3.3

BIOLOGICAL RESOURCES

3.3.1 Introduction

This section identifies the existing conditions of biological resources within the proposed Project area and addresses potential impacts that could result from the proposed Project and its alternatives. The proposed Project includes construction of a crude oil tank farm on Pier 400 (Tank Farm Site 1), installation of piles at the edge of Pier 400 for a Marine Terminal, construction of a new tank farm on Terminal Island (Tank Farm Site 2), and construction of pipelines connecting proposed Project facilities on Pier 400 and Terminal Island to the Valero Refinery. The proposed Project would result in significant, but mitigable, impacts to the California least tern, and unavoidable significant impacts could occur from introduction of invasive species and from the unlikely event of an oil spill that would affect marine and avian resources (including the California least tern). All other impacts of the proposed Project on biological resources would be less than significant. For purposes of this document, the terms non-native, invasive, or exotic species are considered the same as the term nonindigenous species (NIS) and are used interchangeably.

3.3.2 Environmental Setting

3.3.2.1 Terrestrial Habitats

The proposed Project sites were assessed based on aerial photographs of the proposed Project area (Google Earth), baseline survey reports for the Harbor (MEC and Associates 2002), and site reconnaissance visits in February 2004 and November 2007 by a biologist trained in terrestrial biology (SAIC 2004, 2007). Pier 400 is mostly paved, and contains facilities such as buildings, lights, roads, and paved container storage areas with little or no vegetation. The California least tern nesting habitat, located to the east of the proposed Tank Farm Site 1, is described below under "Special Status Species." Tank Farm Site 1 is currently undeveloped. The soil is sandy with shell fragments. Vegetation is moderate and weedy. Common species present 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 not native to North America (SAIC 2004, 2007). Incidental pampas grass (*Cortaderia jubata*), a non-native, as well as

the native mulefat (*Baccharis salicifolia*), telegraph weed (*Heterotheca grandiflora*), western ragweed (*Ambrosia psilostachya*), and horseweed (*Conyza canadense*) also occur on the site (SAIC 2007). Vegetation was removed from Tank Farm Site 1 in March 2003 and 2004 to allow additional area for least tern nesting (Keane Biological Consulting 2003, 2005a). This was not part of mitigation requirements for LAHD projects in the Harbor. The weedy vegetation growing there has not been removed since that time. No natural or sensitive plant communities are present.

Tank Farm Site 2 is located on Terminal Island (Chapter 2, Figure 2-1). Facilities at the site are scheduled to be removed as part of a separate project, and the unpaved portions of the site are barren or have predominantly non-native, weedy vegetation. Plant cover, where present, is low to moderately dense. The non-native species include smilo grass (*Piptatherum miliaceum*), fountain grass (*Pennisetum setaceum*), and tree tobacco. A few native plants are present at scattered locations. These include telegraph weed, mulefat, alkali heath (*Frankenia salina*), and a willow (*Salix* sp.) sapling (SAIC 2007). No natural or sensitive plant communities are present.

Most of pipeline segment 1 is located in paved or barren areas. On Pier 400 at the Marine Terminal and Tank Farm Site 1, the route passes through weedy vegetation as described above for Tank Farm Site 1. As it enters Terminal Island, the route passes through a disturbed site that is mostly barren, with telegraph weed and other weedy species at the northwest corner. The location of the eastern bore pit for the Navy Way crossing includes an area that has landscape plants (palm trees and shrubs) as well as scattered native and non-native plants. The native species include telegraph weed, salt heliotrope (*Heliotropium curassavicum*), and evening primrose (*Oenothera* sp.). The short segment between Navy Way and Terminal Way is typified by landscape and weedy species. The area between Terminal Way and the railroad tracks is mostly barren with a few weedy species. West of the railroad tracks to Tank Farm Site 2, the area has moderate cover of predominantly weedy species. A few non-native shrubs are present, and a non-native saltbush (*Atriplex semibacata*) occurs scattered over the site. No natural or sensitive plant communities are present along this pipeline segment.

Pipeline segments 2a and 2b would pass through paved areas, a few landscape trees, and a strip of vegetation east of the U.S. Customs building that includes bougainvillea (*Bougainvillea* sp.), lantana (*Lantana* sp.), sweet clover (*Melilotis alba*), mulefat, rosea iceplant (*Drosanthemum floribundum*), and weedy annual species. Segment 2c would pass through street trees, represented by eucalyptus (*Eucalyptus* sp.) and bottlebrush (*Callistemon* sp.) along Pilchard Street with the remainder in paved areas. No natural or sensitive plant communities are present along this pipeline segment.

Most of pipeline segment 3 would be installed using horizontal directional drilling (HDD). The laydown area for the southern section on Mormon Island is in disturbed areas that are either paved or unpaved with sparse cover of non-native grasses and forbs. From Fries Avenue east to near Henry Ford Avenue, the east and west HDD laydown areas are paved. The pigging station on the west side of Henry Ford Avenue (Site A) is unpaved but covered in gravel with no vegetation. The alternative pigging station (Site B) has non-native trees around the perimeter and the remainder of the site is primarily barren. Pipeline segment 4 is in paved areas to the east side of the Valero Refinery, where it would then be in an unpaved, barren area to future Pier

B Street, continuing in paved areas to the PT Manifold site. No natural or sensitive plant communities are present along this pipeline segment.

Staging area 408 is crossed by pipeline segments 2a and 2b, as described above for those pipelines (see Figure 2-12 for locations of construction staging areas). Staging areas 412 and 413 on Pier 400 are paved. The unpaved space between the pavement and the Pier 400 landfill containment riprap supports a sparse cover of horseweed, telegraph weed, tree tobacco, and mulefat. Staging area 417 is unpaved but has large piles of gravel and little to no vegetation except adjacent to the west and north fences where the plants are primarily telegraph weed and other non-native species. Staging area 420 is partly paved and partly unpaved. The unpaved areas are barren or have sparse weedy or landscape vegetation. Staging area 421 is paved and contains facilities that would be demolished as part of a separate project. Staging area 425 is paved with no vegetation. Staging area 427 is an existing berth adjacent to Staging area 420. No natural or sensitive plant communities are present in these staging areas.

Wildlife use of developed and undeveloped areas within the proposed Project area, such as Tank Farm Site 1 and Tank Farm Site 2, are generally limited to feral cats, rats and mice, and birds commonly associated with development in the region such as gulls (*Larus* spp.), American crow (*Corvus brachyrhynchos*), rock dove (*Columba livia*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), northern mockingbird (*Euphagus cyanocephalus*), and swallows. Numerous house finches were observed at Pier 400 in December and January during the 2000 baseline surveys (MEC and Associates 2002). In November 2007, one burrowing owl (*Athene cunicularia*) was observed on Tank Farm Site 1 (SAIC 2007). The weedy areas provide cover and forage for small animals (e.g., rodents, lizards, and birds). The burrowing owl is discussed further in Section 3.3.2.5.

3.3.2.2 Benthic Environments

Soft Bottom Habitats

Organisms that live in (benthic infauna) and on (benthic epifauna) the bottom sediments provide a food source for fish, invertebrates, and other organisms. The density and species composition of these organisms are influenced by sediment grain size, nutrient levels, water depth, pollutant levels in the sediments and overlying water, and/or the time since dredging. Harbor-wide, quarterly sampling indicated ~~the~~ benthic infaunal communities in 2000 were~~as~~ dominated by polychaete worms with crustaceans moderately abundant and mollusks, plus other taxa, least abundant. Since the 1950s, improvements in water quality have aided the establishment of diverse assemblages of benthic animals in previously disturbed Inner Harbor and channel areas (USACE and LAHD 1980, 1984). Data from the 1970s show that the pollution-tolerant polychaete (*Tharyx parvus)* accounted for most of the benthic organisms in soft bottom samples (Soule and Oguri 1976; USACE and LAHD 1980). An assessment of dominant species in the Harbor indicates a gradient of increasing environmental stress (enrichment/contamination) from the Outer to Inner Harbor and from basins to slips (MEC and Associates 2002). Over time there has been an increasing tendency for movement of healthy Outer Harbor assemblages up the main

channel and improved benthic indicators in the Inner Harbor areas (MEC and Associates 2002).

The mean annual abundance of infaunal organisms in deep open water of the Los Angeles Outer Harbor (southeast of Pier 400 and west of Pier 400 near the entrance to Main Channel) ranged from 175 to 299 organisms/0.1 m^2, and biomass ranged from 1.87 to 1.91 g/0.1 m^2 in the 2000 baseline surveys. In the Main Chanel, the number of organisms was 240/0.1 m^2 with a biomass of 8.5 g/ 0.1 m^2. The mean annual number of species collected was 35 in the area southeast of Pier 400, 43 west of Pier 400, and 41 in the Main Channel. Statistical cluster analyses of the infaunal data suggested that the Outer Harbor assemblages in this area ~~has~~ have low pollutant concentrations (MEC and Associates 2002) based on the diverse fauna, low percentage of pollution tolerant or enrichment species, and presence of species associated with relatively uncontaminated coastal areas. Although sediment chemistry samples and analyses were not done during the 2000 Biological Baseline study, "typical" pollutants in contaminated areas could include metals, organotins (organotin are chemical compounds based on tin with hydrocarbon substituents, for example tributyltin is an organotin), organic pesticides and polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and semi-volatile organics.

Annual and seasonal variations in density of infaunal organisms are to be expected as a result of variations in oceanographic (chemical and physical) conditions over time and human activities (USACE and LAHD 1992). The area near the mouth of the Main Channel had not been dredged in about 20 years prior to the 2000 surveys while the area southeast of Pier 400 had been dredged within about the past 10 years, which influenced the species diversity of the infaunal community. In Long Beach Harbor, the mean annual abundance of infaunal organisms in deep open water ranged from 225 to 347 organisms/0.1 m^2, and biomass ranged from 3.60 to 4.02 g/0.1 m^2 (MEC and Associates 2002). The mean number of species was 44 to 46. Abundance ranged from 198 to 515 organisms/0.1 m^2 in Cerritos Channel and Channel 2 (Inner Harbor locations) with biomass ranging from 3.95 to 16.40 g/0.1 m^2. The number of species ranged from 36 to 47. The Inner Harbor locations appear to have low to moderate pollutant concentrations based on cluster analyses.

Epifaunal invertebrates associated with, but not living in, soft-bottom sediments are generally larger than infaunal organisms and are also referred to as macroinvertebrates. These species are most commonly caught during trawl sampling. The most common epibenthic invertebrates collected in deep open water of the Los Angeles Outer Harbor, in the Main Channel, and in the Long Beach Inner Harbor were black spotted shrimp (*Crangon nigromaculata*) and tuberculate pear crab (*Pyromaia turberculata*). In the Long Beach Outer Harbor, the most common species were the black spotted shrimp, tuberculate pear crab, and spotwrist hermit crab (*Pagurus spilocarpus*). The annual mean density of epifaunal invertebrates southeast of Pier 400 was 16 organisms per trawl and ranged from 7 to 28 individuals per trawl (MEC and Associates 2002). The annual mean biomass was 0.03 kg/trawl with a range of 0.01 to 0.05 kg/trawl. In the Main Channel, the annual mean density was 32 individuals per trawl with an annual mean range of 17 to 60 per trawl. The annual mean biomass of these organisms was 0.14 kg/trawl with a range of 0.02 to 0.28 kg/trawl. In Long Beach Outer Harbor, the annual mean density was 48 individuals/trawl with an annual mean biomass of 2.60 kg/trawl. The annual mean range was 23 to 90 individuals/trawl with a biomass of 0.06 to 7.46 kg/trawl. In the

Long Beach Inner Harbor, the annual mean density was 13 organisms/trawl with a range of 6 to 22 organisms/trawl. The annual mean biomass was 0.62 kg/trawl with a range of 0.20 to 1.01 kg/trawl (MEC and Associates 2002).

Surveys in the Outer Harbor in 1986-1987 (MEC 1988) collected a mean of 10 individuals per trawl (adjusted for smaller trawl size) in three Outer Harbor locations. The number of individuals per trawl, however, varied considerably among the nine sampling dates (0 to 71 individuals per trawl). Surveys in the Outer Harbor in 1996-1999 by the City of Los Angeles indicated that the abundance of invertebrates collected by trawl decreased considerably during the 1997-1998 El Niño, but subsequently recovered (MEC and Associates 2002). These data and the 2000 data discussed above indicate that epifaunal invertebrate abundance can vary within a year, but has not decreased from 1987 to 2000.

Fish associated with soft bottoms are discussed under "Water Column Habitat" below. No shallow water habitat exists adjacent to the proposed Marine Terminal or any of the marine terminals that could be used in the No Federal Action/No Project Alternative. The Pier 300 Shallow Water Habitat is located over 2.3 mi (3.7 km) by water to the northeast of the proposed Marine Terminal, and the Cabrillo Shallow Water Habitat is located over 0.4 mi (0.6 km) to the southwest of the Marine Terminal site. The other marine terminals that could be used in the alternatives to the proposed Project are all at greater distances from these habitats, particularly the terminals in the Port of Long Beach.

Hard Substrate Habitats

3.3.2.3 Water Column Habitats

The water column provides habitat for plankton (small floating animals and plants) and fish. In the Outer Harbor, phytoplankton (plant) communities showed seasonal patterns of abundance with diatom blooms in the spring and more intense dinoflagellate-dominated blooms in the fall (Environmental Quality Analysts and MBC 1978; Soule and Oguri 1976, 1979). The most abundant phytoplankton species included *Chaetoceros* spp., *Asterionella japonica*, and *Skeletonema costatum*, although red tides were dominated by *Gonyaulax polyhedra*. Phytoplankton tend to be less diverse in the Inner Harbor than in the Outer Harbor, but productivity can be higher in the former due to warmer water temperatures, nutrient inputs, and reduced circulation (HEP 1980). Zooplankton (animal) communities in the Outer Harbor were dominated by copepods and cladocerans such as *Acartia tonsa*, *A. californiensis*, *Paracalanus parvus*, *Corycaeus anglicus*, *Oithona* sp., *Evadne nordmanni*, *E. spinifera*, *Penilia avirostris*, and *Podon polyphemoides*. A recent entrainment study conducted for the City of Los Angeles Department of Water and Power (MBC 2007) indicated the copepod *Acartia* was the most abundant zooplankton species in the Inner Harbor year-round. In the Inner Harbor, copepods that have seasonal peaks and declines are the dominant zooplankton species. In the Outer Harbor near Pier 300, the mean density of zooplankton was 3,000 to 4,000 per m^3 (USACE 1985). The megalops stage of kelp crabs, spider crabs, and pea crabs comprised over 90 percent of all target shellfish larvae collected by MBC (2007) (the megalops stage is the second larval stage in the crab's lifecycle; in this stage, the young crab abandons its rounder, legless body shape for one more closely resembling

an adult crab equipped with little claws and other legs). Advanced larvae of species with commercial fishery value (i.e., Cancer crabs, California spiny lobster, market squid) each comprised less than 1 percent of the target shellfish species. Phytoplankton and zooplankton communities were not sampled in the 2000 baseline study.

Ichthyoplankton (fish eggs and larvae) species and abundances vary on a spatial and temporal basis in the Harbor. The most abundant larvae collected in deep waters of the Outer Harbor during 2000 were bay goby (*Lepidogobius lepidus*), northern anchovy (*Engraulis mordax*), unidentified goby, and queenfish (*Seriphus politus*), while the most abundant fish eggs were unidentified croaker and unidentified fish. In shallow water habitats, the most abundant larvae were California clingfish (*Gobiesox rhessodon*), queenfish, unidentified goby, bay goby, northern anchovy, and blennies (*Hypsoblennius* spp.), with abundant fish eggs represented by unidentified fish, croaker, speckled sanddab (*Citharichthys stigmaeus*), and California tonguefish (*Symphurus atricauda*). In Long Beach Inner Harbor, the most abundant eggs were unidentified croaker and unidentified fish while the most abundant larvae were bay goby, unidentified goby, and white croaker. Larvae were most abundant in spring and summer (May and August) while fish eggs were most abundant in February and August. The species composition and abundance of ichthyoplankton in the Harbor has been shown to be similar to that of the juvenile and adult fish community (Brewer 1983), suggesting that the Harbor is a nursery for nearly all of the fish species found there as adults (MEC 1988, MBC 1984).

The Los Angeles-Long Beach Harbor complex is a habitat for over 130 species of juvenile and adult fish, some of them transient visitors and some permanent residents (Horn and Allen 1981, MEC 1988, USACE and LAHD 1980). Seventy-four species of juvenile/adult fish were collected in the Harbor during the 2000 baseline study (MEC and Associates 2002). Of these, northern anchovy, white croaker (*Genyonemus lineatus*), and queenfish were the dominant species. Abundance was greater in summer than in winter. Deep open water of the Outer Harbor was dominated by northern anchovy and white croaker in both otter trawl and lampara net samples, with Pacific sardine (*Sardinops sagax*) and queenfish also abundant in lampara samples. The mean catch per lampara haul was 279 fish, and the mean catch per trawl was 509 fish. White croaker, northern anchovy, and queenfish were the most abundant species in the trawl and lampara samples in the shallow water mitigation habitats, with shiner perch (*Cymatogaster aggregata*) also abundant in the lampara samples. The mean catch per lampara haul was 352 fish and per trawl was 402 fish. Beach seine samples at Cabrillo Beach and the Pier 300 shallow water habitat found topsmelt (*Atherinops affinis*) to be the most abundant species. In Long Beach Inner Harbor, the most abundant species caught using the trawl and lampara was the northern anchovy, with white croaker, topsmelt, and specklefin midshipman (*Porichthys myriaster*) also common. Commercially important species such as the California halibut (*Paralichthys californicus*), barred sand bass (*Paralabrax nebulifer*), and California barracuda (*Synodus argentea*) were found in the Harbor.

3.3.2.4 Water Birds

Numerous water-associated birds use the Harbor as residents and as seasonal visitors. They use the water surface for resting and forage over or in the water. Some species

also rest or roost on breakwaters and other man-made structures in the Harbor. The year 2000 baseline study found 69 species that are dependent on marine habitats and another 30 species that are not (MEC and Associates 2002). 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 (*Larus occidentalis*) was common all year while Heermann's gull (*Larus heermanni*) was common from June through January. Western grebes (*Aechmophorus occidentalis*) were also present throughout the year. Four species of terns and black skimmers (*Rynchops niger*) were observed in the summer. The Caspian tern nesting season is approximately April through August (Shuford and Craig 2002). This species nested on Pier 400 just west of the California least tern nesting site (i.e., in the proposed Tank Farm Site 1) in 1997 through 2005 (Keane Biological Consulting 2005b), but has not been observed nesting or attempting to nest there in 2006 or 2007 (Keane Biological Consulting 2007a, 2007b). Great blue heron (*Ardea herodias*) were present along the riprap of Pier 400 all year but were more abundant in fall and winter. The California least tern (*Sternula antillarum browni*) and black skimmer are discussed below under Special Status Species. Birds observed on or adjacent to Tank Farm Site 1 in November 2007 included great blue heron, double-crested cormorant (*Phalacrocorax auritus*), and gulls (SAIC 2007).

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 and Associates 2002). Elegant terns nest at five locations in North America: Pier 400 in the Port, Bolsa Chica, the San Diego saltworks, and two islands (Isla Raza and Isla Montague) in the Gulf of California, Mexico (Collins 2006a). Approximately 90 to 97 percent of the world population of this species nests on Isla Raza. Elegant terns, predominantly from Bolsa Chica (Collins 2006a), nested in the 12-acre (5-ha) 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 is within proposed Tank Farm Site 1 and 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, possibly due to local water conditions (Collins 2006a). In Long Beach Inner Harbor (Cerritos Channel, Channels 2 and 3, and Back Channel), gulls was the most abundant guild with waterfowl and upland birds also common (MEC and Associates 2002). The western gull was the most common species throughout the year with Heermann's gull commonly present from July through January. Rock doves were also abundant throughout the year. Other seasonally common species included double-crested cormorant, barn swallow (*Hirundo rustica*), great blue heron, western grebe, and California brown pelican (*Pelecanus occidentalis californicus*). The latter species is discussed below under Special Status Species.

3.3.2.5 Special Status Species

Several state- and federally-listed threatened or endangered bird species, along with other special status bird species, are known to be present at least seasonally in the

Harbor (Table 3.3-1). The status of these birds was taken from the California Natural Diversity Data Base (CNDDB 2008). Many birds are protected under the Migratory Bird Treaty Act. Those that are state- or federally-listed as threatened or endangered or state species of special concern are included in Table 3.3-1. Other migratory birds are discussed above in the sections on Water Birds and Terrestrial Habitats. A Biological Assessment has been prepared for the three federally-listed bird species and listed species of whales in offshore waters (Appendix J) for Section 7 consultation under the Endangered Species Act (ESA). In addition to special status bird species, several species of marine mammals and sea turtles are known to be present in or near the Harbor as discussed below.

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 nearby 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 FEIS/FEIR (USACE and LAHD 1992). The following is a summary of information on least tern use of the Los Angeles Harbor.

The 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 1974 (Keane Biological Consulting 1999a). In 1979, the Los Angeles Harbor Department began providing nesting habitat for the species and entered into a MOA with the USFWS, the USACE, and CDFG for management of a 15-acre (6.1-ha) 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 three to five 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 is now on the southern tip of Pier 400 (Keane Biological Consulting 2003), immediately east of proposed Tank Farm Site 1. In 1997, the only successful nesting occurred on the then newly constructed Pier 400 and in 1998 the Pier 300 nesting site was decommissioned (Keane Biological Consulting 1999a). 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 (6.4-ha) fenced nesting site although 67 in 2003, 29 in 2004, and 25 in 2005 were located in the adjacent area to the west (part of proposed 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

percent of the total number of fledglings and the highest number of fledglings per pair (Keane Biological Consulting 1999a). In 2003, the Harbor produced 55 percent of the total number of fledglings in Los Angeles and Orange counties and 25 percent of the statewide fledglings (Keane Biological Consulting 2003). In 2005 these numbers increased to 71.4 percent of the total fledglings in Los Angeles and Orange counties and 45 percent of the statewide number of fledglings (Keane Biological Consulting 2005b).

Several foraging studies have been conducted in the Harbor. The 1982, 1984, and 1985 surveys found that California least terns foraged over shallow water (generally less than 20 ft [6 m] deep) in the Outer Harbor, especially near the Pier 300 California 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 California least terns foraged both inside and outside the Harbor during egg incubation. More foraging occurred near the breakwater than adjacent to Terminal Island during incubation but this reversed after the eggs hatched (Keane Biological Consulting 1997). Based on the 1994-1996 surveys, California 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 two years. After the south side of Pier 300 was dredged to deepen the water, use of this area by the least terns declined. The Cabrillo Beach and Cabrillo Saltmarsh areas were used to varying degrees (Keane Biological Consulting 1997). A study in 1997 and 1998 found that California 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 California least terns. These studies showed that shallow water areas (less than 20 ft [6 m] deep) provide important foraging areas for the California least tern.

Table 3.3-1. Special Status Bird Species in the Proposed Project Area

Common Name	*Scientific Name*	*Status*[1]		*Habitat Use*
		Federal	*State*	
California least tern	*Sternula antillarum browni*	E	E, FP	Nests at designated site on Pier 400; forages over shallow water near nest site; present April-August
California brown pelican	*Pelecanus occidentalis californicus*	E	E	Roosts on breakwaters; forages over open water; rests on water or structures; present all year
American peregrine falcon	*Falco peregrinus anatum*	Delisted	E, FP	Resident; nests in the Inner Harbor; forages throughout Harbor on birds
Western snowy plover	*Charadrius alexandrinus nivosus*	T	CSC	Several migrants at Pier 400 in the California least tern nesting site, but no nesting in 2003 through 2007
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	--	E	Inhabits pickleweed marsh; transient visitor to Harbor
Black skimmer	*Rynchops niger*	--	CSC	Nested on Pier 400 in 1998-2000 and 2004; forages over water near nests; present all year
Common loon	*Gavia immer*	--	CSC	Infrequent winter visitor to Harbor; a few observed in the Outer Harbor in 2000; does not nest in the Harbor
Burrowing owl	*Athene cunicularia hypugea*	--	CSC	One observed on riprap in Long Beach Outer Harbor in 2000; one trapped on Pier 400 in 2003 and 2004; observed on Pier 400 in 2005, 2006, and 2007; no known nesting in Project area
Loggerhead shrike	*Lanuis ludovicianus*	--	CSC	Primarily in Inner Harbor on riprap or dock/piling habitat; on Pier 400 in 2003; no nesting habitat at Project sites

Sources: MEC and Associates 2002; Keane Biological Consulting 2003, 2005b, 2007a, 2007b.

