of the Salinas de San Pedro Salt Marsh).

Dredging and shoreline construction activities could affect foraging habitat for listed, candidate, or special-status species through a temporary increase in activity, noise, vibration, and turbidity, which have the potential to displace individuals from the work area during construction. Dredging, rock placement, bulkhead installation, pile driving, and construction of wharfs, docks, piers, and promenades, all have potential

to displace individuals during construction activities. Additionally, foraging activities of special-status species that feed on fish in the harbor could be affected as a result of dredging/filling and pile driving activities that produce turbidity in foraging areas. These construction activities are discussed below and are followed by an evaluation of the impact of these activities on listed and other special-status species.

Piling Installation. Approximately 1,750 new support piles would be installed for wharf, dock, pier, and promenade construction. Piling installation would be accomplished with a combination of jetting (for concrete piles), vibratory (for steel piles), and impact pile driving methods (for all piles). While jetting and vibratory methods would be used to the extent possible, all piles would probably require impact driving to achieve the final depth and to properly set the piles. The size and type of pilings affect the sound volume produced during pile driving. Steel piles produce higher volume sound than concrete piles, and larger piles generally produce higher sound volume than smaller ones. In addition, the extent and intensity of noise effects would also depend on the underwater geography and water depth in the piling vicinity.

Sounds Transmission. Sound transmission in the underwater environment can be affected by local bathymetry, substrates, currents, and stratification of the water column. Based on underwater studies of grey whale behavior, a disturbance threshold (Level B harassment) of 160 dB_{RMS} has been identified for cetaceans (71 FR 3260) and would apply to other marine mammals as well. Exposure to sound at this level would likely cause avoidance, but not injury, for marine mammals. The practical spreading model of underwater sound loss assumes a loss of 4.5 dB per doubling distance (WSDOT 2007), and is used here to calculate the extent of underwater sound. The Level A harassment threshold for pinnipeds is 190 dB_{RMS} (71 FR 3260). Sound produced by impact driving concrete piles could be in excess of the disturbance threshold (160 dB_{RMS}) at a distance of up to 742 feet (approximately 0.75 of the distance across the Main Channel) and would likely cause marine mammals to avoid this range during impact pile driving. Sound from driving steel piles, necessary for setting the final depth, would exceed the Level A and Level B thresholds.

Concrete Pilings. Concrete piles would be used throughout most of the proposed Project; however, steel piles would be used for boat docks. Concrete piles would be installed using hydraulic jetting, with impact driving to achieve final depth and to firmly set the piles. While jetting is not expected to create high-intensity underwater sound, impact driving of concrete piles is expected to produce peak sound volumes of up to 188 dB_{PEAK} and 173 dB_{RMS} at a distance of 32.8 feet (WSDOT 2007). NMFS has stated that the injury threshold (Level A harassment threshold) for pinnipeds sound is 190 dB_{RMS} (71 FR 3260). This sound level is not expected with concrete pile driving.

Steel Pilings. Steel pilings are proposed for support of the Salinas de San Pedro Salt Marsh promenade and for support rails for floating docks. Steel piles that are 12 inches in diameter that are impact driven are expected to produce up to 190 dB_{PEAK} and 177 dB_{RMS} at a distance of 32.8 feet (WSDOT 2007), which is just below

the Level A harassment threshold. In some locations, steel pilings up to 24 inches in diameter would be used. Although sound volume produced depends on local conditions and size of the pile, monitoring from other projects indicates that sound levels up to 217 dB_{PEAK} and 203 dB_{RMS} may be produced for steel piles up to 24 inches in diameter during impact driving (WSDOT 2007) that is required to set the piles to final depth. At this sound level, the Level A harassment threshold would extend for a distance of up to 243 feet from each pile. The distance to the Level B harassment threshold would extend over a larger radius that would include the entire channel. At the salt marsh promenade, the affected area would extend through a portion of the shallow-water areas adjacent to Inner Cabrillo Beach and the Youth Camp facility. Sound from pilings that are driven landward of the water line may be further attenuated, reducing the affected area to some lesser distance.

Soft Start. The proposed Project would initiate steel pile driving via the lower sound-producing vibratory method. Marine mammals near the proposed project area would likely vacate the area prior to receiving a potential injury from impact driving of steel since the vibratory method would act as a "soft start." The soft start method is commonly employed when only impact pile driving methods will be used for pile driving and is accomplished by operating the hammer at less than full capacity (i.e., approximately 40–60% energy levels) with no less than a 1-minute interval between each strike for a 5-minute period. Similar levels of noise reduction (40–60%) are expected underwater. Because hammering or impact driving of steel piles would be employed only for the last approximately 20 feet of the steel piles, the vibratory method would function as the soft start, and marine mammals are expected to voluntarily move away from the area upon commencement of the vibratory pile driving.

California Least Tern

A nesting colony for the California least tern is located on the southeast portion of Pier 400 within the Port of Los Angeles. Historically, the site has been located at a variety of locations on Terminal Island in the vicinity of Pier 300. In 1997, the birds nested for the first time on the newly constructed Pier 400. Since 1998, this species has nested exclusively on Pier 400. Currently, a 15-acre nesting site on Pier 400 is maintained by LAHD under an interagency Nesting Site Memorandum of Agreement (City of Los Angeles 2006). The proposed project site is more than 1.5 miles from this nesting site. Least terns feed on small fish in the surface waters of the harbor. The shallow waters (<20 feet MLLW) in the Outer Harbor are considered important feeding areas for the tern and are areas requiring protection, as provided in Mitigation Measure MM BIO-1. Outer Harbor shallow water would be unaffected by the proposed Project with the exception of the proposed expansion and restoration of the salt marsh. Expansion and restoration of the salt marsh would create additional mudflat and coastal salt marsh habitat. Construction activities in the salt marsh during the tern nesting season could prohibit feeding of terns in this location due to potential turbidity from construction activities to extend into the shallow water immediately offshore of the salt marsh. Impacts from turbidity would be considered adverse but mitigated with implementation of MM BIO-1. The remainder of proposed project construction activities would not result in short-term or long-term effects on California least terns nesting on Pier 400.

Enhancement and expansion of the mudflat within the Salinas de San Pedro Salt Marsh (see mitigation under Impact BIO-2a) during the California least tern nesting season would make this area less available for foraging by the least tern. However, this area represents only a small percent of the shallow water (approximately 1% of the approximate 300 acres available), is not used as frequently as other shallow-water areas in the harbor (Keane 2007), and is not considered a significant impact. Construction activities during restoration of the salt marsh could result in turbidity extending into adjacent Outer Harbor waters. In accordance with protective measures for California least terns, if feasible, all work to enhance and expand the salt marsh and mudflat and work on the salt marsh promenade in the vicinity of the shallow-water habitat (i.e., area over inlet to salt marsh), would be timed to occur outside the least tern nesting season (April through August). If it is necessary to perform any temporary construction-related activities for the proposed Project or for the salt marsh enhancement during the least tern nesting season, then Mitigation Measure MM BIO-1 would be implemented to mitigate these impacts.

American Peregrine Falcon

The American peregrine falcon feeds on other birds (e.g., rock dove, starlings, etc.) and would not be affected by proposed project activities because relatively few prey would be lost and only a small amount of potential foraging area would be temporarily affected. The American peregrine falcon foraging area extends for miles (Grinnell and Miller 1986), and thus covers much of the harbor as well as land areas to the west and north. In the harbor vicinity, this species historically has nested on the Schuyler Heim Bridge, the Gerald Desmond Bridge, the Vincent Thomas Bridge, the tower at the Koch Carbon facility, and on the Long Beach City Hall building. They may forage in an area where waterbirds concentrate, and they may range widely when foraging. No known peregrine falcon nesting areas would be affected due to distance from the proposed project activities.

California Brown Pelican

The proposed project construction activities would not result in significant short- or long-term effects on the California brown pelican. The California brown pelican, which does not nest in the harbor, feeds throughout the harbor including the Main Channel and often rests on pilings, boat floats, floating docks, and docks. Even if pelicans were temporarily disturbed by proposed project construction/dredging, the proposed Project represents less than 1% of the available feeding area in the harbor complex, and pelicans have many areas for undisturbed roosting within the harbor, including the Middle Breakwater. Over the long term, the increase of water area due to harbor cuts would provide a small additional foraging area for California brown pelicans.

Marine Mammals

No listed marine mammals are expected to occur in the harbor study area. California sea lions are commonly seen in the vicinity of the commercial fish market and near sportfishing vessels returning to the docks in the study area, and harbor seals may also be present. Under the proposed Project, there would be an increase of 6.82 acres

of open-water habitat available to marine mammals through construction of new harbor cuts. There would also be an increase of 5.29 acres of covered water area from construction of over-water structures, which would not preclude use by marine mammals. The new marine habitat area would be greater than the increase in covered area, resulting in a net increase in open-water (unshaded) marine habitat of 1.53 acres. Noise from impact pile driving could cause seals and sea lions to avoid these areas during pile driving. However, with the use of lower sound-producing methods as described in Mitigation Measure MM BIO-3, marine mammals would be readily able to avoid construction areas, and no injury of marine mammals from construction sound is expected.

Other Special-Status Species

No nesting habitat for double-crested cormorant, black skimmer, elegant tern, California gull, and common loon exists within the study area, so their presence at or near the proposed project area would be for feeding in the harbor waters, resting on the water surface, and/or roosting on structures.

Black skimmers have been observed nesting on the central portion of Pier 400 (1998–2000 and in 2004 with poor success). No black skimmer nesting has occurred on Pier 400 since 2004, although non-nesting birds have been observed during California least tern monitoring in 2006 and 2007. Black skimmer are not expected to nest within the study area. The area at Pier 400 where they nested previously is now a container terminal and no project improvements are planned for Pier 400; therefore, black skimmer would not be affected by the proposed Project.

Elegant terns, predominantly from Bolsa Chica (Collins 2006a), nested in the 12-acre area adjacent to the west side of the least tern nesting area in 1998 and 2000 through 2005, with observations of 166 nests in 2001 to 10,170 in 2004 (Keane Biological Consulting 2005b). This area had been cleared of vegetation through 2004 to provide additional nesting habitat for the California least tern. Approximately 2,700 elegant tern nests were present in 2005, but the terns abandoned the site after a nocturnal predator visited the site, probably moving to Bolsa Chica (Keane Biological Consulting 2005b), and did not nest there in 2006 or 2007 (Keane Biological Consulting 2007a, 2007b).

Proposed project construction activities could result in significant short- or long-term effects on the black-crowned night heron, which have nested in trees near the Berth 78–Ports O'Call area during past years, but were not observed in nesting surveys conducted in May 2008. Great blue heron, which have nested in light stands at Berths 49–51 and have nested at Reservation Point approximately 0.5 mile from the proposed project study area, could also be affected by proposed project construction activities. Adverse affects would be reduced with implementation of Mitigation Measure MM BIO-2.

Burrowing owls have been observed at and near the California least tern nesting site (approximately 1.6 miles away from proposed project activities) from 2003 through 2007 and appear to be preying on the California least terns. No observations of burrowing owl pairs or other indications of nesting have been observed during the

least tern monitoring (Keane pers. comm.). However, since individuals are present during the burrowing owl nesting season (February 1 through August 31), it is assumed that nesting could occur on Pier 400. Proposed project construction activities would not occur at the Pier 400 site and would not affect burrowing owl in the event nesting did occur there. Additionally, implementation of Mitigation Measure MM BIO-2 would identify presence of burrowing owl in the unlikely event they were nesting within the area where proposed project activities were to occur.

CEQA Impact Determination

As described above, construction of the proposed Project could result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern. In-water construction would cause localized activity, noise, and turbidity that may disrupt marine mammals, designated special aquatic sites such as eelgrass beds, and the special-status bird species' foraging activities and cause them to avoid the construction area during those activities. Proposed construction activities could affect nesting black-crowned night and great blue herons. Also, restoration of the salt marsh could cause turbidity that extends into the Outer Harbor, affecting foraging California least terns. Impacts would be significant; however, implementation of Mitigation Measure MM BIO-1 would prevent excessive turbidity, thereby minimizing the impact from construction activities on marine habitat and species, and Mitigation Measure MM BIO-2 would be implemented to prevent disturbance of nesting birds from construction activity. Significant impacts on sea lions, which are continuously present along the Main Channel, resulting from noise associated with pile driving would be reduced with implementation of Mitigation Measure MM BIO-3.

Mitigation Measures

MM BIO-1. Monitor and manage turbidity. Although in-water activities and Promenade construction adjacent to and along Cabrillo Beach will not occur during the least tern nesting season(April through August), construction activities in this vicinity will be monitored for visible turbidity in shallow water adjacent to the San Pedro de Salinas Salt Marsh to prevent adverse impacts to eelgrass growth and survival and least tern foraging habitat. This requirement will be monitored by the qualified biologist and will be based on visually observed differences between ambient surface water conditions and any dredging turbidity plume. The biologist will report to the LAHD construction manager and environmental manager, the USACE Regulatory Division, and CDFG/USFWS any turbidity from project construction activities that enters the shallow-water area outside of the salt marsh. Dredging activities will be modified in consultation with CDFG/USFWS. Corrective measures could include using a different dredge bucket to reduce water entrainment, installation of a floating silt curtain to contain turbid water, or other measures.

MM BIO-2. Conduct nesting bird surveys. This measure applies if construction is to occur between February 15 and September 1. Prior to ground-disturbing activities, a qualified biologist will conduct surveys for the presence of black-crowned night herons, blue herons, and other nesting birds within Berth 78–Ports O'Call or other

appropriate and known locations within the study area that contain potential nesting bird habitat. Surveys will be conducted 24 hours prior to the clearing, removal, or grubbing of any vegetation or ground disturbance. If active nests of species protected under the MBTA and/or similar provisions of the California Fish and Game Code (i.e., native birds including but not limited to the black-crowned night heron) are located, then a barrier installed at a 50–100 foot radius from the nest(s) will be established and the tree/location containing the nest will be marked and will remain in place and undisturbed until a qualified biologist performs a survey to determine that the young have fledged or the nest is no longer active.

MM BIO-3. Avoid marine mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring within the Outer Harbor will include establishment of a safety zone, and the area surrounding the operations will be monitored by a qualified marine biologist for pinnipeds. As the disturbance threshold level sound is expected to extend at least 1,000 feet from the steel pile driving operations, a safety zone will be established around the steel pile driving site and monitored for pinnipeds within a 1,200-foot-radius safety zone around the pile. As the steel pile driving site will move with each new pile, the 1,200-foot safety zone will move accordingly. Observers on shore or by boat will survey the safety zone to ensure that no marine mammals are seen within the zone before pile driving of a steel pile segment begins. If marine mammals are found within the safety zone, pile driving of the segment will be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor will wait at least 15 minutes, and if no marine mammals are seen, it may be assumed that the animal has moved beyond the safety zone. This 15-minute criterion is based on a study indicating that pinnipeds dive for a mean time of 0.50 minutes to 3.33 minutes; the 15-minute delay will allow a more than sufficient period of observation to be reasonably sure the animal has left the project vicinity.

If pinnipeds enter the safety zone after pile driving of a segment has begun, pile driving will continue. The biologist will monitor and record the species and number of individuals observed, and make note of their behavior patterns. If the animal appears distressed, and if it is operationally safe to do so, pile driving will cease until the animal leaves the area. Pile driving cannot be terminated safely and without severe operational difficulties until reaching a designated depth. Therefore, if it is deemed operationally unsafe by the project engineer to discontinue pile driving activities, and a pinniped is observed in the safety zone, pile driving activities will continue until the critical depth is reached (at which time pile driving will cease) or until the pinniped leaves the safety zone. Prior to the initiation of each new pile driving episode, the area will again be thoroughly surveyed by the biologist.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be significant before mitigation, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2a: Construction of the proposed Project would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Natural Habitats

Special aquatic habitats and sensitive natural communities identified in the proposed project area that would be affected by proposed project construction include scattered kelp outcrops along the Main Channel adjacent to Warehouse 1 and the proposed Outer Harbor Cruise Terminals, eelgrass and mudflat habitat adjacent to the Youth Camp, mudflat habitat at Berth 78–Ports O'Call, and mudflat, salt marsh, and cord grass habitat at the Salinas de San Pedro Salt Marsh The isolated remnant coastal freshwater marsh along 22nd Street would not be affected by construction of the proposed Project.

Kelp Beds. The area of kelp beds within the study area fluctuates throughout its annual growing season (March–October). Little or no kelp beds (macro-algae beds) exist between Berths 74 and 92, and construction of proposed project features in these areas would not directly affect kelp beds. Construction of the promenade along Berths 68–72 and construction of the wharf extension at the Outer Harbor Cruise Terminal at Berths 49–50 could result in temporary disturbance of kelp outcrops (predominantly *Egregia* and *Macrocystis*) due to the barges used for pile driving and work boat activities. However, these activities would be of short duration, and any affected kelp would be expected to reestablish if disturbed.

Salt Marsh, Mudflats, Eelgrass, and Cord Grass. Effects on the 0.175-acre mudflat habitat at Berth 78–Ports O'Call would be offset by expansion and enhancement of the Salinas de San Pedro Salt Marsh. Currently, the salt marsh is not functioning optimally due to poor tidal circulation. As part of the mitigation for the proposed Project, LAHD is proposing to expand and enhance the salt marsh by excavating, recontouring, revegetating, and monitoring this area.

Loss of mudflat habitat functioning at Berth 78–Ports O'Call due to shading would be mitigated by the creation of a new mudflat area at a ratio of 1:1 as part of the

proposed salt marsh habitat enhancement/expansion described in Mitigation Measure MM BIO-4.

Construction of the promenade along the Youth Camp and Salinas de San Pedro Salt Marsh area would not affect salt marsh habitat, as the promenade is proposed to be located outside the perimeter. A minor amount of mudflat habitat may be affected by shading as a result of promenade construction at the inlet to the salt marsh (see Figure 3.3-4). However, the promenade would be 15 feet above MLLW above the mudflat, which would allow light underneath the structure, and the proposed enhancement/expansion of the 3.25-acre Salinas de San Pedro Salt Marsh area is expected to more than offset any minor impacts anticipated as a result of this construction activity (see Mitigation Measure MM BIO-4). Furthermore, because no barge-mounted construction equipment would be used in the construction of the salt marsh promenade, no disturbance of eelgrass located in harbor waters adjacent to these areas would be affected as a result of propeller wash or barge grounding. Any cord grass observed within the footprint of the salt marsh promenade would be salvaged by a restoration ecologist. The plant material would be stored at an appropriate native plant nursery until restoration efforts are fully implemented. Any impacts to cord grass would be mitigated by Mitigation Measures MM BIO-4 and MM BIO-5.

Enhancement/expansion of the 3.25-acre Salinas de San Pedro Salt Marsh would result in temporary impacts on the salt marsh, and eelgrass and mudflat habitat. Permanent loss of any vegetated intertidal habitat would be mitigated fully within the salt marsh expansion and enhancement area. Improvements would ultimately increase tidal circulation within this location and increase the diversity of flora and fauna in the salt marsh (Figure 3.3-5).

Eelgrass present within the salt marsh area, as well as along the inlet and proposed location for placement of the rock groin intended to increase tidal circulation and protect the integrity of the inlet (Appendix E.7), would be affected by the proposed enhancement and expansion activities. The proposed rock groin would be placed along the north side of the inlet, at the far extent of Cabrillo Beach. The rock groin would be approximately 220 feet long, 25 feet wide, and 13 feet high (bottom/toe at -5 feet MLLW and top/crest at +8 feet MLLW), with a footprint of 0.13 acre. Of this area, approximately 0.07 acre of eelgrass would be permanently covered, as well as 0.04 acre of existing mudflat (Figure 3.3-6). Additionally, a construction buffer zone around the rock groin placement would potentially temporarily affect another 0.25 acre of eelgrass, but these areas would be expected to reestablish and would be monitored by a qualified biologist following conclusion of rock groin placement.