Note: 1. E = endangered
T = threatened
CSC = California Species of Special Concern (nesting populations for birds in this table);
FP = fully protected

Foraging by least terns at the Pier 300 Shallow Water Habitat increased even more than the number of nests in recent years. This suggests that least tern prey were more abundant over 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 two years.

The number of fledglings produced on Pier 400 in 2006 decreased to 44.3 percent of those in Los Angeles and Orange counties and 20 percent 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 percent of those in Los Angeles and Orange counties and 8 percent 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 Port activities. These factors are numerous and include (K. Keane, personal communication 2008a):

1) The creation in 2005 and 2006 of additional nesting sites for the California least tern as part of the Bolsa Chica Lowlands Restoration Project in Huntington Beach (approximately 12 miles [19 km] south of the Port, where numbers of California least tern nesting pairs have increased from approximately 130 in 2005 to 200 in 2007 (Marschalek 2005, 2006, 2007, 2008)

2) The increase in the number of California least tern nesting pairs at Venice Beach, approximately 20 miles [32 km] north of the Port. Least tern nesting at Venice Beach, the only other least tern nesting site in Los Angeles County, had been unsuccessful due to recurrent predation by American crows (*Corvus brachyrhynchos*). More effective management of the American crow population preying on least tern eggs and chicks beginning in 2006 resulted in an increase in least tern nesting pairs from 17 in 2004 and 90 in 2005 to 302 in 2006 and 450 in 2007.

3) Fluctuations in the abundance and availability of California least tern prey. Least terns preferred prey is northern anchovy (*Engraulis mordax*) and other small bait fish, which although populations can be highly variable, are the most common pelagic fish species in the Port (MEC and Associates 2002). Because information on local occurrence of bait fish populations may not be available, anecdotal evidence (e.g., high observed chick mortality), increases in water temperatures during the chick-fledgling period (anchovies prefer cooler waters), and a decrease in observations of least tern parents bringing fish into the nesting site are all factors used by least tern biologists to infer at least a localized insufficiency in least tern prey.

4) In addition to high observed chick mortality (see item 3 above), the Los Angeles Harbor nesting site has experienced a high number of potential avian predators, particularly peregrine falcon (*Falco peregrinus*) and burrowing owl (*Athene cunicularia*) during recent years. The recent increase in peregrine falcons and burrowing owls at the Los Angeles Harbor nesting site is likely not related to the proximity of the site to industrial uses, since both species are predators at nesting sites surrounded by open space as well as developed areas, and the APM container terminal adjacent to the nesting site provides no nesting and few foraging opportunities that would attract either species to the area.

5) An increase in avian chick predators including American kestrel (*Falco sparverius*), peregrine falcon (*Falco peregrinus*) and burrowing owl (*Athene cunicularia*) during recent years. For the latter species, only occasionally observed at the Los Angeles Harbor nesting site until 2005, 86 chick remains due to burrowing owl predation were observed in 2006, and 23 chick remains in 2007. However, the actual number of least tern chicks depredated by burrowing

owls in 2007 is believed to be far higher, since burrowing owl observations were recorded at the Los Angeles Harbor nesting site from May through July, and five separate individual burrowing owls were live-trapped and removed from the site (KBC 2007a and 2007b).

6) A statewide decline in the California least tern population has been documented since 2005. This included a 4.7 percent decline in the number of nesting pairs in the San Diego region as well as a 46 percent decline at the Los Angeles Harbor nesting site. However, other factors discussed above have had a local influence on the decline in the number of least tern nesting pairs at the Los Angeles Harbor.

The factors discussed above are unrelated to the proximity of the Los Angeles Harbor nesting site to industrial uses because (1) California least terns have used the harbor nesting site since 1997, (2) numbers of California least tern nesting pairs increased (except for a decrease in 2002, when statewide numbers declined rapidly) from 80 in 1997 to 1,254 in 2005, and (3) the APM Container Terminal adjacent to the nesting site has been in operation since 2002. Nesting has increased at Pier 400 as a result of active management, site preparation, and more consistent and effective predator management. However, nesting decreases have occurred due to several factors discussed in the bullets above, which are unrelated to the presence of industrial uses. In fact, several California least tern nesting sites statewide thrive adjacent to industrial uses and high levels of human disturbance, including the Lindbergh Field nesting site at the San Diego airport, and the Huntington Beach nesting site adjacent to Pacific Coast Highway.

California Brown Pelican

Western Snowy Plover

American Peregrine Falcon

Other Special Status Bird Species

Sea Turtles

Marine Mammals

Vessel Collisions with Marine Mammals and Sea Turtles

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 US 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 percent) and blue whales (15 percent) with a few fin whales and humpback whales. The number of strikes per year ranged from none to seven and averaged 2.6 along the entire coast of California, but the actual number is likely to be greater because not all strikes are reported. Although

t~~T~~he types of vessel(s) involved in whale strikes may not always be reported, ~~often was not known but does~~they do include freighters/container vessels such as those going to the Los Angeles-Long Beach Harbor.

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 with 1,700 in the eastern North Pacific (NMFS 2008). Along the California coast, blue whale abundance has increased over the past two decades (Calambokidis *et al*. 1990, Barlow 1995, and 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 1991-1995 and from 1998-2002. September 2007, however, saw a large 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" (Working Group on Marine Mammal Unusual Mortality Events 2007). 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 incidents. The Jensen and Silber Whale Strike Database (Jensen and Silber 2003) reports that there are 134 cases of known vessel strikes in U.S. coastal waters. Of these 134 cases, 14.9 percent (20) involved container/cargo ships/freighters, and 6.0 percent (8) involved tankers. The remaining incidents involved Navy vessels (17.1 percent or 23 cases), whale-watching vessels (14.2 percent or 19 cases), cruise ships/liners (12.7 percent or 17 cases), ferries (11.9 percent or 16), Coast Guard vessels (6.7 percent or 9 cases), recreational vessels (5.2 percent or 6 cases), and fishing vessels (3.0 percent or 4 cases) with one collision (0.75 percent) 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 NOAA which was based on information in the Jensen and Silber (2003) whale strike database and Laist et al. (2001), the majority of vessel collisions with whales occurred at speeds between 13-15 knots. Specifically, NOAA 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 Undated).

3.3.2.7 Invasive Species

At least 46 invasive aquatic species have become established in waters of the Los Angeles/Long Beach Harbor (Gregorio and Layne 1997). These include a Japanese brown alga (*Sargassum muticum*), bubble snail (*Philine auriformis*), Japanese mussel (*Musculista senhousia*), an isopod (*Sphaeroma quoyanum*), and yellowfin goby (*Acanthogobius flavimanus*). The primary source of these organisms is likely to have been discharges of ballast water from cargo vessels using the San Pedro Bay Ports (NRC 1996; USCG 1998). Other potential vessel sources include hulls, anchors and chains, piping and tanks, propellers, and suction grids, while other non-vessel sources include aquarists and restaurant live fish trade. A total of 33 non-native species were identified in the 2000 surveys (MEC and Associates 2002). Eight invasive invertebrate species have been found in the sediments of Los Angeles Outer Harbor near Pier 400, another 10 species were found in riprap samples, and one species was collected in trawl samples. These species include *Theora lubrica*, *Aricidea catherinae* and *A. horikoshii*, *Levinsenia gracilis*, *Sigambra tentaculata*, *Dipolydora socialis* and *D. girardi*, *Pseudopolydora paucibranchiata*, *Sinocorophhium heteroceratum*, Mediterranean mussel, *Boccardiella hamata*, *Nicolea gracilibranchis*, *Polydora lingi* and *P. websteri*, and *Syllis gracilis* and *S. fasciata*. The non-native alga, sargassum (*Sargasum muticum*), was recorded at three of the four sampling transects in Los Angeles Outer Harbor but at none of the three Long Beach Outer Harbor transects, and the alga *Undaria pinnatifida* was found at one location (near Cabrillo Beach launch ramp) during the 2000 baseline kelp and macroalgae surveys (MEC and Associates 2002). Biological Baseline studies conducted for the Ports in 2008 observed *Undaria* at 12 of the 20 kelp/macroalgae sampling locations, with most (8 out of 12) being reported at Inner Harbor stations (SAIC unpublished data). Sargassum was also found at the four Long Beach Inner Harbor locations, and *Undaria* was found near the U.S. Coast Guard Base along the Main Channel in Long Beach Harbor~~at one of those locations~~. Another non-native sargassum (*S. filicinum*) has recently been found in Long Beach Harbor (Miller 2006) and has the potential to be present in the vicinity of Pier 400. Invasive species can compete with or prey upon native species and thus alter the local ecology, which can have economic effects as well.

The Mediterranean strain of Caulerpa (*Caulerpa taxifolia*) is an invasive alga that is listed as a federal noxious weed under the Plant Protection Act. This species has never been identified in San Pedro Bay, but is of particular concern because it is a fast growing green alga native to tropical waters where it typically grows in isolated patches. However, in areas outside its native range, Caulerpa grows rapidly and quickly overtakes native species. In the Mediterranean, Caulerpa has caused ecological devastation by overwhelming local seaweed species and altering fish distributions. Its rampant growth has also resulted in huge economic losses by harming tourism, pleasure boating, fishing, and the diving industry. Species of

Caulerpa are used in the aquarium trade and can enter coastal marine waters through disposal of the plants or aquarium water into storm drains or coastal waters. Currently, Caulerpa has been found in two southern California locations. Due to its potential to create severe ecological and economic losses, a Caulerpa survey must be completed in accordance with the Caulerpa Control Protocol (NMFS 2008b, Appendix I.~~2~~1) prior to any underwater disturbance (defined as bulkhead repair, pile driving, dredging, placement of navigational aids, etc).

3.3.2.10 Wetlands and Other Special Habitats

Eel ~~G~~grass Beds

Eelgrass beds are considered a special aquatic site (vegetated shallows) under the Clean Water Act. Eelgrass (*Zostera marina*) is a rooted aquatic plant that inhabits shallow soft bottom habitats in quiet waters of bays and estuaries as well as sheltered coastal areas (Dawson and Foster 1982). It can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. Most eelgrass beds in bays or estuaries are found in water less than 20 ft (6 m) deep, with light being the primary limiting factor. Surveys of the Harbor in 2000 found eel grass beds along Cabrillo Beach and on the east side of Pier 300, including the Seaplane Lagoon (MEC and Associates 2002). No eelgrass beds were present along Face C of Pier 400, where the Marine Terminal would be built, due to water depth and rocky substrate in shallow water. No eelgrass beds are known to be present in Long Beach Harbor, although a few plants were observed in Cerritos Channel during the riprap surveys (MEC and Associates 2002). Eelgrass beds along Cabrillo Beach are 1.4 mi (2.3 km) from the proposed Berth 408, and those in the Pier 300 Shallow Water Habitat are 2 mi (3.2 km) away.

Kelp Beds

Mudflats

3.3.3 Applicable Regulations

This section describes regulations, permits, and agreements that may be applicable under associated natural resource laws and regulations.

Clean Water Act

Rivers and Harbors Act of 1899

Federal Endangered Species Act

Magnuson-Stevens Fishery Conservation and Management Act

Migratory Bird Treaty Act

Marine Mammal Protection Act

California Fish and Game Code, Section 1600

California Endangered Species Act

Ballast Water Management for Control of Nonindigenous Species Act

California PRC Section 71200 *et seq*. (enacted January 1, 2000), and as amended by AB 433 in September 2003, 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 exchanging ballast water within port waters, and requires that exchange occurs 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 Port. Recently enacted California legislation (e.g., Assembly Bill 740 and Senate Bill 1781) requires vessel hull husbandry practices and sets performance standards for the discharge of ballast water, with which vessels calling at Berth 408 will be required to comply.

The statewide compliance with ballast water reporting was greater than 902 percent for the period January 2000 2004 to June 20022006 (Falkner et al. 2007). Of the vessels reporting, 96 99 percent indicated that they complied with the mandatory management requirements, either through retaining ballast water on board or by exchanging ballast water prior to discharge. At the port zone level, Between January 2000 and June 2002, the San Pedro Bay Ports collectively received the greatest percentage of the California ballast water reporting forms (10,810 forms, or 73 percent of the state's total) between January 1, 2000, and June 30, 2002 and continues to lead the state in qualifying voyages (QVs), for both foreign and coastal arrivals (Falkner et al. 2007). The Act also requires an analysis of other vectors for release of non-native 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) would require phase-in of ballast water treatment performance standards, first for newly constructed ships and then for existing ships.

Spill Prevention, Control, and Countermeasure

3.3.4 Impacts and Mitigation Measures

3.3.4.3 Project Impacts and Mitigation

3.3.4.3.1 Proposed Project

3.3.4.3.1.1 Construction Impacts

Impact BIO-1.1: Construction of proposed Project facilities could affect individuals of or habitat for the California least tern and other special status species.

Marine Terminal, Tank Farm Site 1, 42-inch Pipeline Route, and Staging Area 412

California Least Tern

Marine Terminal. Construction of the Marine Terminal facilities on land at Face C of Pier 400 would be at least 2,400 feet (730 m) from the least tern nesting site. This includes the security ~~operators'~~ office and marine terminal control building ~~and the administration building~~. Construction noise is not constant, and the peak on-land construction noise (excluding pile driving, which is discussed below) would be less than 65 decibels [dB(A)] at the nesting site based on a standard noise attenuation analysis. The attenuation analysis is based on the typical noise level of a complement of construction equipment of 91 dB(A) at 50 ft (15 m) (City of Los Angeles 2006), with noise attenuating by 6 dB per doubling of distance. This is within the range of existing noise at the nesting site: ambient existing noise (in year 2005) measured at the western edge of the nesting site averaged 50 dB(A) over 24 hours (based on measurements taken once every hour for 7 days), with the highest recording during the measurement period being 88 dB(A) (Navcon Engineering 2005b – see Appendix L.2). Therefore, on-land c~~C~~onstruction activities at the Marine Terminal ~~at that distance from the nesting site~~ are unlikely to affect least terns while at the nesting site. Least tern flights to the Cabrillo Shallow Water Habitat and Pier 300 Shallow Water Habitat for foraging would be unlikely to pass over the construction site, although some individual terns could fly over the construction site en route to other areas in the Harbor.

Noise and vibration from pile driving for construction of the Marine Terminal could affect least terns directly through startle responses and indirectly through changes in the distribution or abundance of fish prey species in response to the vibration. Pile driving for the Marine Terminal would occur more than 2,400 ft (730 m) from the western edge of the least tern nesting site. Peak noise levels from Project pile driving would range from 95 to 107 ~~A-weighted decibels [~~dB(A)~~]~~ at a distance of 50 ft (15 m) (City of Los Angeles 2006). Using the maximum value for the proposed Project pile driving (largest steel piles), the maximum pile driving noise level at the western edge of the California least tern nesting site would be at most ~~less than~~ approximately 74 dB, which is based on a value of 95 to 107 dB at 50 ft (15 m) and attenuation of 6 dB per doubling of distance, due to attenuation of the sound by more than 33 decibels (dB) over the 2,400-ft (732-m) distance between the pile driving locations ~~work~~ and the western edge of the nesting site. Peak noise levels (ambient noise plus that from

proposed Project construction) of up to 76 dB(A) would occur at the least tern nesting site during driving of large, steel pilings, depending on ambient noise levels. The increase in noise at the nesting site would be less during driving of smaller, concrete piles. ~~The ambient noise measured at the western edge of the nesting site averaged 50 dB(A) during the day, with a maximum of 88 dB(A) (Navcon Engineering 2005b – see Appendix L.2).~~ Therefore, maximum (peak) noise levels during construction would be within the range of values measured at the site under existing conditions.

The average noise level at the California least tern nesting site would likely be increased during pile driving, compared to the current ambient noise. (As noted above, measurements at the western edge of the nesting site taken once every hour for 7 days in 2005 averaged 50 dB(A) over 24 hours, with the highest recording during the measurement period being 88 dB(A) (Navcon Engineering 2005b – see Appendix L.2.)) However, pile driving would not be a continuous operation, and noise levels would vary depending on type of piling (steel, concrete), piling size, daily schedule of construction activities, duration of pile driving, and pile driving method. During days in which pile driving would occur, the average daytime noise level at the nesting site is estimated to be approximately 66 dB(A), but the nighttime level would not be changed compared to existing conditions (because no pile driving, nor any other construction, would occur during nighttime). Although no thresholds exist for average noise level effects on the California least tern, the potential to disturb California least terns during pile driving activities would be low because this species is tolerant of a variety of very high average-noise-level environments while nesting, including airfield operations, highway traffic, military operations (with helicopters), and construction activities (K. Keane, personal communication 2008c).

Construction of container terminal facilities on both Pier 300 and Pier 400 has occurred adjacent to the nesting site while the California least terns were nesting with no observed adverse affects related to noise (K. Keane, personal communication 2008c). In addition, piles were driven for the berths along the south side of Pier 300 at a distance of less than 1,200 to 2,300 ft (366 to 701 m) from the nesting site (located on Pier 300 at that time). No disturbance of nesting of the California least terns was observed during these events.~~Pile driving would not increase the maximum noise level at the least tern nesting site but would increase the average noise level by up to 24 dB(A) while the steel piles were being driven. The increase in noise would be less for the smaller concrete piles. Because pile driving noise would be less than existing maximum noise levels at the nesting site, noise (in air) from the pile driver for the steel pilings would have a low potential to startle least terns at the nesting site.~~

Pile driving also causes sound pressure waves in the water that could result in the dispersal of fish schools, at least temporarily, and consequently could affect the ability of least terns to find and feed on small schooling fish. The size (diameter and length) and type of piles, type and maximum energy level of the hammer, and specific site characteristics influence the level of sound produced and its attenuation with distance from the pile driving. Results from a study site in Canada indicated that driving closed-end steel piles 36 inches (91 cm) in diameter with a peak sound pressure approaching 150 kPa resulted in mortality of several species of fish ~~at an unspecified distance from the noise source~~"around the pile" (Vagle 2003). Hastings and Popper (2005) reported no statistically significant mortality (i.e., no difference from control groups) for sound exposure levels (SELs) as high as 181 dB (re 1 μPa^2-

s) for surfperch and SELs as high as 182 dB (re 1 μPa^2-s) for steelhead. In contrast, for large hammers driving steel piles over 8 ft (2.4 m) in diameter, ~~only~~ temporary behavioral effects on juvenile salmonids were predicted at distances greater than 575 ft (175 m) from the noise source (NMFS 2003). ~~In comparison, t~~The ~~110~~ 92 ~~(Option 1) or 74 (Option 2)~~ steel piles planned for Berth 408 would range from 48 to 54 inches (122 to 137 cm) in diameter. Impact driving for these steel piles could generate levels as high as 210 dB_{peak}, 195 dB_{rms}, and 185 dB_{sel} at a distance of 33 feet (10 m) from the pile (Caltrans 2007). In addition, ~~40~~ 44 ~~(Option 1) or 184 (Option 2)~~ 24-inch (61-cm) diameter concrete piles would be installed in the water for the berth. Impact driving for the concrete piles could generate levels as high as 188 dB_{peak}, 176 dB_{rms}, and 166 dB_{sel} at a distance of 50 feet (15 m) from the pile (Caltrans 2007). ~~(As indicated in Section 2.4.2.1, at the current design stage it is not certain whether the mooring dolphins would require steel or pre-stressed concrete piles; "Option 1" as used in this section corresponds to the use of steel piles for the mooring dolphins, while "Option 2" corresponds to the use of pre-stressed concrete piles for the mooring dolphins.) Another~~ An additional 34 concrete piles would be installed on land. As noted in Section 2.4.2.1, the number of piles includes those needed to support the Alternative Marine Power (AMP) system and a platform for potential future installation of an Advanced Cleanup Technologies, Inc. Advanced Maritime Emissions Control System (ACTI AMECS).

Shallow water foraging areas for the California least tern at the Cabrillo Shallow Water Habitat are located more than 2,000 ft (610 m) from the Marine Terminal, and effects of pile-driving sound on fish in that habitat are expected to be minimal. This is because the distance from the berth to the foraging area would be more than twice the 575-ft (175-m) distance at which effects on fish behavior would be expected and because the size of piles would be smaller. California least terns also forage extensively at the Pier 300 Shallow Water Habitat that is over 2.3 mi (3.7 km) away (via water) from Berth 408. Pier 400 lies between Berth 408 and that foraging area. Due to this distance and the intervening landfill, impacts to forage fish used by least terns at the Pier 300 Shallow Water Habitat would not be expected. ~~These~~ Underwater sound effects also would be of short duration and greatest along Face C of Pier 400, representing deep water habitat that is not heavily used for California least tern foraging. Further, the area affected by pile-driving sound pressure waves would be a small portion of Harbor waters, and installation of the piles may or may not occur when the California least terns are present.

Tank Farm Site 1. Proposed Project facilities on Tank Farm Site 1 and the necessary utility line extensions at Pier 400 would be constructed adjacent to the California least tern nesting area. Temporary construction yard (staging area) 412 would also be located adjacent to the northeast corner of the least tern nesting area and could be used for delivery and storage of stone column gravel. Construction activities within about 200 ft (61 m) of the nesting area would have the potential to adversely affect the reproductive success of least terns if these activities occurred during the nesting season. The 200-ft (61-m) distance has historically been accepted as an appropriate set-back from the least tern nesting site for construction lay-down areas (USACE and LAHD 1992.) This distance is not an exclusion zone or an absolute distance that prohibits all activities, but rather is a reasonable buffer distance that would apply to construction activities that have the potential to adversely affect the California least tern. This distance can be modified through consultation with the CDFG and

USFWS under the MOA for the California Least Tern Nesting Site (City of Los Angeles et al. 2006), but is assumed to be 200 ft (61 m) for this analysis.

Construction activities that would occur within 200 ft (61 m) of the nesting site include most of the 50,000 barrel (bbl) surge tank, the motor control building and transformers, an access road, the eastern portion of the 8-ft (2.4-m) high containment dike, an 8-ft (2.4-m) security fence, approximately five 30-ft (9-m) high light poles, a 24-inch water line, a 34.5-kV electrical line, a communication line, a gas line, a storm drain line, and a portion of Pipeline Segment 1 (see Figure 2-4 and Figure 2-6 in Chapter 2). Temporary piles would be driven adjacent to staging area 412 as a mooring for ships delivering stone column gravel. The eastern side of the 50,000 bbl surge tank would be 120 ft (36.6 m) from the security fence adjacent to the least tern nesting site. For the impact analysis, it is assumed that some of these facilities would be constructed during the nesting season. Construction of the other tanks (excluding stone column installation discussed below), the remaining containment dikes and security fence, parking, and perimeter access road; other equipment; operator building and administrative building; and the Marine Terminal facilities would occur at a distance greater than 200 ft (61 m) from the least tern nesting site.

Noise from at least some of the construction equipment and human presence adjacent to (within approximately 200 ft, 61 m of) nesting least terns could cause adults to abandon nests or to leave the nests long enough that the eggs or chicks become chilled or are preyed upon. Because the western side of the least tern nesting site is at a higher elevation than Tank Farm Site 1, human presence alone within 200 ft (61 m) is not likely to adversely affect the least terns. However, temporary lighting, equipment, stockpiles of materials, or large pieces of equipment could provide perches for predatory birds near the nesting site during construction. Food wastes from construction workers that are not placed in sealed trash receptacles and lighting could attract predators that would disturb or prey upon least terns. Construction near the least tern nesting site would occur during two nesting seasons.

Stone columns made from compacted gravel would be installed for support under the tanks (prior to tank construction) at Tank Farm Site 1 and Tank Farm Site 2. This would involve the use of a vibrating probe to penetrate into the ground and to install the gravel columns. Testing to determine if the stone columns have sufficiently strengthened the soil would also occur. Both noise and vibration are produced by these activities. Installation of stone columns at Tank Farm Site 1, particularly those closest to the nesting site when the least terns are nesting, has the potential to disturb or stress the birds and thereby reduce reproductive success. A study of existing noise levels at the west edge of the least tern nesting site in August 2005 (Appendix L.2) found noise to be directly related to activities at the existing terminals on Pier 400. The average noise level at the northwest corner of the nesting site was approximately 50 dB(A) with the maximum level exceeding 88 dB(A). At the southwest corner of the nesting site the average noise level was approximately 48.5 dB(A) with the maximum level above 83 dB(A). Construction activities at the proposed Project Marine Terminal and Tank Farm Site 1 would add to those noise levels, particularly when proposed Project noise is more than 10 dB(A) higher than the background noise level. The California least tern would not be affected, if the stone column installation is scheduled for September through March when the least terns would not be present. Stone column installation would take six months and, thus, could occur when the least terns are present. Noise and vibration from stone column construction at Tank

Farm Site 1 during the least tern nesting season would have the potential to adversely affect this species. Installation of stone columns at Tank Farm Site 2 would not affect the least tern due to distance from the nesting area.

Runoff of sediment and pollutants from construction activities at the proposed Project facility sites has the potential to adversely affect water quality, particularly at storm drain outlets. Such runoff would most likely occur during the rainy season (October through April) when the least tern is not present. Runoff of pollutants such as concrete wash water, especially during the least tern nesting season, has the potential to cause mortality of forage fish used by least terns. The proposed Project would be required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction Activity, which includes preparation of a SWPPP and implementation of Best Management Practices (BMPs) to control stormwater runoff of pollutants. Measures assumed to be in the SWPPP are described in **Impact WQ-1.1**. In addition, Port construction specifications (Section 01410) require containment of all concrete wastes and other pollutants so that no runoff occurs. Thus, no reduction in forage fish availability for California least terns would occur.

Pipeline Segment 1 Route. No construction activities would take place in shallow water foraging habitat for the least tern, but Pipeline Segment 1 in the causeway bridge from Pier 400 to Terminal Island would pass near the shallow water habitat on the east side of Pier 400 and the Pier 300 Shallow Water Habitat. The potential for effects on the California least tern would depend on the timing of the construction activities. If all construction within approximately 200 ft (61 m) of the nesting site and foraging areas was completed when least terns were not present, then no effects to that species would occur. Construction when California least terns are present (April through August) would have the potential to adversely affect some individuals, depending on the type of activity and its location and duration.

Staging and Storage Areas. Staging area 412 on Pier 400 just north of the California least tern nesting site could be used for delivery and storage of gravel for stone column installation. Staging area 412 is paved and, thus, would not provide any suitable nesting habitat for the California least tern. Installing and removing temporary mooring piles at this location within 200 ft (61 m) of the nesting site would have the potential to disturb least tern nesting if these activities occurred between April and late August. Unloading, stock piling, and transport of gravel to the tank construction locations at Tank Farm Site 1 would also have the potential to disturb least tern nesting in the northeast portion of the nesting site if such activities occurred during the nesting season (April to September). The construction schedule (see Figure 2-11) shows stone column work would take six months, which could overlap with the least tern nesting season. These activities would be unlikely to adversely affect least tern nesting because they would be similar to activities that currently occur at the adjacent container terminal (e.g., vehicle movement, human presence, and noise associated with those activities). Activities at the container terminal occur as close as 120 ft (37 m) to the least tern nesting site while staging area 412 extends over 800 ft (244 m) away from the nesting site, allowing space for activities away from the nesting site. Storage and movement of rock at any of the other potential staging areas would not affect the California least tern due to distance from the nesting site.

California Brown Pelican

Construction activities at the proposed Project sites on Pier 400 (Marine Terminal, Tank Farm Site 1, and Pipeline Segment 1 route) are unlikely to adversely affect California brown pelicans. This species appears to have adapted to harbor activities because there has been no decline in abundance as harbor activity has increased, based on bird surveys conducted in the Harbor (MBC 1984, MEC 1988, MEC and Associates 2002). No roosting areas on the breakwaters would be directly or indirectly affected by the proposed Project, and the species does not nest in the Harbor area (see Section 3.3.2.5). The Middle Breakwater, where the pelicans prefer to roost, is located about one-half mile (0.8 km) or more from the proposed Project sites. Furthermore, much of the construction activity would occur during the day when the pelicans are not roosting.

Foraging by brown pelicans can occur throughout Harbor and nearshore waters. The only construction activity that would occur in or immediately adjacent to the water would be construction of the Marine Terminal and installation/removal of temporary mooring piles at staging area 412, if this site is used for delivery of stone column gravel. However, this would only affect a small area of potential brown pelican foraging habitat, relative to the amount of comparable habitat present in the Outer Harbor and nearby nearshore waters, for a short time. Brown pelicans may avoid this project region during construction, although some may continue to forage in that area. No adverse effects to the species would result due to the small area affected, the short duration of the disturbance, and availability of other foraging areas nearby.

Western Snowy Plover

Western snowy plovers are not known to nest in the Harbor, so there would be no potential for impacts to nesting by this species. Additionally, since construction activities associated with the proposed Project would not directly affect the California least tern nesting site and Cabrillo Beach, habitat used by western snowy plovers that occasionally visit the least tern nesting site and those that winter at Cabrillo Beach also would not be affected. Western snowy plovers appear to be tolerant of human presence and noise and typically do not flush from resting spots on the beach when a person approaches much closer than 200 feet (61 m) (personal observations by SAIC biologists during surveys for this species on beaches of Santa Barbara). However, a 200-foot (61-m) buffer zone is generally used for mechanized beach grooming when western snowy plovers are present on Santa Barbara City beaches. Based on that information, measures to protect the California least tern on Pier 400 would also protect western snowy plover that sometimes stop there during migration. Cabrillo Beach is more than 1.5 mi (2.4 km) from any construction activities associated with the proposed Project and, due to the distance, western snowy plovers on that beach would not be affected by Project-related construction noise. Further, noise from construction associated with the Marine Terminal and Tank Farm Site 1 would not adversely affect snowy plovers migrating through the area and stopping at the least tern nesting site. This is because current peak noise levels can be as high as 88 dB(A) and the construction would not increase that peak level.

Other Special Status Species

Construction of Tank Farm Site 1 on Pier 400 would permanently eliminate an area that was used by nesting black skimmers just west of the least tern nesting area in 1998-2000 and in 2004. Only a few black skimmers nested there in 2004. However, that site was suitable for black skimmer nesting only in the years when vegetation was cleared from the site to provide additional area for California least tern nesting. The Tank Farm Site 1 area was not cleared of vegetation in 2005, 2006, or 2007, and this made the site less attractive for black skimmer nesting. No black skimmers attempted to nest there in 2006 or 2007 (Keane Biological Consulting 2006, 2007a, b). Such clearing is not required or planned to occur in the future, and therefore, nesting by black skimmers is not expected to occur prior to Tank Farm Site 1 construction activities, so no nesting habitat would be lost. Vegetation clearing for construction activities prior to the black skimmer nesting season, however, could allow nesting to occur again. If this were to occur, construction activities would have the potential to injure or kill nesting birds, and could cause them to abandon the site.

Burrowing owls have been observed at and near the California least tern nesting site from 2003 through 2007 and appear to be preying on the California least terns. No observations of owl pairs or other indications of nesting have been observed during the least tern monitoring (K. Keane, personal communication 2008b). However, since individuals are present during the owl nesting season (February through August), it is assumed that nesting could occur on Pier 400. Construction activities could injure nesting birds or cause them to abandon their nests. ~~Any reduction in the number of burrowing owls present, however, would be a benefit to the least terns.~~

Construction activities on Pier 400 would have little or no effect on other listed and special status species because they do not breed on-site and the few individuals of those species that could be present on or near the proposed Project site would be expected to avoid the construction activities.

Construction activities would be a minimum of 2,700 to 3,500 ft (823 to 1,062 m) from the closest breakwater. Pile driving, stone column installation, and other construction noise in the air and water could cause some sea lions and harbor seals to temporarily move farther away from these activities, such as to other areas of the breakwater, although the animals are expected to adapt to the noise and continue to haul out on the breakwaters and buoys during construction. MEC and Associates (2002) primarily observed pinnipeds hauled out on channel markers (buoys), docks in the marinas, or swimming in the water, with very few hauled out on rip rap or beach areas. Breeding would not be affected because neither species breeds in the Harbor. Sound pressure waves in the water caused by pile driving could temporarily affect the hearing of marine mammals (primarily sea lions) if swimming near the proposed Project area ~~in the Outer Harbor~~.

Pinnipeds appear to have greater tolerance to noise levels than cetaceans. Kastelein et al. (2006) demonstrated that captive seals avoid zones where the sound pressure levels were louder than 107 dB_{rms} (re 1 µPa), but noted that it is possible that in the wild, seals may tolerate higher levels, in order to get food, escape predators, or stay with a pup. Finneran et al. (2003) found no measurable Temporary Threshold Shift (TTS) at sound pressure levels up to 178 to 183 dB (re 1 µPa) for California sea lions. Kastak et al. (2005) measured TSS in California sea lion, harbor seal, and northern

elephant seal at sound pressure levels over periods of 25 to 50 minutes. Increasing the exposure duration from 25 to 50 minutes had a greater effect on threshold shifts than increasing the exposure level from 80 dB original sound source level (SL) (137 to 159 dB_{rms} re 1 µPa) to 95 dB SL (152 to 174 dB_{rms} re 1 µPa); SELs resulting in TTS onset ranged from about 183 to 206 dB (re 1 μPa^2 s). Kastak and Schusterman (1996) reported TTS in California sea lions exposed to airborne noise from nearby construction. Pile driving produces noise levels of 175 to 205 dB_{rms} ~~177 to 220 dB~~ (re 1 µPa) at 33 ft (10 m) depending on the material and size of the piles (Caltrans 2007)~~(Hastings and Popper 2005)~~. Caltrans (2007) data indicate the sound level for the proposed steel piles could be as high as 195 dB_{rms} at 33 ft (10m). In comparison, an underwater sound level of ~~180~~ 190 dB_{rms} (re 1 µPa) has been designated as the level A harassment level for pinnipeds (Federal Register 2005), representing a potential effect level for marine mammals occurring close to construction noise sources in the Outer Harbor.

~~Observations during pile driving for the San Francisco-Oakland Bay Bridge East Span seismic safety project showed minimal response in harbor seals while sea lions swam rapidly out of the area (Caltrans 2001).~~In water, sound transmission loss is between 3 and 6 dB per doubling of distance, with approximately 4.5 dB per doubling of distance in nearshore waters (Vagle 2003). However, at distances of less than about 330 feet (100 m), the transmission loss (rate of attenuation) can be less (Caltrans 2007). For this project, marine mammals such as pinnipeds could experience sound levels approaching Level A harassment levels at around 100 m (330 feet) from the pile driving. This estimate accounts for the size of the largest steel piles, the power of the hammer that would be required to drive them, the lower rate of attenuation close to the pile, and uncertainty in the sound propagation rate that depends on site-specific characteristics (Caltrans 2007). ~~Thus,~~ During project construction, sea lions would be expected to avoid areas where sound pressure waves could affect them. A few individual harbor seals could be affected, but the number would be low since few are present (5 were observed near Pier 400 in 2000; ~~)~~ ~~(~~MEC and Associates 2002) and the effect would be of short duration, mainly ~~(~~during individual pile driving~~)~~ that would occur infrequently over a 16-month period during Marine Terminal construction (see Section 2.4.3.1.1 of the Draft SEIS/SEIR or Section 1.2.4.3.1.1 of the Final SEIS/SEIR).

Gravel for the stone columns under the tanks at Tank Farm Site 1 would be transported to staging area 412 (preferred) or 427 by ship from sources as far away as Canada. Two Panamax vessels would be needed to supply the gravel. This small number of vessel trips would be unlikely to adversely affect marine mammals because few, if any, individuals would be present in the vessel traffic routes from the rock source to Pier 400 due to their sparse distribution in the open ocean (whales, porpoises/dolphins, seals, and sea lions) and in the Outer Harbor (sea lions and harbor seals only), and because the animals are typically agile and have the ability to avoid damage by vessels. The number of ships (2) would represent a small percentage of large vessels that transit into the Harbor on an average yearly basis, corresponding to a low probability of collision with marine mammals. Delivery of other construction materials by barge, such as pilings, would be unlikely to adversely affect marine mammals due to the slow speed of the barges.

Tank Farm Site 2

Construction activities at Tank Farm Site 2 are unlikely to adversely affect any listed or other special status species because none are expected to be present at or near that location. Peregrine falcon nest sites on the Vincent Thomas and Schuyler F. Heim bridges are located more than 0.6 mi (1 km) and 1.3 mi (2.1 km) from Tank Farm Site 2, respectively. Transport of gravel for stone columns at this site would require two Panamax ships, and effects on marine mammals would be as described above for Tank Farm Site 1. The ships would deliver the gravel to staging area 427 (preferred) or 412.

Pipeline Segments 2-4 and Other Staging Areas

Noise and human presence during construction of pipeline segments 2-4 would occur in land areas that are not used by special status species. Construction activities for pipeline segment 2 (a-c) would be at least 2,000 ft (610 m) from potential peregrine falcon nesting sites on the Vincent Thomas Bridge and over 8,000 ft (2,438 m) from the Schuyler F. Heim Bridge, while construction of pipeline segments 3 and 4 would be at least 2,000 ft (610 m) from the Vincent Thomas Bridge and 4,000 ft (1,219 m) from the Schuyler F. Heim bridge. In this industrial area, construction disturbances would not affect peregrine falcon nesting on either bridge due to the distance and the existing nature of intervening industrial noise and port-related activities. Temporary use of the staging areas, other than 412 as discussed above for the California least tern, would not have any adverse effect on special status species because no suitable habitat for these species is present at these sites.

Accidents

Accidental spills of pollutants during construction on land would be unlikely to result in runoff of pollutants into the storm drain system that discharges into the Harbor. This is because large quantities of such material would not be used during construction and any spills would be contained by implementation of runoff control measures and cleaned up with no runoff to Harbor waters, as described for **Impact WQ-1.1**. Small spills on land would not directly affect the California least tern nesting site because it is at a higher elevation than Tank Farm Site 1, and no habitat for other special status species is present within the construction areas for the proposed Project. Further, vapor emissions from small spills on land would not adversely affect California least terns because emissions from such small spills also would be correspondingly low. Moreover, any spill would be cleaned up immediately and typical winds at the exposed site would quickly disperse the emissions.

Accidental spills of fuel, lubricants, or hydraulic fluid into Harbor waters from the equipment used for construction of Berth 408 and a temporary mooring at staging area 412 are unlikely to occur during the proposed Project (Section 3.14 **Impact WQ-1.1**). Any small spills that occurred would not adversely affect special status species because no individuals of those species would be using the water surface during the work. In addition, any such spills would be small and cleaned up immediately (see Section 3.12, Hazards, **Impact RISK-1**), so that the spilled material would not move away from the work area into areas that could be used by special status species.

ESA Preliminary Determination

The ESA Preliminary Determination for construction and operation of the proposed Project is summarized below under BIO-1.2 (Section 3.3.4.3.1.2).

CEQA Impact Determination

California least tern. Impacts would be less than significant for construction activities that are more than 200 ft (61 m), or other established buffer distance, from the nesting site when the terns are present, except for stone column installation and temporary lighting at Tank Farm Site 1, for the reasons described above. Construction activities closer than approximately 200 ft (61 m) to the nesting site when the terns are present could have significant impacts. Stone column installation at Tank Farm Site 1 and construction lighting while the terns are nesting could have significant impacts as described above.

California brown pelican. As described above, impacts of construction activities would be less than significant under CEQA.

Western snowy plover. As described above, construction would have no impacts.

Other special status species. Since Tank Farm Site 1 would not be cleared for construction and would be left vacant at the beginning of the nesting season, black skimmers would be unlikely to use this area for nesting, resulting in no impacts to this species. If vegetation clearing at Tank Farm Site 1 for construction resulted in black skimmer nesting at the site, injury to nesting birds and disruption of nesting would be a significant impact. If burrowing owls were nesting at the Tank Farm Site 1 and nesting was disrupted, impacts would be significant. Impacts to other special status species, including marine mammals, would be less than significant as described above.

Mitigation Measures

MM 4D-7 and **MM 4D-9** from the Deep Draft FEIS/FEIR are applicable to the proposed Project impacts. However, the more project-specific measures below cover the intent of **MM 4D-7** and **MM 4D-9**, so the latter are not included in the list of mitigation measures below.

MM BIO-1.1a: Monitor the California Least Tern and Other Bird Nesting. A qualified least tern biologist hired by the Port shall monitor California least tern and other special status bird nesting during construction activities on Pier 400, including installation of Pipeline Segment 1 to Tank Farm Site 2 and use of staging area 412. Monitoring shall occur from 2 weeks prior to the nesting season start (April) to the end of the nesting season (September or when the last bird has vacated the site and no birds return for at least two weeks). Monitoring shall occur at a minimum of three days a week during the nesting season which, for California least terns, generally extends from mid-May through the beginning of August. ~~that would occur from April through August.~~ In the event of an imminent threat to nesting special status species and the Construction Manager is not immediately available, the monitor shall have the authority to redirect construction activities. If construction activities need to be redirected to prevent impacts to special status birds, the monitor shall immediately

contact the LAHD Environmental Management Division, Port Inspector, and Construction Manager. The Construction Manager has the authority to halt construction if determined to be necessary.

MM BIO-1.1b: Stone Column Installation Monitoring. At Tank Farm Site 1, no stone column construction shall occur at night (sunset to sunrise), and if possible, stone column construction during daytime hours should be conducted outside the least tern nesting season. If stone column installation is unavoidable during the nesting season, the work shall be phased so that installation nearest the nesting site is conducted prior to or after the nesting season, and a qualified biologist shall monitor the least terns at the nesting site during stone column installation to identify adverse reactions of the birds to this activity. If the terns react adversely to work at any of these sites, work will be temporarily stopped. The LAHD Environmental Management Division, least tern biologist, and Construction Manager shall confer with the USFWS and CDFG regarding necessary further actions.

MM BIO-1.1c: Construction Schedule. All construction activities that are within 200 ft (61 m) of the California least tern nesting site and foraging areas shall be scheduled to occur between September and March, unless otherwise approved by the USFWS and CDFG. This includes installation and removal of mooring piles as well as gravel delivery at staging area 412 (see Port brochure in Appendix J).

MM BIO-1.1d: Construction Contractor Environmental Training. The Port shall provide environmental training by a qualified biologist to all construction contractor personnel working at the site. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and other special status species (e.g., black skimmer and burrowing owl) and measures required to avoid or minimize the potential for impacts to these species. The latter measures shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals during construction; prohibition of pets or animals of any kind during work on Pier 400; limiting activities within 200 ft (61m), or other established buffer distance, of the nesting site from March through August, to the extent feasible; and scheduling construction activities that would be near the nesting site for the period between September and March.

MM BIO-1.1e: Perches. When California least terns are present at the nesting site, idle construction equipment and stockpiles of materials exceeding approximately 8 ft (2.4 m) in height shall be placed so that they do not provide perches for birds that could prey on least terns.

MM BIO-1.1f: Lighting. Night time construction at Tank Farm Site 1 and construction staging area 412 during the least tern nesting season should be avoided. All lighting (temporary and security) shall be directed away from the California least tern nesting site and shielded to minimize increased light in the nesting area.

MM BIO-1.1g: Vegetation Clearing. Vegetation growing at Tank Farm Site 1 shall only be cleared immediately prior to construction activities occurring from April through August to discourage and protect least terns and black skimmers from nesting within the work area. Areas cleared at other times of the year will not be left barren and vacant during the nesting season.

MM BIO-1.1h: Protection of Special Status Species Nesting Birds. To avoid impacts to nesting special status species, such as the California least tern, black skimmer, and burrowing owl, that might nest within Tank Farm Site 1, a preconstruction survey shall be conducted by a qualified biologist if construction commences during the normal nesting season for most bird species (February 1 to August 1) to determine if any are nesting there. If any nesting is found, a buffer area of 200 ft (61 m) shall be established and protective measures shall be finalized in coordination with the USFWS and CDFG (and the USACE for federally listed species). ~~Nesting birds shall be protected until nesting is complete or young have fledged as determined by a qualified biologist.~~ If any nesting is found, an initial buffer area of 200 ft (61 m) shall be established, and the biological monitor would work with the LAHD Environmental Management Division (EMD) and their California least tern consultant, Port Inspector, and Construction Manager to ensure protection of the least terns while nesting. As appropriate, the USACE, USFWS, and CDFG would be consulted regarding the safe distance setback requirements. Nesting birds shall be protected until nesting is complete or young have fledged as determined by a qualified biologist.

MM BIO-1.1i: Protection of California Least Tern Nesting. During construction, no unauthorized vehicles or persons shall be allowed within 200 ft (61 m) ~~100 ft (30 m)~~ of the east side and northeast corner of the least tern nesting site (the "at grade portion") during the nesting season. Signs shall be posted, and barriers (e.g., temporary fencing) shall be provided if signage is not adequate.

MM BIO-1.1j: Noise Buffer. Construction of the north-south oriented containment dikes at Tank Farm Site 1 should occur early in site development to aid as noise buffers during construction.

MM BIO-1.1k: Noise Reduction during Pile Driving

The contractor shall be required to use sound abatement techniques to reduce both noise and vibrations from pile driving activities. Sound abatement techniques shall include, but are not limited to, vibration or hydraulic insertion techniques, drilled or augured holes for cast-in-place piles, bubble curtain technology, and sound aprons where feasible. At the initiation of each pile driving event, the pile driving shall also employ a "soft-start" in which the hammer is operated 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.

In addition, a qualified biologist shall be required to monitor the area in the vicinity of pile driving activities for any fish kills during pile driving. If there are any reported fish kills, pile driving shall be halted and the USACE and NMFS shall be notified via the Port's Environmental Management Division. The biological monitor shall also note (surface scan only) whether marine mammals are present within 100 meters of the pile driving, and if any are observed, temporarily halt pile driving until the observed mammals move beyond this distance.

~~No mitigation measures are required for the less than significant impacts to marine mammals.~~

Residual Impacts

With implementation of **MM BIO-1.1a** through **MM BIO-1.1~~j~~k**, residual impacts on the California least tern and other special status species as a result of proposed Project construction activities would be less than significant.

NEPA Impact Determination

California least tern. Impacts would be less than significant for construction activities that are more than 200 ft (61 m), or other established buffer distance, from the nesting site when the least terns are present, except for stone column installation and temporary lighting at Tank Farm Site 1, for the reasons described above. Construction activities closer than approximately 200 ft (61 m) to the nesting site when the least terns are present could have significant impacts. Stone column installation at Tank Farm Site 1 and construction lighting while the terns are nesting could have significant impacts as described above.

California brown pelican. As described above, impacts of construction activities also would be less than significant under NEPA.

Western snowy plover. As described above, construction would have no impacts.

Other special status species. Because black skimmers currently do not nest at Tank Farm Site 1and are not expected to nest there prior to the time when proposed Project facilities would be built, no loss of black skimmer nesting habitat would occur. Since Tank Farm Site 1 would not be cleared for construction and would be left vacant at the beginning of the nesting season, black skimmers would be unlikely to use this area for nesting, resulting in no impacts to this species. Vegetation clearing prior to their nesting season could allow nesting to occur again, and construction activities could then have a significant impact to this species through injury to nesting birds or by causing them to abandon the nest site. If burrowing owls are nesting at the Tank Farm Site 1 and nesting is disrupted, impacts would be significant. Impacts to marine mammals would be less than significant as described above.

Mitigation Measures

MMs BIO-1.1a through **BIO-1.1j** would apply for the California least tern, burrowing owl, and black skimmer.

MM BIO-1.1k would apply to reduce the ~~No mitigation measures are required for the less than significant~~ impacts to marine mammals.

Residual Impacts

With implementation of **MM BIO-1.1a** through **MM BIO-1.1~~j~~k**, residual impacts on the California least tern and other special status species as a result of proposed Project construction activities would be less than significant.

Impact BIO-2.1: Construction of proposed Project facilities would not substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands.

Natural Habitats

The only state-, federally-, or locally-designated natural habitat or plant community present at or adjacent to the proposed Project sites, including the Pier 400 Marine Terminal site and Tank Farm Site 1, Tank Farm Site 2, or along the pipeline routes is the least tern nesting site SEA on Pier 400. Impacts to special status species, including the California least tern and its nesting habitat (SEA), are discussed above in **Impact BIO-1.1**.