The proposed expansion and enhancement activities also include removing the island located in the center of the salt marsh, which provides only marginally functioning terrestrial habitat. The proposed enhancement plan includes removing sediment that is trapped in the salt marsh as a result of poor tidal flushing and taking the elevation of the majority of the salt marsh area down to -4 MLLW. This would result in significant short-term impacts to the eelgrass located within the salt marsh. Approximately 0.23 acre of eelgrass would be affected by the proposed expansion and enhancement. All eelgrass impacted by proposed construction would be

Figure 3.3-4
Existing Inlet to Salinas de San Pedro Salt Marsh

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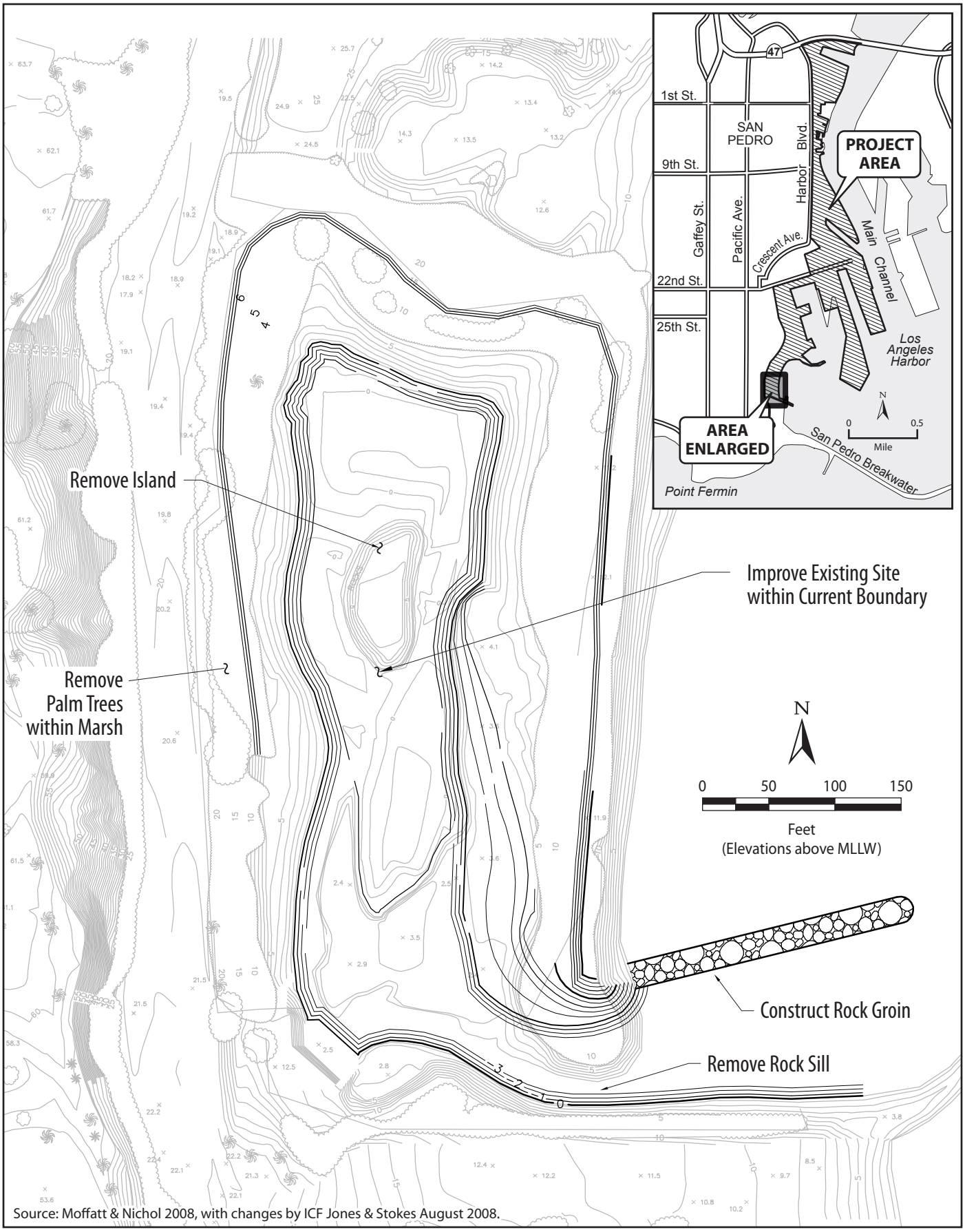
01074.07 (5-16-08)



Source: Moffatt & Nichol 2008, with changes by ICF Jones & Stokes August 2008.

01074.07 (8-1-08)

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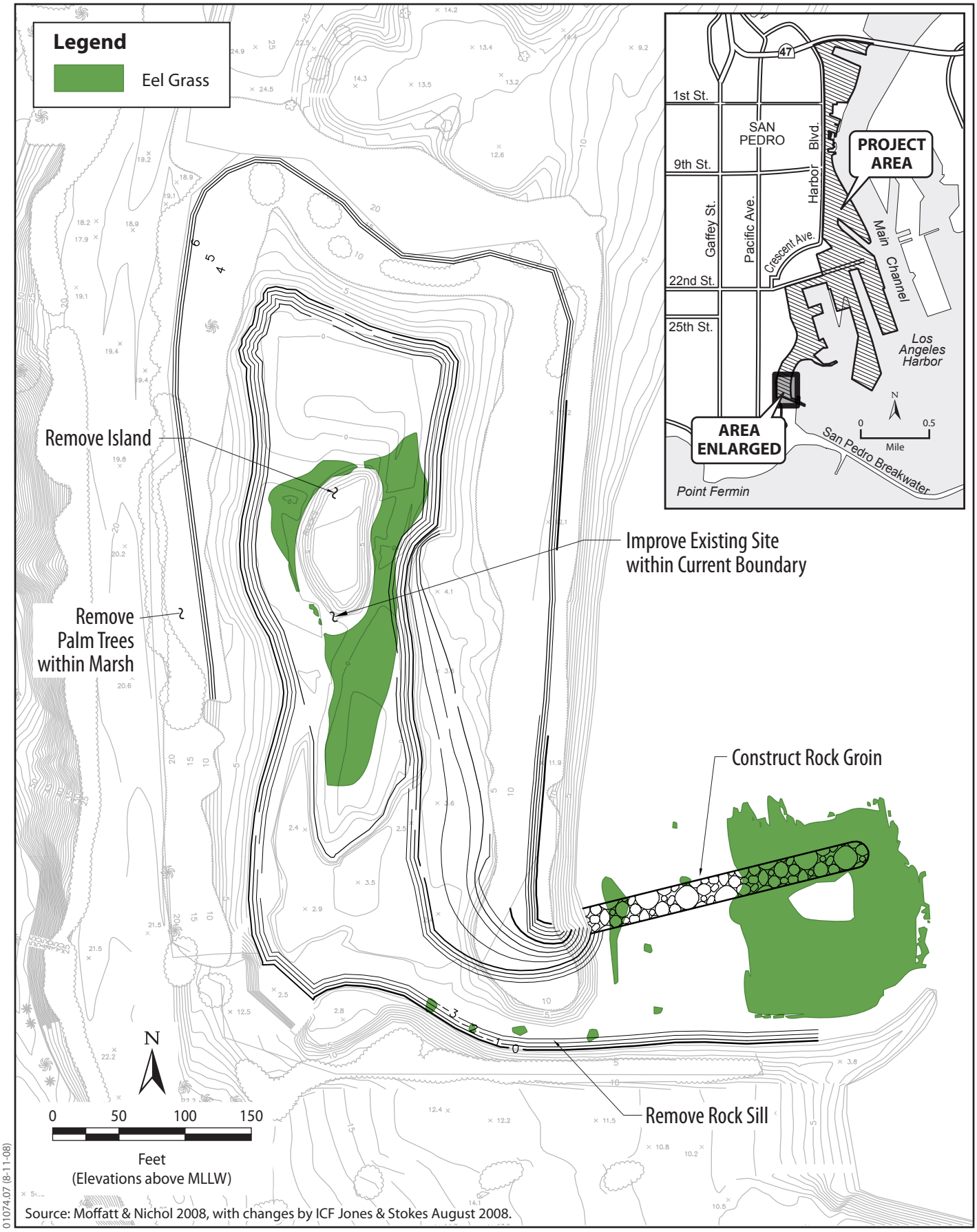
Figure 3.3-5
Proposed Salt Marsh Mitigation Improvements



Source: Moffatt & Nichol 2008, with changes by ICF Jones & Stokes August 2008.

01074.07 (8-11-08)

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Figure 3.3-6
Eelgrass Locations

reestablished and mitigated within the expanded and enhanced salt marsh in accordance with the *Southern California Eelgrass Mitigation Policy* (NMFS 1991). Implementation of Mitigation Measure MM BIO-5 (Implementation of a Mitigation and Monitoring Plan) would assist in the success of the restoration efforts.

Expansion and enhancement of the salt marsh and mudflat as mitigation for the shading of the mudflat habitat at Berth 78–Ports O'Call and the inlet to the Salinas de San Pedro Salt Marsh, as well as restoration of tidal flushing, would result in significant short-term impacts on the existing mudflat in the salt marsh and coastal salt marsh through loss of production and use by shorebirds and other aquatic species; however, salt marsh enhancement would provide long-term benefits to aquatic organisms and habitat functions by removing accreted sediments and improving circulation.

Concurrent with the addition of mudflat at the Salinas de San Pedro Salt Marsh, accumulated sediment would be removed to restore the marsh area to its as-built condition. Construction associated with the salt marsh enhancement would cause temporary disturbance of vegetation, water quality, and soils. Turbidity from the Salinas de San Pedro Salt Marsh enhancement/restoration activities could result in turbidity extending into the eelgrass beds and mudflat immediately offshore of the site. Implementation of Mitigation Measure MM BIO-5 would ensure success of the restoration efforts.

Coastal Freshwater Marsh. The isolated remnant coastal freshwater marsh located at 22nd Street/Old Tank Farm (0.30-acre) is a state-jurisdictional water. No construction activities or proposed project improvements would impact the state coastal freshwater marsh. Therefore, no temporary or permanent impacts would occur within the state jurisdictional coastal freshwater marsh.

Essential Fish Habitat

Marine habitat in the harbor functions as EFH for several pelagic species regulated under the MSA (see Table 3.3-2). Construction of over-water structures could affect use of these areas by these EFH species. However, the area along the San Pedro Waterfront is already affected by boat docks, floats, and shading from over-water walks, buildings, and vertical walls; therefore, the proposed Project's additional in-water structures are considered adverse but not significant impacts. In addition, 6.8 acres of new, open-water habitat would be created through the construction of the new harbor cuts. While it is anticipated that these harbor inlets would not support higher fish habitat values as seen in the Outer Harbor, they would provide additional EFH habitat value similar to that found in existing Inner Harbor areas, which include Inner Harbor channels, slips, and marinas. In addition, the proposed Project would expand and enhance the Salinas de San Pedro Salt Marsh, which would likely increase its use by EFH species. Therefore, the proposed Project would not have a significant adverse effect on EFH over the long term.

Proposed project construction of the wharves, docks, and the promenade would potentially affect EFH and fish listed in Coastal Pelagic and Pacific Groundfish FMPs through changes in marine habitat and the potential for turbidity, temporary

displacement of individuals due to construction activities, release of contaminants to the water column, temporary lighting, and underwater sound from the pile driving. Appendix E.8 shows conceptual representative cross sections of new harbor cuts. Installation of piles during construction of the berth structures would result in vibration in the water, as well as a small amount of turbidity. Because the proposed Project has potential to adversely affect EFH, an EFH consultation with NMFS would be conducted pursuant to the MSA. An EFH assessment is included as Appendix E.9.

Sound pressure waves in the water from pile driving can affect fish, particularly those with a swim bladder, with the level of effect influenced by factors such as species, size of fish (smaller fish are affected more), physical condition of fish, peak sound pressure and frequency, shape of the sound wave, depth of water at the piles, location of fish in the water column, amount of air in the water, size and number of waves on the water surface, bottom substrate composition and texture, tidal currents, and presence of predators (NMFS 2003; NMFS 2004). Types of effects on fish can include mortality from swim bladder rupture or internal hemorrhaging, changes in behavior, and hearing loss (permanent or temporary) (Vagle 2003). The most common behavioral changes include temporary dispersal of fish schools. Sound pressure waves caused by the steel pile driving could affect fish near the piles with mortality of some individuals. The four species in the Coastal Pelagics FMP (northern anchovy, Pacific sardine, Pacific mackerel, and jack mackerel) are common water-column species in the harbor that could be affected by pile driving. The only common Pacific Coast groundfish species, Pacific sanddab, likely to be present near construction activities could also be affected by pile driving. The number of fish affected would depend on the distribution and abundance of these species near the construction site at the time of construction. However, there have been no documented cases of fish mortality as a result of pile driving in the harbor. Fish in the Pacific Groundfish FMP, other than the Pacific sanddab, are generally not abundant in the harbor. Additionally, the soft start that would occur as part of Mitigation Measure BIO-3 would generally influence fish to avoid the work area while construction activities were under way. Thus, few individuals would be present in or near the work area, and those present would likely move out of the work area.

Effects of proposed project construction activities would be of short duration (a few weeks to months) and would occur in a small area. A small amount of the benthic infauna and the epibenthic macroinvertebrates found in the harbor water adjacent to the construction activities would be lost within the footprint of the piles being driven and the rock placed around the base of these piles, and soft-bottom habitat would be converted to hard-bottom at these locations. The turbidity generated by driving each pile would be localized immediately adjacent to the pile and would dissipate rapidly with minor effects on invertebrates and fish at the pile locations. The small loss of prey for managed fish species would not adversely affect their populations within the harbor due to the large amount of undisturbed foraging area available and the small number of individuals of managed groundfish species that feed on benthic organisms in the harbor. Construction disturbances such as turbidity would have a negligible effect on eggs and larvae of managed species, which are located primarily in the water column and move with water currents, and, thus, would be exposed only

briefly to turbidity. Additionally, only a small number would be affected in the construction area relative to those present in all marine habitats in the harbor. Adult and juvenile fish of managed species would likely avoid the disturbance area during construction activities and would not be adversely affected.

The sound pressure waves from pile driving could cause mortality of a few fish in the Coastal Pelagics FMP, but these species are abundant in the harbor and loss of a few individuals would not cause a substantial reduction of their populations. The proposed Project could cause the loss of a few individuals but would not cause a significant loss of EFH. Approximately 1,750 new support piles would be installed for wharf, dock, pier, and promenade construction. Piling installation would be accomplished with a combination of jetting (for concrete piles), vibratory (for steel piles), and impact pile driving methods (for all piles). While jetting and vibratory methods would be used to the extent possible, all piles would probably require impact driving to achieve the final depth and properly set the piles. The size and type of the pilings affects the sound volume produced during pile driving. Steel piles produce higher volume sound than concrete piles, and larger piles generally produce higher sound volume than smaller ones. In addition, the extent and intensity of noise effects would also depend on the underwater geography and water depth in the piling vicinity.

Concrete piles would be used throughout most of the proposed Project, but some steel piles would be required for boat docks. These would be installed using hydraulic jetting, with impact driving to achieve final depth and to firmly set the piles. While jetting is not expected to create high-intensity underwater sound, impact driving of concrete piles is expected to produce peak sound volumes of up to 188 dB_{PEAK} and 173 dB_{RMS} at a distance of 32.8 feet (WSDOT 2007). Likewise, steel piles would be installed part way with relatively low-noise vibratory methods and set to final depth with an impact driver. Steel piles that are 12 inches in diameter impact driven are expected to produce up to 190 dB_{PEAK} at a distance of 32.8 feet (WSDOT 2007). Although sound volume produced depends on local conditions, monitoring from other projects indicates that sound levels up to 217 dB_{PEAK} and 203 dB_{RMS} may be produced during impact driving, which is required to set the steel piles to final depth, for steel piles up to 24 inches (WSDOT 2007). However, the increased noise levels are of a short duration and would not result in substantial effects to EFH or loss of sustainable fisheries. A small amount of water column habitat would be converted to hard substrate (piles) due to berth and promenade construction, and the addition of rock placed around the piles in soft sediments would convert a small amount of soft-bottom habitat to hard substrate. These minor effects on EFH would not result in loss of sustainable fisheries.

Upland construction activities (e.g., cruise terminal facilities, Ports O'Call redevelopment, parking structures, etc.) would have no direct effects on EFH, which by definition is located in the water. Runoff of sediments from such construction could enter harbor waters; however, as discussed in Section 3.14, "Water Quality, Sediments, and Oceanography," implementation of sediment control measures (e.g., sediment barriers and sedimentation basins) would minimize such runoff and result in minimal effects on water quality that could affect EFH.

CEQA Impact Determination

Natural Habitats. Proposed project construction activities would affect several special aquatic sites in the project area, including a small mudflat at Berth 78–Ports O'Call; mudflat and eelgrass habitat within the Salinas de San Pedro Salt Marsh and at the proposed location for the rock groin; salt marsh habitat, cord grass, and mudflat habitat in the Salinas de San Pedro Salt Marsh; and kelp outcroppings at Berths 68–69 and Berths 47–50 at the proposed Outer Harbor Cruise Terminals. Avoidance measures and Mitigation Measures MM BIO-1 through MM BIO-5 would reduce these impacts to less-than-significant levels. However, construction activities associated with expansion and enhancement of the mudflat and salt marsh for the long-term benefit of the marsh would result in significant short-term impacts on the salt marsh, and eelgrass and mudflat habitat within the marsh. While implementation of Mitigation Measure MM BIO-5 would reduce these effects, this short-term impact remains significant and unavoidable.

Essential Fish Habitat. Temporary disturbances in the water during wharf, dock, and promenade construction would affect EFH or result in minimal loss of fish in managed species as described above, but would not substantially reduce their numbers. Additionally, conversion of a small amount of soft-bottom to hard-substrate habitat would occur as a result of the proposed Project, resulting in a minor loss of benthic invertebrates and water column habitat; however, this is not a significant impact. Overall, a net increase in open-water habitat through harbor cuts would result from the proposed Project. Construction activities for upland areas such as cruise ship terminals, Ports O'Call, and parking structures would have no direct impacts on EFH because none is present at those sites. Indirect impacts through runoff of sediments during storm events would be less than significant because such runoff would be controlled as described for water quality in Section 3.14 (e.g., project-specific SWPPP with construction BMPs such as sediment barriers, sediment traps, and sedimentation basins). In addition, the work would be conducted in compliance with applicable permits, such as the USACE's Section 10 (RHA), Section 404 (CWA), and Section 103 (MPRSA), and RWQCB's 401 water quality certification. With implementation of mitigation measures, impacts would be less than significant under CEQA.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-3. Implement Mitigation Measures MM BIO-4 and MM BIO-5 below.

MM BIO-4. Enhance and expand Salinas de San Pedro Salt Marsh. To mitigate impacts associated with shading of the 0.175-acre mudflat habitat at Berth 78–Ports O' Call, shading created by the installation of the promenade at the inlet to the Salinas de San Pedro Salt Marsh, 0.07-acre impact to eelgrass, and 0.04-acre impact to mudflat habitat from placement of the rock groin, LAHD will expand the mudflat and salt marsh habitat and reestablish eelgrass within Salinas de San Pedro Salt Marsh in accordance with the *Southern California Eelgrass Mitigation Policy*. It is anticipated that the mudflat area within the salt marsh will be increased approximately 0.56 acre converting only upland areas to do so and that eelgrass

habitat will be reestablished within the salt marsh with no net loss. These improvements will occur by recontouring the side slopes to increase mudflat area, removing the rocksill within the inlets, removing nonnative vegetation, removing the rock-sloped island within the marsh, lowering the elevation of the salt marsh, and constructing a rock groin at the marsh inlet to block littoral sediment from entering the marsh. Figure 3.3-5 illustrates the proposed improvements to the salt marsh.

MM BIO-5. Prepare a habitat mitigation and monitoring plan. A habitat mitigation and monitoring plan (HMMP) will be developed to detail the Salinas de San Pedro Salt Marsh expansion and enhancements and will include the following performance measures: 1) eelgrass, pickleweed, cord grass, and other native species present will be salvaged prior to construction and placed in a nursery for replanting post-restoration; 2) salvaged plants will be replanted at appropriate tidal elevations; 3) sediments removed from the salt marsh will be disposed of at LAHD's upland disposal site at Anchorage Road (see Section 3.14, "Water Quality, Sediments, and Oceanography"); 4) turbidity will be monitored in accordance with Mitigation Measure MM BIO-1 so that nearby eelgrass and mudflat habitat is protected during restoration activities; and 5) at the completion of expansion and enhancement activities, the salt marsh and associated mudflat will be monitored by a qualified restoration ecologist at Years 1, 2, 3, 5, and 10 to ensure performance standards are met and that restored areas, including eelgrass and a minimum of 0.175 acre of created mudflat, are self-sustaining by Year 5.