Marine algae growing on the riprap at the Berth 408 site did not include giant kelp (*Macrocystis pyrifera*), based on the 2000 ~~baseline surveys~~ (MEC and Associates 2002) and 2008 baseline surveys (SAIC unpublished data), and does not form a kelp bed. Some of the algae present could be removed within the footprint of each pile during installation of the pilings in shallow water over the riprap, but this would affect a very small proportion of the algae on Pier 400. Installation of pilings for Berth 408 would have a negligible effect on marine algae as none grows at depths greater than -25 ft (7.6 m) MLLW in the Harbor and because only six concrete piles would be installed in less than 25 ft (7.6 m) of water. Marine algae, including giant kelp, is present along the south and east faces of Pier 400 (MEC and Associates 2002), and installation/removal of temporary mooring piles for delivery of gravel to staging area 412 would result in removal of a few plants. The resulting changes in the algal community would be minor, would be of short duration due to rapid re-growth, and would not result in a substantial reduction of a locally-designated plant community. No eelgrass beds, wetlands, or mudflats are present near the Berth 408 site or staging area 412. The closest such habitats are 1.4 mi (2.3 km) from the Berth 408 site, and they would not be affected due to distance from Berth 408 and staging area 412. This includes the eelgrass beds at Cabrillo Beach, in the Pier 300 Shallow Water Habitat, and in the Seaplane Lagoon.

Essential Fish Habitat

The impacts of proposed Project construction on EFH and fish listed in the FMPs are addressed below and in Appendix K.

Proposed Project construction of the Marine Terminal berth on the southwest side of Pier 400 would potentially affect EFH and fish listed in the FMPs through 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 K). Installation of piles during construction of the berth structures would result in vibration in the water, as well as a small amount of turbidity.

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. As described for **Impact BIO-1.1**, 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 Groundfish FMP, other than the Pacific sanddab, are generally not very abundant in the Harbor, and most occur in habitats away from the Marine Terminal work area. Fish would generally 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 near Pier 400 would be lost within the footprint of the piles being driven and the rock placed around the base of these piles. 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 negligible effects on eggs and larvae of managed species, located primarily in the water column and moving with water currents, due to their brief exposure to the disturbances and the small number that could be affected in the construction area relative to those present in all marine habitats in the Harbor. These limited effects would not result in a substantial reduction or alteration to essential fish habitat. 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. A total of ~~110~~ 92 steel piles that are 48 to 54 inches (122 to 137 cm) in diameter and ~~40~~ 44 concrete piles would be installed for Berth 408~~ in Option 1~~. ~~For Option 2, a total of 72 steel piles and 184 concrete piles would be installed in the water.~~ A small amount of water column habitat (0.~~04~~ 03 acre, 0.~~02~~ 01 ha) would be converted to hard substrate (piles) due to Berth 408 construction, and the addition of rock around the base of the piles installed in soft sediments would convert a small amount of soft bottom to hard substrate (0.~~1~~ 09 acre, 0.~~04~~ 03 ha) (see Table 3.3-3). These effects on EFH would result in no loss of sustainable fisheries.

Table 3.3-3. Effects of Berth 408 Pilings on Habitat

Pile Type	No. Piles	Water Depth (ft)	Bottom Type	Pile Footprint (ac)	Rock Footprint (ac)
Steel	42	65-70	Soft	0.015	0.085
Concrete	10				
Steel	50	5-45	Riprap	0.019	NA
Concrete	34				
Total	136			0.034	0.085
Note: Water depth is relative to MLLW.					

Construction of a temporary mooring adjacent to staging area 412 on Pier 400 would result in short-term disturbances from driving piles, mooring of vessels to unload gravel for the stone columns, and subsequently removing those piles. These disturbances would be less than for Berth 408 construction and would have no adverse effects on EFH and individuals of managed species.

Construction activities (e.g., tank farms, pipelines, and staging areas) on land 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, 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.

EFH Preliminary Determination

The USACE has preliminarily determined the proposed Project will have adverse, but less than significant impacts on EFH based on the above analysis and Appendix K, and has ~~will initiate~~initiated consultation with NMFS pursuant to the Magnuson-Stevens Fishery Conservation and Management Act.

CEQA Impact Determination

Natural Habitats. Construction would have no impacts on natural habitats such as eelgrass beds, mudflats, or wetlands because none are present at or near the proposed Project site. The small amounts of marine algae affected by construction of Berth 408 and a temporary mooring at staging area 412, if the latter is used, would have less than significant impacts to kelp beds because a small area would be affected, the sparse algal cover that is present does not form a kelp bed, and rapid recovery would occur after the temporary mooring is removed. Impacts to the least tern SEA would be less than significant with mitigation, as discussed for **Impact BIO-1.1**.

Essential Fish Habitat. Temporary disturbances in the water during Berth 408 and temporary mooring construction would cause no substantial alteration of EFH or loss of fish in managed species as described above, including conversion of a small amount of soft bottom to hard substrate habitat, and impacts would be less than significant under CEQA. Construction activities at the tank farm sites and for new pipeline installation 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 BMPs such as sediment barriers and sedimentation basins). In addition, the work would be conducted in compliance with applicable permits, such as USACE's Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) permit and LARWQCB's 401 Water Quality Ceertification.

Mitigation Measures

~~No mitigation is required.~~ **MM BIO-1.1k** would minimize effects on EFH.

Mitigation for impacts on the California least tern SEA are addressed in **Impact BIO-1.1** above.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Natural Habitats. Construction would have no impacts on natural habitats such as eelgrass beds, mudflats, or wetlands because none are present at or near the proposed Project site as described for the CEQA analysis. The small amounts of marine algae that would be affected by construction of Berth 408 and a temporary mooring at staging area 412, if the latter is used, would have less than significant impacts to kelp beds because a small area and few plants would be affected, the sparse algal cover does not form a kelp bed, and rapid recovery would occur after the temporary mooring is removed. Impacts to the least tern SEA would be less than significant with mitigation as discussed under **Impact BIO-1.1**.

Essential Fish Habitat. Temporary disturbances in the water, such as from pile driving and conversion of a small amount of soft bottom to hard substrate habitat, during Berth 408 and temporary mooring construction would cause no substantial alteration of EFH or loss of fish in managed species as described above, and impacts would be less than significant under NEPA. Construction activities at the tank farm sites and for new pipeline installation 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 BMPs such as sediment barriers and sedimentation basins). In addition, the work would be conducted in compliance with applicable permits, such as USACE's Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) permit and LARWQCB's 401 Water Quality Certification.

Mitigation Measures

MM BIO-1.1k would minimize effects on EFH.~~No mitigation is required.~~
Mitigation for impacts on the California least tern SEA are addressed in **Impact BIO-1.1** above.

Residual Impacts

Residual impacts would be less than significant.

Impact BIO-4.1: Proposed Project construction activities could substantially disrupt local biological communities.

Noise, Vibration, and Pollutants

Turbidity, noise, and vibration from berth construction would likely cause most fish and birds to temporarily leave the immediate construction area. Installation, use, and removal of a temporary mooring at staging area 412 on Pier 400 (Figure 2-12) would have similar but smaller magnitude effects on fish and birds. Disturbances to these marine species would be temporary, and the animals could move to other nearby areas for the duration of the disturbance, as described for fish in **Impact BIO-2.1** and Appendix K. Driving the larger steel piles for Berth 408 construction would have the potential to result in mortality of a few fish in the immediate vicinity of the work due to sound pressure waves. The species most likely to be affected would be northern anchovy due to their small size (see **Impact BIO-1.1**) and abundance in the Outer Harbor. Fish and bird populations would not be adversely affected due to the small number of individuals affected, the small numbers of individuals moving into other areas, the short duration of the disturbance, and the small proportion of the Harbor affected. Upon completion of construction, the displaced individuals would be able to return, resulting in no substantial disruption of Outer Harbor biological communities.

The temporary disturbances resulting from construction activities would not substantially reduce the abundance of food organisms available to predatory species, such as some species of fish and birds. Further, the temporary movement of mobile species away from the construction area would not substantially disrupt local biological communities at the site or areas into which the displaced organisms would move. Sediments suspended during pile installation would affect a small area at each pile location, but would dissipate rapidly with no substantial effects on biological communities (e.g., benthos, plankton, and fish).

Construction activities would not affect the Cabrillo Shallow Water Habitat and Pier 300 Shallow Water Habitat due to their distance from construction activities. Some sound pressure waves from pile driving would reach the Cabrillo Shallow Water Habitat, but at over 2,000 ft (610 m) from the piles the effects would not disrupt local fish communities. Sound pressure waves would not reach the Pier 300 Shallow Water Habitat due to distance and no direct line of travel in water from Berth 408 to that habitat.

Caspian and elegant terns, which have used a portion of the Tank Farm Site 1 area for nesting in the past, would not be expected to nest there prior to Project construction. In 2003 and 2004, vegetation was cleared from a portion of Tank Farm Site 1 adjacent to the least tern nesting site to provide additional area for California least tern nesting, and both Caspian and elegant terns used that area with approximately 10,000 elegant tern nests in 2004. Caspian and elegant terns began nesting adjacent to the least tern site in 2005 but abandoned the area in May and have not nested there since (Keane Biological Consulting 2007a,b). This area was not cleared in 2005

through 2007, and this made the site less attractive for nesting by Caspian, elegant, and least terns. (Elegant terns are presently nesting at Bolsa Chica wetlands.) If, however, vegetation were cleared in advance of Tank Farm Site 1 construction and prior to the nesting season, and if elegant and Caspian terns were in the area, they could use the site again, and construction activities could injure or kill nesting birds or cause them to abandon their nests. Nesting by both species is protected under the Migratory Bird Treaty Act.

Marine Terminal, tank farm, pipeline, and staging area construction activities would have minimal effects on terrestrial vegetation because plant cover is sparse to absent at the construction sites and the plant species present are primarily non-native. Wildlife species, other than birds are also primarily non-native and/or adapted to use of developed sites. Both non-native and native birds are present in the proposed Project area, and those that frequent the sites proposed for Project construction are adapted to use developed areas. Consequently, local biological communities in this industrial area would not be substantially disrupted. Impacts to the California least tern and other special status species are as addressed for **Impact BIO-1.1**.

As described in Section 3.14, Water Quality, Sediments and Oceanography under **Impact WQ-1.1** and **WQ-5.1**, runoff of pollutants such as concrete washwater and sediments during construction would be contained on site using BMPs and would not significantly affect water quality in the Harbor at storm drain discharge locations. The small amount of pollutants that could pass the BMPs would not substantially affect marine organisms in Harbor waters and on hard substrate at these locations due to expected low concentrations, relative to ambient conditions. Implementation of BMPs required by the Port (contract specifications, Section 01410) and applicable Project permits (e.g., NPDES General Permit for Discharges of Storm Water Associated with Construction Activities) during construction to control pollutant and sediment runoff would also reduce the potential for, and amount of, such runoff to levels below thresholds that could substantially affect marine organisms.

Accidents

Accidental spills of pollutants during construction on land would be unlikely to result in runoff of pollutants into the storm drain system that discharges into the Harbor. This is because large quantities of such material would not be used during construction and any spills would be contained by implementation of runoff control measures and cleaned up with no runoff to Harbor waters, as described for **Impact WQ-1.1**.

Accidental spills of fuel, lubricants, or hydraulic fluid into Harbor waters from the equipment used for construction of Berth 408 and a temporary mooring at staging area 412 are unlikely to occur during the proposed Project (Section 3.14 **Impact WQ-1.1**). Any small spills that occurred would not adversely affect aquatic biota to the degree that local biological communities are substantially disrupted. Any such spills would be small and cleaned up immediately (see Section 3.12, Hazards, **Impact RISK-1**) in compliance with SPCC requirements, resulting in the potential for loss of only a few common marine organisms and causing no adverse effects on biological communities as a whole.

Invasive Species

Vessel traffic would be increased slightly during proposed Project construction. Construction of all proposed Project facilities would be land-based, with the exception of the Marine Terminal berth. For that activity, barge-mounted cranes and a pile driver would be required for installation of pilings associated with the berth breasting dolphin, berth platform, mooring dolphins, walkways, floating dock, and trestles. These vessels would not likely originate from outside the Port (i.e., the barge would likely be permanently moored within the Port) and, therefore, would not introduce non-native species in ballast water or from the ship hulls. The 1-inch crushed rock planned for use in the stone columns would be delivered by ship and would originate from outside the Port. This would have a low potential to transport non-native species into the Port because the material would likely come from West Coast (Canada to southern California) quarry sources that are able to supply the required material at the time of construction and because unloading ships would be taking on ballast water rather than discharging it. Use of Panamax class ships (as defined in Section 2) would require only four to bring in the amount of gravel needed for Tank Farm Site 1 and Tank Farm Site 2.

Habitat Alteration

Marine open water as well as benthic soft bottom and hard substrate habitats are present adjacent to the proposed Project site. All proposed Project construction activities are land-based, with the exception of the proposed Marine Terminal berth on Pier 400 and a temporary mooring at staging area 412 (Figure 2-12 in Chapter 2). Construction of Berth 408 would result in a change of aquatic habitat. Installation of ~~150~~ 136 pilings (~~110~~ 92 of which are steel piles 48 to 54 inches in diameter) ~~for Option 1 or 258 pilings (74 of which are steel) for Option 2~~ in the water to support the berth structures would replace a small amount of water column habitat (about 0.~~04~~ 03 acre, 0.~~02~~ 01 ha) with 1.~~9~~ 7 acres (0.~~8~~ 7 ha) of hard substrate ~~habitat~~ surface area ~~in Option 1, or 2.4 acres (1.0 ha) if the mooring dolphins use concrete piles in Option 2~~. Rock placed around the base of 42 of the larger piles would convert ~~replace~~ approximately 0.~~1~~ 09 acre (0.~~04~~ 03 ha) of soft bottom ~~with~~ to hard substrate habitat (see Table 3.3-3). This represents substantially less than 0.01 percent of the Outer Harbor soft bottom habitat. The underwater surface area of the pilings ~~and~~ rock fill ~~at their base~~ would ~~function as additional hard substrate (compared with existing armoring), and would~~ be colonized by hard bottom-associated marine organisms. The breasting dolphins and connections to shore along with the wharf would place solid structures above the water that would cause shading of the water surface, but much less than for a typical wharf. The platform constructed for the AMP system and the platform that may eventually support part of the ACTI AMECS would add a small amount of shading as well. Only a few (probably two) pilings would be needed for the temporary mooring at the staging area, and these would be removed after the rock is delivered. This would cause a negligible change in habitat.

Construction of the tank farm sites and pipeline segments as well as use of the unpaved staging areas would remove small amounts of vegetation that are dominated by weedy species or native species that colonize disturbed areas. In most locations, the vegetation is sparse. This vegetation provides habitat for the few individuals of common wildlife species found in this industrial area as a result of the low amount of cover and food present. At Tank Farm Site 2, any vegetation remaining after the

existing facilities are demolished would be replaced by landscape plantings. The vegetation at Tank Farm Site 1 would be permanently lost, while the few mostly non-native plants at the Marine Terminal site would be replaced by landscaping. The landscape areas planted would provide habitat for wildlife species adapted to industrial areas. The small areas of vegetation removed during pipeline installation by trenching and at work areas for directional drilling would return to pre-project conditions within a year or two, and any landscape trees removed would be replaced.

CEQA Impact Determination

Impacts of pollutant runoff, noise and vibration, turbidity, and introduction of invasive species to most local biological communities would be less than significant under CEQA for the reasons described above. Since Tank Farm Site 1 would not be cleared for construction and would be left vacant at the beginning of the nesting season, elegant terns and Caspian terns would be unlikely to use this area for nesting, resulting in no impacts to these species. If vegetation clearing at Tank Farm Site 1 for construction resulted in elegant tern and/or Caspian tern nesting at the site, injury to nesting birds and disruption of nesting would be a significant impact. The small amount of water column habitat replaced with hard substrate marine habitat would not represent a permanent loss of aquatic habitat, and proposed Project construction impacts would be less than significant. Accidental spills of pollutants during in-water construction would be unlikely to occur and would have less than significant impacts if any did occur. Loss or alteration of terrestrial habitats would result in less than significant impacts because the areas affected would be small with minimal value to wildlife, and project-related landscaping at the Marine Terminal and Tank Farm Site 2 would replace the low values lost.

Mitigation Measures

MM BIO-1.1g and **MM BIO-1.1h** would be implemented to reduce the potentially significant impacts to elegant terns, Caspian terns, and other nesting birds at Tank Farm Site 1. No mitigation is required for the less than significant impacts.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Impacts of pollutant runoff, noise and vibration, turbidity, and introduction of invasive species to most local biological communities would be less than significant under NEPA for the reasons described above. Since Tank Farm Site 1 would not be cleared for construction and would be left vacant at the beginning of the nesting season, elegant terns and Caspian terns would be unlikely to use this area for nesting, resulting in no impacts to these species. If vegetation clearing at Tank Farm Site 1 for construction resulted in elegant tern and/or Caspian tern nesting at the site, injury to nesting birds and disruption of nesting would be a significant impact. The small amount of water column habitat replaced with hard substrate marine habitat would not represent a permanent loss of aquatic habitat, and proposed Project construction impacts would be less than significant. Accidental spills of pollutants during in-water construction would be unlikely to occur and would have less than significant impacts if any did occur. Loss or alteration of terrestrial habitats would result in less

than significant impacts because the areas affected would be small with minimal value to wildlife, and project-related landscaping at the Marine Terminal and Tank Farm Site 2 would replace the low values lost. The vegetated area at Tank Farm Site 1 would not be lost compared to the NEPA Baseline because that area would be paved.

Mitigation Measures

MM BIO-1.1g and **MM BIO-1.1h** would be implemented to reduce the potentially significant impacts to elegant terns, Caspian terns, and other nesting birds at Tank Farm Site 1. No mitigation is required for the less than significant impacts.

Residual Impacts

Residual impacts would be less than significant.

3.3.4.3.1.2 Operational Impacts

Impact BIO-1.2: Operation of proposed Project facilities could affect individuals of or habitat for the California least tern and other special status species.

California Least Tern

Noise and Vibration. Operation of the proposed Project tank farm facilities at Site 1 on Pier 400 would locate noise and vibration sources (i.e., pumps and transformers) near the least tern nesting area. However, the locations of noise-generating equipment have been sited to minimize effects on the California least tern. Large transformers would be located on the east side of the Motor Control Building. Air conditioning units would be located on the west side of the Motor Control Building, smaller VFD transformers would be located on the north and south sides of that building, and shipping pumps would be just west of that location. The shipping pumps would be 200 ft (61 m) or more from the western edge of the least tern nesting area. These pumps would run continuously for 20 to 30 hours while tankers are unloading at the berth (about four times a week) and then run intermittently, except for a 24-hour period when the transfer tank would be cleared. A noise contour study showed that noise from the shipping pumps and other proposed Project equipment would extend into the least tern nesting area, ~~resulting~~ producing~~in~~ noise levels ranging from 45 to 70 dB(A) (Navcon Engineering 2005a – see Appendix L.1). The highest noise levels were in the northwest part of the nesting area. Relocation of some equipment and placement of a 20-ft (6-m) high sound wall barrier on the east and south sides of the shipping pumps reduced the noise level range to 40 to 60 dB(A). Further changes in the Project layout resulted in ~~P~~placement of a 26-ft (7.9-m) high sound wall barrier with a roof around the east and south sides of the shipping pumps and a 6-ft (1.8-m) block wall around the large transformers ~~are part of the Project~~ to reduce noise at the California least tern nesting site (Navcon Engineering 2006 – see Appendix L.3). The resulting noise levels are described below. Noise estimates from the large transformers were included in the noise contour study (Navcon Engineering 2005a). The VFD transformers produce a low level of sound that is not expected to increase the overall noise from the proposed Project in the least tern nesting area.

Ambient noise was measured at one-hour intervals over a seven-day period in August 2005 at the north and south ends of the western least tern nesting site boundary (Navcon Engineering 2005b – see Appendix L.2). These measurements showed the average noise levels varied between 50 and 60 dB(A) during the day (about 7 AM to 12 AM) and between 40 and 45 dB(A) at night. The maximum noise recorded was 88.2 dB(A).

A 3D noise modeling study (Navcon Engineering 2006 – see Appendix L.3) combined the ambient and predicted proposed Project noise levels, and noise contour maps were generated using the Community Noise Exposure Level (CNEL). The results of this modeling showed that operation of facilities at Tank Farm Site 1 would increase ambient noise at the least tern nesting site by less than 1 dB(A) over most of the site and by less than 2 dB(A) in a small area along the western side of the nesting site. When the shipping pumps are not running, the terns would be exposed only to background ambient noise. Short term noise events at the existing adjacent marine container terminal currently exceed the average ambient noise level of 50 to 60 dB(A). Noise from container loading and unloading and trucks (including horns and gate activities) does not deter least tern nesting at Pier 400. The small, intermittent increase in noise resulting from operation of Tank Farm Site 1 would not adversely affect the California least tern. The species has continued to nest at this location, even with periodic high noise levels associated with existing activities on Pier 400.

Lighting. Lighting along the eastern security fence would be adjacent to the California least tern nesting area. These lights would have directional beams pointing away from the nesting area but would add an increment to the general night light levels at the nesting site from the existing lighting for the APM Container Terminal to the north. Tank stairs, platforms, and instrument locations would have lights with shields and deflectors to direct light at the work area only. These lights would be smaller, located at distances of 120 ft (36.6 m) or greater from the nesting site, and unlikely to affect light levels at the nesting site. Proposed Project lighting along the eastern side of Tank Farm Site 1 would not result in a substantial increase in nighttime light levels at the California least tern nesting site. ~~This~~ A small increase in light levels ~~would only~~could extend a short distance into the least tern nesting site, primarily at the southwestern corner. However, ~~T~~the nesting site is approximately 850 ft (259 m) wide, and a low level of increased light along the western edge would have a low potential to disturb least tern roosting at night or to increase predation on the least terns. Monitoring indicates that California least terns have adapted to artificial lighting at Pier 400 without adverse effects on nesting success (K. Keane, personal communication 2008a).

Predation. The buildings, containment dikes, security fence, light poles, sound barrier wall, and the closest tanks (50,000 bbl and one 250,000 bbl) could provide perches for birds, such as American crow, common raven, American kestrel, black-crowned night heron, and gulls, that may prey on least tern eggs, young, or adults (Keane Biological Consulting 2003). The locations of structures that could be used as perches have been discussed with biological resource agencies during the proposed Project planning process and some structures were relocated to minimize impacts. The least tern nesting site is approximately 7.5 ft (2.3 m) higher (elevation 23.5 ft MSL) than the ground surface at Tank Farm Site 1 (elevation 16 ft MSL), and the tanks would have a height of 51.5 ft (15.7 m) above ground level (elevation 67.5 ft MSL at top). The closest of these tanks would be 120 ft (36.6 m) from the least tern

nesting site and 44 ft (13.4 m) higher than the nesting site. The light poles would be 30 ft (9.1 m) tall, making them 22.5 ft (6.9 m) higher than the nesting site. Approximately five of these poles would be within 200 ft (61 m) of the nesting site. The Motor Control Building would be 16 ft (4.9 m) high, or 8.5 ft (2.6 m) higher than the nesting site. The sound barrier wall around the pumps would be 20 ft (6 m) tall, and only a portion of it would provide potential vantage points for viewing of the least tern nesting site by perching predators (Motor Control Building and 50,000 bbl tank are between the wall and the nesting site). Thus, the proposed project could increase predation on the least tern that could affect their population size. The security fence and containment dikes would be only 0.5 ft (0.2 m) higher than the least tern nesting site and, thus, would not provide perching vantage points for predators, considering that the chick fence is about 3 ft (0.9 m) high along the western edge of the nesting site.

Human Presence. During operations of the Marine Terminal and Tank Farm Site 1, the level of human presence would be low with little activity near the least tern nesting site. Vehicular traffic on the perimeter access road in Tank Farm Site 1 would be infrequent. Plains personnel would periodically inspect the tanks, but this activity would be of short duration (a few hours at the most) and would be over 120 ft (61 m) away from the nesting site. This level and location of human activity is unlikely to have any effect on the least tern. The Port has an existing worker education program regarding the California least tern that would apply to the Pacific Los Angeles Marine Terminal LLC (PLAMT) personnel.

Vessel Traffic. Project-related vessel traffic entering the Outer Harbor would use the existing Glenn Anderson Ship Channel to reach the berth on Pier 400. The increase of up to 201 vessel calls per year would represent a 7 percent increase over the CEQA Baseline entering Los Angeles Harbor and a 3 percent increase over the CEQA Baseline for Los Angeles-Long Beach Harbor. Compared to the NEPA Baseline, which assumes that a maximum of 267 new vessels calls would occur to satisfy demand and could be accommodated by existing facilities, project-related vessel traffic would be 66 calls per year less than that baseline. The small increase compared to the CEQA Baseline would have a low potential to adversely affect least tern foraging since this species primarily uses shallow water areas for foraging, although some deeper water areas, both inside and outside the Harbor, are sometimes used for foraging (Keane Biological Consulting and Aspen Environmental Group 2004). Project-related vessel calls would have no effects on least tern foraging under NEPA.

Visual. The visual presence of the tanks and other facilities at Tank Farm Site 1 has the potential to affect California least terns. A visual simulation of the views from ground level at the southeastern corner, center, and northwest corner of the nesting site shows what the tanks would look like to least terns on the nesting site (Figure 3.3-1). When close to the chick fence along the west side of the nesting site, the fence would at least partially screen the view of the tanks with the exception of the top edge of the 50,000 bbl and 250,000 bbl tanks. From the center of the nesting area both tanks would be visible but only take up a small fraction (less than 4 percent) of the skyline. Containers at the terminal to the north of the proposed Project site also would be visible. From the southeast corner of the nesting site, the two tanks would appear small and low and take up only a fraction of the skyline. In general, least terns do not nest in the direct vicinity of high structures such as solid

walls and buildings. The distance of the tanks from the nesting site and the low elevation of the containment berms around the tanks (0.5 ft [0.2 m] higher relative to the elevation of the nesting site) would not infringe on the open vista of nesting sites normally occupied by least terns (see Figure 3.3-1).

Oil Spills. Small volumes (less than 238 bbl) of crude oil spilled into Harbor waters during vessel transit within the Port could occur with a frequency of one per 217 years, ~~assuming~~ since all proposed Project vessels are double hulled (see Section 3.12, Hazards, Table 3.12-7 in **Impact RISK-2.1**). Moderate spills (238-1,200 bbl) would occur with a frequency of one per 108,155 years. Spills greater than 1,200 bbl would occur less than once in two million years and the likelihood of occurrence during the proposed Project is remote. Spills of petroleum hydrocarbons into Harbor waters from the berth during unloading of crude oil would occur at a frequency of one per 460 years for spills less than 238 bbl and at a frequency of one per 17,100 years for spill of 238-2,380 bbl. The frequency of marine gas oil (MGO) spills during barge transit from the Inner Harbor to the Outer Harbor would be one per 725 years (less than 238 bbl) and less than one per seven million years for a large spill. Small to moderate spills of oil into Harbor waters during vessel transit to Berth 408 would be in the Outer Harbor and could drift into the Cabrillo Shallow Water Habitat before being contained and cleaned up. If such an accident were to occur when California least terns were present and foraging in that area, oil could adhere to their feathers and cause mortality or sublethal effects by changing the insulation qualities of the feathers, through ingestion during preening, or by rubbing off onto eggs or chicks. Such effects could reduce survival of affected individuals, including eggs or chicks, and thus the southern California nesting population size. Spills of crude oil or MGO during unloading at Berth 408 would be contained within the boom deployed around the vessel/barge and would not reach the shallow water foraging area used by the least terns.

Spills from Pipeline Segment 1 suspended on the causeway bridge could enter the Pier 300 Shallow Water Habitat, the Seaplane Lagoon, or the channel adjacent to the Pier 400 causeway (west side) due to pipeline rupture. Spills from Pipeline segment 4 where it crosses over Dominguez Channel could also result in oil reaching Harbor waters. Spills from proposed Project pipelines that could reach Harbor waters would occur at a frequency of less than one per one million years (See Figure 3.12-11 in **Impact RISK-2.2**) and thus, the likelihood of occurrence during the proposed Project is remote. Oil spills from the tanks or pipelines on land would be contained and cleaned up before reaching Harbor waters in accordance with SPCC requirements and the proposed Project oil spill response plan (see below). The California least tern nesting site is also at a higher elevation than Tank Farm Site 1. Thus, the California least tern nesting site would not be affected by those oil spills, but foraging least terns could be affected by spills entering the Pier 300 Shallow Water Habitat and Seaplane Lagoon as described above.

The only substances containing volatile chemicals that would be stored (at least temporarily) at Tank Farm Site 1 would be crude oil and Marine Gas Oil (MGO). MGO would be stored in a 15,000-bbl tank at the far western side of Tank Farm Site 1 at a distance of 920 ft (280 m) from the western edge of the California least tern nesting site, and the tank would be surrounded by a containment dike. Crude oil would be held in two 250,000-bbl tanks that are also surrounded by containment dikes. The probability of an MGO or crude oil spill from the tanks is very low and, if

such a spill were to occur, it would be contained with the dike around the tank and cleaned up immediately. The probability for vapor emissions from such a spill to adversely affect California least terns at the nesting site would be low. This conclusion is based on mitigation measures to contain accidental spills and environmental factors that would lower risk, such as rapid dispersion of emissions due to typical wind conditions at the exposed site, as well as the seasonal occurrence of least terns.

Oil spills could also occur during proposed Project vessel transit in offshore waters. Small spills of less than 238 bbl would occur with a frequency of one per 319 years while 10 to 30 percent of the vessel cargo could be spilled once in 911 years. Spillage of the entire cargo (2,500,000 bbl) could occur once in 1,063 years (see Table 3.12-5 in **Impact RISK-2.1**). Offshore spills would not affect the California least tern because none would be present in these habitats.

California Brown Pelican

Normal operation of the proposed Project facilities is not likely to adversely affect brown pelicans in the Harbor because no foraging, roosting, or resting habitat would be lost or disturbed. Movement of tankers to and from the berth could briefly interfere with foraging, but this would not be any different than disturbances caused by other vessel traffic in the Harbor. About four vessels per week are expected to use the proposed Marine Terminal. This level of activity would not adversely affect pelican foraging.

As described above for the California least tern, oil spills are unlikely to occur due to the safety measures that are part of the proposed Project. If a spill were to occur that enters Harbor waters, however, oil could adhere to the feathers of brown pelicans as they dive into the water or while resting on the water surface. This could affect their thermoregulation and cause physiological stress when ingested during preening. Brown pelicans do not nest in the Harbor area so the oil would not affect their eggs, chicks, or breeding success. The number of brown pelicans that could be affected would depend on the time of year that the spill occurred, the size of the spill, and the time for cleanup to be completed. The abundance of brown pelicans in the Harbor is greatest in the summer with a maximum of 1,181 observed in July 2000 (MEC and Associates 2002). California brown pelicans have a large range (west coast of the U.S. and into Mexico, with breeding at offshore islands in southern California and Mexico) so only a small proportion of the population might be affected by an oil spill in the Port. In addition, not all the individual brown pelicans in the Harbor would be affected by an oil spill because the oil would not spread over the entire water surface in the Harbor before being contained and cleaned up, and spill containment and cleanup activities would minimize brown pelican use of the spill area. For spills in open water away from the coast and coastal islands, few if any California brown pelicans would be affected due to their sparse distribution over open waters. Oil spills on land would not affect this species.

Western Snowy Plover

Operation of the proposed Project facilities on Pier 400 and Terminal Island would not interfere with western snowy plover migration. The storage tanks, associated facilities, and low level of human presence would not impede migration flights, and

noise from the facilities at Tank Farm Site 1 on Pier 400 would not adversely affect the few individuals that would stop at the California least tern nesting site during their migration. This species is as tolerant or more tolerant of noise than the California least tern, as discussed in **Impact BIO-1.1**. Measures to protect the California least tern would also protect the western snowy plover. The shipping pumps would be the primary source of noise, but the sound wall around them would reduce noise to levels that would not affect the birds. Furthermore, the pumps may not be running when the western snowy plovers are present. Oil spills into Harbor waters would not affect this species while at the California least tern nesting site because the individuals are not using the water surface and no beach is available for foraging at the water's edge. For the individuals wintering at Cabrillo Beach, oil spills into Harbor waters from vessels in transit to Berth 408 are unlikely to reach the beach due to rapid containment and cleanup of such spills.

Other Special Status Species

Operation of Tank Farm Site 2 on Terminal Island would not affect listed or special status species since none are known to be present at this site. Peregrine falcons could forage in this area, but those nesting in the Inner Harbor are adapted to the industrial environment and would not be affected by operation of the proposed facilities. An estimated 201 vessel calls per year to the Port would result from the proposed Project by 2025. Underwater sound from these vessels or tug boats used to maneuver them to the berth would add to the existing vessel traffic noise in the Harbor. Adding one vessel call every 1 to 2 days is not expected to adversely affect marine mammals in the Outer Harbor because the transit distance would be short, few individuals would be affected, and sea lions, representing the main species likely to be encountered, would be expected to avoid sound levels that could cause damage to their hearing. Vessels approaching Angels Gate would pass through nearshore waters, and sound from their engines and drive systems could affect marine mammals that happen to be nearby.

The addition of 201 proposed Project vessel calls to the Port would have a low probability of harming endangered, threatened, or species of special concern such as marine mammals and sea turtles. Specifically, in regards to vessel collisions with whales in California coastal waters, the large amount of vessel traffic along the coast has resulted in few (less than three per year on average) reported strikes over the past 25 years. Vessel speed seems to influence the incidence of whale/ship collisions, and most strikes, if any were to occur, would likely be fatal to the whales because unmitigated vessel speeds are generally above 13 knots in the coastal shipping lanes. As discussed in Section 3.3.2.5, NOAA Fisheries 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.

A small or moderate oil spill within the Harbor could affect a few black skimmer individuals because this species forages at the water surface, as described for the California least tern. However, the number affected, if any, would be a small proportion of the population because few nest in the Harbor, and their population would not be affected by a small loss of individuals. None of the other special status birds in the Project area use the water surface and, thus, would not be affected by oil spills on the water. Effects on marine mammals would be minor, partly because few

are present in the area where spills could occur and rapid containment and cleanup would reduce the potential for effects, even for a moderate spill. Sea lions would be the species most likely to come into contact with spilled oil in the Outer Harbor. Oil can cause temporary irritation of pinniped (seal and sea lion) eyes, while oil adhering to the fur of species that rely on blubber for insulation (e.g., California sea lions and harbor seals) apparently causes no signs of stress (Geraci and Smith 1977).

Oil spills in offshore waters would be unlikely to affect sea turtles because few, if any, would encounter such a spill and no foraging or breeding habitat would be affected. (Sea turtles are rare visitors along the coast.) Marine mammals in offshore waters could come in contact with spilled oil, although cetaceans may avoid oil slicks, with only minor effects such as a temporary discoloration of the skin (Geraci and St. Aubin 1980). None of the other special statute birds would be present over offshore waters.

Oil Spill Response

As described in Section 3.12.2.1, all Port terminals and vessels calling at those terminals are required to have oil spill response plans and at least some capability to respond to a spill. Commercial contractors handle most oil spills in the Harbor and have a variety of response services and equipment (e.g., boats, skimmers, booms, and pumps) to handle all types of spills. In addition, LAHD has established conditions that are applied to all new and renewed Marine Oil Terminal leases. These include provisions for the inspection, control, and cleanup of leaks from aboveground tank and pipeline sources, thereby minimizing the potential for impacts of a spill to special status species.

ESA Preliminary Determination

In summary, the USACE has preliminarily determined that construction (see Section 3.3.4.3.1.1, Impact BIO-1.1) and operation of the proposed Project may affect the California least tern and the California brown pelican. Additionally, the USACE has preliminarily determined the proposed Project would not affect the western snowy plover. Therefore, t~~T~~he USACE ~~will initiate~~has~~will~~ initiated consultation with USFWS pursuant to ESA Section 7.

CEQA Impact Determination

As described above, operation of the proposed Project could have significant impacts to the California least tern through increased predation and oil spills into Harbor waters that would reduce the population size. An increase in predation on least terns due to the proposed Project would be a significant impact. Any oil spills into Harbor waters that occur during April through August would have the potential to cause significant, unavoidable impacts to least terns. Offshore oil spills would have no impacts to the California least tern, as described above. With the sound barrier in place around the shipping pumps and transformers (as part of proposed Project), noise and vibration from the shipping pumps, combined with other proposed Project equipment noise, would have a less than significant impact on the least terns. Proposed Project noise would be relatively constant while background noise would fluctuate with peaks and dips related to other activities on Pier 400. Project lighting would have minimal effects on light levels in the California least tern nesting site,

due to shielding, height (less than 30 feet [9 m]), and size of the lights, thereby resulting in less than significant impacts.

Impacts of oil spills to the California brown pelican would likely be less than significant because few individuals in the population (California and Mexico) would be affected, and oil spills in the Port would not affect breeding success of the species because none breed in the Harbor area. Because of their generally coastal distribution, few if any individuals would be affected by offshore oil spills. In the worst case, however, a number of brown pelicans could be affected by an oil spill (in the Harbor or offshore) with significant, unavoidable impacts.

Impacts of oil spills to the black skimmer in the Harbor would be less than significant because few, if any, individuals in the breeding population would be affected.

No impacts to the western snowy plover are anticipated from oil spills in the Harbor for the reasons described above. Impacts of oil spills to marine mammals would be less than significant because effects would be temporary and would not cause mortality. Impacts to sea turtles would also be less than significant because few, if any, individuals would be affected and no mortality would be expected.

Impacts to other special status bird species would be less than significant for the reasons described above.

Project-related vessel traffic may affect some marine mammals. Impacts of increased underwater sound would be less than significant because few individuals would be affected, the animals would likely move away from the sound as it increases in intensity from the approaching vessel, exposure would be of a short duration that would not adversely affect individuals. Project-related oil tankers transiting the coastal waters of southern California could potentially cause harm to endangered, threatened, or species of special concern such as marine mammals and sea turtles from vessel collisions. Impacts of project-related vessel traffic on marine mammals and sea turtles would be considered less than significant because the probability of vessel strikes is low and proposed Project vessel strikes would not be expected to occur. As discussed above, less than three vessel strikes with whales are reported on average per year for the California coast. 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 Santa Barbara in 2003 showed signs of blunt force trauma consistent with a vessel strike (Santa Barbara Marine Mammal Center 1976–2004). No collisions have been reported between any oil tankers and any cetaceans or sea turtles in the region (Cordaro 2002), although an oil supply vessel struck and presumably killed an adult male northern elephant seal (*Mirounga angustirostris*) in the Santa Barbara Channel in June 1999 (Minerals Management Service 2001). MGO barges for the proposed Project would be traveling at slow speeds within the Harbor and would have less than significant impacts to harbor seals and California sea lions.

However, although the likelihood of a project-related collision is very low, it could occur and cause an impact to species listed under the ESA, especially blue whales. Therefore, although considered less than significant because of the low probability of

vessel strikes, any increase in vessel traffic caused by the proposed Project may incrementally increase the potential for whale strikes.

Mitigation Measures

California Least Tern

To reduce the potential for significant impacts from predation and oil spills, the following mitigation measures are proposed.

MM BIO-1.2a: Structure Perches. The portions of all structures (buildings, lights, etc.) at the proposed Tank Farm Site 1 on Pier 400 that have a direct line of sight to the California least tern nesting site shall be designed to prevent birds from perching on them. The prevention measures cannot be specified at this time but shall be those approved by the USFWS at the time of installation (e.g., Nixalite currently used on high mast lights) and shall be monitored during the least tern nesting season to verify that predatory birds are not perching on proposed Project structures and to identify any repairs needed to keep the measures in good working order. Any such repairs shall be implemented immediately (i.e., within one day while least terns are present).

MM BIO-1.2b: Predator Control. A qualified biologist shall monitor Tank Farm Site 1 for predators during the California least tern nesting season. Any predators found will be controlled in coordination with CDFG and USFWS.

MM BIO-1.2c: Oil Spill Containment. If a project-related oil spill occurs during the least tern nesting season and has the potential to enter the Pier 300 Shallow Water Habitat, booms shall be deployed to prevent oil from entering this important foraging area. The applicant shall ensure quick deployment of oil booms at the south entrance of the Pier 300 Shallow Water Habitat or at the causeway gap bridge, either through storage of booms at the south entrance to the Pier 300 Shallow Water Habitat and at the causeway gap bridge or through deployment at these locations in accordance with the approved oil spill response plan.

MM BIO-1.2d: Security Lighting. Security lighting standards on the eastern side of Tank Farm Site 1 near the least tern nesting site shall be no greater than 30 ft (9.1 m) in height and directed away from the nesting site.

MM BIO-1.2e: Operations Personnel Environmental Training. The Port shall provide environmental training by a qualified biologist to all operational workers at the PLAMT Pier 400 Marine Terminal and Tank Farm Site 1. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and measures required to avoid or minimize the potential for adverse effects to the species. The latter measure shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals; prohibition on bringing pets or animals of any kind to work on Pier 400; and scheduling significant maintenance/construction activities that would occur near the nesting site for the period between September and March.

California Brown Pelican

MM BIO-1.2c would apply for oil spill impacts within the Harbor for the California brown pelican, but no mitigation is feasible for significant oil spill impacts to the California brown pelican outside of the Pier 300 Shallow Water Habitat.

Other Species

No mitigation is needed for less than significant impacts. However, although the likelihood of a collision between a project-related vessel and marine mammals is very low and is considered less than significant, the following measure would further reduce potential impacts:

MM BIO-1.2f: Vessel Speed Reduction Program. All ships calling (100 percent) at Berth 408 shall comply with the expanded VSR Program of 12 knots between 40 nm from Point Fermin and the Precautionary Area from Year 1 of operation.

The average cruise speed for a marine oil tanker ranges from about 18 to 25 knots; depending on the size of the ship (larger ships generally cruise at higher speeds). As discussed previously, NOAA Fisheries recommends that speed restrictions in the range of 10 to 13 knots be used. Slowing this speed to 12 knots within 40 nm of the Port would reduce the likelihood of collisions consistent with NOAA guidance. The 40 nm zone extends to the Channel Islands area.

Residual Impacts

California Least Tern

Implementation of **MM BIO-1.2a** and **MM BIO-1.2b** would reduce impacts on the California least tern nesting area from predatory birds and other animals to less than significant. Implementation of **MM BIO-1.2d** and **MM BIO-1.2e** would further reduce the potential for impacts from lighting and human activity.

Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of small or moderate oil spills on the California least tern. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect the least terns when they are present and foraging in the area (e.g., during April through August). A small (e.g., up to 238 bbl) or larger oil spill, even though associated with a low probability of occurrence, that was not contained during the least tern nesting season could, therefore, result in significant and unavoidable impacts.

California Brown Pelican

Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of small or moderate oil spills on the brown pelican. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect the brown pelicans. A small (e.g., up to 238 bbl) or larger oil spill, even though associated with a low probability of occurrence, that was not contained could, therefore, result in significant and unavoidable impacts.

Other Species

Less than significant impacts would occur. Implementation of **MM BIO-1.2f** would further reduce the potential for impacts of vessel collisions with whales.

NEPA Impact Determination

As described for CEQA, operation of the proposed Project could have significant impacts to the California least tern through increased predation and oil spills into Harbor waters. Oil spills into Harbor waters during vessel transits that occur from April through August would have a low potential to cause significant unavoidable impacts to California least terns, because of the low frequency of such spills relative to the NEPA Baseline; one small spill per 217 years for the proposed Project compared to one per 184 years for the NEPA Baseline, and one moderate spill per 108,155 years for the proposed Project versus one per 91,726 years for the NEPA Baseline. Offshore oil spills would have no impact to the California least tern due to their nearshore distribution. With the sound barriers in place (as part of the proposed Project), noise and vibration from the shipping pumps, combined with other proposed Project equipment noise, would have a less than significant impact on the least terns, when present. Proposed Project noise would be relatively constant while background noise would fluctuate with peaks and dips related to other activities on Pier 400. An increase in predation on California least terns due to the proposed Project would be a significant impact.

Impacts of oil spills to the California brown pelican would likely be less than significant because few individuals in the population (California and Mexico) would be affected, and oil spills in the Port would not affect breeding success of the species since no nesting occurs in the Harbor complex. Because of their generally coastal distribution, few if any individuals would be affected by offshore oil spills. In the worst case, however, a number of brown pelicans could be affected by an oil spill (in the Harbor or offshore) with significant, unavoidable impacts.

Impacts to the black skimmer would be less than significant because few, if any, individuals in the breeding population would be affected.

No impacts to the western snowy plover are anticipated from oil spills in the Harbor for the reasons described above. Impacts of oil spills to marine mammals would be less than significant because effects would be temporary and would not cause mortality. Impacts to sea turtles would also be less than significant because few, if any, individuals would be affected and no mortality would be expected.

Impacts to other special status bird species, sea turtles, and marine mammals would be less than significant, as described for CEQA.

Project-related vessel traffic (66 vessels per year less than the NEPA Baseline) would have a lower potential for impacts on marine mammals because fewer vessels would enter the Harbor, ~~and any impacts that did occur would be less than significant as described for CEQA~~and therefore there would be no impacts under NEPA.

Mitigation Measures

California Least Tern

To reduce the potential for significant predator impacts, lighting and personnel impacts, and oil spill effects, **MM BIO-1.2a** through **BIO-1.2e** described for CEQA impacts would apply.

California Brown Pelican

To reduce the potential for oil spill effects, **MM BIO-1.2c** described for CEQA impacts would apply.

Other Species

No mitigation is needed, but implementation of **MM BIO-1.2f** would reduce the potential for project-related vessel strikes with marine mammals.

Residual Impacts

California Least Tern

Implementation of **MM BIO-1.2a** and **MM BIO-1.2b** would reduce impacts on the California least tern nesting area from predatory birds and other animals to less than significant. Implementation of **MM BIO-1.2d** and **MM BIO-1.2e** would further reduce the potential for impacts from lighting and human activity.

Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of small or moderate oil spills on the California least tern. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect the least terns when they are present and foraging in the area (e.g., during April through August). A small (e.g., up to 238 bbl) or larger oil spill, even though associated with a low probability of occurrence, that was not contained during the California least tern nesting season could, therefore, result in significant and unavoidable impacts.

California Brown Pelican

Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of small or moderate oil spills on the brown pelican. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect the brown pelicans. A small (e.g., up to 238 bbl) or larger oil spill, even though associated with a low probability of occurrence, that was not contained could, therefore, result in significant and unavoidable impacts.

Other Species

Less than significant impacts would occur.

Impact BIO-2.2: Operation of proposed Project facilities would have the potential to substantially reduce or alter a state-, federally-, or locally-

designated natural habitat, special aquatic site, or plant community, including wetlands.

Natural Habitats

No locally-designated natural habitats or plant communities are present at the proposed Project sites, including the proposed Marine Terminal and Tank Farm Site 1, Tank Farm Site 2, or along the pipeline routes, except the California least tern SEA on Pier 400. Operation of Tank Farm Site 1 would affect the California least tern nesting habitat (SEA) as described in **Impact BIO-1.2**. Shading from the berth structures over the water would be minimal because only the narrow walkways and trestles as well as the small AMP and AMECS platforms would result in shading compared to the solid deck structure of a wharf. Thus, the berth structures would not be expected to reduce or eliminate the growth of algae on the rock riprap of the shoreline at Berth 408. The pilings for the berth structures with the greatest light exposure could be colonized by marine algae. The resulting changes in the algal community would be minor and would not result in a reduction of a locally-designated plant community. No eelgrass beds, wetlands, or mudflats are present near the Marine Terminal site and, thus, would not be affected by operations activities. This includes the eelgrass beds near Cabrillo Beach and in the Pier 300 Shallow Water Habitat and Seaplane Lagoon. Normal operation of the proposed Project facilities would have no effects on terrestrial natural habitats or plant communities.

Proposed Project operations, including temporary holding and shipment of crude oil through underground pipelines to the Valero Refinery, would occur mostly on already-developed land and would not affect any natural habitats.