Residual Impacts

Short-term residual impacts on the salt marsh and on the eelgrass and mudflat habitat during expansion and enhancement construction activities would occur. These effects are temporary significant and unavoidable impacts. An overall net gain in habitat area (minimum 0.20 acre of mudflat for Berth 78 and rock groin placement) and functions of the salt marsh and mudflat would be achieved (see Impact BIO-2b). Additionally, new harbor cuts would result in a net gain of open-water Inner Harbor habitat available to EFH species. Water quality BMPs included in the proposed Project as detailed in Section 3.14.4.3, such as silt fencing, sediment basins, and sediment traps, would be implemented as part of the proposed Project.

NEPA Impact Determination

As discussed for the CEQA analysis, short-term impacts on the salt marsh and on the eelgrass and mudflat habitat would be significant and unavoidable. However, overall a net gain in mudflat habitat (minimum 0.20 acre) and increased functions of the salt marsh to support eelgrass and other native vegetation would occur (see Impact BIO-2b). Impacts on EFH and special aquatic habitat would be significant without mitigation, but with application of Mitigation Measures MM BIO-1 through MM BIO-5, these impacts would be less than significant. Water quality BMPs included in the proposed Project as detailed in Section 3.14.4.3 would also be implemented. Additionally, temporary effects on EFH would not substantially affect EFH-managed species nor would the minor effects of conversion of soft-bottom habitat to hard substrate. Long term, the proposed Project would result in a net

increase in open-water habitat through harbor cuts. Overall, the proposed Project would result in less-than-significant impacts on EFH and special aquatic habitats.

Mitigation Measures

Implement Mitigation Measures MM BIO-1through MM BIO-5.

Residual Impacts

Residual impacts would be short-term, significant and unavoidable, as discussed for residual impacts under CEQA. An overall net gain in habitat area (minimum 0.20 acre of mudflat) and functions of the salt marsh, eelgrass, and mudflat would be achieved (see Impact BIO-2b). Additionally, new harbor cuts would result in a net gain of open-water Inner Harbor habitat available to EFH species.

Impact BIO-3a: Construction of the proposed Project would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

No known terrestrial wildlife migration corridors are present in the study area. The only defined migratory species in the harbor are birds. California least tern is a migratory bird species that nests on Pier 400; construction of the proposed Project would not interfere with the aerial migration of this species. Movement to and from foraging areas in the harbor also would not be affected by proposed project construction activities. The western snowy plover is also a migratory species, and a few migrating individuals have been observed at the least tern nesting site in recent years. Breeding individuals of the California brown pelican move to breeding sites in Mexico and on offshore islands for part of the year. A number of other water-related birds that are present at least seasonally in the harbor are migratory as well. Construction activities within the study area would not block or interfere with migration or movement of any of these species covered under the MBTA because the work would be in a small portion of the harbor area where the birds occur and the birds could easily fly around or over the work.

Fish species present in the harbor would be subject to temporary acoustic and possibly water quality impacts during dredging and installation of structures such as bulkheads and pilings to support over-water structures. The sound pressure waves from pile driving could cause mortality of a few fish in the Coastal Pelagics FMP, but these species are abundant in the harbor and loss of a few individuals would not cause a substantial reduction of their populations. These impacts could result in temporary avoidance of the construction areas. However, these effects would be temporary, lasting for a few days at a time. There would be no physical barriers to movement, and the baseline condition for fish and wildlife access would be essentially unchanged.

Project-related construction vessel traffic to and from the harbor (i.e., tugboats carrying disposal materials to LA-2 or LA-3) would not interfere with marine mammal migrations along the coast because these vessels would represent a small

proportion (3%) of the total Port-related commercial traffic in the area, and each vessel would have a low probability of encountering migrating marine mammals during transit through coastal waters because these animals are generally sparsely distributed (LAHD and USACE 2007).

CEQA Impact Determination

No wildlife movement or migration corridors would be affected by the proposed Project during construction activities on land and in the water as described above. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

No wildlife movement or migration corridors would be affected by the proposed Project during construction activities on land and in the water as described above. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4a: Dredging, filling, and wharf construction activities for the proposed Project would not substantially disrupt local biological communities.

Biological communities, the collection of species inhabiting a particular habitat or ecosystem, can potentially be disrupted by changes in environmental conditions that favor a different assemblage of species, or alter the dynamics among species that make up a biological community. The significance of changes in local conditions depends on the extent and duration of those changes, as well as the species or groups of species affected. Because the terrestrial portions of the proposed Project are largely developed, impacts on terrestrial biological communities would be limited.

Construction-related impacts on marine biological communities are expected to be temporary, lasting through the construction period and for a short time thereafter. These include physical disturbance, underwater noise, and turbidity produced during

pile driving, dredging, bulkhead installation, and rock placement. Lasting changes in the physical environment that may affect biological communities are discussed under Impact BIO-4b.

Physical Disturbance

Where structures (pilings, bulkheads, toe protection rock) are installed below the ordinary high water mark (OHWM) or high tide line, some physical disturbance of the underlying sediment would be inevitable and a small loss of or conversion of habitat area would occur where rock is placed around the bottom of the pilings. Benthic habitat at the piling sites would be disturbed, and individual invertebrates would be crushed. Sediment displaced during pile driving would bury surface organisms in the immediate vicinity (i.e. within an approximately 1-foot diameter around each piling). Sediment recolonization would occur rapidly, however, so this impact would be limited in both time and space and would not constitute a substantial disturbance of biological communities.

Under the proposed Project, 760 existing pilings would be removed, and 1,750 pilings would be installed. Removal of existing pilings would remove piling habitat that forms a base of attachment for a variety of marine invertebrates. Most of the pilings that would be removed are creosote-treated wood and many are covered with a protective plastic covering. Plastic pile covers and toxins in the creosote piles inhibit colonization by invertebrates. The concrete pilings that would be installed would provide a better point of attachment for marine invertebrates, as these organisms are adapted to attach to stony surfaces (such as concrete) and the concrete is non-toxic and would not require wrapping.

Prior to installation of in-water structures, eelgrass surveys would be conducted as required under the *Southern California Eelgrass Mitigation Policy* (NMFS 1991). If eelgrass is found in the vicinity of any of the structures, a mitigation plan would be developed to ensure that there would be no loss of eelgrass habitat. However, since the depth, substrates, or water quality are generally inadequate for eelgrass growth where structures are proposed, and no eelgrass has been observed in these areas to date, the proposed Project would probably have no impact on eelgrass and associated biological communities.

As discussed under Impact BIO-1a, special-status and other sensitive species in the harbor that could use the water surface and shoreline and potentially be displaced or affected during construction include the harbor seal, sea lion, California least tern, California brown pelican, American peregrine falcon, double-crested cormorant, black skimmer, elegant tern, Caspian tern, California gull, western snowy plover, black-crowned night heron, great blue heron, swallows, and common loon. Physical disturbances as a result of proposed project construction activities could temporarily disrupt foraging and other activities of these species, however, no substantial disruption to biological communities would result from proposed project construction.

Dredging can affect aquatic organisms in many ways. Direct impacts would occur to organisms living within the sediments removed as part of the dredging activity.

Dredging can adversely affect aquatic organisms if toxic substances are present in sediments and if those sediments are suspended in the water column during dredge activities or when disposed of at a marine disposal site. Implementation of Mitigation Measure MM BIO-6 would reduce the effects of dredging activities. Dredging can affect fish by temporarily increasing turbidity in the dredge vicinity. Turbidity can adversely affect fish and other aquatic life by impairing vision and sense of smell, injuring gills, reducing water transparency, and covering sessile organisms. If anoxic sediments are disturbed, dissolved oxygen may also be reduced in the water column during dredging in the vicinity of the dredge operation. Water quality effects of dredging depend on the quality of sediments, currents, and type of dredge equipment used. However, based on water quality monitoring data from other harbor dredge projects using suction and clamshell dredge equipment (Jones & Stokes 2007a, 2007b), water quality effects are expected to be transitory, lasting for less than one tide cycle following active dredging, and covering an area generally within 1,000 feet of the activity, and often less than 300 feet. Suction dredging generally has a smaller impact area, often less than 300 feet (Jones & Stokes 2007a, 2008). Turbidity may also be temporarily increased during installation of piles, bank protection rock, and bulkheads. However, the extent would generally be much less than the area affected by dredging, probably affecting a radius of no more than about 100 feet from the activity.

Noise

As described under Impact BIO-2a, pile driving creates underwater sound. Although this sound is not expected to cause injury to marine mammals, it may be of a sufficient volume and range to cause some acoustic impacts to fish. Acoustic impacts may include avoidance of the proposed project area, injury, or death. As described under Impact BIO-2a, the extent of acoustic impacts would depend on the size and type of pilings used, and the pile driving methods used. Vibratory methods that are proposed for driving steel piles have not been shown to cause fish injury (WSDOT 2007) . Impact methods, along with jetting, would be required to drive or proof the concrete pilings. Impact pile driving may cause some fish mortality, particularly at the onset. Because smaller fish are more susceptible to acoustic injury, the species most likely to suffer mortality would be northern anchovy, Pacific sardine, topsmelt, and shiner perch. These species play important roles in the cycling of energy and nutrients in the harbor, which has been designated as EFH for both northern anchovy and Pacific sardine. A peak sound level of 180 dB_{PEAK} has been identified as an injury threshold for small fish. Impact driving of concrete piles would create sound of levels up to 188 dB_{PEAK} to a radius of up to 32.8 feet from each pile. Steel piles that are 12 inches in diameter that are impact driven are expected to produce up to 190 dB_{PEAK} and 177 dB_{RMS} at a distance of 32.8 feet (WSDOT 2007). In some locations, steel pilings up to 24 inches in diameter would be used. Although sound volume produced depends on local conditions, monitoring from other projects indicates that sound levels up to 217 dB_{PEAK} and 203 dB_{RMS} may be produced for steel piles up to 24 inches during impact driving (WSDOT 2007) that is required to set the piles to final depth. Vibratory methods would be used to drive the steel piles (proposed for support of the salt marsh promenade and rails for floating docks), with the exception of the last 20 feet, which would be need to be hammer driven. With implementation of Mitigation Measure BIO-3, the pile driving would initiate with a

soft start, which would minimize impacts to fish in the area, as they would leave the area. This localized activity would not be a significant effect on the biological community in the harbor.

Marine mammals, such as sea lions and harbor seals, in the study area at the time of construction could be temporarily disturbed by construction activities; however, with implementation of Mitigation Measure MM BIO-3, any individuals present would likely avoid the work area. As described under Impact BIO-1a, construction activities are not likely to interfere with marine mammal foraging because the disturbances would be temporary and limited to different discrete locations along the harbor waterfront. These temporary behavioral effects on marine mammals would not measurably affect biological communities.

Light

Shade from construction vessels, and lights to support construction activities at night, would have temporary influences on the distribution of water column species. Certain zooplankton, fish, and squid are attracted to light. Other species may be attracted by concentrations of zooplankton and squid associated with night lighting. Conversely, daytime shading from construction vessels or localized turbidity during in-water construction may reduce algal productivity. Certain fish species are attracted to shade and cover that construction vessels provide, while vibration and activity may frighten certain species from the area. However, since construction activities and locations would be constantly changing, the effects would be similar to those that occur under normal Port operations with vessels constantly coming and going, and night lighting provided for Port operations. Therefore, no substantial disruption of biological communities would occur.

Long-term alterations in light from water-shading structures are discussed below under Impact Bio-4b.

Invasive Species

Construction activities have the potential to introduce or redistribute invasive species if those species are present in the construction area and are disturbed by boat anchors or other equipment, or if in-water equipment or construction vessels bring those species into the proposed project area. However, the potential for introduction during construction activity would be essentially the same as under normal Port operations.

The invasive green alga, *Caulerpa*, has the potential to spread by fragmentation. Prior to in-water work, (including pile driving, dredging, rock placement, and sheet wall installation), an underwater survey for the invasive alga *Caulerpa* would be conducted in order to ensure that no *Caulerpa* is present in the study area (NMFS and CDFG 2007). In the event that *Caulerpa* is detected during pre-construction surveys, an eradication program would be implemented per the requirements of the *Caulerpa* protocol (NMFS and CDFG 2007). Construction would commence only after the area is certified to be free of this invasive species. To date, more than 30 *Caulerpa* surveys have been conducted in the harbor as a standard procedure conducted prior to sediment disturbing activities, and no *Caulerpa* has been found (SCCAT 2008).

Considering the *Caulerpa* survey requirement and absence of *Caulerpa* to date, and with implementation of the aforementioned *Caulerpa* protocols, the potential for proposed project activity to spread this species is unlikely.

CEQA Impact Determination

As described above, construction activities in the study area would cause short-term and locally significant impacts on individuals (e.g. birds, marine mammals, and fish including those with designated EFH). Permanent impacts to mudflat habitat at Berth 78–Ports O'Call and at the inlet to the Salinas de San Pedro Salt Marsh, as well as eelgrass impacts associated with groin placement and lowering the elevation of the salt marsh, would be significant prior to mitigation. Implementation of Mitigation Measure MM BIO-4 (enhancement and expansion of the salt marsh) and MM BIO-5 (HMMP implementation) would reduce these impacts to less than significant. No substantial disruption of biological communities would result from proposed Project construction. Temporary loss of habitat function from construction expansion and enhancement activities within the mudflat, eelgrass, and salt marsh habitat is expected and would result in a short-term significant and unavoidable impact. However, there would be an overall net gain in habitat functions for this area as described in Mitigation Measures MM BIO-4 and MM BIO-5. Impacts on the salt marsh and on the eelgrass and mudflat habitat are discussed under Impact BIO-2a. Only the inlet to the salt marsh habitat would be affected from promenade construction and implementation of Mitigation Measure MM BIO-1 would reduce this impact to less than significant.

Contaminated sediments released during dredging could adversely affect aquatic organisms if toxic substances are present in sediments and if those sediments are suspended in the water column during dredge activities or when disposed of at a marine disposal site. Impacts would be significant. As described in Mitigation Measure MM BIO-6, testing of the sediment for contaminants and appropriate disposal of these sediments would occur as part of proposed project activities. Additionally, water quality BMPs included in the proposed Project as detailed in Section 3.14.4.3 would be implemented. With implementation of mitigation, construction impacts resulting from the proposed Project would be less than significant.

Construction activities that have the potential to introduce or redistribute invasive species would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-5, and Mitigation Measure MM BIO-6 below.

MM BIO-6. Dispose sediment. Prior to dredging, sediments will be tested for contaminants and will only be disposed of at marine disposal sites if they meet the sediment quality and quantity criteria for disposal. Depending on the test results, sediments will be disposed of at a pre-approved ocean disposal site (LA-2, LA-3), a contained disposal facility in the harbor, or an approved upland location such as the

Port's Anchorage Road Soil Storage Site. Disposal in-harbor will only occur if an acceptable disposal site is identified and permitted by the USACE (under Section 404 of the federal CWA). At this time, no in-harbor disposal is foreseeable for the San Pedro Waterfront dredged sediments.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

Impact BIO-5a: Construction of the proposed Project would not result in a permanent loss of marine habitat.

Construction of the proposed Project would add marine habitat area through new harbor cuts in currently developed upland areas adjacent to the Main Channel. The area along the San Pedro Waterfront is already affected by boat docks, floats, and shading from over-water walks, buildings, and vertical walls; therefore, the proposed Project's additional in-water structures are considered adverse but not significant impacts. In addition, 6.8 acres of new open-water habitat would be created through the construction of the new harbor cuts. While it is anticipated that these inlets would not support higher fish habitat values as seen in the Outer Harbor, they would provide additional EFH value similar to that found in existing Inner Harbor areas, which include Inner Harbor channels, slips, and marinas. In addition, the proposed Project would expand and enhance the Salinas de San Pedro Salt Marsh, which would likely increase its use by EFH species. As a result, no EFH habitat area would be lost as a result of the proposed Project, and creation of the new harbor cuts would result in a net gain of open-water Inner Harbor habitat available to EFH species. These gains are summarized for all alternatives in Table 3.3-3. Proposed project construction would, however, add various materials (e.g., rock, steel, concrete) to the aquatic environment. These fills would change the aquatic habitat types in the affected areas from soft-bottom or water column to hard substrates. Over time, these in-water materials would be colonized by aquatic organisms and function as marine habitat, albeit of different character. In total, the acreage of the harbor cuts would exceed the acreage of aquatic habitat altered by discharge of materials from constructing the proposed Project.

Table 3.3-3. Permanent Open Water Habitat Gains from the San Pedro Waterfront Development Project

Project Element	*Proposed Project (acres)*	*Alternative (acres)*			
		1	*2*	*3*	*4*
North Harbor	5.0	5.3	5.0	5.0	0
Downtown Harbor	1.5	1.5	1.5	1.5	1.5
7th Street Harbor	0.3	0.3	0.3	0.3	0.3
Total (acres)	6.8	7.1	6.8	6.8	1.8
Notes: Datum = +4.8 MLLW (mean lower low water) Neither Alternative 5 nor Alternative 6 would involve new harbor cuts or any in-water or over-water activities.					

Overall, the proposed Project would increase aquatic habitat by 6.8 acres through the creation of new harbor cuts. Although there would be changes in habitat character/type from discharge of materials and physical structures, the total quantity of open-water habitat would be increased. Mitigation for impacts on marine biological resources has been developed by LAHD in coordination with the NMFS, USFWS, and CDFG through agreed-upon mitigation policy (USACE and LAHD 1992). This policy defines the value of different habitats in the harbor relative to a system of mitigation credits accrued by creating or enhancing habitat in the harbor and at offsite locations (see Figure 3.3-3). Under these existing mitigation agreements (City of Los Angeles et al. 1984, 1997), this could create 3.4 mitigation credits to be added to LAHD's Inner Harbor Mitigation Bank (LAHD et al. 1984) (i.e., 6.8 acres x 0.5 credit per acre of Inner Harbor value created). Inner Harbor habitat is credited at 0.5 credit per acre rather than 1 credit per acre because of the combined effects of water quality and physical habitat alterations (e.g. riprap, bulkheads, over-water structures) that may reduce the value of Inner Harbor habitat.

CEQA Impact Determination

Proposed project construction would result in an increase in water area, which could add 3.4 mitigation credits to LAHD's Inner Harbor Mitigation Bank. This creation of Inner Harbor new water area would result in increased biological production until the time that banked mitigation credits might be used for some future Port fill. There would be no permanent loss of marine habitat as a result of proposed project construction. Although there would be changes in habitat character/type from discharge of materials and physical structures, the total quantity of open-water habitat would be increased. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

A residual net gain in Inner Harbor open water could result in credits being added to the Inner Harbor Mitigation Bank. Inner Harbor Mitigation Bank credits are used to offset aquatic losses associated with LAHD projects. The proposed Project would also enhance and create intertidal habitats and provide a net increase in marine habitat. While there would be habitat character/type changes, the affected areas would still function as marine habitat, and there would be a net gain in marine habitat. Therefore, impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant, as discussed for the CEQA impact determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

A residual net gain in Inner Harbor open water would occur. Impacts would be less than significant, as discussed for CEQA.

Operational Impacts

Impact BIO-1b: Operation of the proposed Project would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Under the proposed Project, the greatest potential for operational impacts on sensitive marine species would be from accidental fuel spills and/or illegal discharges associated with increased vessel traffic. However, the increase in vessel traffic would be modest and is expected to include an additional one to two cruise ship calls per month. In the event that a spill from the fuel dock operations reaches harbor waters, a variety of marine organisms could be affected. Specific impacts would depend on the type (chemical composition) and size of the spill, exact location of entry into the harbor, and timing (both season and time of day relative to tidal cycle, and the effectiveness of emergency response efforts to contain and clean up the fuel spill). Contaminants could have indirect effects on sensitive species by affecting prey species such as plankton, invertebrates, and fish. Some contaminants could bioaccumulate, potentially reducing the survival and reproductive success of sensitive species. Insoluable hydrocarbons that would float on the water surface

could coat the feathers of birds using the water surface for resting or those diving into the water. Most impacts would occur in the immediate vicinity of the spill, but tidal currents could move the pollutant into the Outer Harbor. Dilution, flushing, and evaporation of volatile materials would reduce concentrations to below toxic levels and ultimately remove the materials from the harbor. Impacts would be local and could range from insignificant to significant, depending on the number and species of organisms affected and the spill's extent, toxicity, and clean up response.

With appropriate operational controls and compliance with the various permit requirements and regulations related to spill control (water quality BMPs included in the proposed Project as detailed in Section 3.14.4.3), it is expected that spills would be contained on site, cleaned up, and disposed of at an approved location, and would thus have minimal impacts on biological resources. These spill events are considered unlikely and the potential impacts on sensitive species are considered less than significant.

Upland operations are not anticipated to result in additional impacts on special-status species since these areas are currently developed or are highly disturbed and provide little habitat potential for special-status species.

The addition of 24 ships from the proposed project cruise vessel calls to the Port would have a low probability of harming endangered, threatened, or species of concern such as marine mammals and sea turtles. Specifically, in regards to cruise vessel collisions with whales in California coastal waters, the large amount of vessel traffic along the coast has resulted in few reported whale strikes over the past 25 years. In addition, the most recent known whale strikes have occurred near the Santa Barbara Channel with vessels traveling through the northern shipping channel routes. The majority of cruise destinations are to the south of the Port of Los Angeles (Catalina, San Diego, and Mexico) or west to Hawaii; these routes avoid the Santa Barbara Channel. However, because blue whales migrate north and south along the California coast and breed in Mexico, there is a small potential for cruise vessels to encounter blue whales during migration.

As discussed in Section 3.3.2.7.2, NMFS recommends that speed restrictions in the range of 10 to 13 knots be used, where appropriate, feasible, and effective, in areas where reduced speed is likely to reduce the risk of ship strikes and facilitate whale avoidance. The Port currently has an approximate 90% participation rate with the Vessel Speed Reduction Program (VSRP) over all vessels entering the harbor complex. The VSRP slows ship speeds to 12 knots from Point Fermin to the harbor, approximately 40 nautical miles out.

CEQA Impact Determination

Increased vessel traffic would incrementally increase the potential for accidental fuel spills and illegal discharges (see Section 3.14, "Water Quality, Sediments, and Oceanography"). Impacts would be significant, however, implementation of spill control mitigation measures (described in Section 3.14, "Water Quality, Sediments, and Oceanography") would reduce the potential for spills to a level that is less than significant.

Cruise ships transiting the coastal waters of southern California could potentially cause harm to endangered, threatened, or species of concern such as marine mammals and sea turtles from vessel collisions. Impacts of project-related vessel traffic on marine mammals would be considered less than significant because of the low probability of vessel strikes. Very few ship strikes involving pinnipeds have been reported over the past 28 years by the Santa Barbara Marine Mammal Center (1976–2004). No sea turtle ship strikes have been reported in the area, although an Olive Ridley sea turtle stranded in the Santa Barbara Channel in 2003 showed signs of blunt force trauma consistent with a vessel strike (Santa Barbara Marine Mammal Center 1976–2004).

Given the small increase in number of vessels compared to the small number of reported strikes per year (less than three), the likelihood of such a collision from the proposed Project is very low and only a small incremental increase in the likelihood of a vessel strike would occur as a result of the proposed Project. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

As described under the CEQA impact determination, significant impacts would be reduced to less than significant with implementation of water quality BMPs.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2b: Operation of the proposed Project would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Natural Habitats

The salt marsh promenade would extend across the entrance to the Salinas de San Pedro Salt Marsh in an unvegetated (see Figure 3.3-4) area located northwest of Inner Cabrillo Beach. The promenade would be located approximately 18 feet above the

sediment surface and support piles would span the salt marsh entrance. Although the promenade would be elevated and would, therefore, not directly affect the inlet to the salt marsh habitat or the salt marsh habitat itself, it would shade a small portion of the inlet to the salt marsh and beach for some part of each day. It is possible that this shade could affect the microclimate and sunlight available for photosynthesis in any minor vegetated areas that would be shaded, thereby altering vegetation in that portion of the salt marsh that receives the greatest shade (along the eastern edge of the marsh). However, because the waterfront promenade would be elevated, only 30 feet wide, and primarily located above the unvegetated inlet to the salt marsh, the shaded vegetated area would change constantly during the morning hours and only a small area directly under the waterfront promenade would be completely shaded. As a result, it is unlikely that shade would measurably alter the salt marsh or mudflats.

The small (0.175-acre) mudflat area located at Berth 78–Ports O'Call would be shaded permanently by the proposed waterfront promenade and a 0.04-acre mudflat area would be permanently covered by the rock groin. The shading of this special aquatic habitat would severely impair its existing values. Because the proposed Project proposes to expand and enhance the Salinas de San Pedro Salt Marsh and associated mudflat area by 0.56 acre, no net loss of mudflat habitat would occur as a result of the proposed Project.

In the Inner Cabrillo Beach area, the elevated portion of the proposed promenade that crosses the beach would shade some intertidal habitat. Eelgrass shading is not expected due to the orientation, dimensions, and position of the promenade in relation to the eelgrass beds, which are located at low intertidal elevations and subtidally (-1.0 MLLW and deeper). Portions of the waterfront promenade that would be built at or close to the existing grade (i.e., north and south of the beaches) would not shade eelgrass at any time.

The distance between the elevated waterfront promenade structure and the edge of the eelgrass bed would be greater than 90 feet. Assuming (conservatively) that the height of the elevated waterfront promenade is 18 feet above the beach or water surface, shading at a distance of 90 feet from the structure would only occur when the sun angle is less than about 10° above the horizon. There would be some variability in the duration of low angle sunlight throughout the seasons, but the time when the sun angle would be less than 10° degrees would be during the 1-hour period before sunset (Table 3.3-4).

Table 3.3-4. Solar Conditions that Result in Shade from the Waterfront Promenade in the Direction of Eelgrass Beds

	Winter Solstice	*Equinox*	*Summer Solstice*
Sun Position	SW to WSW	WSW to W	W to WNW
Calculated length of time that evening sun angle is less than 10°	56 minutes	48 minutes	54 minutes
Calculations made with the Sunposition computer program (Gronbeck 2005).			

The effects of shade would be further reduced because when the sun angle is low, a higher proportion of sunlight striking the water surface is reflected than when the sun angle is high. As a result, shading from a distant object during a short period in the morning or evening hours has a relatively small effect on sunlight available for photosynthesis and, consequently, little effect on eelgrass and algal growth or survival. In addition, because the sun position changes throughout the seasons of the year, the areas and times of shading would change daily. As a result, only the bare sand area in the immediate vicinity of the waterfront promenade would be consistently shaded.

Little or no kelp (predominantly *Egregia* and *Macrocystis*) exists between Berths 74 and 92 or Berths 70–72, and construction of the proposed promenade in these areas would not directly affect kelp beds or indirectly affect them through shading. Small patches of kelp that occur along the Outer Harbor (Berths 68–69) could be affected by shading from the proposed promenade, and the addition of solid wharf deck for the Outer Harbor Cruise Terminal at Berth 48 is also in an area of some scattered kelp outcroppings. The existing remote wharves would remain in place and the kelp at these locations would not be affected. Shading of kelp at Berths 68–69 would be avoided as the promenade would be designed so that it would not extend over and shade the kelp. However, the small amount of kelp that exists at the location of the Outer Harbor Cruise Terminal wharf at Berth 48 could be affected by construction of the solid deck. This represents a very small portion of kelp. The berthing of cruise ships in this location would not significantly affect the kelp because cruise ships would not remain at berth long enough or frequently enough to adversely affect the kelp. In summary, shading would have a less-than-significant affect on kelp outcrops in the proposed project area.

Essential Fish Habitat

The proposed Project would not have a significant impact on EFH. The baseline biological survey of the harbor (MEC 2002) indicated that several fish species managed under MSA are present in the harbor (Table 3.3-2), but only four species in the Coastal Pelagics FMP (northern anchovy, Pacific sardine, Pacific mackerel, and jack mackerel) are common water-column species in the harbor, and the only one Pacific Coast groundfish species (Pacific sanddab) is common in the harbor. New harbor cuts would not fundamentally change vessel activities, and it is expected that these species would use the new open-water area resulting from harbor cuts as they use other Inner Harbor areas. The proposed expansion and enhancement of the salt marsh and mudflat in the Salinas de San Pedro Salt Marsh could also benefit these fish species.

CEQA Impact Determination

The salt marsh promenade would shade portions of the unvegetated entrance to the Salinas de San Pedro Salt Marsh and potentially small portions of the vegetated salt marsh habitat. Because the promenade would be elevated 18 feet and would be 30 feet wide, shading occurrences in any one area would be brief and are not anticipated to alter the vegetation. However, impacts associated with operation of the waterfront

promenade over the 0.175-acre mudflat located at Berth 78–Ports O'Call and the 0.04-acre mudflat area at the entrance to the salt marsh would be significant.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

With implementation of Mitigation Measures MM BIO-4 and MM BIO-5, the 0.175-acre mudflat located at Berth 78–Ports O'Call and the 0.04-acre mudflat area at the entrance to salt marsh would be replaced in-kind at the Salinas de San Pedro Salt Marsh. There would be an overall increase in the amount of salt marsh area and quality within the study area due to the proposed expansion and enhancements to the salt marsh and associated mudflat habitat. This includes the proposed 0.56 acre of new mudflat area through excavation of existing littoral sediments. The new mudflat area would have higher functional capacity than the 0.175-acre area at Berth 78–Ports O'Call as a result of its association with adjacent restored salt marsh and upland habitat location, which is well away from a heavily utilized retail/commercial area and in proximity to increased Outer Harbor water quality. There would be a net gain in salt marsh and mudflat functions and no loss of mudflat habitat; therefore, long-term impacts on mudflat and salt marsh habitat would be less than significant.

Additionally, proposed harbor cuts would create additional open water area that would provide a small, incremental increase in EFH until such time that mitigation credits are utilized for future Port fills.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

Impacts would be less than significant, as discussed for CEQA.

Impact BIO-3b: Operation of the proposed Project would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

No barriers to wildlife passage would result from operation of the proposed Project. The type of activity that would occur within the harbor (vessel traffic) would slightly increase by 24 calls per year and would have no effect on wildlife movement or migration within the harbor.

CEQA Impact Determination

For the reasons stated above, impacts would be less than significant due to operation of the proposed Project.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant, as discussed for the CEQA impact determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4b: Operation of the proposed Project would cause a substantial disruption of local biological communities.

Potential operational impacts of the proposed Project on local biological communities may occur from changes in physical structure and effects of over-water structures related to wharves, piers, bulkheads, floating docks, and the promenades. Vessel traffic also has the potential to introduce nonnative species to the harbor.

Physical Structure

Pilings and floating docks provide a shaded vertical attachment surface that supports a different community of invertebrates compared to rock (Glasby 1999a, 1999b) or soft bottom. Piling communities of barnacles, mussels, anemones, sea stars, and sessile marine worms would colonize concrete and steel pilings, and some fish species (especially rockfish and perch) would likely be attracted to the new over-water structures. Changes in the number of piles under the proposed Project and the alternatives are summarized in Table 3.3-5. The proposed Project would increase the number of pilings in the harbor by 990.

Installation of rock for bank protection affects the composition of the intertidal invertebrate community of the affected intertidal areas. Benthic invertebrate

communities of soft-bottomed intertidal habitat areas in the harbor are dominated by worms and mollusks, while rock provides attachment for sessile invertebrates, macro-algae, and cover for motile organisms (MEC 2002). Where rock replaces vertical bulkheads, there would also be an increase in physical habitat complexity and cover. Conventional vertical bulkheads on the other hand, lack complexity and are thought to provide relatively poor habitat.

Habitat alterations that would occur under the proposed Project are summarized in Table 3.3-5.

Table 3.3-5. Summary of Gain and Loss Resulting from In-Water and Over-Water Structures to Marine Habitat from the Proposed Project and Project Alternatives

	Proposed Project	*Alternative*			
		1	*2*	*3*	*4*
Piling Habitat (no.)					
Gain	1,750	1,540	1,730	1,530	1,110
Loss	760	760	760	760	580
Total	**990**	**780**	**970**	**770**	**530**
Riprap (acres)					
Gain	0	0	0	0	0
Loss	1.0	1.0	1.0	1.0	0.4
Total	**-1.0**	**-1.0**	**-1.0**	**-1.0**	**-0.4**
Floating Docks (acres)					
Gain	1.39	1.39	1.39	1.39	1.35
Loss	-0.58	-0.58	-0.58	-0.58	-0.53
Total	**0.81**	**0.81**	**0.81**	**0.81**	**0.82**
Water Area/Column* (acres)					
Gain	6.8	7.1	6.8	6.8	1.8
Loss	0.0	0.0	0.0	0.0	0.0
Total	**6.8**	**7.1**	**6.8**	**6.8**	**1.8**

Notes:
*Datum = +4.8 MLLW (mean lower low water)

Neither Alternative 5 nor Alternative 6 would involve new harbor cuts or any in-water or over-water activities.

The proposed Project would remove 760 old pilings, most of which are creosote-treated timber piles, and would install 1,750 new concrete or steel piles. The concrete piles would offer a point of attachment for a number colonizing invertebrate

species such as barnacles, mussels, sponges, and anemones. Steel piles would not provide additional habitat for colonization by invertebrate species. Although the existing creosote-treated piles would also provide substrate for these organisms, toxic compounds in creosote inhibit colonization. So, the new pilings would likely provide substrate for a more diverse and productive invertebrate community. Overall, there would be a net increase of 990 piles in the study area. Floating docks also would provide hard horizontal and to a minor extent vertical, substrate suitable for colonization by algae and sessile invertebrates, and would shade underlying areas. The proposed Project would remove 0.58 acre of floating dock area and would create 1.39 acres of floating dock area, creating a net increase of 0.81 acre of floating docks. The proposed Project would also remove 1.0 acre of riprap from the North, Downtown, and 7th Street Harbor areas.

Studies of oil platforms in southern California have shown that rockfish are found in significantly greater numbers around vertical structures, such as pier pilings, where both shelter and forage sources are available (Love et al. 2006). The net result of the potential loss of water column habitat due to rock placement around new piles would be offset to some degree by the benefits from increased cover and forage opportunities. Changes in biological communities as a result of over-water structures would not necessarily be detrimental, but would occur on a relatively large scale. However, the over-water structures created as a result of the proposed Project would be located mainly in open-water habitat that is not dissimilar to what exists currently in the harbor; disruption to biological communities would be short-term.

Shade

Shade reduces energy available for photosynthesis and, therefore, reduces growth of algae or submerged vegetation; however, overhead structures also attract some fish species that shade and cover in the vicinity of the structure. The effect of shade on biological communities depends on local site conditions that also affect habitat variables. Detailed discussion on shading impacts on kelp beds, mudflats, and the salt marsh are described in Impact BIO-2b under "Natural Habitat."

Removal of existing structures under the proposed Project would alter local conditions. New harbor cuts would increase open-water marine habitat by 6.8 acres. Approximately 5.3 acres of harbor water would be developed with over-water structures (i.e., waterfront promenade, floating docks, piers, and wharves) (Table 3.3-6). These over-water and in-water structures could affect local biological communities by shading aquatic habitat and by providing cover and vertical (piling and rock) structure. However, the proposed Project would create the majority of the open-water marine habitat that would contain these over-water and in-water structures. Although there would be a short-term disruption to biological communities as a result of removal of existing over-water and in-water structures, and recolonization of these areas would take 1 to 3 years, as discussed in Impact BIO-4a, there would be no net loss of open-water marine habitat or long-term biological community disruption overall. The area of these structures over marine habitat (below OHWM/high tide line) under the proposed Project and alternatives are summarized in Table 3.3-6.

Table 3.3-6. Summary of Over-Water and In-Water Structures from the Proposed Project and Project Alternatives

	Proposed Project	*Alternative*			
		1	*2*	*3*	*4*
Promenade (acres)					
Gain	3.8	3.8	3.7	3.8	3.8
Loss	0.0	0.0	0.0	0.0	0.0
Total	**3.8**	**3.8**	**3.7**	**3.8**	**3.8**
Floating docks (acres)					
Gain	2.1	2.1	2.1	2.1	1.5
Loss	1.5	1.5	1.5	1.5	1.4
Total	**0.6**	**0.6**	**0.6**	**0.6**	**0.1**
Piers (acres)					
Gain	0.1	0.1	0.1	0.1	0.1
Loss	0.0	0.0	0.0	0.0	0.0
Total	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Wharves (acres)					
Gain	2.3	1.8	2.3	0.1	0.1
Loss	1.7	1.7	1.7	0.0	0.0
Total	**0.6**	**0.1**	**0.6**	**0.1**	**0.1**

Notes:
*Datum = +4.8 MLLW (mean lower low water)

Neither Alternative 5 nor Alternative 6 would add any in-water or over-water structures.

Invasive Species

New harbor cuts at the North Harbor, Downtown Harbor, 7th Street Harbor, and 7th Street Pier would increase the numbers of vessels docking in the harbor. However, these would be primarily locally operating vessels (e.g. Crowley tug fleet, personal watercraft) that would have a limited potential for introducing invasive species due to their generally limited range.

Ships entering the harbor from beyond the EEZ would be subject to ballast water management regulations to minimize the risk of accidental introductions of invasive species described in Section 3.3.3.13. However, adherence to these regulations would not eliminate the risk of accidental introductions. Invasive species may enter the harbor attached to a ship's hull, anchor, or other equipment. Operation of the proposed Project would increase the number of cruise ships visiting the harbor from

an average of 22 calls per month (2006 CEQA baseline) to a predicted average of as many as 24 per month by 2037. This increase in vessel traffic would incrementally increase the potential for invasive species introductions. Cruise ships require comparatively little exchange of ballast water compared to cargo vessels. Additionally, the traffic of cruise ships is only a fraction of the international ship traffic in the harbor. However, there would still be a risk of invasive species introduction, which would disrupt biological communities.

CEQA Impact Determination

As described in Impact BIO-4a, there would be short-term, construction-associated disruption to existing biological communities in part of the proposed project area as a result of removal of existing in-water and over-water structures. Long-term impacts would not occur as a result of the proposed Project. Pilings and floating docks constructed as part of the proposed Project would provide shaded horizontal (i.e. boat floats) and vertical (i.e. bulkheads) submerged attachment surfaces that would support invertebrate communities, and some fish species would likely be attracted to the new over-water and in-water structures. Additionally, newly placed piles would support a different community of invertebrates compared to rock or soft-bottom habitats. Habitat complexity and cover would increase as well, as rock provides attachment for sessile invertebrates, macro-algae, and cover for motile organisms. Where it replaces vertical bulkheads, there would also be an increase in physical habitat complexity and cover. In addition, this area of disruption, specifically between Berths 83–88, is a relatively small part of the harbor, and this small-scale disruption would not be considered a substantial disruption of a local biological community. Although there would be a short-term disruption to biological communities in part of the proposed project area as a result of removal of existing over-water and in-water structures, and recolonization of these areas would take 1 to 3 years, there would be no net loss of open-water marine habitat or long-term biological community disruption overall.

While unlikely, operation of the proposed Project has the potential to introduce invasive marine species into the harbor through minor ballast water exchanges that could occur, or through attachment to ship hulls or equipment. Invasive species would substantially disrupt biological communities, which would be a significant impact.

Mitigation Measures

Although there would be a short-term disruption to biological communities as a result of removal of existing over-water and in-water structures, and recolonization of these areas would take 1 to 3 years, there would be no net loss of open-water marine habitat or long-term biological community disruption overall. Therefore, no mitigation is required.

No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.

Residual Impacts

The increased number of new, concrete pilings and floating docks would likely provide substrate for a more diverse and productive invertebrate community and impacts would be less than significant. However, significant residual impacts would occur due to risks associated with the accidental introduction of invasive species.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Mitigation would be the same as discussed under CEQA.

Residual Impacts

Impacts would be significant, as discussed under CEQA.

3.3.4.3.2 Alternative 1—Alternative Development Scenario 1

The impact mechanisms affecting biological resources under Alternative 1 would be the same as those under the proposed Project. Alternative 1 would differ from the proposed Project in the following elements important to marine resources:

- the North Harbor development would include a larger cut, and
- no new wharf would be constructed at cruise ship Berths 49–50.

Under Alternative 1, only one cruise ship would be docked in the Outer Harbor and less open-water area would be displaced by vessels at dock than under the proposed Project. The maximum cruise ship traffic would be incrementally reduced under Alternative 1 compared to the proposed Project, and, therefore, the potential for spills associated with vessel traffic and the potential for introduction of invasive species from ballast water, and attachment to the hull, anchors, chains, or other equipment would be reduced as well. However, the average number of cruise ship calls per month would not necessarily be fewer under Alternative 1 than under the proposed Project.