Oil spills during vessel transit within the Outer Harbor could reach the Cabrillo Shallow Water Habitat and eelgrass beds near Cabrillo Beach. Spilled oil is less likely to reach the eelgrass beds in the Pier 300 Shallow Water Habitat due to distance and the ability to more effectively boom this area off. Effects on the plants, if spilled oil were to reach them, would be adverse but of short duration (Committee on Oil in the Sea 2003, Okada 2001). Invertebrates within eelgrass beds would also be adversely affected with rapid recovery for most species (Jacobs 1980, Jewett and Dean 1997, Den Hartog and Jacobs 1980). The oil would float, toxic volatile components would evaporate or be diluted (Jordan and Payne 1980) before the oil reaches these areas, and the oil would be cleaned up immediately in compliance with SPCC requirements and the proposed Project OSCP, thereby reducing the potential for toxic effects. Oil spills in offshore waters would not reach any natural habitats before being cleaned up or weathering until toxic components had evaporated. Thus, oil spills could cause a substantial reduction or alteration of eelgrass habitats but would not substantially affect other natural habitats.

Essential Fish Habitat

The impacts of proposed Project operations on EFH and fish listed in the FMPs are addressed below and in Appendix K.

Operation of proposed Project facilities would not reduce or substantially alter EFH. An increase of up to 201 vessel calls per year and changes in storm runoff from the tank farm sites would not adversely affect EFH species because few additional

vessels (7 percent increase over CEQA Baseline) to no additional vessels (less than NEPA Baseline) would enter the Los Angeles Harbor each year and existing regulations to protect water quality would continue to minimize the input of pollutants to Harbor waters.

Small oil spills (e.g., less than 238 bbl) could occur with a frequency of once in 217 years during the life of the proposed Project during vessel transit within the Harbor, and moderate spills would occur once in 108,155 years. For unloading crude oil, the frequency of small oil spills would be once in 460 years, and moderate spills could occur once in 17,100 years. Spills greater than 1,200 bbl would occur less than once in two million years, and the likelihood of occurrence during the proposed Project (Section 3.12) is remote. The frequency of MGO spills during transit in the Harbor would be one per 725 years (less than 238 bbl) and less than one per seven million years for a larger spill. Small to moderate spills of oil into Harbor waters during vessel transit to Berth 408 would be in the Outer Harbor and could drift into the Cabrillo Shallow Water Habitat before being contained and cleaned up. The small to moderate spills that have a low probability to occur could have short-term effects on Coastal Pelagics FMP species such as the northern anchovy, Pacific sardine, Pacific mackerel, and jack mackerel because juveniles and adults of these fish are frequently near the water surface and some individuals could be exposed to soluble factions of spilled oil until evaporation and dilution occurs. However, only a small proportion of these fish present in the Harbor are likely to be affected (see Appendix K; also see **Impact BIO-4.2**), particularly for oil spilled during unloading into the containment boomed area around the vessel/barge. All of these species also are abundant in nearshore waters outside the Harbor so that regional populations would not be reduced. ~~The~~ Pacific sanddab (Groundfish FMP) would not be adversely affected by an oil spill because ~~the~~ juveniles and adults of this species live and feed ~~remain~~ on or near the bottom and do not rely on food from the upper water column. Therefore, Pacific sanddabs would not be affected by surface ~~and the~~ oil from a small spill ~~would float~~. Of these five species, only the northern anchovy spawns in the Harbor as well as outside the Harbor, and the planktonic eggs and larvae could be exposed to toxic components of spilled oil that dissolve in the water. However, the area affected would be a fraction of the entire Harbor, and the amount of eggs and larvae that could be adversely affected would not substantially reduce recruitment into the population.

Small to large oil spills could occur during offshore transit of proposed Project vessels (see Section 3.12, Table 3.12-5 in **Impact RISK-2.1**). Small oil spills (less than 238 bbl) would affect a very small area and the volatile, toxic components would rapidly evaporate so that few if any individuals of FMP species (particularly those near the water surface) would be affected. For larger spills, however, the oil could spread over a considerable area before dispersing and thus could affect more individuals of FMP species. Eggs, larvae, juveniles, and adults near the water surface and under the oil would be exposed to the water soluble factions of the oil, many of which are toxic. However, evaporation and dilution would rapidly reduce the concentration of these substances in the water (Jordan and Payne 1980) so that effects on large numbers of fish would be unlikely to occur. Furthermore, the low frequency of large spills (once in 911 to 1,063 years) would only affect the fish in one year out of many, and the long-term population size would not be reduced (Laur and Halderson 1996).

CEQA Impact Determination

No natural plant communities, eelgrass beds, wetlands, or mudflats are present at the proposed Project sites, and operations at those sites would result in no impacts under CEQA. Impacts of Tank Farm Site 1 operation to the California least tern SEA (nesting habitat) would be significant but feasibly mitigated as described in **Impact BIO-1.2**. Impacts of an oil spill in the Harbor that reached eelgrass beds would be significant in the short term. Operational activities on land and in the water would not substantially reduce or alter EFH for the reasons described above, and impacts would be less than significant. Small oil spills in the Harbor and offshore would have less than significant impacts to sustainable fisheries because few fish within managed populations would be affected and effects would be of short duration. Large offshore oil spills would also have less than significant impacts to sustainable fisheries for the reasons described above.

Mitigation Measures

No mitigation is required for less than significant impacts to EFH. **MM BIO-1.2c** would apply for oil spill impacts within the Harbor for eelgrass beds in the Pier 300 Shallow Water Habitat, but no mitigation is feasible for significant oil spill impacts to the Cabrillo Beach eelgrass beds.

Residual Impacts

Residual impacts to EFH would be less than significant. Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of oil spills on eelgrass beds. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect eelgrass beds. Oil spills, even though associated with a low probability of occurrence, that were not contained could, therefore, result in significant and unavoidable impacts.

NEPA Impact Determination

No natural plant communities, eelgrass beds, wetlands, or mudflats are present at the proposed Project site, and operations at those sites would result in no impacts under NEPA. Impacts to the California least tern SEA (nesting habitat) would be significant but feasibly mitigated as described in **Impact BIO-1.2**. Increased use of other terminals in the San Pedro Bay Ports for delivery of oil under the NEPA Baseline would not occur with the proposed Project, and all vessels transporting project-related oil would use proposed new Berth 408. Impacts of an oil spill in the Harbor that reached eelgrass beds would be significant in the short term. Operational activities on land and in the water would not substantially reduce or alter EFH for the reasons described above, and impacts would be less than significant. Compared to the NEPA Baseline, the number of tankers entering the Harbor would be 66 less than the baseline, and oil spills would occur less frequently than under baseline conditions, resulting in no impacts.

Mitigation Measures

No mitigation is required for less than significant impacts to EFH. **MM BIO-1.2c** would apply for oil spill impacts within the Harbor for eelgrass beds in the Pier 300

Shallow Water Habitat, but no mitigation is feasible for significant oil spill impacts to the Cabrillo Beach eelgrass beds.

Residual Impacts

Residual impacts to EFH would be less than significant. Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of oil spills on eelgrass beds. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect eelgrass beds. Oil spills, even though associated with a low probability of occurrence, that were not contained could, therefore, result in significant and unavoidable impacts.

Impact BIO-3.2: Operation of proposed Project facilities would not interfere with wildlife migration/movement corridors.

No known terrestrial wildlife or aquatic species migration corridors are present in the proposed Project area, including the tank farm sites. The California least tern is a migratory bird species that nests on Pier 400 adjacent to Tank Farm Site 1, and operation of proposed Project facilities at that site (and at Tank Farm Site 2) is not expected to interfere with migration of this species to and from this nesting site. This species has continued to migrate to nesting sites within the Port that are adjacent to developed terminals for over 30 years. Movement to and from foraging areas in the Harbor would not be affected by the proposed Project facilities since the least terns currently fly over existing active terminals to reach foraging areas. Other operations-related effects of the proposed Project on California least terns are addressed in **Impact BIO-1.2**. Movement of other migratory birds in the Harbor would not be affected by the proposed Project facilities because no movement corridors would be blocked.

CEQA Impact Determination

No wildlife movement or migration corridors on land or in the water would be affected by the proposed Project for the reasons described above, resulting in no impacts under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impact.

NEPA Impact Determination

No wildlife movement or migration corridors on land or in the water would be affected by the proposed Project for the reasons described above, resulting in no impacts under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impact.

Impact BIO-4.2: Proposed Project operations, including accidental oil spills and introduction of invasive species, have the potential to substantially disrupt local biological communities.

Oil Spills

Accidental oil spills during operations, described above under **Impact BIO-1.2**, could also affect other marine biological resources such as marine birds, fish, and intertidal invertebrates through direct contact with the oil (physical effects) or toxic effects of components in the oil (particularly the lighter, soluble/volatile components). Cleanup of spilled oil could have further impacts on these organisms through direct removal or toxicity of cleaning agents. The amount of habitat and numbers of organisms affected would depend on the size of the spill, type of oil, season, and oceanographic conditions. Small spills (e.g., up to 238 bbl) during vessel transit in the Port could occur with a frequency of one per 217 years, assuming all proposed Project vessels are double hulled (see Section 3.12, Table 3.12-7 in **Impact RISK-2.1**). Moderate spills (238-1,200 bbl) would occur with a frequency of one per 108,155 years. Spills greater than 1,200 bbl would occur less than once in two million years, and the likelihood of occurrence during the proposed Project is remote. Spills of petroleum hydrocarbons into Harbor waters from the berth during unloading of crude oil would occur at a frequency of one per 460 years for spills less than 238 bbl and at a frequency of one per 17,100 years for spill of 238-2,380 bbl. The frequency of MGO spills during barge transit from the Inner Harbor to the Outer Harbor would be one per 725 years (less than 238 bbl) and less than one per seven million years for a larger spill.

Small to moderate spills of oil into Harbor waters during vessel transit to Berth 408 would be in the Outer Harbor and would likely remain there as containment and cleanup would be rapid in compliance with SPCC requirement and the proposed Project OSCP. Spills at the tank farms would not reach Harbor waters due to the containment berms around the tanks that are part of the proposed Project design. Because the pipelines are buried in the ground, except at the Pier 400 causeway gap and over Dominguez Channel, oil spills from the buried segments would have a very low probability of entering Harbor waters (see Section 3.12, **Impact RISK-2.2**). Spills from the short, above-ground segments could enter Harbor waters with a frequency of less than once in over a million years (see Section 3.12, Figure 3.12-11 in **Impact RISK-2.2**).

Intertidal invertebrates would be affected if an oil slick contacted the shoreline (primarily riprap within the Harbor) and wharf pilings. The shoreline invertebrate communities present on hard substrates vary by location in the Harbor (see Hard Substrates under Section 3.3.2.2), and no recent information is available for the communities present at sandy shorelines. However, the amount of ~~such~~ shoreline

habitat that could be affected by a small to moderate spill from vessels in transit to Berth 408 would be a small proportion of that habitat present in the Harbor because the spill would likely be in an open area of the Outer Harbor where it could be contained before reaching the shoreline. The quality of the habitat affected would depend on the particular location where the spill contacted the shore. For a spill during unloading of tankers at Berth 408, the containment boom around the vessel/barge would prevent oil from reaching the shoreline. After cleanup, the disturbed area would be recolonized by invertebrates from planktonic eggs and larvae or movement from adjacent areas. Based on experimental removal of intertidal invertebrates, recovery would be expected within a few years (MEC 1988). Thus, oil spills in the Outer Harbor would not substantially disrupt local intertidal invertebrate communities. Although the probability of an oil spill from proposed Project pipelines is low, oil spilled into waters of the Inner Harbor would affect intertidal invertebrates over a larger area than a spill in the Outer Harbor because the narrow channels and slips have a larger amount of shoreline relative to the amount of surface water. Therefore, an oil spill would reach more shoreline before being contained and cleaned up. In a worst case, a substantial amount of intertidal habitat could be affected by a spill.

Subtidal benthic invertebrate communities are unlikely to be affected by an oil spill because the oil would float on the water surface, soluble components would be diluted before reaching the bottom, and cleanup would be rapid. The small amount of weathered oil that was not immediately cleaned up could sink to the bottom as tar balls that would either drift along the bottom or become incorporated into the sediments. The more toxic components would not be present in this weathered oil, and tar balls on the bottom would not substantially disrupt benthic invertebrate communities.

Planktonic organisms under the slick could be affected by reduced light penetration for photosynthesis (phytoplankton) or as a result of toxic soluble components of the oil (phytoplankton and zooplankton). Exposure of these organisms to the oil would be of short duration and limited to the immediate vicinity of the slick because these organisms move with the currents throughout the Harbor and cleanup would be immediate in compliance with SPCC requirements and the project-specific OSCP. Furthermore, planktonic organisms have a high naturally occurring mortality rate, coupled with high reproductive rates (Dawson and Pieper 1993) which allow for rapid recovery from small, localized impacts. Thus, the Outer Harbor plankton communities would not be substantially disrupted.

Fish in the water column are mobile and can move away from the crude oil spill and cleanup disturbance. Thus, few if any individuals would be affected, and fish communities would not be substantially disrupted. However, for marine birds (excluding those special status species addressed in **Impact BIO-1.2**) loss of substantial numbers due to a moderate oil spill, even though of low probability, could have long-term, adverse effects on population size due to their low reproductive rates. Gulls are the most numerous group of marine birds present in the Harbor (MEC and Associates 2002) and, thus, would be the most likely to be affected. These birds often rest on the water surface and could come into contact with oil on the surface. Other bird species, for which a small proportion of their regional populations could be affected by an oil spill in the Harbor, would not be substantially affected.

Oil spills from tankers traveling within the Outer Harbor could reach the Cabrillo Shallow Water Habitat before cleanup is complete. However, oil floating on the surface would not alter this habitat, and effects on fish and invertebrates would be as described above. Spilled oil would be less likely to enter the Pier 300 Shallow Water Habitat due to the greater distance and channels to be followed.

Spills of MGO during barge transit within the Harbor are unlikely to occur, but if one did occur, local marine communities could be substantially disrupted. MGO is a distillate produce from crude oil that contains polycyclic aromatic hydrocarbons (PAHs) and is toxic to aquatic organisms (BP Marine 2004, Koyama and Kakuno 2004). Thus, the potential for adverse effects on marine communities, particularly along the shoreline and in the upper part of the water column, would be greater than for a crude oil spill. Effects of an MGO spill, however, would be short term as recovery would be expected occur within a few years for intertidal invertebrates and in less time for plankton and fish due to rapid reproduction and recruitment. MGO spills during unloading at Berth 408 would be contained by the boom around the barge and would not result in a substantial disruption of local marine communities.

Small to large oil spills of crude oil could occur during offshore transit of proposed Project vessels (See Section 3.12, **Impact RISK-2.1**). Small oil spills (less than 238 bbl) would affect a very small area and the volatile, toxic components would rapidly evaporate so that relatively few planktonic organisms and fish (particularly those near the water surface) could be affected. For larger spills, however, the oil could spread over a considerable area before dispersing and thus could affect more organisms near the water surface. Eggs, larvae, juveniles, and adults of invertebrates and fish near the water surface and under the oil would be exposed to the water soluble factions of the oil, many of which are toxic. Evaporation and dilution would rapidly reduce the concentration of these substances in the water (Jordan and Payne 1980) so that effects on large numbers of organisms would be unlikely to occur. Marine organisms of the open ocean are generally wide ranging and do not form local communities. Furthermore, the low frequency of large spills (once in 911 to 1,063 years) would only affect the fish and planktonic organisms in one year out of many, and long-term population size would not be reduced. Thus, oil spills would not cause a substantial reduction or alteration of local fish and plankton communities. Flocks of marine birds that rest on or dive into the water, however, could be affected by a large offshore oil spill with population-level effects as described for spills within the Harbor that could cause a substantial reduction or alteration of local marine bird communities.

Runoff of Pollutants

Accidental spills or releases of other pollutants used at proposed Project facilities through runoff from large storms and tsunamis that exceed the capacity of the sumps and storm drains would increase the pollutant load in Harbor waters (Section 3.14). Concentrations of these pollutants would likely be low due to dilution by the large amounts of water that caused the release and the small amount of pollutants that would be used on site, but bioaccumulation by marine organisms could still occur. The potential for such accidents is low due to standard safety measures that would be implemented as part of the proposed Project.

Invasive Species

Compared to CEQA baseline conditions, t~~T~~he annual~~The~~ number of vessel calls under the proposed Project in 2025 ~~entering the Los Angeles Harbor~~ would increase ~~as a result of the proposed Project~~ by approximately 201 ~~per year by 2025~~ (which is nearly 7 percent ~~per year) compared to~~of ~~to~~ the 2,813 total vessel calls to Los Angeles Harbor that occurred during the CEQA baseline year)~~CEQA Baseline of 2,813 vessels per year into Los Angeles Harbor~~. Compared to ~~the~~ NEPA baseline conditions, however~~Baseline of 267 vessels per year into the Los Angeles Long Beach Harbor~~, the annual number of vessel calls under the proposed Project in 2025 would decrease by approximately 66,~~Compared to the NEPA Baseline of 267 vessel calls per year into the Los Angeles Long Beach Harbor,~~ meaning that under NEPA the ~~proposed Project decrease would be approximately 66 per year, and the~~ potential for introduction of invasive species from vessel calls would be reduced~~ but not eliminated~~. These vessels would come primarily from outside the U.S. Exclusive Economic Zone (EEZ), and would be subject to regulations to minimize the introduction of non-native species in ballast water. LAHD will continue to monitor and conform with regulatory requirements related to NIS.

Increasing the number of vessel calls ~~entering~~ to the Los Angeles Harbor by nearly 7 percent ~~compared to~~of the total number of vessel calls to the Harbor that occurred in the CEQA Baseline year would result in a small increase under CEQA in the potential for discharge of ballast water containing non-native invasive species (~~invasive exotic species~~NIS). This is because the vessels would generally be unloading cargo~~,~~ and consequently taking on ballast water to compensate when leaving the Harbor. However, the state law that went into effect on January 1, 2004 (CSLC 2004) requires specific ballast water management practices for such water carried from outside the EEZ and specifies that regulations for qualifying voyages (vessels of greater than 300 gross registered tons) traveling within the Pacific Coast Region (from Cooks Inlet, Alaska to about three-fourths of the way down the Baja Peninsula~~Washington and Oregon~~) be developed by July 1, 2005. These regulations were developed and went into effect on March 22, 2006. Non-native algal and invertebrate species can also be spread via vessel hulls. Of particular concern is introduction of the alga, *Caulerpa taxifolia*. *Caulerpa taxifolia* has been found at two locations in southern California: Agua Hedionda Lagoon and Huntington Harbor (MEC and Associates 2002). This species and *Undaria pinnatifida*, discovered in the Los Angeles/Long Beach Harbor in 2000, could also be transported to the Harbor via vessels traveling between ports within the EEZ, although the risk for *Caulerpa* from this source is low because the primary introduction pathway has been the aquarium trade. Other NIS found in the Harbors during the 2000 Baseline study included the polychaete *Pseudopolydora paucibranchiata*, clam *Theora lubrica*, and New Zealand bubble snail *Philine auriformis* (MEC and Associates 2002).

For vessels traveling to or from other ports along the west coast of North America, the potential for introduction of additional exotic species will be reduced by the new regulations. Nearly all new vessels calling at proposed Berth 408 are expected to originate from and travel to ports outside the EEZ. Thus, considering the small increase in vessel traffic as a result of the proposed Project compared to the total number entering the Harbor, as well as the ballast water regulations currently in effect, the potential for introduction of additional exotic species via ballast water would be low from vessels entering from or going outside the EEZ. Introduction of

exotic species via organisms attached to vessel hulls and other equipment in the water, however, could still occur despite vector management regulations.

Habitat Alteration

Alteration of the marine habitat caused by construction would continue throughout operations. The new structures in the water would be colonized by marine organisms, and local hard substrate biological communities would be increased.

CEQA Impact Determination

For intertidal invertebrates, impacts from crude oil spills into Harbor waters would most likely be less than significant and short-term, with full recovery expected to occur within a few years, as described above, and local communities would not be substantially disrupted. Impacts to local communities of plankton and fish in the Harbor and offshore would also be less than significant (no substantial disruption) for the reasons described above. Impacts to marine birds from even small oil spills would be significant and unavoidable in the worst-case for the reasons described above because local communities could be substantially disrupted. Oil spills at the tank farms would be contained and would have no impacts to biological communities. Spills from buried pipelines would also be contained on land and would have no impacts to biological communities. Oil spills from the two above-ground pipeline segments into Harbor waters would be unlikely to occur during the proposed Project (probability of once in more than one million years). In the worst case, however, impacts of a crude oil spill into waters of the Inner Harbor from a proposed Project pipeline rupture would be significant for local intertidal communities. An MGO spill during barge transit within the Harbor could cause substantial disruption of local biological communities, resulting in a significant impact. Runoff of pollutants and habitat alteration would have impacts that are less than significant for the reasons described above. Impacts of habitat alteration would be less than significant due to the minor changes that would occur. Although of low probability, operation of the proposed Project facilities has the potential to result in the introduction of non-native species via vessel hulls or ballast water and, thus, could substantially disrupt local biological communities. Such impacts would, therefore, be significant under CEQA.

Mitigation Measures

Oil Spills

No mitigation is feasible for significant crude oil and MGO spill impacts to local marine communities. However, implementation of **MM BIO-1.2c** would reduce the potential for impacts from an oil spill in the Outer Harbor to marine birds using the Pier 300 Shallow Water Habitat. No mitigation is required for the less than significant impacts of crude oil spills to other local biological communities.

Runoff of Pollutants

No mitigation is required.

Invasive Species

Existing regulations would reduce but not eliminate the potential for introduction of invasive species via vessels. Due to the lack of a proven technology, no feasible mitigation is currently available to prevent introduction of invasive species via vessel hulls. New technologies are being explored, and if methods become available in the future they would be implemented as required at that time.

Habitat Alteration

No mitigation is required.

Residual Impacts

Oil Spills

For most small oil spills (less than 238 bbl) during unloading of crude oil and MGO at the berth, standard measures proposed as part of the proposed Project to prevent, contain, and cleanup the spill would reduce residual impacts to less than significant. Residual impacts of spills from the above-ground pipeline segments would be significant and unavoidable in the worst case. Oil spill response capabilities in the Harbor are summarized in **Impact BIO-1.2** and detailed in Section 3.12.

For accidental oil spills, particularly those from proposed Project vessels during transit in the Port, these measures would similarly reduce impacts, but would not eliminate the potential for such accidents to adversely impact local biological communities. Since no additional feasible mitigation is available, residual impacts from accidental oil spills that affected a substantial number of marine birds or other local biological communities would be considered significant and unavoidable.

Runoff of Pollutants

Residual impacts would be less than significant.

Invasive Species

Residual impacts would be significant and unavoidable.

Habitat Alteration

Residual impacts would be less than significant.

NEPA Impact Determination

The NEPA Baseline includes paving of Tank Farm Sites 1 and 2, and 267 vessel calls per year for delivery of oil to other berths in the San Pedro Bay Ports that are not part of the CEQA Baseline. Runoff of pollutants would be slightly less than described for the CEQA analysis because uses of Tank Farm Site 1 under the NEPA Baseline would contribute a small amount of pollutants to storm runoff from that site, and impacts would be less than significant for the reasons described in the CEQA analysis. Habitat alteration would have less than significant impacts for the reasons

described above. The potential for introduction of invasive species would be less than for the CEQA analysis because vessel traffic would be decreased by 66 calls per year relative to the NEPA Baseline as compared to an increase of 201 relative to the CEQA Baseline. Under NEPA, the proposed Project's potential for introduction of exotic species would be less than for the applicable baseline, and impacts of introduced species, if they did occur, would be included within that baseline. Therefore, the proposed Project would result in less than significant impacts related to introduction of exotic species under NEPA.

Oil spills at the tank farms would be contained and would have no impacts to biological resources. Spills from buried pipelines would also be contained on land and would have no impacts to biological resources. Oil spills from the two above-ground pipeline segments into Harbor waters would be unlikely to occur, but in the worst case, impacts of a crude oil spill into waters of the Inner Harbor from a proposed Project pipeline rupture would be significant for local intertidal communities. An MGO spill during barge transit within the Harbor could cause substantial disruption of local biological communities resulting in a significant impact. Increased use of other terminals in the San Pedro Bay Ports for delivery of oil under the NEPA Baseline would not occur with the proposed Project, and all vessels transporting project-related oil would use proposed new Berth 408. Because the number of oil tankers would be less than the baseline, oil spills would be less likely to occur, resulting in less than significant impacts to local intertidal invertebrate, plankton, fish, and marine bird communities.