Construction Impacts

Impact BIO-1a: Construction of Alternative 1 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Impacts on individuals, or existing habitat, of state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or species of special concern would be the same as described under the proposed Project. Differences between Alternative 1 and the proposed Project relevant to Impact BIO-1a would be due to differences in construction areas. Under Alternative 1, the North Harbor cut would be larger (see Tables 3.3-4 and.3.3-5) resulting in incrementally larger construction disturbances in this area. However, because the wharf would not be constructed at Berths 49–50 under Alternative 1, fewer pilings would be installed, reducing the avoidance area for marine and marine-foraging species. Because only one cruise ship berth would be developed in the Outer Harbor, less Outer Harbor area would be avoided by special-status species during construction than under the proposed Project.

CEQA Impact Determination

Water area would increase by 7.13 acres. As described for the proposed Project, construction of Alternative 1 could result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern. In-water construction would cause localized activity, noise, and turbidity that would likely cause marine mammals and the special-status bird species present in the study area to avoid the construction area during those activities. Proposed construction activities could affect nesting black-crowned night and great blue herons. Also, restoration of the salt marsh could cause turbidity that extends into the Outer Harbor, affecting foraging California least terns. Impacts would be significant; however, implementation of Mitigation Measure MM BIO-1 would be used to prevent excessive turbidity, thereby minimizing the impact from dredging on marine habitat and species, and Mitigation Measure MM BIO-2 would be implemented to prevent disturbance of nesting birds from construction activity. Significant impacts on marine mammals resulting from noise associated with pile driving would be reduced with implementation of Mitigation Measure MM BIO-3.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2a: Construction of Alternative 1 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Natural habitats that would be impacted by construction of the proposed Project would include the 0.175-acre mudflat at Berth 78–Ports O'Call, and the 0.04-acre mudflat and 0.07-acre eelgrass habitat at the inlet to the Salinas de San Pedro Salt Marsh. The temporary impact on eelgrass and other habitat in the Salinas de San Pedro Salt Marsh from enhancement/expansion activities, and temporary effects on scattered kelp beds at Berths 68–69 and 47–49, would be similar to those that would occur under the proposed Project. Impacts on EFH and MSA-managed species also would be similar to those that would occur under the proposed Project. As described under the proposed Project, there would be no reduction in eelgrass habitat or wetlands.

CEQA Impact Determination

As with the proposed Project, the loss of approximately 0.175 acre of mudflat at Berth 78–Ports O' Call and 0.04 acre at the salt marsh inlet would be significant if not mitigated, as would the loss of 0.07 acre of eelgrass at the salt marsh inlet. Temporary disturbances during wharf, promenade, and dock construction may affect EFH or result in loss of managed species, but would not substantially reduce their numbers. Conversion of soft-bottom habitat to hard substrate would result in minor loss of benthic invertebrates and water column habitat, but this is not a significant impact. As with the proposed Project, construction activities associated with expansion and enhancement of the mudflat and salt marsh for the long-term benefit of the marsh would result in significant short-term impacts on the salt marsh and the eelgrass and mudflat habitat within the marsh. While implementation of Mitigation

Measures MM BIO-4 and MM BIO-5 would reduce these effects, this short-term impact remains significant and unavoidable.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through MM BIO-5.

Residual Impacts

Short-term significant and unavoidable residual impacts on the salt marsh and on the eelgrass and mudflat habitat during expansion and enhancement construction activities would occur. With Mitigation Measures MM BIO-4 and MM BIO-5, loss of functioning mudflat and eelgrass habitat would be fully mitigated and overall there would be a net increase in mudflat area and habitat functions (see Impact BIO-2b). Additionally, new harbor cuts would result in a net gain of open-water Inner Harbor habitat available to EFH and MSA-managed species.

NEPA Impact Determination

Short-term impacts on the salt marsh and on the eelgrass and mudflat habitat would be significant and unavoidable, and impacts on EFH and MSA-managed species would be less than significant as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through BIO-5.

Residual Impacts

Impacts would be the same as discussed for residual impacts under CEQA.

Impact BIO-3a: Construction of Alternative 1 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

As under the proposed Project, movement to and from foraging areas for fish, marine mammals, and bird species present in the harbor would not be affected by Alternative 1. Fish species in the harbor would be subject to temporary acoustic and possibly water quality impacts during dredging and installation of bulkheads and pilings to support over-water structures under Alternative 1. These impacts could result in temporary avoidance of the construction areas. However, these effects would be short-term and temporary, lasting a few days at a time. There would be no physical barriers to wildlife movement, and the baseline condition for wildlife access would be essentially unchanged.

CEQA Impact Determination

No wildlife movement or migration corridors would be affected by Alternative 1 during construction activities on land and in the water as described above. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant as discussed under the CEQA impact determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 1 would not substantially disrupt local biological communities.

The potential for disruption to biological communities from construction impacts or introduction of noise, light, or invasive species would be similar to that described under the proposed Project.

Wharf construction in the North Harbor would increase the extent and duration of temporary construction impacts under Alternative 1 as compared to the proposed Project in that area. However, these types of impacts would be reduced in the Outer Harbor since only one wharf at cruise ship Berth 47 would be developed. Overall, Alternative 1 would require driving 210 fewer piles (see Table 3.3-5) than the proposed Project, so underwater noise and physical disturbance from pile driving would be reduced. As with the proposed Project, noise impacts would be of limited intensity, extent, and duration, so effects on birds, marine mammals, and fish, including EFH and MSA-managed fish species, would be short-term.

As with the proposed Project, contaminated sediments released during dredging could adversely affect aquatic organisms if toxic substances are present in sediments and if those sediments are suspended in the water column during dredge activities or

when disposed of at a marine disposal site. Impacts would be significant without mitigation. However, as described in Mitigation Measure MM BIO-6 (contaminated sediment disposal), testing of the sediment for contaminants and appropriate disposal of these sediments would occur as part of proposed project activities.

Temporary loss of habitat functions from expansion and enhancement activities in the salt marsh is expected. An overall net gain in salt marsh area and function and no net loss of mudflat or eelgrass habitat area is expected. Short-term temporary effects on the inlet to the salt marsh resulting from promenade construction would occur. Therefore, Alternative 1 would not substantially disrupt biological communities.

CEQA Impact Determination

For the reasons described above, construction activities in the study area would cause short-term local impacts on individuals, including MSA-managed fish species; however, no substantial disruption of biological communities would result from Alternative 1. Temporary loss of habitat function from construction enhancement activities within the mudflat, eelgrass, and salt marsh area is expected, but would result in an overall net gain in habitat functions for this area as described in Mitigation Measures MM BIO-4 and MM BIO-5. Impacts on the salt marsh and on the eelgrass and mudflat habitat are discussed under Impact BIO-2a. Impacts from dredging and wharf construction for Alternative 1 would be significant prior to mitigation. With implementation of mitigation, construction impacts resulting from Alternative 1 would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as those described for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

Impact BIO-5a: Construction of Alternative 1 would not result in a permanent loss of marine habitat.

The impacts of Alternative 1 on marine biological resources would be very similar to those described for the proposed Project. However, under Alternative 1, the North Harbor project element would create a larger new area of marine habitat, extend the North Harbor wharf, and only expand the Outer Harbor cruise ship facilities at Berth 47. As a result, Alternative 1 would require fewer pilings, cover less created open-water habitat, and remove less existing bulkheads than the proposed Project.

Alternative 1 would create 7.13 acres of new water area (Table 3.3-3). Under existing mitigation agreements (City of Los Angeles et al. 1984, 1997), 3.6 mitigation credits would be created (i.e., 7.13 acres x 0.5 credit per acre of Inner Harbor habitat created).

CEQA Impact Determination

Similar to the proposed Project, Alternative 1 would result in no permanent loss of marine habitat. The quantity of created open-water marine habitat would increase to 7.13 acres (0.30 acre more than under any of the other alternatives). Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

A residual net gain in Inner Harbor open water could result in credits being added to the Inner Harbor Mitigation Bank. Inner Harbor Mitigation Bank credits are used to offset aquatic losses associated with LAHD projects. Alternative 1 would enhance and create intertidal habitats and provide a net increase in marine habitat. Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as described under the CEQA determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant, as described under CEQA.

Operational Impacts

Operational impacts of Alternative 1 would be essentially the same as under the proposed Project.

Impact BIO-1b. Operation of Alternative 1 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

The operational impacts of Alternative 1 on individuals and existing habitat for listed, rare, protected, candidate, and sensitive species would be the same as would occur under the proposed Project. There would be a small incremental reduction in peak vessel activity, vessel-related water quality risk, and potential whale strikes when compared to the proposed Project since only one Outer Harbor cruise ship at Berth 47 is proposed under Alternative 1.

CEQA Impact Determination

As with the proposed Project, there is potential for an increase in accidental fuel spills and illegal discharges due to increased vessel calls at the facility (see Section 3.14, "Water Quality, Sediments, and Oceanography"). However, water quality BMPs included in the proposed Project as detailed in Section 3.14.4.3 would reduce the potential to a level that is less than significant. Alternative 1 proposes fewer additional cruise ship vessels than the proposed Project and impacts to whales resulting from vessel strikes would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

As described under the CEQA impact determination, significant impacts would be reduced to less than significant with implementation of water quality BMPs.

Mitigation Measures

No mitigation required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2b: Operation of Alternative 1 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Operational impacts of Alternative 1 would be the same as those described under the proposed Project.

CEQA Impact Determination

For the reasons described under the proposed Project, operation of Alternative 1 would not result in a reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. Significant impacts associated with operation of the waterfront promenade over the 0.175-acre mudflat located at Berth 78–Ports O'Call and 0.04-acre mudflat and 0.07-acre eelgrass area at the salt marsh inlet would be reduced with mitigation.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

There would be a net gain in salt marsh and mudflat functions and no net loss of mudflat or eelgrass habitat with implementation of MM BIO 4 and MM BIO 5; therefore, long-term impacts on mudflat, eelgrass, and salt marsh habitat would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

Impacts would be less than significant, as discussed for CEQA.

Impact BIO-3b: Operation of Alternative 1 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

Operational impacts of Alternative 1 would be the same as those described under the proposed Project. No barriers to wildlife movement or migration would be created.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4b: Operation of Alternative 1 would cause a substantial disruption of local biological communities.

Operation of Alternative 1 would have similar effects on local biological communities to those that would occur under the proposed Project. Because Alternative 1 would only develop one Outer Harbor cruise ship wharf at Berth 47, there would be less alteration of existing open-water marine habitat in that area. Alternative 1 would include a larger North Harbor cut; however, this change would be an increase in open-water habitat area (discussed under Impact BIO-5a), which would cause short-term disruption of a local biological community, as discussed under Impact BIO-4a.

As with the proposed Project, Alternative 1 would increase in-water structure and covered habitat; however, there would be 210 fewer pilings and 0.5 acre less wharf area under Alternative 1 than under the proposed Project. As with the proposed

Project, newly created open water would be similar to what currently exists in the Inner Harbor and overall, there would be no net loss of open-water marine habitat under Alternative 1.

While unlikely, operation of Alternative 1 has the potential to introduce invasive marine species into the harbor through infrequent ballast water, or through attachment to ship hulls or equipment. Invasive species could substantially disrupt biological communities. The potential to introduce invasive species would be slightly less than under the proposed Project because the maximum cruise ship traffic would be reduced under this alternative.

CEQA Impact Determination

Introduction of invasive species through ballast water or on the hulls of ships entering the harbor could substantially disrupt biological communities, and would, therefore, be a significant impact.

Mitigation Measures

Although there would be a short-term disruption to biological communities as a result of removal of existing over-water and in-water structures, and recolonization of these areas would take 1 to 3 years, there would be no net loss of open-water marine habitat or long-term biological community disruption overall. Therefore, no mitigation is required.

No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.

Residual Impacts

The increased number of new, concrete pilings and floating docks would likely provide substrate for a more diverse and productive invertebrate community and impacts would be less than significant. However, significant residual impacts would occur due to risks associated with the accidental introduction of invasive species.

NEPA Impact Determination

Impacts would be significant, as discussed under the CEQA impact determination.

Mitigation Measures

Mitigation would be the same as discussed under CEQA.

Residual Impacts

Impacts would be significant, as discussed under CEQA.

3.3.4.3.3 Alternative 2—Alternative Development Scenario 2

Alternative 2 would have essentially the same potential impacts on biological resources as the proposed Project. The one change relative to marine biological resources is that the salt marsh promenade would not be developed under Alternative 2. This difference would slightly reduce the area for potential impact.

Construction Impacts

Impact BIO-1a: Construction of Alternative 2 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Potential construction impacts on individuals, or existing habitat, of state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern would be essentially as described under the proposed Project. The area affected by construction noise and activity would be slightly less under Alternative 2 than under the proposed Project since the salt marsh promenade would not be developed and construction would be located farther away from the salt marsh habitat.

CEQA Impact Determination

As described for the proposed Project, construction of Alternative 2 could result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern. In-water construction would cause localized activity, noise, and turbidity that would likely cause marine mammals and the special-status bird species present in the study area to avoid the construction area during those activities. Proposed construction activities could affect nesting black-crowned night and great blue herons. Also, restoration of the salt marsh (Mitigation Measure MM-BIO-4) could cause turbidity that extends into the Outer Harbor, affecting foraging California least terns. Impacts would be significant; however, implementation of Mitigation Measure MM BIO-1 would prevent excessive turbidity, thereby minimizing the impact from dredging on marine habitat and species, and Mitigation Measure MM BIO-2 would be implemented to prevent disturbance of nesting birds from construction activity. Significant impacts on marine mammals resulting from noise associated with pile driving would be reduced with implementation of Mitigation Measure MM BIO-3.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2a: Construction of Alternative 2 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Impacts under Alternative 2 would be similar to those under the proposed Project. As described under the proposed Project, there would be minor temporary impacts on scattered kelp beds at Berths 68–72 and Berths 47–49. The 0.175-acre mudflat area at Berth 78–Ports O'Call would be covered by the waterfront promenade as would the 0.04-acre mudflat and 0.07-acre eelgrass area at the inlet to the salt marsh, which would adversely affect these habitat areas. Temporary impacts on the salt marsh, and eelgrass and mudflat habitat from expansion and enhancement activities would occur; however, impacts related to construction of the promenade along the salt marsh would not occur as the promenade would be moved west along Shoshone Road. As a result, approximately 20 fewer piles would be driven.

Harbor cuts and the creation of Inner Harbor open-water marine habitat would be the same as for the proposed Project, resulting in a net gain of Inner Harbor open-water habitat and EFH available for MSA-managed species. Conversion of soft-bottom habitats to hard substrate would be the same under Alternative 2 as the proposed Project, as would temporary disturbances due to turbidity, pile driving sound wave effects on fish, and other in-water construction activities.

CEQA Impact Determination

As with the proposed Project, the permanent loss of approximately 0.20 acre of mudflat and 0.07 acre of eelgrass habitat would be significant. Although Alternative 2 would reduce the number of piles driven by approximately 20, this is a minor reduction and would insignificantly reduce temporary impacts. Therefore, temporary disturbances during wharf, promenade, and dock construction that may affect EFH or result in loss of MSA-managed fish species would essentially be the same as what would occur under the proposed Project. Conversion of soft-bottom habitat to hard substrate would result in minor loss of benthic invertebrates and water column habitat, but this is not a significant impact. As with the proposed Project, construction activities associated with expansion and enhancement of the mudflat and salt marsh (Mitigation Measure MM-BIO-4) for the long-term benefit of the marsh would result in significant short-term impacts on the salt marsh and on the eelgrass and mudflat habitat within the marsh. While implementation of Mitigation Measures MM BIO-4 and MM BIO-5 would reduce these effects, this short-term impact remains significant and unavoidable.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through MM BIO-5.

Residual Impacts

Short-term significant and unavoidable residual impacts on the salt marsh and on the eelgrass and mudflat habitat during expansion and enhancement construction activities would occur. With Mitigation Measures MM BIO-4 and MM BIO-5, loss of functioning mudflat and eelgrass habitat would be fully mitigated and overall there would be a net gain in salt marsh area and function and no net loss of mudflat or eelgrass habitat area (see Impact BIO-2b). Additionally, new harbor cuts would result in a net gain of open-water Inner Harbor habitat available to EFH species.

NEPA Impact Determination

Short-term impacts on the salt marsh and on the eelgrass and mudflat habitat would be significant and unavoidable, and impacts on EFH would be less than significant, as discussed under the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through BIO-5.

Residual Impacts

Impacts would be the same as discussed for residual impacts under CEQA.

Impact BIO-3a: Construction of Alternative 2 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

As under the proposed Project, movement to and from foraging areas for fish, marine mammals and bird species present in the harbor would not be affected by Alternative 2. Fish species present in the harbor would be subject to temporary acoustic and possibly water quality impacts during dredging and installation of bulkheads and pilings to support over-water structures under Alternative 2. These impacts could result in temporary avoidance of the construction areas. However, these effects would be short-term and temporary, lasting a few days at a time. There would be no physical barriers to wildlife movement, and the baseline condition for wildlife access would be essentially unchanged.

CEQA Impact Determination

No wildlife movement or migration corridors would be affected by Alternative 2 during construction activities on land and in the water as described above. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant, as discussed under the CEQA impact determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 2 would not substantially disrupt local biological communities.

The potential for disruption to biological communities from construction impacts would be essentially the same as under the proposed Project, including physical disturbances from dredging related to turbidity, suspended toxic sediments, noise, and light. The portion of the promenade along the Salinas de San Pedro Salt Marsh would not be built under Alternative 2, resulting in a small reduction in noise and disturbance associated with pile driving in the upper beach and the inlet of the salt marsh. Alternative 2 would require driving approximately 20 fewer piles (1,730 compared to 1,750 under the proposed Project), so underwater noise and disturbance impacts described under the proposed Project would be only slightly reduced under Alternative 2, and only in the vicinity of the Inner Cabrillo Beach. As with the proposed Project, noise impacts would be of limited intensity, extent, and duration so effects on birds, marine mammals, EFH and MSA-managed fish species would be short-term. The potential for construction to introduce or spread invasive species would be the same as described for the proposed Project. Therefore, Alternative 2 would not substantially disrupt biological communities.

CEQA Impact Determination

As with the proposed Project, construction activities in the study area would cause short-term local impacts on individuals, including MSA-managed fish species; however, no substantial disruption of biological communities would result from Alternative 2. Temporary loss of habitat function from construction expansion and enhancement activities within the mudflat, eelgrass and salt marsh area is expected, but would result in an overall net gain in habitat functions for this area as described in Mitigation Measures MM BIO-4 and MM BIO-5. Impacts on the salt marsh and on the eelgrass and mudflat habitat are discussed under Impact BIO-2a. Impacts from dredging and wharf construction for Alternative 2 would be significant prior to mitigation. With implementation of mitigation, construction impacts resulting from Alternative 2 would be less than significant.

The potential for construction activities to introduce or spread invasive species would be essentially the same for Alternative 2 as under the proposed Project, as would the potential for contaminated sediments to affect water quality. However, implementation of Mitigation Measure MM BIO-6 would address this potential impact. Therefore, Alternative 2 would not substantially disrupt biological communities.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as those described for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

Impact BIO-5a: Construction of Alternative 2 would not result in a permanent loss of marine habitat.

Construction of Alternative 2 would result in identical creation of Inner Harbor open-water marine habitat and accounting of Inner Harbor mitigation credits as the proposed Project. Therefore, impacts of Alternative 2 on marine habitat would be essentially the same as those described for the proposed Project.

CEQA Impact Determination

Under Alternative 2, the quantity of Inner Harbor open-water habitat would increase due to harbor cuts and credit for open-water habitat that would be banked for future use by the Port. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

A residual net gain in Inner Harbor open water could result in credits being added to the Inner Harbor Mitigation Bank. Inner Harbor Mitigation Bank credits are used to offset aquatic losses associated with LAHD projects. Alternative 2 would enhance and create intertidal habitats and provide a net increase in marine habitat. Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as described under the CEQA determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant, as described under CEQA.

Operational Impacts

Impact BIO-1b. Operation of Alternative 2 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

The operational impacts of Alternative 2 on individuals and existing habitat for listed, rare, protected, candidate, and sensitive species would be essentially the same as under the proposed Project.

CEQA Impact Determination

There is potential for an increase in accidental fuel spills and illegal discharges due to increased vessel calls at the facility (see Section 3.14, "Water Quality, Sediments, and Oceanography"). The small incremental increase in potential whale strikes from vessels traveling to the harbor is considered less than significant.

Mitigation Measures

No mitigation required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

As described under the CEQA impact determination, significant impacts would be reduced to less than significant with implementation of water quality BMPs.

Mitigation Measures

No mitigation required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2b: Operation of Alternative 2 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Operational impacts of Alternative 2 would be the same as those described under the proposed Project.

CEQA Impact Determination

For the reasons described under the proposed Project, operation of Alternative 2 would not result in a reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. Significant impacts associated with operation of the waterfront promenade over the 0.175-acre mudflat located at Berth 78–Ports O'Call, as well as the 0.04-acre mudflat and 0.07-acre eelgrass areas at the inlet to salt marsh, would be less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

There would be a net gain in salt marsh and mudflat functions and no net loss of mudflat or eelgrass habitat with implementation of MM BIO 4 and MM BIO 5; therefore, long-term impacts on mudflat, eelgrass, and salt marsh habitat would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

Impacts would be less than significant, as discussed for CEQA.

Impact BIO-3b: Operation of Alternative 2 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

Operational impacts of Alternative 2 would be the same as those described under the proposed Project. No barriers to wildlife movement or migration would be created.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4b: Operation of Alternative 2 would cause a substantial disruption of local biological communities.

Operation of Alternative 2 would have the same effects on local biological communities as those that would occur under the proposed Project. Although there would be no development of the salt marsh promenade under Alternative 2, the proposed Project would locate the promenade over unvegetated areas and bare sand; differences in effect on biological communities would be insignificant.

Alternative 2 proposes approximately 20 fewer pilings and 0.1 acre less promenade area than the proposed Project, reducing the amount of attachment surface for marine species. This reduction would have an insignificant effect on biological communities.

The potential for introduction of invasive species would be the same as under the proposed Project.

CEQA Impact Determination

While unlikely, operation of Alternative 2 has the potential to introduce invasive marine species into the harbor through infrequent ballast water exchanges, or through attachment to ship hulls or equipment. Invasive species could substantially disrupt biological communities. The potential for introduction of invasive species would be the same as under the proposed Project. Operational impacts of Alternative 2 would, therefore, be significant under CEQA.

Mitigation Measures

No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.

Residual Impacts

The increased number of new, concrete pilings and floating docks would likely provide substrate for a more diverse and productive invertebrate community and impacts would be less than significant. However, significant residual impacts would occur due to risks associated with the accidental introduction of invasive species.

NEPA Impact Determination

Impacts would be significant, as discussed under the CEQA impact determination.

Mitigation Measures

Mitigation would be the same, as discussed under CEQA.

Residual Impacts

Impacts would be significant, as discussed under CEQA.

3.3.4.3.4 Alternative 3—Construction of Alternative Development Scenario 3 (Reduced Project)

Alternative 3 would have similar potential impacts on marine biological resources as those described under the proposed Project; however, similar to Alternative 1, only one cruise ship would be docked in the Outer Harbor and less open-water area would be displaced by vessels at dock than under the proposed Project. Consequently, with regard to cruise ship berths, Alternative 3 would have the same effect as Alternative 1, and less potential for effect when compared to the proposed Project.

The potential impacts on biological resources under Alternative 3 would otherwise be the same as described for the proposed Project.

Construction Impacts

Impact BIO-1a: Construction of Alternative 3 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Impacts on individuals, or existing habitat, of state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern would be essentially the same as described under the proposed Project. Because only one cruise ship berth would be developed in the Outer Harbor, less area would be avoided by special-status species during construction than under the proposed Project.

CEQA Impact Determination

As described for the proposed Project, construction of Alternative 3 could result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern. In-water construction would cause localized activity, noise, and turbidity that would likely cause marine mammals and the special-status bird species present in the study area to avoid the construction area during those activities. Proposed construction activities could affect nesting black-crowned night and great blue herons. Also, restoration of the salt marsh could cause turbidity that extends into the Outer Harbor, affecting foraging California least terns. Impacts would be significant; however, implementation of Mitigation Measure MM BIO-1 would be used to prevent excessive turbidity, thereby minimizing the impact from dredging on marine habitat and species, and MM BIO-2 would be implemented to prevent disturbance of nesting birds from construction activity. Significant impacts on marine mammals resulting from noise associated with pile driving would be reduced with implementation of Mitigation Measure MM BIO-3.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2a: Construction of Alternative 3 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Alternative 3 would have the same impacts on natural habitats as those described under the proposed Project, including impacts on the 0.175-acre mudflat at Berth 78–Ports O'Call, the 0.04-acre mudflat and 0.07-acre eelgrass habitat areas at the inlet to the Salinas de San Pedro Salt Marsh, the temporary impact on the Salinas de San Pedro Salt Marsh including eelgrass and mudflat habitat from enhancement and expansion activities, and temporary effects on scattered kelp beds at Berths 68–69 and 47–49. Short-term impacts on EFH and MSA-managed species would also be the same. As described under the proposed Project, there would be no reduction in eelgrass habitat or wetlands.

CEQA Impact Determination

As with the proposed Project, the loss of approximately 0.2 acre of mudflat and the 0.07-acre eelgrass area would be significant. Temporary disturbances during wharf, promenade, and dock construction may affect EFH or result in minor losses of individuals of MSA-managed species, but would not substantially reduce their numbers leading to a significant impact. Conversion of soft-bottom habitat to hard substrate would result in minor loss of benthic invertebrates and water column habitat, but this is not a significant impact. As with the proposed Project, construction activities associated with restoration and expansion of the mudflat and salt marsh for the long-term benefit of the marsh would result in significant short-term impacts on the salt marsh, and on eelgrass and mudflat habitat within the marsh. While implementation of Mitigation Measures MM BIO-4 and MM BIO-5 would reduce these effects, this short-term impact remains significant and unavoidable.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through MM BIO-5.

Residual Impacts

Short-term significant and unavoidable residual impacts on the salt marsh and mudflat habitat during restoration construction activities would occur. With Mitigation Measures MM BIO-4 and MM BIO-5, loss of functioning mudflat habitat would be fully mitigated and overall there would be a net increase in mudflat area and habitat functions (see Impact BIO-2b). Additionally, new harbor cuts would result in a net gain of open-water Inner Harbor habitat available for EFH and MSA-managed fish species.

NEPA Impact Determination

Short-term impacts on shallow-water habitat would be significant and unavoidable, and impacts on EFH and MSA-managed species would be less than significant as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through MM BIO-5.

Residual Impacts

Impacts would be the same as discussed for residual impacts under CEQA.

Impact BIO-3a: Construction of Alternative 3 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

As under the proposed Project, movement to and from foraging areas for fish, marine mammals, and bird species present in the harbor would not be affected by Alternative 3. Fish species in the harbor would be subject to temporary acoustic and possibly water quality impacts during dredging and installation of bulkheads and pilings to support over-water structures under Alternative 3. These impacts could result in temporary avoidance of the construction areas. However, these effects would be short-term and temporary, lasting a few days at a time. There would be no physical barriers to wildlife movement, and the baseline condition for wildlife access would be essentially unchanged.

CEQA Impact Determination

No wildlife movement or migration corridors would be affected by Alternative 3 during construction activities on land and in the water as described above. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant, as discussed for the CEQA impact determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 3 would not substantially disrupt local biological communities.

The potential for disruption to biological communities from construction impacts or introduction of noise, light, or invasive species would be similar to that described under the proposed Project.

Alternative 3 would have essentially the same impacts as the proposed Project with the exception of the Outer Harbor area, as only one wharf at cruise ship Berth 47 would be developed. Overall, Alternative 3 would require driving 220 fewer piles (see Table 3.3-5) than under the proposed Project, so underwater noise and physical disturbance from pile driving would be less under Alternative 3 than under the proposed Project. However, as with the proposed Project, noise impacts would be of limited intensity, extent, and duration, so effects on birds, marine mammals and fish, including EFH and MSA-managed fish species, would be short-term. The potential for construction activities to introduce or spread invasive species would be essentially the same as under the proposed Project, as would the potential for contaminated sediments to affect water quality. However, implementation of Mitigation Measure MM BIO-6 would address this potential impact. Temporary loss of habitat functions from restoration and expansion activities in the salt marsh is expected, but an overall net gain in area of mudflat and habitat functions is expected, as are temporary effects on the inlet to the salt marsh resulting from promenade construction. Therefore, Alternative 3 would not substantially disrupt biological communities.

CEQA Impact Determination

As with the proposed Project, construction activities in the study area would cause short-term local impacts on individuals, including MSA-managed fish species; however, no substantial disruption of biological communities would result from Alternative 3. Temporary loss of habitat function from construction expansion and enhancement activities within the mudflat, eelgrass and salt marsh area is expected, but would result in an overall net gain in habitat functions for this area as described in Mitigation Measures MM BIO-4 and MM BIO-5. Impacts on the salt marsh and on the eelgrass and mudflat habitat are discussed under Impact BIO-2a. Impacts from dredging and wharf construction for Alternative 3 would be significant prior to mitigation. With implementation of mitigation, construction impacts resulting from Alternative 3 would be less than significant.

The potential for construction activities to introduce or spread invasive species would be essentially the same for Alternative 3 as under the proposed Project, as would the potential for contaminated sediments to affect water quality. However, implementation of Mitigation Measure MM BIO-6 would address potential impacts related to disturbing contaminated sediments. Therefore, Alternative 3 would not substantially disrupt biological communities.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as those described for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

Impact BIO-5a: Construction of Alternative 3 would not result in a permanent loss of marine habitat.

Construction of Alternative 3 would result in identical creation of open-water marine habitat and accounting of Inner Harbor mitigation credits as the proposed Project. Therefore, impacts of Alternative 3 on marine habitat would be essentially the same as those described for the proposed Project.

CEQA Impact Determination

Under Alternative 3, the quantity of Inner Harbor open-water habitat would increase due to harbor cuts and credit for open-water habitat that would be banked for future use by the Port. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

A residual net gain in Inner Harbor open water could result in credits being added to the Inner Harbor Mitigation Bank. Inner Harbor Mitigation Bank credits are used to offset aquatic losses associated with LAHD projects. Alternative 3 would enhance and create intertidal habitats and provide a net increase in marine habitat. Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as described under the CEQA determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant, as described under CEQA.

Operational Impacts

Impact BIO-1b. Operation of Alternative 3 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

The operational impacts of Alternative 3 on individuals and existing habitat for listed, rare, protected, candidate, and sensitive species would be essentially the same as under the proposed Project. There would be a small incremental reduction in peak vessel activity and fuel spills and potential whale strikes compared to the proposed Project since only one cruise ship at Berth 47 would be developed under Alternative 3.

CEQA Impact Determination

There is potential for an increase in accidental fuel spills and illegal discharges due to increased vessel calls at the facility (see Section 3.14, "Water Quality, Sediments, and Oceanography"). There would be an even smaller incremental increase in vessels calls and potential whale strikes under Alternative 3 than for the proposed Project from vessels traveling to the harbor. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

As described under the CEQA impact determination, impacts to individuals and existing habitat would be less than significant. Additionally, under NEPA, the increase in vessel calls is the same as the NEPA baseline, and therefore does not represent an impact related to whale strikes.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2b: Operation of Alternative 3 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Operational impacts of Alternative 3 would be the same as those described under the proposed Project.

CEQA Impact Determination

For the reasons described under the proposed Project, operation of Alternative 3 would not result in a reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. Significant impacts associated with operation of the waterfront promenade over the 0.175-acre mudflat located at Berth 78–Ports O'Call and the 0.04-acre mudflat and 0.07-acre eelgrass area at the inlet to the salt marsh would be reduced with mitigation.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

There would be a net gain in salt marsh and mudflat functions and no net loss of mudflat or eelgrass habitat with implementation of MM BIO 4 and MM BIO 5, therefore, long-term impacts on mudflat, eelgrass and salt marsh habitat would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

Impacts would be less than significant, as discussed for CEQA.

Impact BIO-3b: Operation of Alternative 3 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

Operational impacts of Alternative 3 would be the same as those described under the proposed Project. No barriers to wildlife movement or migration would be created.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4b: Operation of Alternative 3 would cause a substantial disruption of local biological communities.

Operation of Alternative 3 would have similar effects on local biological communities as those that would occur under the proposed Project. Because Alternative 3 would only develop one Outer Harbor cruise ship berth at Berth 47, there would be less alteration of existing open-water marine habitat in that area, and 220 fewer pilings would be driven than under the proposed Project. As with the proposed Project, open water created is similar to what currently exists in the Inner Harbor and overall, there would be no net loss of open-water marine habitat under Alternative 3.

While unlikely, operation of Alternative 3 has the potential to introduce invasive marine species into the harbor through infrequent ballast water, or through attachment to ship hulls or equipment. Invasive species could substantially disrupt biological communities. The potential to introduce invasive species would be similar to Alternative 1 and slightly reduced when compared to the proposed Project because of the reduction in cruise ship traffic under this alternative.

CEQA Impact Determination

Introduction of invasive species through ballast water or on the hulls of ships entering the harbor could substantially disrupt biological communities, and would, therefore, be a significant impact.

Mitigation Measures

Although there would be a short-term disruption to biological communities as a result of removal of existing over-water and in-water structures, and recolonization of these areas would take 1 to 3 years, there would be no net loss of open-water marine habitat or long-term biological community disruption overall. Therefore, no mitigation is required.

No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.

Residual Impacts

The increased number of new, concrete pilings and floating docks would likely provide substrate for a more diverse and productive invertebrate community and impacts would be less than significant. However, significant residual impacts would occur due to risks associated with the accidental introduction of invasive species.

NEPA Impact Determination

Impacts would be significant, as discussed under the CEQA impact determination.

Mitigation Measures

Mitigation would be the same as discussed under CEQA.

Residual Impacts

Impacts would be significant, as discussed under CEQA.

3.3.4.3.5 Alternative 4—Alternative Development Scenario 4

The impacts of Alternative 4 on marine biological resources would be similar to those described for the proposed Project. However, under Alternative 4, the North Harbor project element would not be constructed and no cruise ship berths would be developed in the Outer Harbor. As a result, Alternative 4 would create less aquatic habitat, but would also require fewer pilings, less aquatic habitat disturbance, and less bank protection than the other alternatives.

Construction Impacts

Impact BIO-1a: Construction of Alternative 4 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Impacts on individuals, or existing habitat, of state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern would be similar as described under the proposed Project. However, because no Outer Harbor cruise ship berths would be developed and there would be no North Harbor cut, less area would be avoided by special-status species during construction than under the proposed Project. Additionally, Alternative 4 would reduce the number of piles driven in the harbor by 640, thereby reducing the potential noise disturbance to marine mammals.

CEQA Impact Determination

As described for the proposed Project, construction of Alternative 4 could result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern. In-water construction would cause localized activity, noise, and turbidity that would likely cause marine mammals and the special-status bird species present in the study area to avoid the construction area during those activities, but to lesser degree than the proposed Project due to a reduction in the number of piles. Proposed construction activities could affect nesting black-crowned night and great blue herons. Also, restoration of the salt marsh could cause turbidity that extends into the Outer Harbor, affecting foraging California least terns. Impacts would be significant; however, implementation of Mitigation Measure MM BIO-1 would prevent excessive turbidity, thereby minimizing the impact from dredging on marine habitat and species, and Mitigation Measure MM BIO-2 would be implemented to prevent disturbance of nesting birds from construction activity. Significant impacts on marine mammals resulting from noise associated with pile driving would be reduced with implementation of Mitigation Measure MM BIO-3.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, the potential for temporary impacts from construction would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-3.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2a: Construction of Alternative 4 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Alternative 4 would have similar impacts on natural habitats as those described under the proposed Project, including impacts on the 0.175-acre mudflat at Berth 78–Ports O'Call, the 0.04-acre mudflat and 0.07-acre eelgrass area at the inlet to the salt marsh, the temporary impact on eelgrass, mudflat and marsh habitat in the Salinas de San Pedro Salt Marsh from enhancement and expansion activities, and temporary effects on scattered kelp beds at Berths 68–69. Short-term impacts on EFH and MSA-managed fish species would also be similar. However, minor temporary impacts on scattered kelp beds at Berths 47–49 would not occur under Alternative 4. Temporary disturbances from in-water work to EFH or MSA-managed species would be reduced since there would be less in-water construction without the Outer Harbor berths and the North Harbor cut. As described under the proposed Project, there would be no reduction in eelgrass habitat or wetlands.

CEQA Impact Determination

As with the proposed Project, the loss of approximately 0.20 acre of mudflat and 0.07 acre of eelgrass area would be significant if not mitigated. Temporary disturbances during wharf, promenade, and dock construction may affect EFH or result in loss of MSA-managed species, but would not substantially reduce their numbers. Conversion of soft-bottom habitat to hard substrate would result in minor loss of benthic invertebrates and water column habitat, but this is not a significant impact. As with the proposed Project, construction activities associated with expansion and enhancement of the mudflat and salt marsh for the long-term benefit of the marsh would result in significant short-term impacts on the salt marsh and on the eelgrass and mudflat habitat within the marsh. While implementation of Mitigation Measures MM BIO-4 and MM BIO-5 would reduce these effects, this short-term impact remains significant and unavoidable.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through MM BIO-5.

Residual Impacts

Short-term significant and unavoidable residual impacts on the salt marsh and on the eelgrass and mudflat habitat during expansion and enhancement construction activities would occur. With Mitigation Measures MM BIO-4 and MM BIO-5, loss of functioning mudflat and eelgrass habitat would be fully mitigated and overall there would be a net gain in salt marsh area and function and no net loss of mudflat or eelgrass habitat area (see Impact BIO-2b).

NEPA Impact Determination

Short-term impacts on salt marsh and mudflat habitat would be significant and unavoidable, and impacts on EFH and MSA-managed species would be less than significant, as discussed for the CEQA impact determination.

Mitigation Measures

As described under the proposed Project, implement Mitigation Measures MM BIO-1 through MM BIO-5.

Residual Impacts

Impacts would be the same as discussed for residual impacts under CEQA.

Impact BIO-3a: Construction of Alternative 4 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

As under the proposed Project, movement to and from foraging areas for fish, marine mammals, and bird species present in the harbor would not be affected by Alternative 4. Fish species present in the harbor would be subject to temporary acoustic and possibly water quality impacts during dredging and installation of bulkheads and pilings to support over-water structures. These impacts could result in temporary avoidance of the construction areas. However, these effects would be short-term and temporary, lasting a few days at a time. There would be no physical barriers to wildlife movement, and the baseline condition for wildlife access would be essentially unchanged.

CEQA Impact Determination

No wildlife movement or migration corridors would be affected by Alternative 4 during construction activities on land and in the water as described above. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant, as discussed under the CEQA impact determination.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 4 would not substantially disrupt local biological communities.

The potential for disruption to biological communities from construction impacts or introduction of noise, light, or invasive species would be similar to that described under the proposed Project.

Alternative 4 would have essentially the same impacts as the proposed Project with the exception of the Outer Harbor berth construction area and the North Harbor cut, which are not included under Alternative 4. Overall, Alternative 4 would require driving 640 fewer piles than the proposed Project, so underwater noise and physical disturbance from pile driving would be reduced. As with the proposed Project, noise impacts would be of limited intensity, extent, and duration, so effects on birds, marine mammals and fish, including EFH and MSA-managed fish species, would be short-term. The potential for construction activities to introduce or spread invasive species would be slightly reduced because there would be two less berths in the Outer Harbor and no North Harbor cut. The potential for contaminated sediments to affect water quality would also be reduced, however, implementation of Mitigation Measure MM BIO-6 would address this potential impact. Temporary loss of habitat functions from expansion and enhancement activities in the salt marsh is expected, but an overall net gain in area of mudflat and habitat functions is expected, as are temporary effects on the inlet to the salt marsh resulting from promenade construction. Therefore, Alternative 4 would not substantially disrupt biological communities.