Mitigation Measures

Oil Spills

No mitigation is required for less than significant impacts of oil spills, and no mitigation is available for significant impacts of an MGO spill or a spill from one of the above-ground pipeline segments, although **MM BIO-1.2c** would reduce the potential for impacts to marine birds using the Pier 300 Shallow Water Habitat.

Runoff of Pollutants

No mitigation is required.

Invasive Species

No mitigation is required.

Habitat Alteration

No mitigation is required.

Residual Impacts

Oil Spills

Residual impacts would be significant and unavoidable for oil and MGO spills.

Runoff of Pollutants

Residual impacts would be less than significant.

Invasive Species

Residual impacts would be less than significant.

Habitat Alteration

Residual impacts would be less than significant.

3.3.4.3.2 No Federal Action/No Project Alternative

Operations

Impact BIO-2: Construction and operation of No Federal Action/No Project Alternative facilities would have the potential to substantially reduce or alter a state-, federally-, or locally-designated natural habitat, special aquatic site, or plant community, including wetlands.

Natural Habitats

No state-, federally-, or locally-designated natural habitats or plant communities are present at the proposed temporary container storage site on Pier 400 and Pier 300, as described for the proposed Project, and thus would not be affected by construction or operations activities at those sites. Potential effects on the California least tern SEA adjacent to the Pier 400 site would be as described for **Impact BIO-1**.

Relative to the CEQA Baseline, increased vessel traffic for delivery of oil to Port of Long Beach Berths B76-78 and B84-87 would not directly affect any natural habitats or plant communities because none are present at these berths or in the channels used by vessels to access these facilities. LAHD Berths 238-240 are located across the Main Channel from the mudflat at Berth 78, and up to 146 more vessel calls per year to this terminal, comprising about one vessel call every two to three days, would not represent a disturbance source that would affect the mudflat area. Oil spills resulting from the increased delivery at the Port of Long Beach berths would not affect any natural habitats or plant communities because none of these resources are present in the vicinity of the berths or along the channels used by vessels traveling to the berths. The mudflat across from LAHD Berths 238-240 could be temporarily affected by a No Federal Action/No Project-related uncontained oil spill, although rapid cleanup of the oil in compliance with SPCC requirements would minimize effects to this habitat. Oil spills from No Federal Action/No Project-related vessels in the Outer Harbor would have no substantial effects on kelp beds along the breakwaters due to planned rapid containment and cleanup and mucous coating on kelp fronds that prevents oil from adhering. For example, dense kelp beds have persisted in an area of natural oil seeps at Coal Oil Point in Santa Barbara County. No kelp beds are present in the Inner Harbor. Although the frequency of small oil spills in the Harbor would be slightly greater than for the proposed Project, effects on eelgrass beds at Cabrillo Beach and in the Pier 300 Shallow Water Habitat and Seaplane Lagoon could be adverse as described for the proposed Project in **Impact BIO-2.2**. Offshore oil spills

would not affect any natural habitats as none are present. Thus, only oil spills within the Harbor that reach eelgrass beds would cause a substantial reduction or alteration of natural habitats.

Relative to the NEPA Baseline, no effects would occur because activities would be the same as in that baseline.

Essential Fish Habitat

The small changes in storm runoff from the temporary container storage areas would not adversely affect EFH species because regulations to protect water quality would continue to minimize the input of pollutants to Harbor waters. The increase in vessel traffic would not reduce or substantially alter EFH. Up to 146 additional vessels per year would call at Berths 238-240, and an additional 121 vessels per year would call at Port of Long Beach Berths 76-78 and 84-87 relative to the CEQA Baseline, and no change in vessel calls would occur relative to the NEPA Baseline. These small increases in vessel traffic relative to the CEQA Baseline of 2,813 for the Port and 3,380 for the Port of Long Beach would not adversely affect EFH species because comparatively few additional vessels would enter the Harbor each year, they would be unlikely to represent a substantial effect on EFH, and any effects that did occur would likely be to only to a few individuals of FMP species.

Small spills from vessels in transit to the berths could occur at a frequency of once in 184 years, but would be expected to cause only short-term effects to Coastal Pelagics FMP species such as the northern anchovy, Pacific sardine, Pacific mackerel, and jack mackerel since juveniles and adults of these fish occur frequently near the water surface and some individuals could be exposed to soluble factions of spilled oil until evaporation and dilution occurs. Moderate oil spills (238-1,200 bbl) could occur at a frequency of once in 91,726 years and would not affect the entire Harbor due to rapid containment and cleanup in compliance with SPCC requirements with similar effects on managed species as a small spill. Small oil spills during unloading could occur at a frequency of once in 450 years while spills of up to 2,380 bbl could occur once in 16,650 years. These spills likely would be contained by booms at the berths. Only a small proportion of the FMP fish present in the Harbor are likely to be affected by small to moderate oil spills due to the small area affected and planned rapid cleanup. All of these species are also abundant in nearshore waters outside the Harbor so that regional populations would not be reduced. ~~The~~ Pacific sanddab (Groundfish FMP) would not be adversely affected by an oil spill because the juveniles and adults of this species live and feed ~~remain~~ on or near the bottom and do not rely on food from the upper water column. ~~and the oil would float.~~ Therefore, Pacific sanddabs would not be affected by surface oil from a small spill. Of these five species, only the northern anchovy spawns in the Harbor as well as outside the Harbor, and the planktonic eggs and larvae could be exposed to toxic components of spilled oil that dissolve in the water. However, the area affected would be a fraction of the entire Harbor, and the amount of eggs and larvae that could be adversely affected would not substantially reduce recruitment into the population.

The likelihood of occurrence for large oil spills (greater than 1,200 bbl) from tankers in transit in the Harbor as a result of the No Federal Action/No Project Alternative is remote (less than once in nearly two million years). Small to large oil spills in

offshore waters would have the same effects as described for the proposed Project but at a slightly higher frequency of occurrence.

CEQA Impact Determination

Natural Habitats. Construction would have no impacts on natural habitats such as kelp beds, eelgrass beds, mudflats, or wetlands because the proposed temporary container storage sites are on land where none of these habitats are present. Impacts to the least tern SEA adjacent to the Pier 400 site would be significant but feasibly mitigated as discussed for **Impact BIO-1**. Use of existing facilities at Port of Long Beach Berths 76-78 and 84-87 would have no impacts to natural habitats because none are present at or near these berths. Increased vessel traffic to LAHD Berths 238-240 would have less than significant impacts to the mudflat on the west side of the Main Channel due to oil spills, for the reasons described above. Oil spills in the Harbor that reach eelgrass beds could have significant impacts to this community by causing a substantial alteration of the habitat in the short term. Offshore oil spills would have no impacts on natural habitats.

Essential Fish Habitat. Construction activities at the proposed temporary container storage sites would have no direct impacts on EFH because none is present on land. Indirect impacts through runoff of pollutants during storm events (construction and operations) 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 BMPs) and because no substantial reduction or alteration of EFH would occur.

Oil spills would have less than significant impacts to FMP species for the reasons described above.

Mitigation Measures

No mitigation is required for less than significant impacts to EFH. **MM BIO-4** would apply for oil spill impacts within the Harbor for eelgrass beds in the Pier 300 Shallow Water Habitat, but no mitigation is feasible for significant oil spill impacts to the Cabrillo Beach eelgrass beds.

Residual Impacts

Residual impacts to EFH would be less than significant. Implementation of **MM BIO-4** would reduce but not eliminate the potential for impacts of oil spills on eelgrass beds. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect eelgrass beds. Oil spills, even though associated with a low probability of occurrence, that were not contained could, therefore, result in significant and unavoidable impacts.

NEPA Impact Determination

Because the No Federal Action/No Project Alternative is identical to the NEPA Baseline in this project, under NEPA the No Federal Action/No Project Alternative would have no impact.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

Impact BIO-4.2: No Federal Action/No Project operations, including accidental oil spills and introduction of invasive species, have the potential to substantially disrupt local biological communities.

Oil Spills

As described for the proposed Project, oil spills from vessels during transit through the Harbor or during unloading at a berth could affect marine biological resources such as marine birds, fish, and intertidal invertebrates through direct contact with the oil (physical effects) or toxic effects of components in the oil (particularly the lighter, soluble/volatile components). Cleanup of spilled oil could have further impacts on these organisms through direct removal or toxicity of cleaning agents. These effects could occur at more locations in the Harbor, including in Long Beach Harbor (inner and outer), than for the proposed Project due to the different berths to be used.

Small spills (up to 238 bbl) during vessel transit in the San Pedro Bay Ports could occur with a frequency of one per 184 years, assuming all No Federal Action/No Project vessels are double hulled. Moderate oil spills (238-1,200 bbl) could occur once in 91,726 years, and larger spills would be unlikely to occur (less than once in nearly two million years) (see Section 3.12, Table 3.12-14). Spills during unloading at the berths are less likely to occur (frequency of once in 450 years for small spills and once in 16,650 years for moderate spills) (Section 3.12, Hazards).

Intertidal invertebrates would be affected if the oil slick contacts the shoreline (primarily riprap within the Harbor) and wharf pilings. The amount of such habitat that could be affected by a small spill to moderate spill in the Outer Harbor would be a small proportion of comparable habitat present in the Harbor because the spill would be in an open area of the Outer Harbor where it could be contained before reaching the shoreline. After cleanup, the disturbed area would be recolonized by invertebrates from planktonic eggs and larvae or movement from adjacent areas. Based on experimental removal of intertidal invertebrates, recovery would be expected within a few years (MEC 1988). Thus, oil spills in the Outer Harbor would not substantially disrupt local intertidal invertebrate communities. Oil spilled into waters of the Inner Harbor would affect intertidal invertebrates over a larger area than a spill in the Outer Harbor because the narrow channels and slips have a larger amount of shoreline relative to the amount of surface water. Therefore, an oil spill would reach more shoreline before being contained and cleaned up. In a worst case, a substantial amount of intertidal habitat could be affected by a spill.

Benthic invertebrate communities are unlikely to be affected by an oil spill because the oil would float on the water surface, soluble components would be diluted before reaching the bottom, and cleanup would be rapid. The small amount of weathered oil

that was not immediately cleaned up could sink to the bottom as tar balls that would either drift along the bottom or become incorporated into the sediments. The more toxic components would not be present in this weathered oil, and tar balls on the bottom would not substantially disrupt benthic invertebrate communities.

Planktonic organisms under the slick could be affected by reduced light penetration for photosynthesis (phytoplankton) or as a result of soluble components of the oil (phytoplankton and zooplankton). However, exposure of these organisms to the oil would be of short duration and limited to the immediate vicinity of the slick because these species move with currents throughout the Harbor and cleanup would be implemented immediately, by plan. Furthermore, planktonic organisms have a high naturally occurring mortality rate coupled with high reproductive rates are (Dawson and Pieper 1993), so rapid recovery should occur following small, localized impacts. Thus, plankton communities would not be substantially disrupted.

Fish in the water column are mobile and can move away from the spill and cleanup disturbance. Thus, few if any individuals would be affected, and fish communities would not be substantially disrupted. However, for marine birds (excluding the special status species addressed in **Impact BIO-1**) loss of substantial numbers due to a moderate oil spill, even though of low probability, could have long-term, adverse effects on population size due to their low reproductive rates. Gulls are the most numerous group of marine birds present in the Harbor (MEC and Associates 2002) and, thus, would be the most likely to be affected. These birds often rest on the water surface and could come in contact with oil on the surface. Other species, for which a small proportion of their regional populations could be affected by an oil spill in the Harbor, would not be substantially affected.

Oil spills from tankers traveling within the Outer Harbor, and particularly in Los Angeles Harbor, could reach the Cabrillo Shallow Water Habitat before cleanup is complete. However, oil floating on the surface would not alter this habitat, and effects on fish and invertebrates would be as described above. Spilled oil would be less likely to enter the Pier 300 Shallow Water Habitat due to the greater distance and channels to be followed.

Offshore oil spills would have the same types of effects as described for the proposed Project, but the frequency of occurrence would be slightly more often. That is, oil spills would not cause a substantial reduction or alteration of local fish and plankton communities but could cause a substantial reduction or alteration of local marine bird communities.

Runoff of Pollutants

Accidental spills or releases of other pollutants from containers and vehicles used at the temporary container storage areas on Pier 400 and Pier 300 would increase the pollutant load in Harbor waters through runoff from the sites (see Section 3.14). However, concentrations of these pollutants would likely be low due to the small amount of pollutants that could be present on site and the planned rapid cleanup of any accidental spills. The small amount of pollutants that might enter the Harbor through the storm drains would be regulated by a stormwater permit that includes a SWPPP and BMPs and would not substantially disrupt local biological communities near Pier 400 or Pier 300.

Invasive Species

Compared to CEQA baseline conditions, the annual number of vessel calls under the proposed Project in 2025 would increase by approximately 201 (which is nearly 7 percent of the 2,813 total vessel calls to Los Angeles Harbor that occurred during the CEQA baseline year). Compared to NEPA baseline conditions, however call, the annual number of vessel calls under the proposed Project in 2025 would decrease by approximately 66, meaning that under NEPA the potential for introduction of invasive species from vessel calls would be reduced. These vessels would come primarily from outside the U.S. Exclusive Economic Zone (EEZ), and would be subject to regulations to minimize the introduction of non-native species in ballast water

~~The number of vessells entering Los Angeles-Long Beach Harbor would increase as a result of the No Federal Action/No Project by approximately 267 per year by 2025 (approximately 4 percent) compared to the CEQA Baseline of 6,193 vessels per year into this Harbor complex. These vessels would come primarily from outside the U.S. EEZ and would be subject to regulations to minimize the introduction of non-native species in ballast water.~~

Increasing the number of vessel calls ~~entering~~ to the Los Angeles-Long Beach Harbor by approximately ~~4~~ 7 percent would result in only a small increase in the potential for discharge of ballast water containing invasive exotic species because the vessels generally would be unloading cargo and subsequently taking on ballast water to compensate when leaving the Harbor. However, the state law that went into effect on January 1, 2004 (CSLC 2004) requires specific ballast water management practices for such water carried from outside the EEZ and specifies that regulations for qualifying voyages (vessels greater than 300 gross registered tons) ~~traveling~~ within the Pacific Coast Region (from Cooks Inlet, Alaska to about three-fourths of the way down the Baja Peninsula~~Washington and Oregon~~) be developed by July 1, 2005. These regulations were developed and went into effect on March 22, 2006. Non-native algal and invertebrate species can also be spread via vessel hulls. Of particular concern would be the introduction of the alga, *Caulerpa taxifolia*. *Caulerpa taxifolia* has been found at two locations in southern California: Agua Hedionda Lagoon and Huntington Harbor (MEC and Associates 2002). This species and *Undaria pinnatifida*, discovered in the Los Angeles/Long Beach Harbor in 2000, could also be transported to the Harbor via vessels traveling between ports within the EEZ, although the risk for *Caulerpa* from this source is low because the primary introduction pathway has been the aquarium trade.

For vessels traveling to or from other ports along the west coast of North America, the potential for introduction of additional exotic species will be reduced by the new regulations. Nearly all new vessels calling at LAHD Berths 238-240 and Port of Long Beach Berths 76-78 and 84-87 are expected to originate from and travel to ports outside the EEZ. Thus, considering the small increase in vessel traffic as a result of the No Federal Action/No Project compared to the total number entering the Harbor, as well as the ballast water regulations currently in effect, the potential for introduction of additional exotic species via ballast water would be low from vessels entering from or going outside the EEZ. Introduction of exotic species via organisms attached to vessel hulls and other equipment in the water, however, could still occur.

CEQA Impact Determination

For intertidal invertebrates, impacts of oil spills into Outer Harbor waters would most likely be less than significant and short-term, with full recovery expected to occur within a few years, as described above, and local communities would not be substantially disrupted. Spills into Inner Harbor waters, however, could substantially disrupt local intertidal invertebrate communities in the worst case, resulting in a significant and unavoidable impact. Impacts to local communities of plankton and fish in the Harbor and offshore would also be less than significant (no substantial disruption) for the reasons described for the proposed Project. Impacts to birds from large oil spills would be significant and unavoidable under worst-case scenarios, as described above because local communities could be substantially disrupted. Runoff of pollutants would have impacts that are less than significant for the reasons described above. Although unlikely, operation of the No Federal Action/No Project facilities has the potential to result in the introduction of non-native species via vessel hulls or ballast water, thereby potentially causing substantial effects to local biological communities. Impacts would, therefore, be significant under CEQA.

Mitigation Measures

Oil Spills. No mitigation is feasible for significant oil spill impacts to local intertidal invertebrate and marine bird communities. However, implementation of **MM BIO-4** would reduce the potential for impacts to marine birds using the Pier 300 Shallow Water Habitat. No mitigation is required for the less than significant impacts of oil spills to other local biological communities.

Runoff of Pollutants. No mitigation is required.

Invasive Species. Existing regulations would reduce but not eliminate the potential for introduction of invasive species via vessels. No feasible mitigation is available as described for the proposed Project.

Residual Impacts

Oil Spills. For small oil spills (less than 238 bbl) during unloading of oil at the berths, standard measures to prevent, contain, and cleanup a spill would reduce the residual impact to less than significant. Oil spill response capabilities in the Harbor are as summarized for **Impact BIO-1.2** for the proposed Project and as detailed in Section 3.12.

For small accidental oil spills from No Federal Action/No Project vessels during transit in the Harbor, these measures would similarly reduce impacts, but would not eliminate the potential for such accidents to adversely impact local biological communities. As no additional, feasible mitigation is available, residual impacts from oil spills that affected a substantial number of birds or other local biological communities would be considered significant and unavoidable.

Runoff of Pollutants. Residual impacts would be less than significant.

Invasive Species. Residual impacts would be significant and unavoidable.

NEPA Impact Determination

Because the No Federal Action/No Project Alternative is identical to the NEPA Baseline in this project, under NEPA the No Federal Action/No Project Alternative would have no impact.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

3.3.4.3.3 Reduced Project Alternative

3.3.4.3.3.1 Construction Impacts

Impact BIO-1.1: Construction of the Reduced Project Alternative could affect individuals of or habitat for the California least tern and other special status species.

All construction activities at the Marine Terminal, Tank Farm Site 1, Tank Farm Site 2, and staging areas and for installation of pipelines would be the same as noted for the proposed Project. Effects of these activities on the California least tern and other special status species would be the same as described for the proposed Project in **Impact BIO-1.1**.

CEQA Impact Determination

California least tern. Impacts would be less than significant for construction activities that are more than 200 ft (61 m), or other established buffer distance, from the nesting site when the terns are present, except for stone column installation and temporary lighting at Tank Farm Site 1. Construction activities closer than approximately 200 ft (61 m) to the nesting site when the terns are present could have significant impacts. Stone column installation at Tank Farm Site 1 and construction lighting while the terns are nesting could have significant impacts.

California brown pelican. Impacts of construction activities would be less than significant, as described for the proposed Project.

Western snowy plover. Construction would have no impacts.

Other special status species. Since Tank Farm Site 1 would not be cleared for construction and would not be left vacant at the beginning of the nesting season, black skimmers would be unlikely to use this area for nesting, resulting in no impacts to this species. If vegetation clearing at Tank Farm Site 1 prior to construction resulted in black skimmer nesting at the site, injury to nesting birds and disruption of nesting would be a significant but feasibly mitigated impact. If burrowing owls were nesting at Tank Farm Site 1 and nesting was disrupted, impacts would be significant.

Impacts to other special status species, including marine mammals, would be less than significant.

Mitigation Measures

MM 4D-7 and **MM 4D-9** from the Deep Draft FEIS/FEIR are applicable to the Reduced Project impacts. However, the more project-specific measures below cover the intent of **MM 4D-7** and **MM 4D-9**, so the latter are not included in the list of mitigation measures below.

MM BIO-1.1a through **MM BIO-1.1~~j~~k** would apply, as described for the proposed Project.

~~No mitigation measures are required for the less than significant impacts to marine mammals.~~

Residual Impact

With implementation of **MM BIO-1.1a** through **MM BIO-1.1~~j~~k**, residual impacts on the California least tern and other special status species as a result of Reduced Project construction activities would be less than significant.

NEPA Impact Determination

California least tern. Impacts would be less than significant for construction activities that are more than 200 ft (61 m), or other established buffer distance, from the nesting site when the California least terns are present, except for stone column installation and temporary lighting at Tank Farm Site 1. Construction activities closer than approximately 200 ft (61 m) to the nesting site when the terns are present could have significant impacts. Stone column installation at Tank Farm Site 1 and construction lighting while the terns are nesting could have significant impacts.

California brown pelican. Impacts of construction activities would be less than significant, as described for the proposed Project.

Western snowy plover. Construction activities would cause no impacts.

Other special status species. Because black skimmers currently do not nest at Tank Farm Site 1 and are not expected to nest there between now and when Reduced Project facilities would be built (assuming that the area is not cleared of vegetation), no loss of black skimmer nesting habitat and, consequently, no impacts would occur. Under the NEPA Baseline, the site would be paved by about 2012. Vegetation clearing prior to the black skimmer nesting season could allow nesting to occur again, and construction activities could then have a significant impact to this species through injury to nesting birds or by causing them to abandon the nest site. If burrowing owls are nesting at the Tank Farm Site 1 and nesting is disrupted, impacts would be significant. Impacts to marine mammals would be less than significant as described for the proposed Project.

Mitigation Measures

MM BIO-1.1a through **BIO-1.1~~j~~k** would apply ~~for the California least tern, black skimmer, and burrowing owl~~, as described for the proposed Project.

~~No mitigation measures are required for the less than significant impacts to marine mammals.~~

Residual Impact

With implementation of **MM BIO-1.1a** through **MM BIO-1.1~~j~~k**, residual impacts on the California least tern and other special status species as a result of Reduced Project construction activities would be less than significant.

Impact BIO-2.1: Construction of Reduced Project Alternative facilities would not substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands.

No locally-designated natural habitats or plant communities are present at the Reduced Project sites, including the Pier 400 Marine Terminal site, Tank Farm Site 1, pipeline routes, and staging areas as described for the proposed Project. Impacts to the least tern SEA on Pier 400 are as discussed for **Impact BIO-1.1** in the proposed Project. The small amount of marine algae that would be affected by Marine Terminal construction, and installation, operation, and removal of a temporary mooring at staging area 412, would be inconsequential and would not result in a substantial reduction or alteration of a locally-designated plant community. No eelgrass beds, wetlands, or mudflats are present near the Berth 408 site or staging area 412. The closest such habitats are 1.4 mi (2.3 km) from the Berth 408 site, and they would not be affected due to the distance from the in-water construction sites. This includes the eelgrass beds at Cabrillo beach, in the Pier 300 Shallow Water Habitat, and in the Seaplane Lagoon.

Construction of the Marine Terminal berth and temporary mooring at staging area 412 (Figure 2-12 in Chapter 2) could temporarily affect a small amount of EFH and individuals of the FMP fish species in Table 3.3-2 that are present at the time of construction as a result of increased turbidity, temporary displacement of individuals, release of contaminants to the water column, temporary lighting, and underwater sound from pile driving as described for the proposed Project. The small amount of soft bottom habitat converted to hard substrate habitat would not adversely affect EFH or managed species as described for the proposed Project. Construction of facilities on land would have no direct effects on EFH, which is located in the water, and runoff from those areas would be controlled as discussed in Section 3.14.

EFH Preliminary Determination

The USACE has preliminarily determined the Reduced Project would have adverse, but less than significant impacts on EFH based on the above analysis and Appendix K, and ~~will~~ has initiated consultation with NMFS pursuant to the Magnuson-Stevens Fishery Conservation and Management Act.

CEQA Impact Determination

Natural Habitats. Construction would have no impacts on natural habitats such as eelgrass beds, mudflats, or wetlands because none are present at or near the Reduced Project site. Impacts to marine algae for Berth 408 construction, AMP system and ACTI AMECS platform installation, and temporary mooring installation/removal and use at a staging area on Pier 400 would be less than significant as described for the proposed Project. Impacts to the least tern SEA would be less than significant with mitigation, as discussed for **Impact BIO-1.1**.