CEQA Impact Determination

As with the proposed Project, construction activities in the study area would cause short-term local impacts on individuals, including MSA-managed fish species; however, no substantial disruption of biological communities would result from Alternative 4. Temporary loss of habitat function from construction expansion and enhancement activities within the mudflat, eelgrass and salt marsh area is expected, but would result in an overall net gain in habitat functions for this area as described in Mitigation Measures MM BIO-4 and MM BIO-5. Impacts to salt marsh and to eelgrass and mudflat habitat are discussed under Impact BIO-2a. With implementation of mitigation, construction impacts resulting from Alternative 4 would be less than significant.

The potential for construction activities to introduce or spread invasive species would be essentially the same for Alternative 4 as under the proposed Project, as would the potential for contaminated sediments to affect water quality. However, implementation of Mitigation Measure MM BIO-6 would address contaminated sediment impacts. Therefore, Alternative 4 would not substantially disrupt biological communities.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be the same as those discussed under the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-1 through MM BIO-6.

Residual Impacts

Impacts would be less than significant.

Impact BIO-5a: Construction of Alternative 4 would not result in a permanent loss of marine habitat.

Construction impacts of Alternative 4 on marine biological resources would be similar in type but dissimilar in quantity to the proposed Project. Under Alternative 4, the North Harbor cut would not occur, thus only 1.8 acres of new open-water Inner Harbor habitat would be created (a reduction of 5 acres from the proposed Project). Alternative 4 does not include any berths at the Outer Harbor; however, three berths are proposed for the Inner Harbor, which has only two under the proposed Project. As a result, Alternative 4 would require fewer pilings, would cover less created open-water habitat, and would remove less existing bulkheads and other in-water features than the proposed Project.

CEQA Impact Determination

Similar to the proposed Project, Alternative 4 would result in no permanent loss of marine habitat; however, the quantity of created open-water marine habitat would be reduced to 1.8 acres (5 acres less than under any other alternative). Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

A residual net gain in Inner Harbor open water could result in credits being added to the Inner Harbor Mitigation Bank. Inner Harbor Mitigation Bank credits are used to offset aquatic losses associated with LAHD projects. Alternative 4 would enhance and create intertidal habitats and provide a net increase in marine habitat. Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant, as discussed under the CEQA determination.

Mitigation Measures

No mitigation required.

Residual Impacts

Impacts would be less than significant, as described under CEQA.

Operational Impacts

Impact BIO-1b. Operation of Alternative 4 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

The operational impacts of Alternative 4 on individuals and existing habitat for listed, rare, protected, candidate, and sensitive species would be essentially the same as would occur under the proposed Project. There would be a small, incremental reduction in peak vessel activity and vessel-related water quality risk and potential whale strikes when compared to the proposed Project since no cruise ship berths would be constructed in the Outer Harbor.

CEQA Impact Determination

There is potential for an increase in accidental fuel spills and illegal discharges due to increased vessel calls at the facility (see Section 3.14, "Water Quality, Sediments, and Oceanography"). Impacts would be significant, however, implementation of spill control mitigation measures (described in Section 3.14) would reduce the potential for spills to a level that is less than significant. The potential for whale strikes would be less than for the proposed Project because there would be a

reduction in the incremental increase of ship calls. Because of the small increase in vessel calls, impacts as a result of whale strikes are less than significant.

Mitigation Measures

No migration is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

As described under the CEQA impact determination, significant impacts would be reduced to less than significant with implementation of water quality BMPs.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2b: Operation of Alternative 4 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Although Alternative 4 does not propose development of the Outer Harbor cruise ship berths and North Harbor, operational impacts would not differ significantly from the proposed Project with regard to Impact BIO-2b.

CEQA Impact Determination

For the reasons described under the proposed Project, operation of Alternative 4 would not result in a reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. Significant impacts associated with operation of the waterfront promenade over the 0.175-acre mudflat located at Berth 78–Ports O'Call and the covering of 0.04 acre of mudflat and 0.07-acre eelgrass area at the salt marsh inlet would be reduced with mitigation.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

There would be a net gain in salt marsh and mudflat functions and no net loss of mudflat or eelgrass habitat with implementation of MM BIO 4 and MM BIO 5, therefore, long-term impacts on mudflat, eelgrass and salt marsh habitat would be less than significant.

NEPA Impact Determination

Impacts would be significant, as discussed for the CEQA impact determination.

Mitigation Measures

Implement Mitigation Measures MM BIO-4 and MM BIO-5.

Residual Impacts

Impacts would be less than significant, as discussed for CEQA.

Impact BIO-3b: Operation of Alternative 4 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

Operational impacts of Alternative 4 would be the same as those described under the proposed Project. No barriers to wildlife movement or migration would be created.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4b: Operation of Alternative 4 would cause a substantial disruption of local biological communities.

Operation of Alternative 4 would have similar effects on local biological communities to those that would occur under the proposed Project. Because Alternative 4 does not propose development of Outer Harbor berths, alteration of existing open-water marine habitat in that area would be decreased. Additionally, Alternative 4 would require driving 640 fewer pilings (see Table 3.3-5) than the proposed Project. Because Alternative 4 does not include the North Harbor cut, there would be 5 acres less Inner Harbor open-water habitat created (only 1.8 acres) than under the proposed Project. Open water created is similar to what currently exists in the Inner Harbor and overall there would be no net loss of open-water marine habitat under Alternative 4.

While unlikely, operation of Alternative 4 has the potential to introduce invasive marine species into the harbor through infrequent ballast water, or through attachment to ship hulls or equipment. Invasive species could substantially disrupt biological communities. The potential to introduce invasive species would be similar to Alternatives 1 and 3, and slightly reduced when compared to the proposed Project, because of the reduction in cruise ship traffic under this alternative..

CEQA Impact Determination

Introduction of invasive species through ballast water or on the hulls of ships entering the harbor could substantially disrupt biological communities, and would therefore, be a significant impact.

Mitigation Measures

Although there would be a short-term disruption to biological communities as a result of removal of existing over-water and in-water structures, and recolonization of these areas would take 1 to 3 years, there would be no net loss of open-water marine habitat or long-term biological community disruption overall. Therefore, no mitigation is required.

No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.

Residual Impacts

The increased number of new, concrete pilings and floating docks would likely provide substrate for a more diverse and productive invertebrate community and

impacts would be less than significant. However, significant residual impacts would occur due to risks associated with the accidental introduction of invasive species.

NEPA Impact Determination

Impacts would be significant, as discussed under the CEQA impact determination.

Mitigation Measures

Mitigation would be the same as discussed under CEQA.

Residual Impacts

Impacts would be significant, as discussed under CEQA.

3.3.4.3.6 Alternative 5—No-Federal-Action Alternative

No federal action would occur under Alternative 5. There would be no alterations to the harbor or in-water work, and there would be no development of the Outer Harbor cruise ship berths, Outer Harbor Cruise Ship Terminals, or Outer Harbor parking structure, although cruise ships would occasionally berth in the Outer Harbor as they currently do. The three cruise ship berths in the Inner Harbor would continue to operate, and a 2.9-acre parking garage and associated surface parking would be built to service the Inner Harbor Cruise Ship Terminals and Catalina Express. All of the other proposed upland features would be part of Alternative 5.

Since Alternative 5 would include no new water area, and no modifications of docks, piers, wharves, or other in-water or over-water structures or activities that could alter aquatic habitat, Alternative 5 would have no effect on marine biological resources. The area of aquatic habitat would not change from existing conditions and would, therefore, be less than the proposed Project and Alternatives 1 to 4, all of which would create new aquatic habitat area.

Construction Impacts

Impact BIO-1a: Construction of Alternative 5 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

The upland locations of Alternative 5 developments currently provide little or no habitat value for state- or federally listed endangered, threatened, rare, protected,

candidate, or sensitive species or a species of special concern. Therefore, these species and habitat would not be affected under Alternative 5.

CEQA Impact Determination

Other than brown pelicans, which are ubiquitous in the San Pedro Waterfront area, no state- or federally designated species is likely to be present in the areas where construction and habitat modification would occur. Alternative 5 would be redeveloping areas that are currently developed and are mostly paved under existing conditions. Since the proposed sites currently provide little or no habitat value for designated species, no loss of individuals or populations would occur as a result this alternative.

No sensitive species or critical habitat would be affected by Alternative 5, and no impacts would occur under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no residual impacts.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-2a: Construction of Alternative 5 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Alternative 5 proposes no changes to the marine environment; therefore, impacts to marine habitat from construction of Alternative 5 would not occur. No SEAs, EFH, special aquatic sites, or plant communities, including wetlands, would be affected.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-3a: Construction of Alternative 5 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a sensitive species.

No in-water or over-water construction activities would occur under Alternative 5, and upland construction activities would not affect aerial migration of bird species. Consequently, no marine or other species migration would be affected by construction. As under the proposed Project, no wildlife movement/migration corridors would be affected by construction activities.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-4a: Construction of Alternative 5 would not substantially disrupt local biological communities.

No in-water or over-water construction activities would occur under Alternative 5, and upland construction activities would not disrupt local biological communities. The disturbances and loss of habitat for species described for the proposed Project and Alternatives 1–4 would not occur.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-5a: Construction of Alternative 5 would not result in a permanent loss of marine habitat.

Alternative 5 proposes no changes to the marine environment. All project elements would be located in upland areas; therefore, permanent loss of marine habitat from construction of Alternative 5 would not occur.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Operational Impacts

Impact BIO-1b. Operation of Alternative 5 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Operation of Alternative 5 would have a lower potential than the other project alternatives for the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern since no new in-harbor facilities would be operating. The risk of oil spills and whale strikes discussed under the proposed Project would also exist under Alternative 5, although somewhat reduced. Under

Alternative 5, there would be 23 monthly average cruise ships calls, which would be one more than the CEQA baseline and 2 less than estimated under the proposed Project in 2037. Occasional small fuel spills, such as a 210 gallon fuel spill that occurred in 2007 (Reuters 2007), may continue to occur from time to time.

CEQA Impact Determination

As with the proposed Project, there is potential for an increase in accidental fuel spills and illegal discharges due to increased vessel calls at the facility (see Section 3.14, "Water Quality, Sediments, and Oceanography"). However, water quality BMPs included in the proposed Project as detailed in Section 3.14.4.3 would reduce the potential to a level that is less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-2b: Operation of Alternative 5 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Operational impacts under Alternative 5 would be the same as under current conditions with regard to Impact BIO-2b as no upland state-, federally, or locally designated natural habitat would be altered or reduced in the study area.

CEQA Impact Determination

Operation of Alternative 5 would not result in a reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-3b: Operation of Alternative 5 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

No new in-water or over-water activities would occur under Alternative 5 and upland activities would not affect aerial migration of bird species. Operation of Alternative 5 would be the same as under current conditions. No barriers to wildlife movement or migration would be created.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact BIO-4b: Operation of Alternative 5 would cause a substantial disruption of local biological communities.

Operational impacts of Alternative 5 would occur in previously developed areas and therefore, would not cause a substantial disruption of biological communities.

Because harbor improvements would not be developed under Alternative 5, the project would not affect local marine biological communities through changes in physical structures, cover, etc. However, an incremental increase in vessel calls would occur; therefore, potential for introduction of invasive species is the same as would occur under Alternatives 1, 3, and 4.

CEQA Impact Determination.

While unlikely, operation of Alternative 5 has the potential to introduce invasive marine species into the harbor through ballast water, or through attachment to ship hulls or equipment. Invasive species could substantially disrupt biological communities. The potential for introduction of invasive species would be the same as under the proposed Project and would, therefore, be significant under CEQA.

Mitigation Measures

No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.

Residual Impacts

Because no feasible mitigation is currently available to prevent introductions of invasive species, residual impacts would be significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.3.4.3.7 Alternative 6—No-Project Alternative

Pursuant to CEQA Guidelines Section 15126.6(e)(3)(A), the No-Project Alternative describes what reasonably would be expected to occur on the site if no LAHD or federal action were to occur. In this case, the No-Project Alternative involves continued operations of the existing uses within the project area, with no new development or expansion, but acknowledges some forecasted growth in the existing cruise operations at the Inner Harbor cruise berths and terminals. Any other growth or development in accordance with the general plan, PMP, or Port of Los Angeles Strategic Plan would be too speculative to assume in this process, and any other projects that would operate in the Inner Harbor or outside the study area have been or will be analyzed under a separate environmental document and, therefore, will not be analyzed in this document. Under Alternative 6, LAHD would not issue any permits or discretionary approvals, and would not take further action to construct or permit the construction of any portion of the proposed Project. Operation of Port facilities and businesses in the study area would continue to operate under existing regulations.

The study area is largely developed under existing conditions, so that even as changes in operations and use occur over time, the existing (developed) condition is likely to continue. Biological resources would not be disturbed or habitats altered due to construction activities. Under Alternative 6, there would be no new aquatic area created, and no changes in aquatic habitat from the baseline conditions. As a result, there would be no impacts on marine or terrestrial biological resources.

No impacts under CEQA or NEPA would occur for Impacts BIO-1a through BIO-5a because no construction activities are part of Alternative 6. No federal action would occur, and NEPA would not apply, resulting in no impacts.

Construction Impacts

Impact BIO-1a: Construction of Alternative 6 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

No construction activities in upland or aquatic habitats would occur for Alternative 6; consequently, no sensitive species or critical habitat would be affected by construction activities or changes in land use. The potential effects of pile driving, filling, and promenade construction on marine and terrestrial species and habitats

would not occur. Construction disturbances to individual special-status birds and marine mammals, nesting sites, wetlands or mudflats, and loss of EFH described for the proposed Project and Alternatives 1through 4 would not occur.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation would be required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-2a: Construction of Alternative 6 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

No SEA's, EFH, special aquatic sites, plant communities, or habitats including wetlands or mudflats, would be affected by Alternative 6.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-3a: Construction of Alternative 6 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a sensitive species.

No construction activities would occur for Alternative 6; consequently, no fish or wildlife movement/migration corridors would be affected by construction activities.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-4a: Construction of Alternative 6 would not substantially disrupt local biological communities.

No construction activities on land or in the water would occur under Alternative 6; consequently, local biological communities would not be disrupted by construction activities.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-5a: Construction of Alternative 6 would not result in a permanent loss of marine habitat.

Alternative 6 does not involve any construction activities; therefore, no loss of marine habitat would occur. Also, there would be no beneficial effect from creation of new-water habitat as described for the proposed Project and Alternatives 1through 4.

CEQA Impact Determination

No construction activities would occur that would reduce marine habitat. No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Operational Impacts

Impact BIO-1b. Operation of Alternative 6 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.

Port facilities and businesses in the study area would continue to operate under all existing regulations and policies related to state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern including ESA, CWA, and MMPA. Alternative 6 involves an increase in vessel traffic of 17 vessels by 2037. As discussed for the proposed Project, this does not represent a significant impact related to loss of individuals or habitat, including whale strikes.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-2b: Operation of Alternative 6 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Under Alternative 6, operation of Port facilities would continue as under existing conditions. No reduction or alteration of a state-, federally, or locally designated natural habitat, designated EFH, special aquatic site, or plant community, including wetlands would occur as a result of these operations.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation required

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-3b: Operation of Alternative 6 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

Operation of Port facilities in the study area would continue as under existing conditions and would not interfere with wildlife movement/migration corridors or diminish the chances for long-term survival of a species.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation required

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact BIO-4b: Operation of Alternative 6 would not cause a substantial disruption of local biological communities.

Existing conditions, which are highly modified, would be maintained and operation of Alternative 6 would cause no additional disruption of local biological communities.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

3.3.4.3.8 Summary of Impact Determinations

Table 3.3-7 summarizes the CEQA and NEPA impact determinations of the proposed Project and its alternatives related to biological resources, as described in the detailed discussion in Sections 3.3.4.3.1 through 3.3.4.3.7. This table is meant to allow easy comparison between the potential impacts of the proposed Project and its alternatives with respect to this resource. Identified potential impacts may be based on federal, state, and city of Los Angeles significance criteria, LAHD criteria, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA and NEPA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table.

Table 3.3-7. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources				
Proposed Project	**Impact BIO-1a:** Construction of the proposed Project would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Significant	**MM BIO-1. Monitor and manage turbidity.** Dredge and fill activities will be monitored for visible turbidity in shallow water adjacent to the salt marsh to prevent adverse impacts to foraging least terns or eelgrass growth and survival. This requirement will be monitored by the qualified biologist and will be based on visually observed differences between ambient surface water conditions and any dredging turbidity plume. The biologist will report to the LAHD Construction Manager and Environmental Manager, the USACE Regulatory Division, and CDFG/USFWS any turbidity from project construction activities that enters the shallow-water area outside of the salt marsh. Dredging activities will be modified in consultation with CDFG/USFWS. Corrective measures could include using a different dredge bucket to reduce water entrainment, installation of a floating silt curtain to contain turbid water, or other measures. **MM BIO-2. Conduct nesting bird surveys.** This measure applies if construction is to occur between February 15 and September 1. Prior to ground-disturbing activities, a qualified biologist will conduct surveys for the presence of black crowned night herons, blue herons, and other nesting birds within Berth 78–Ports O'Call or other appropriate and known locations within the study area	CEQA: Less than significant

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
			that contain potential nesting bird habitat. Surveys will be conducted 24 hours prior to the clearing, removal, or grubbing of any vegetation or ground disturbance. If active nests of species protected under the MBTA and/or similar provisions of the California Fish and Game Code (i.e., native birds including but not limited to the black-crowned night heron) are located, then a barrier installed at a 50–100 foot radius from the nest(s) will be established and the tree/location containing the nest will be marked and will remain in place and undisturbed until a qualified biologist performs a survey to determine that the young have fledged or the nest is no longer active. **MM BIO-3. Avoid marine mammals.** Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring within the Outer Harbor will include establishment of a safety zone, and the area surrounding the operations will be monitored by a qualified marine biologist for pinnipeds. As the disturbance threshold level sound is expected to extend at least 1,000 feet from the steel pile driving operations, a safety zone will be established around the steel pile driving site and monitored for pinnipeds within a 1,200-foot-radius safety zone around the pile. As the steel pile driving site will move with each new pile, the 1,200 foot safety zone will move accordingly. Observers on shore or by boat will survey the safety zone to ensure that no marine	

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
			mammals are seen within the zone before pile driving of a steel pile segment begins. If marine mammals are found within the safety zone, pile driving of the segment will be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the biologist will instruct the contractor to wait at least 15 minutes, and if no marine mammals are seen by the biologist in that time, it may be assumed that the animal has moved beyond the safety zone. This 15-minute criterion is based on a study indicating that pinnipeds dive for a mean time of 0.50 minutes to 3.33 minutes; the 15-minute delay will allow a more than sufficient period of observation to be reasonably sure the animal has left the project vicinity. If pinnipeds enter the safety zone after pile driving of a segment has begun, pile driving will continue. The biologist will monitor and record the species and number of individuals observed, and make note of their behavior patterns. If the animal appears distressed and, if it is operationally safe to do so, pile driving will cease until the animal leaves the area. Pile driving cannot be terminated safely and without severe operational difficulties until reaching a designated depth. Therefore, if it is deemed operationally unsafe by the project engineer to discontinue pile driving activities, and a pinniped is observed in the safety zone, pile driving activities will continue until the critical depth is reached (at which time pile driving will cease) or until the pinniped leaves the safety zone. Prior to the initiation of each new pile driving episode, the area will again be thoroughly surveyed by the	

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
			biologist.	
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	NEPA: Less than significant
	Impact BIO-2a: Construction of the proposed Project would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1 through MM BIO-3. **MM BIO-4. Enhance and expand Salinas de San Pedro Salt Marsh.** To mitigate impacts associated with shading of the 0.175-acre mudflat habitat at Berth 78–Ports O' Call and shading created by the installation of the promenade at the inlet to the Salinas de San Pedro Salt Marsh, LAHD will expand the mudflat and salt marsh habitat within Salinas de San Pedro Salt Marsh. It is anticipated that the mudflat area within the salt marsh will be increased approximately 0.56 acre converting only upland areas to do so. These improvements will occur by recontouring the side slopes to increase mudflat area, removing the rocksill within the inlets, removing nonnative vegetation, removing the rock-sloped island within the marsh, and potentially constructing a rock groin at the marsh inlet to block littoral sediment from entering the marsh. Figure 3.3-5 illustrates the proposed improvements to the salt marsh. **MM BIO-5. Prepare a mitigation and monitoring plan.** A mitigation and monitoring plan (MMP) will be developed to detail the Salinas de San Pedro Salt Marsh enhancements and will include the following performance measures: 1) pickleweed and cord grass present will be salvaged prior to construction and placed in a nursery for replanting post-restoration; 2) salvaged plants	CEQA: Significant and unavoidable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
			will be replanted at appropriate tidal elevations; 3) sediments removed from the salt marsh will be disposed of at LAHD's upland disposal site at Anchorage Road (see Section 3.14, "Water Quality, Sediments, and Oceanography"); 4) turbidity will be monitored in accordance with Mitigation Measure MM BIO-1 so that eelgrass and mudflat habitat is protected during restoration activities; and 5) at the completion of restoration activities, the salt marsh and associated mudflat will be monitored by a qualified restoration ecologist at Years 1, 2, 3, 5 and 10 to ensure performance standards are met and that restored areas and a minimum of 0.175 acre of created mudflat are self-sustaining by Year 5.	
		NEPA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1through MM BIO-5.	NEPA: Significant and unavoidable
	Impact BIO-3a: Construction of the proposed Project would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4a: Dredging, filling, and wharf construction activities for the proposed Project would not substantially disrupt local biological communities.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-5. **MM BIO-6. Dispose sediment**. Prior to dredging, sediments will be tested for contaminants and will only be disposed of at marine disposal sites if they meet the sediment quality criteria for disposal. Depending on the test results, sediments will	CEQA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
			be disposed of at a pre-approved ocean disposal site (LA-2, LA-3), a contained disposal facility in the harbor, or an approved upland location such as the Port's Anchorage Road Soil Storage Site. Disposal in-harbor will only occur if an acceptable disposal site is identified and permitted by the USACE (under Section 404 of the federal CWA). At this time, no in-harbor disposal is foreseeable for the San Pedro Waterfront dredged sediments.	
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	NEPA: Less than significant
	Impact BIO-5a: Construction of the proposed Project would not result in a permanent loss of marine habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-1b: Operation of the proposed Project would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-2b: Operation of the proposed Project would not result in a substantial reduction or	CEQA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-4	NEPA: Less than

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.		and MM BIO-5.	significant
	Impact BIO-3b: Operation of the proposed Project would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4b: Operation of the proposed Project would cause a substantial disruption of local biological communities.	CEQA: Significant and unavoidable	No mitigation is available.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	No mitigation is available.	NEPA: Significant and unavoidable
Alternative 1	**Impact BIO-1a:** Construction of Alternative 1 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	NEPA: Less than significant
	Impact BIO-2a: Construction of Alternative	CEQA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1 through MM BIO-5.	CEQA: Significant and unavoidable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	1 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	NEPA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1through MM BIO-5.	NEPA: Significant and unavoidable
	Impact BIO-3a: Construction of Alternative 1 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 1 would not substantially disrupt local biological communities.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	NEPA: Less than significant
	Impact BIO-5a: Construction of Alternative 1 would not result in a permanent loss of marine habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-1b: Operation of Alternative 1 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected,	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.			
	Impact BIO-2b: Operation of Alternative 1 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	NEPA: Less than significant
	Impact BIO-3b: Operation of Alternative 1 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4b: Operation of Alternative 1 would cause a substantial disruption of local biological communities.	CEQA: Significant and unavoidable	No mitigation is available.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	No mitigation is available.	NEPA: Significant and unavoidable
Alternative 2	**Impact BIO-1a:** Construction of Alternative 2 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered,	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	NEPA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.			
	Impact BIO-2a: Construction of Alternative 2 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1 through MM BIO-5.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1through MM BIO-5.	NEPA: Significant and unavoidable
	Impact BIO-3a: Construction of Alternative 2 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 2 would not substantially disrupt local biological communities.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	NEPA: Less than significant
	Impact BIO-5a: Construction of Alternative 2 would not result in a permanent loss of marine habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	Impact BIO-1b: Operation of Alternative 2 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-2b: Operation of Alternative 2 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	NEPA: Less than significant
	Impact BIO-3b: Operation of Alternative 2 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4b: Operation of Alternative 2 would cause a substantial disruption of local	CEQA: Significant and unavoidable	No mitigation is available.	CEQA: Significant and unavoidable
		NEPA: Significant and	No mitigation is available.	NEPA: Significant and

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	biological communities.	unavoidable		unavoidable
Alternative 3	**Impact BIO-1a:** Construction of Alternative 3 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	NEPA: Less than significant
	Impact BIO-2a: Construction of Alternative 3 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1 through MM BIO-5.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1through MM BIO-5.	NEPA: Significant and unavoidable
	Impact BIO-3a: Construction of Alternative 3 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4a: Dredging, filling, and wharf	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	CEQA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	construction activities for Alternative 3 would not substantially disrupt local biological communities.	NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	NEPA: Less than significant
	Impact BIO-5a: Construction of Alternative 3 would not result in a permanent loss of marine habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-1b: Operation of Alternative 3 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-2b: Operation of Alternative 3 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	NEPA: Less than significant
	Impact BIO-3b: Operation of Alternative 3	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4b: Operation of Alternative 3 would cause a substantial disruption of local biological communities.	CEQA: Significant and unavoidable	No mitigation is available.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	No mitigation is available.	NEPA: Significant and unavoidable
Alternative 4	**Impact BIO-1a:** Construction of Alternative 4 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-3.	NEPA: Less than significant
	Impact BIO-2a: Construction of Alternative 4 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1 through MM BIO-5.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	Implement Mitigation Measures MM BIO-1through MM BIO-5.	NEPA: Significant and unavoidable
	Impact BIO-3a:	CEQA: Less than significant	No mitigation is required.	CEQA: Less than

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	Construction of Alternative 4 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.			significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 4 would not substantially disrupt local biological communities.	CEQA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-1 through MM BIO-6.	NEPA: Less than significant
	Impact BIO-5a: Construction of Alternative 4 would not result in a permanent loss of marine habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-1b: Operation of Alternative 4 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-2b: Operation of Alternative 4 would not result in a substantial reduction or	CEQA: Significant	Implement Mitigation Measures MM BIO-4 and MM BIO-5.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM BIO-4	NEPA: Less than

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.		and MM BIO-5.	significant
	Impact BIO-3b: Operation of Alternative 4 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	Impact BIO-4b: Operation of Alternative 4 would cause a substantial disruption of local biological communities.	CEQA: Significant and unavoidable	No mitigation is available.	CEQA: Significant and unavoidable
		NEPA: Significant and unavoidable	No mitigation is available.	NEPA: Significant and unavoidable
Alternative 5	**Impact BIO-1a:** Construction of Alternative 5 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-2a: Construction of Alternative	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	5 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-3a: Construction of Alternative 5 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 5 would not substantially disrupt local biological communities.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-5a: Construction of Alternative 5 would not result in a permanent loss of marine habitat.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-1b: Operation of Alternative 5 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected,	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.			
	Impact BIO-2b: Operation of Alternative 5 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-3b: Operation of Alternative 5 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
	Impact BIO-4b: Operation of Alternative 5 would cause a substantial disruption of local biological communities.	CEQA: Significant and unavoidable	No mitigation is available.	CEQA: Significant and unavoidable
		NEPA: No impacts would occur.	No mitigation is required.	NEPA: No impacts would occur.
Alternative 6	**Impact BIO-1a:** Construction of Alternative 6 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered,	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.			
	Impact BIO-2a: Construction of Alternative 6 would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	Impact BIO-3a: Construction of Alternative 6 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	Impact BIO-4a: Dredging, filling, and wharf construction activities for Alternative 6 would not substantially disrupt local biological communities.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	Impact BIO-5a: Construction of Alternative 6 would not result in a permanent loss of marine habitat.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	Impact BIO-1b: Operation of Alternative 6 would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	Impact BIO-2b: Operation of Alternative 6 would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	Impact BIO-3b: Operation of Alternative 6 would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	Impact BIO-4b: Operation of Alternative 6 would cause a substantial disruption of local	CEQA: No impacts would occur.	No mitigation is required.	CEQA: No impacts would occur.
		NEPA: Not applicable	Not applicable	NEPA: Not applicable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	biological communities.			

Notes:

* Impact descriptions for each of the alternatives are the same as for the proposed Project, unless otherwise noted.

† The term *not applicable* is used in cases where a particular impact is not identified as a CEQA- or NEPA-related issue in the threshold of significance criteria, or where there is no federal action requiring a NEPA determination of significance.

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3.3.4.4 Mitigation Monitoring

Table 3.3-8. Mitigation Monitoring for Biological Resources

Impact BIO-1a: Construction of the proposed Project would not result in the loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern, or the loss of federally listed critical habitat. *(Also applies to Impact BIO-1a for Alternatives 1–4)*	
Mitigation Measure	**MM BIO-1. Monitor and manage turbidity**. Although in-water activities and Promenade construction adjacent to and along Cabrillo Beach will not occur during the least tern nesting season (April through August), construction activities in this vicinity will be monitored for visible turbidity in shallow water adjacent to the San Pedro de Salinas Salt Marsh to prevent adverse impacts on eelgrass growth and survival and least tern foraging habitat. This requirement will be monitored by the qualified biologist and will be based on visually observed differences between ambient surface water conditions and any dredging turbidity plume. The biologist will report to the LAHD Construction Manager and Environmental Manager, the USACE Regulatory Division, and CDFG/USFWS any turbidity from project construction activities that enters the shallow-water area outside of the salt marsh. Dredging activities will be modified in consultation with CDFG/USFWS. Corrective measures could include using a different dredge bucket to reduce water entrainment, installation of a floating silt curtain to contain turbid water, or other measures.
Timing	During all in-water construction activities adjacent to the salt marsh for the proposed Project.
Methodology	Visually observe and document the differences between ambient surface water conditions and any dredging turbidity plume. Report to the LAHD Construction Manager and Environmental Manager, the USACE Regulatory Division, and CDFG/USFWS any turbidity from project construction activities that enters the shallow-water area outside of the salt marsh.
Responsible Parties	LAHD
Mitigation Measure	**MM BIO-2. Conduct nesting bird surveys.** This measure applies if construction is to occur between February 15 and September 1. Prior to ground-disturbing activities, a qualified biologist will conduct surveys for the presence of black-crowned night herons, blue herons, and other nesting birds within Berth 78–Ports O'Call or other appropriate and known locations within the study area that contain potential nesting bird habitat.
Timing	During construction activities, if they are to occur between February 15 and September 1.
Methodology	Prior to ground-disturbing activities, a qualified biologist will conduct surveys for the presence of black-crowned night herons, blue herons, and other nesting birds within Berth 78–Ports O'Call or other appropriate and known locations within the study area that contain potential nesting bird habitat. Surveys will be conducted 24 hours prior to the clearing, removal, or grubbing of any vegetation or ground disturbance. If active nests of species protected under the MBTA and/or similar provisions of the California Fish and Game Code (i.e., native birds including but not limited to the black-crowned night heron) are located, then a barrier installed at a 50–100 foot radius from the nest(s) will be established and the tree/location containing the nest will be marked and will remain in place and undisturbed until a qualified biologist performs a survey to determine that the young have fledged or the nest is no longer active.

Responsible Parties	LAHD
Mitigation Measure	**MM BIO-3. Avoid marine mammals.** Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring within the Outer Harbor will include establishment of a safety zone, and the area surrounding the operations will be monitored by a qualified marine biologist for pinnipeds. As the disturbance threshold level sound is expected to extend at least 1,000 feet from the steel pile driving operations, a safety zone will be established around the steel pile driving site and monitored for pinnipeds within a 1,200-foot-radius safety zone around the pile.
Timing	During all in-water construction activities requiring pile driving located in the Outer Harbor.
Methodology	Pile driving activities occurring within the Outer Harbor will include establishment of a safety zone, and the area surrounding the operations will be monitored for pinnipeds by a qualified marine biologist. As the steel pile driving site will move with each new pile, the 1,200-foot safety zone will move accordingly. Observers on shore or by boat will survey the safety zone to ensure that no marine mammals are seen within the zone before pile driving of a steel pile segment begins. If marine mammals are found within the safety zone, pile driving of the segment will be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor will wait at least 15 minutes, and if no marine mammals are seen, it may be assumed that the animal has moved beyond the safety zone. This 15-minute criterion is based on a study indicating that pinnipeds dive for a mean time of 0.50 minutes to 3.33 minutes; the 15-minute delay will allow a more than sufficient period of observation to be reasonably sure the animal has left the project vicinity. If pinnipeds enter the safety zone after pile driving of a segment has begun, pile driving will continue. The biologist will monitor and record the species and number of individuals observed, and make note of their behavior patterns. If the animal appears distressed, and if it is operationally safe to do so, pile driving will cease until the animal leaves the area. Pile driving cannot be terminated safely and without severe operational difficulties until reaching a designated depth. Therefore, if it is deemed operationally unsafe by the project engineer to discontinue pile driving activities, and a pinniped is observed in the safety zone, pile driving activities will continue until the critical depth is reached (at which time pile driving will cease) or until the pinniped leaves the safety zone. Prior to the initiation of each new pile driving episode, the area will again be thoroughly surveyed by the biologist.
Responsible Parties	LAHD
Residual Impacts for Impact BIO-1a	Less than significant
Impact BIO-2a: Construction of the proposed Project would result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. *(Also applies to Impact BIO-2a for Alternatives 1–4)*	
Mitigation Measure	See Mitigation Measures MM BIO-1 through MM BIO-3 above and MM BIO-4 and MM BIO 5.
	MM BIO-4. Enhance and expand Salinas de San Pedro Salt Marsh. To mitigate impacts associated with shading of the 0.175-acre mudflat habitat at Berth 78–Ports O'

	Call, shading created by the installation of the promenade at the inlet to the Salinas de San Pedro Salt Marsh, 0.07-acre impact to eelgrass, and 0.04-acre impact to mudflat habitat from placement of the rock groin, LAHD will expand the mudflat and salt marsh habitat and reestablish eelgrass within Salinas de San Pedro Salt Marsh in accordance with the Southern California Eelgrass Mitigation Policy. It is anticipated that the mudflat area within the salt marsh will be increased approximately 0.56 acre converting only upland areas to do so and that eelgrass habitat will be reestablished within the salt marsh with no net loss. These improvements will occur by recontouring the side slopes to increase mudflat area, removing the rocksill within the inlets, removing nonnative vegetation, removing the rock-sloped island within the marsh, lowering the elevation of the salt marsh, and constructing a rock groin at the marsh inlet to block littoral sediment from entering the marsh. Figure 3.3-5 illustrates the proposed improvements to the salt marsh.
Timing	Prior to the shading of the 0.175-acre mudflat habitat at Berth 78–Ports O' Call and shading created by the installation of the promenade at the inlet to the Salinas de San Pedro Salt Marsh.
Methodology	Expand the mudflat and salt marsh habitat within Salinas de San Pedro Salt Marsh by recontouring the side slopes to increase mudflat area, removing the rocksill within the inlets, removing nonnative vegetation, removing the rock-sloped island within the marsh, and potentially constructing a rock groin at the marsh inlet to block littoral sediment from entering the marsh.
Responsible Parties	LAHD
Mitigation Measure	**MM BIO-5. Prepare a habitat mitigation and monitoring plan**. A habitat mitigation and monitoring plan (HMMP) will be developed to detail the Salinas de San Pedro Salt Marsh expansion and enhancements and will include the following performance measures: 1) eelgrass, pickleweed , cord grass and other native species present will be salvaged prior to construction and placed in a nursery for replanting post-restoration; 2) salvaged plants will be replanted at appropriate tidal elevations; 3) sediments removed from the salt marsh will be disposed of at LAHD's upland disposal site at Anchorage Road (see Section 3.14, "Water Quality, Sediments, and Oceanography"); 4) turbidity will be monitored in accordance with MM BIO-1 so that nearby eelgrass and mudflat habitat is protected during restoration activities; and 5) at the completion of expansion and enhancement activities, the salt marsh and associated mudflat will be monitored by a qualified restoration ecologist at Years 1, 2, 3, 5 and 10 to ensure performance standards are met and that restored areas, including eelgrass and a minimum of 0.175 acre of created mudflat are self-sustaining by Year 5.
Timing	After expansion of the mudflat and salt marsh habitat within Salinas de San Pedro Salt Marsh.
Methodology	Prepare Mitigation Monitoring Plan which includes the following performance measures: 1) pickleweed and cord grass present will be salvaged prior to construction and placed in a nursery for replanting post-restoration; 2) salvaged plants will be replanted at appropriate tidal elevations; 3) sediments removed from the salt marsh will be disposed of at LAHD's upland disposal site at Anchorage Road (see Section 3.14, "Water Quality, Sediments, and Oceanography"); 4) turbidity will be monitored in accordance with Mitigation Measure MM BIO-1 so that eelgrass and mudflat habitat is protected during restoration activities; and 5) at the completion of restoration activities, the salt marsh and associated mudflat will

	be monitored by a qualified restoration ecologist at Years 1, 2, 3, 5 and 10 to ensure performance standards are met and that restored areas and a minimum of 0.175 acre of created mudflat are self-sustaining by Year 5.
Responsible Parties	LAHD
Residual Impacts for Impact BIO-2a	Temporary significant and unavoidable short-term residual impacts during restoration and construction activities. Residual impacts would be short-term as discussed for residual impacts under CEQA. An overall net gain in habitat area (minimum 0.20 acre of mudflat) and functions of the salt marsh, eelgrass and mudflat would be achieved (see Impact BIO-2b). Additionally, new harbor cuts would result in a net gain of open-water Inner Harbor habitat available to EFH species.
Impact BIO-4a: Dredging, filling, and wharf construction activities for the proposed Project would not substantially disrupt local biological communities. *(Also applies to Impact BIO-4a for Alternatives 1–4)*	
Mitigation Measure	See Mitigation Measures MM BIO-1 through MM BIO-5 above and MM BIO-6.
	MM BIO-6. Dispose sediment. Prior to dredging, sediments will be tested for contaminants and will only be disposed of at marine disposal sites if they meet the sediment quality and quantity criteria for disposal. Depending on the test results, sediments will be disposed of at a pre-approved ocean disposal site (LA-2, LA-3), a contained disposal facility in the harbor, or an approved upland location such as the Port's Anchorage Road Soil Storage Site. Disposal in-harbor will only occur if an acceptable disposal site is identified and permitted by the USACE (under Section 404 of the federal CWA). At this time, no in-harbor disposal is foreseeable.
Timing	Prior to dredging, sediments will be tested for contaminants.
Methodology	Testing will be done in accordance to ASTM standards. Depending on the test results, sediments will be disposed of at a pre-approved ocean disposal site (LA-2, LA-3), a contained disposal facility in the harbor, or an approved upland location such as the Port's Anchorage Road Soil Storage Site. Disposal in-harbor will only occur if an acceptable disposal site is identified and permitted by the USACE (under Section 404 of the federal CWA).
Responsible Parties	LAHD
Residual Impacts for Impact BIO-4a	Impacts would be less than significant.
Impact BIO-2b: Operation of the proposed Project would not result in a substantial reduction or alteration of a state-, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands. *(Also applies to Impact BIO-4a for Alternatives 1–4)*	
Mitigation Measure	See Mitigation Measures MM BIO-4 and MM BIO-5 above.
Residual Impacts for Impact BIO-2b	Less than significant

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3.3.5 Significant Unavoidable Impacts

Proposed project construction activities would affect several special aquatic sites in the project area, including a small mudflat at Berth 78–Ports O'Call, mudflat and eelgrass habitat adjacent to the Youth Camp and Salinas de San Pedro Salt Marsh, and kelp outcroppings at Berths 68–69 and Berths 47–49 at the proposed Outer Harbor Cruise Terminals. Construction activities associated with restoration and expansion of the mudflat and salt marsh for the long-term benefit of the marsh (Mitigation Measure MM BIO-3) would result in significant and unavoidable short-term impacts to the salt marsh and mudflat habitat within the marsh.

Vessels entering in the harbor from beyond the Exclusive Economic Zone (EEZ) would be subject to ballast water management regulations to minimize the risk of accidental introductions of invasive species. However, adherence to these regulations would not eliminate the risk of accidental introductions. Invasive species may enter the harbor attached to a ship's hull, anchor, or other equipment. Operation of the proposed Project and Alternatives 1 through 5 would increase the number of cruise ships visiting the Port. The increase in vessel traffic would incrementally increase the potential for invasive species introductions that would disrupt biological communities. No feasible mitigation is currently available to totally prevent introductions of invasive species via vessel hulls, equipment, or ballast water, due to the lack of a proven technology. New technologies are being explored, and if methods become available in the future, they would be implemented as required at that time.