Essential Fish Habitat. Temporary disturbances in the water during Berth 408, AMP system and ACTI AMECS platform installation, and a temporary mooring construction would cause no substantial alteration of EFH or loss of individuals in managed fish species, as described for the proposed Project, and impacts would be less than significant under CEQA. Construction activities at the tank farm sites and for new pipeline installation 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 the runoff would be controlled as described for water quality in Section 3.14 (e.g., project-specific SWPPP with BMPs such as sediment barriers and sedimentation basins). In addition, the work would be conducted in compliance with applicable permits, such as the USACE's Section 10 (Rivers and Harbors Act) and LARWQCB's 401 Water Quality Certification.

Mitigation Measures

MM BIO-1.1k would apply, as described for the proposed Project. ~~No mitigation is required.~~ Mitigation for impacts on the California least tern SEA are addressed in **Impact BIO-1.1** for the proposed Project.

Residual Impact

Residual impacts would be less than significant.

NEPA Impact Determination

Natural Habitats. Construction would have no impacts on natural habitats such as eelgrass beds, mudflats, or wetlands because none are present at or near the Reduced Project site as described for the CEQA analysis. Impacts to marine algae for Berth 408 construction, AMP system and ACTI AMECS platform installation, and temporary mooring installation and use at a staging area on Pier 400 would be less than significant as described for the proposed Project. The potential for impacts to the California least tern SEA would be less than significant with mitigation as discussed for **Impact BIO-1.1**.

Essential Fish Habitat. Temporary disturbances in the water during Berth 408, ACTI or AMP system platform installation, and a temporary mooring construction would cause no substantial alteration of EFH or loss of individuals in managed fish species, as described for the proposed Project, and impacts would be less than significant under NEPA. Construction activities at the tank farm sites 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 the runoff would be controlled as described for water quality in Section 3.14 (e.g.,

project-specific SWPPP with BMPs such as sediment barriers and sedimentation basins).

Mitigation Measures

MM BIO-1.1k would apply, as described for the proposed Project. ~~No mitigation is required.~~ Mitigation for impacts on the California least tern SEA are addressed in **Impact BIO-1.1** for the proposed Project.

Residual Impact

Residual impacts would be less than significant.

Impact BIO-4.1: Reduced Project Alternative construction activities could substantially disrupt local biological communities.

As described for the proposed Project, turbidity, noise, and vibration from construction of the berth, AMP system and ACTI AMECS platform, and a temporary mooring would result in temporary disturbance to marine animals. However, there would be no substantial adverse effects to their populations due to the small number of individuals affected, the small numbers of individuals moving into other areas, the short duration of the disturbance, and the small proportion of the Harbor affected. Upon completion of construction, the displaced individuals would be able to return, resulting in no substantial disruption of Outer Harbor biological communities. The potential for impacts to the California least tern and other special status species are as addressed in **Impact BIO-1.1**.

Temporary disturbances resulting from construction activities would not substantially reduce the amount of food available to predatory species. The Cabrillo Shallow Water Habitat and Pier 300 Shallow Water Habitat would not be adversely affected by construction activities, including sound pressure waves from pile driving, due to their distance from those activities. Construction activities on land would not substantially disrupt plant communities and terrestrial wildlife, as described for the proposed Project.

Caspian and elegant terns, which have used a portion of the Tank Farm Site 1 area for nesting in the past, would not be expected to nest there prior to Project construction as described for the proposed Project. If, however, vegetation were cleared in advance of Tank Farm Site 1 construction and prior to the nesting season, elegant and Caspian terns could use the site again, and construction activities could injure or kill nesting birds or cause them to abandon their nests. Nesting by both species is protected under the Migratory Bird Treaty Act.

Runoff of pollutants during construction would be minimized through use of BMPs as described in Section 3.14 and would not adversely affect marine organisms. No accidents are expected that would result in spills of pollutants that could adversely affect biological resources. Project-related vessel traffic during construction would be increased slightly for delivery of rock for stone column installation. Vessels or barges are likely to be local or from other West Coast locations with minimal potential to introduce invasive species. A small amount of habitat alteration would

occur at the Marine Terminal, tank farm sites, along the pipeline routes, and at the staging areas. Construction of the berth at the Marine Terminal would replace about 0.03 acre (0.01 ha) of water column habitat with ~~0.2~~1.7 acres (0.~~09~~ 7 ha) of hard substrate ~~habitat~~surface, and rock placed around the bases of the larger piles would convert about 0.~~1~~ 09 acre (0.~~04~~ 03 ha) of soft bottom to hard substrate habitat, as described for the proposed Project. These areas include ~~I~~installation of the AMP system and ACTI AMECS platform for air quality mitigation ~~would replace a smaller amount of water column habitat with hard substrate for the pilings~~. These minor changes would not substantially disrupt local biological communities, as described for the proposed Project. Construction activities on land would have minimal effects on terrestrial biota because most are non-native and/or adapted to industrial areas, and project-related landscaping would replace the vegetation and habitat lost.

CEQA Impact Determination

Impacts of pollutant runoff, noise and vibration, turbidity, and introduction of invasive species to local biological communities would be less than significant under CEQA, as described above. Since Tank Farm Site 1 would not be cleared for construction and would be left vacant at the beginning of the nesting season, elegant terns and Caspian terns would be unlikely to use this area for nesting, resulting in no impacts to these species. If vegetation clearing at Tank Farm Site 1 for construction resulted in elegant tern and/or Caspian tern nesting at the site, injury to nesting birds and disruption of nesting would be a significant impact. The small amount of water column habitat replaced with hard substrate marine habitat would not represent a permanent loss of aquatic habitat, and Reduced Project construction impacts would be less than significant. Accidental spills of pollutants during in-water construction would be unlikely to occur and would have less than significant impacts if any did occur. Loss or alteration of terrestrial habitats would result in less than significant impacts because the areas affected would be small with minimal value to wildlife, and project-related landscaping would replace the low values lost.

Mitigation Measures

MM BIO-1.1g and **MM BIO-1.1h** would be implemented to reduce the potentially significant impacts to elegant terns, Caspian terns, and other nesting birds at Tank Farm Site 1. No mitigation is required for the less than significant impacts.

Residual Impact

Residual impacts would be less than significant.

NEPA Impact Determination

Impacts of pollutant runoff, noise and vibration, turbidity, and introduction of invasive species to local biological communities would be less than significant under NEPA, as described above for CEQA. Since Tank Farm Site 1 would not be cleared for construction and would be left vacant at the beginning of the nesting season, elegant terns and Caspian terns would be unlikely to use this area for nesting, resulting in no impacts to these species. If vegetation clearing at Tank Farm Site 1 for construction resulted in elegant tern and/or Caspian tern nesting at the site, injury to nesting birds and disruption of nesting would be a significant impact. The small amount of water column habitat replaced with hard substrate marine habitat would

not represent a permanent loss of aquatic habitat, and Reduced Project Alternative construction impacts would be less than significant. Accidental spills of pollutants during in-water construction would be unlikely to occur and would have less than significant impacts if any did occur. Loss or alteration of terrestrial habitats would result in less than significant impacts because the areas affected would be small with minimal value to wildlife, and project-related landscaping would replace the low values lost. The vegetated area at Tank Farm Site 1 would not be lost compared to the NEPA Baseline because that area would be paved.

Mitigation Measures

MM BIO-1.1g and **MM BIO-1.1h** would be implemented to reduce the potentially significant impacts to elegant terns, Caspian terns, and other nesting birds at Tank Farm Site 1. No mitigation is required for the less than significant impacts.

Residual Impact

Residual impacts would be less than significant.

3.3.4.3.3.2 Operation Impacts

Impact BIO-1.2: Operation of the Reduced Project Alternative could affect individuals of or habitat for the California least tern and other special status species.

Operation of Tank Farm Site 1 adjacent to the California least tern nesting site would be the same as for the proposed Project, but less oil would be transferred. Thus, operational activities, other than transfer of oil, would have the same potential for low level effects of noise, lights, human presence, vessel traffic, and visual presence of structures to this species, as described for the proposed Project. Increased predation could have the same adverse effects as described for the proposed Project.

Increased oil imports at LAHD Berths 238-240 and at Port of Long Beach Berths 76-78 and 84-87 would increase vessel traffic and the potential for oil spills in the Port of Long Beach and in the Main Channel of the Port with the same potential effects on special status species as described for the No Federal Action/No Project Alternative. The frequency of small oil spills during Reduced Project vessel transit within the Harbor to all four of the berths would be once in 118 years, compared to once in 217 years for the proposed Project, and once in 58,914 years versus once in 108,155 years for moderate spills of 238-1,200 bbl (see Section 3.12, Table 3.12-17). The frequency for spills greater than 1,200 bbl is less than once in a million years. Spills during unloading of crude oil at all of the berths would occur once in 410 years (238 bbl) to once in 15,245 years (238-2,380 bbl), which is slightly more frequent than for the proposed Project. MGO spills could occur at a frequency of once in 1,090 years for a small spill (up to 238 bbl) and less than once in about 10 million years for a larger spill during transit in the Harbor. Effects of a spill that did occur during tanker transit in the Harbor would be the same as described for the proposed Project and the No Federal Action/No Action Alternative (i.e., could affect the California least tern population and brown pelican, and unlikely to affect the black skimmer, western snowy plover, and marine mammal populations). Other special status bird species would not be affected by oil spills because they do not use the water surface. Spills

while unloading crude oil or MGO would be contained and would not affect special status species. Spills from onshore tanks and buried pipelines would not reach Harbor waters or the California least tern nesting site, as described for the proposed Project. The probability of oil spills from Pipeline Segment 1 on the Pier 400 causeway bridge is remote (less than one in a million years), but if one did occur, it could enter the Pier 300 Shallow Water Habitat and Seaplane Lagoon and affect California least terns during foraging as described for the proposed Project.

Oil spills could also occur during Reduced Project vessel transit in offshore waters. Small spills of less than 238 bbl would occur with a frequency of one per 174 years while 10 to 30 percent of the vessel cargo could be spilled once in 496 years. Spillage of the entire cargo (2,500,000 bbl) could occur once in 579 years (see Table 3.12-17 in **Impact RISK-2.1**). Offshore spills would not affect the California least tern, western snowy plover, or black skimmer because none would be present due to habitat differences. Few if any California brown pelicans, marine mammals, or sea turtles would be affected.

Effects of vessel traffic during operations on other special status species, such as marine mammals, would be inconsequential as described for the proposed Project.

ESA Preliminary Determination

The USACE has preliminarily determined that construction and operation of the Reduced Project may affect the California least tern and the California brown pelican. Additionally, the USACE has preliminarily determined that the Reduced Project would not affect the western snowy plover. The USACE ~~will~~ has initiated consultation with USFWS pursuant to ESA Section 7.

CEQA Impact Determination

Operation of the Reduced Project could have significant impacts to the California least tern through increased predation and oil spills. With the sound barrier in place around the shipping pumps (as part of Reduced Project), noise and vibration from the shipping pumps, combined with other Reduced Project equipment noise, would have a less than significant impact on least terns, when present. Reduced Project noise would be relatively constant while background noise would fluctuate with peaks and dips related to other activities on Pier 400. An increase in predation on least terns due to the Reduced Project would be a significant impact. Any uncontained oil spills that occurred during April through August would have the potential to cause significant, unavoidable impacts to least terns. Impacts of oil spills during vessel transit within the Harbor to the brown pelican would likely be less than significant because few individuals in the population (California and Mexico) would be affected, and oil spills in the Port would not affect breeding success of the species since they do not nest in the Harbor region. In the worst case, however, a number of brown pelicans could be affected by an oil spill in the Harbor resulting in significant, unavoidable impacts. Impacts to the black skimmer would likely be less than significant because few individuals in the breeding population would be affected. No impacts would occur to other special status bird species, including the western snowy plover, as described for the proposed Project. Crude oil spills during unloading at the berths and MGO at Berth 408 would have no impacts to special status species because the spills would be contained by the boom around the vessel/barge and immediately

cleaned up. Spills from onshore facilities (tanks and pipelines) that do not reach Harbor waters would have no impacts to special status species for the reasons described above. A spill from Pipeline Segment 1 on the Pier 400 causeway bridge, however, could have significant unavoidable impacts to the California least tern if such a spill occurred during the least tern nesting season.

Offshore oil spills would have less than significant impacts to the California brown pelican because few, if any, individuals would be affected as described for the proposed Project. No impacts to the California least tern, black skimmer western snowy plover, and other special status birds would occur as none would be present in offshore waters. Impacts to sea turtles and marine mammals would be less than significant, as described for the proposed Project.

Although the Reduced Project could have up to 372 more vessel calls per year (spread among four berths) than the CEQA Baseline (171 more than the proposed Project), impacts of project-related vessel traffic on marine mammals would be less than significant because few individuals would be affected, the animals would likely move away from the sound as it increases in intensity from the approaching vessel, exposure would be of a short duration that would not adversely affect individuals, and Reduced Project vessel strikes of whales would not be expected to occur.

Mitigation Measures

To reduce the potential for significant impacts from predation and oil spill effects on the California least tern, **MM BIO-1.2a**, **MM BIO-1.2b**, **MM BIO-1.2c**, **MM BIO-1.2d**, and **MM BIO-1.2e** would apply. **MM BIO-1.2c** would also apply for impacts of oil spills to the California brown pelican.

No mitigation is needed for the less than significant impacts to other special status species, but implementation of **MM BIO-1.2f** would reduce the potential for Reduced Project-related vessel strikes with marine mammals**.**

Residual Impact

Implementation of **MM BIO-1.2a** and **MM BIO-1.2b** would reduce impacts on the California least tern nesting area from predatory birds and other animals to less than significant. Implementation of **MM BIO-1.2d** and **MM BIO-1.2e** would further reduce the potential for impacts from lighting and human activity.

Implementation of **MM BIO-1.2c** would reduce, but not eliminate, the potential for impacts of moderate or small oil spills on the California least tern and California brown pelican. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect these species when present and foraging in the area (e.g., during April through August for the least tern and all year for the brown pelican). A small (up to 238 bbl) or moderate oil spill, even though of low probability, that was not contained could, therefore, result in significant, unavoidable impacts.

For the other special status species, less than significant impacts would occur.

NEPA Impact Determination

Operation of the Reduced Project could have significant impacts to the California least tern through increased predation and oil spills. With the sound barrier in place around the shipping pumps (as part of Reduced Project), noise and vibration from the shipping pumps, combined with other Reduced Project equipment noise, would have a less than significant impact on the least terns, when present. Reduced Project noise would be relatively constant while background noise would fluctuate with peaks and dips related to other activities on Pier 400. An increase in predation on least terns due to the Reduced Project would be a significant impact. However, relative to the NEPA Baseline with temporary container storage adjacent to the least tern nesting site, the potential for increased predation would be similar to that baseline. Small oil spills that occurred during April through August would have the potential to cause significant, unavoidable impacts to least terns. Impacts of oil spills during vessel transit within the Harbor to the brown pelican would likely be less than significant because few individuals in the population (California and Mexico) would be affected, and oil spills in the Port would not affect breeding success of the species because it does not nest in the Harbor region. In the worst case, however, a number of brown pelicans could be affected by an oil spill in the Harbor resulting in significant, unavoidable impacts. Impacts to the black skimmer would be less than significant because few individuals in the breeding population would be affected. No impacts would occur to other special status bird species, including the western snowy plover, as described for the proposed Project. Crude oil spills during unloading at the berths and MGO at Berth 408 would have no impacts to special status species because the spills would be contained by the boom around the vessel/barge and immediately cleaned up. Spills from onshore facilities (tanks and pipelines) that do not reach Harbor waters would have no impacts to special status species, for the reasons described above. A spill from Pipeline Segment 1 on the Pier 400 causeway bridge, however, could have significant unavoidable impacts to the California least tern if such a spill occurred during the least tern nesting season.

Offshore oil spills would have less than significant impacts to the California brown pelican because few, if any, individuals would be affected, as described for the proposed Project. No impacts to the California least tern, black skimmer, western snowy plover, and other special status birds would occur as none would be present in offshore waters. Impacts to sea turtles and marine mammals would be less than significant, as described for the proposed Project.

The Reduced Project would have up to 105 more vessel calls per year than under the NEPA Baseline, and impacts of project-related vessel traffic on marine mammals would be less than significant because few individuals would be affected, the animals would likely move away from the sound as it increases from the approaching vessel, exposure would be of a short duration that would not adversely affect individuals, and Reduced Project vessel strikes of whales would not be expected to occur.

Mitigation Measures

To reduce the potential for significant impacts of predation and oil spill effects on the California least tern, **MM BIO-1.2a**, **MM BIO-1.2b**, **MM BIO-1.2c**, **MM BIO-1.2d**, and **MM BIO-1.2e** would apply. **MM BIO-1.2c** would also apply for impacts of oil spills to the California brown pelican.

No mitigation is needed for the less than significant impacts to other special status species, but implementation of **MM BIO-1.2f** would reduce the potential for Reduced Project-related vessel strikes with marine mammals**.**

Residual Impact

Implementation of **MM BIO-1.2a** and **MM BIO-1.2b** would reduce impacts on the California least tern nesting area from predatory birds and other animals to less than significant. Implementation of **MM BIO-1.2d** and **MM BIO-1.2e** would further reduce the potential for impacts from lighting and human activity.

Implementation of **MM BIO-1.2c** would reduce, but not eliminate, the potential for impacts of small and moderate oil spills on the California least tern and California brown pelican. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect the least terns and brown pelicans when they are present and foraging in the area (e.g., during April through August for the least tern and all year for the brown pelican). A small (up to 238 bbl) or a larger oil spill, even though of low probability, that was not contained could, therefore, result in significant, unavoidable impacts.

For the other special status species, less than significant impacts would occur.

Impact BIO-2.2: Operation of Reduced Project Alternative facilities would have the potential to substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands.

Natural Habitats

As described above for construction, no designated natural habitats or plant communities, except the California least tern SEA, are present at or near the Reduced Project facility sites, and operations would not affect these habitats. None of these habitats are present at Berths B76-78 and B84-87 in the Port of Long Beach. Operation of Tank Farm Site 1 would have the same effects on the California least tern SEA as described for the proposed Project in **Impact BIO-1.1**. An increase of 131 vessels per year to Berths 238-240 relative to the CEQA Baseline would have no adverse effects on the mudflat at Berth 78 in the Main Channel, as described for the No Federal Action/No Project Alternative. Changes in algal growth on the riprap and pilings at Berth 408 would be minor and less than significant, as described for the proposed Project. Habitat changes due to pilings would be less than significant, as described for the proposed Project. Increased vessel traffic (109 vessel calls per year) to the Long Beach berths would not adversely affect any natural habitats, as described for the No Federal Action/No Project Alternative.

The potential for oil spills from vessel, while in transit to the four berths, to reach the eelgrass beds at Cabrillo Beach and in the Pier 300 Shallow Water Habitat and Seaplane Lagoon would be essentially the same as for the proposed Project, and the probability of such spills from the vessels going to Berths B76-78, B84-87, and 238-240 would be slightly less than for the No Federal Action/No Project Alternative. As described for the proposed Project, effects on these habitats would be adverse, but the potential for such effects would be reduced because the oil would float, toxic volatile

components would evaporate or be diluted before the oil reaches these areas (Jordan and Payne 1980), and the oil would be cleaned up immediately in compliance with SPCC requirements. Offshore oil spills wound not affect any natural habitats because none are present. Thus, oil spills could cause a substantial reduction or alteration of eelgrass habitats but would not substantially affect other natural habitats.

Essential Fish Habitat

Effects of Reduced Project operations on EFH would be the same as described for the proposed Project, but the predicted frequency of small oil spills would be slightly greater at one per 118 years, compared to one per 217 years, and moderate spills would occur once in 58,914 years versus 108,155 years. Spills greater than 1,200 bbl would occur less than once in one million years and the likelihood of occurrence during the Project is remote (Section 3.12, Table 3.12-17). For unloading crude oil, the frequency of small oil spills would be once in 410 years, and moderate spills could occur once in 15,245 years. The frequency of MGO spills during would be less frequent than for the proposed Project at one per 1,090 years (less than 238 bbl) and less than one per 10 million years for a larger spill. Small to moderate spills of oil into Outer Harbor waters during vessel transit to any of the four berths could drift into the Cabrillo Shallow Water Habitat before being contained and cleaned up in compliance with SPCC requirements. Spills in the Port of Long Beach Inner Harbor would likely be contained within the channels and cleaned up. As described for the proposed Project, the number of individuals in managed fish species that could be affected would be a small proportion of their total populations in the region.

Small to large oil spills could occur during offshore transit of proposed Project vessels (See Section 3.12, Table 3.12-15 in **Impact RISK-2.1**), as described for the proposed Project. Small oil spills (less than 238 bbl) would affect a very small area and few if any individuals of FMP species (particularly those near the water surface). For larger spills, however, the oil could spread over a considerable area before dispersing and, thus, could affect more individuals of FMP species. However, the low frequency of large spills (once in 496 to 579 years) would only affect the fish in one year out of many, and long-term population size would not be reduced (Laur and Halderson 1996).

The amount of vessel traffic would be 171 more than for the proposed Project, with over half of those in the Port of Long Beach. These additional vessel calls would not substantially alter EFH due to the small number relative to the total number of vessel calls per year and the distribution of these vessels in the deep water channels of the San Pedro Bay Ports.

CEQA Impact Determination

No natural plant communities, eelgrass beds, wetlands, or mudflats are present at the Reduced Project site or at Berths B76-78 and B84-87, resulting in no impacts under CEQA. Impacts of vessel traffic and oil spills on mudflats near Berths 238-240 would be less than significant, as described for the No Federal Action/No Project Alternative. Impacts of oil spills in the Outer Harbor to eelgrass beds would be significant as described for the proposed Project. Impacts of operating Tank Farm Site 1 to the California least tern SEA (nesting habitat) would be significant but feasibly mitigated as described for the proposed Project (**Impact BIO-1.2**).

Operational activities on land and in the water would not substantially reduce or alter EFH for the reasons described for the proposed Project, and impacts would be less than significant. Impacts of oil spills on EFH in the Harbor and offshore, although slightly more likely to occur, would be less than significant for the reasons described for the proposed Project.

Mitigation Measures

No mitigation is required for less than significant impacts to EFH. **MM BIO-1.2c** would apply for oil spill impacts within the Harbor for eelgrass beds in the Pier 300 Shallow Water Habitat, but no mitigation is feasible for significant oil spill impacts to the Cabrillo Beach eelgrass beds.

Residual Impact

Residual impacts to EFH would be less than significant. Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of oil spills on eelgrass beds. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect eelgrass beds. Oil spills, even though associated with a low probability of occurrence, that were not contained could, therefore, result in significant and unavoidable impacts.

NEPA Impact Determination

No natural plant communities, eelgrass beds, wetlands, or mudflats are present at the Reduced Project site, resulting in no impacts under NEPA. Increased use of other terminals in the San Pedro Bay Ports for delivery of oil under the NEPA Baseline would be less than for the No Federal Action/No Project Alternative, resulting in no impact. Small to moderate oil spills could occur from vessels transporting project-related oil to Berth 408, with significant impacts to eelgrass beds as described for the proposed Project. Impacts of operating Tank Farm Site 1 to the California least tern SEA (nesting habitat) would be significant but feasibly mitigated as described for the proposed Project (**Impact BIO-1.2**).

Operational activities on land and in the water would not substantially reduce or alter EFH for the reasons described above, and impacts would be less than significant. Small to moderate oil spills from vessels using Berth 408 would have less than significant impacts to sustainable fisheries because few individuals within managed fish species would be affected, as described for the proposed Project. Offshore oil spills would have less than significant impacts to EFH for the reasons described under the proposed Project.

Mitigation Measures

No mitigation is required for less than significant impacts to EFH. **MM BIO-1.2c** would apply for oil spill impacts within the Harbor for eelgrass beds in the Pier 300 Shallow Water Habitat, but no mitigation is feasible for significant oil spill impacts to the Cabrillo Beach eelgrass beds.

Residual Impact

Residual impacts to EFH would be less than significant. Implementation of **MM BIO-1.2c** would reduce but not eliminate the potential for impacts of oil spills on eelgrass beds. There are no additional feasible mitigation measures that would reduce the potential for accidental oil spills to significantly affect eelgrass beds. Oil spills, even though associated with a low probability of occurrence, that were not contained could, therefore, result in significant and unavoidable impacts.

Impact BIO-4.2: Reduced Project Alternative operations, including accidental oil spills and introduction of invasive species, have the potential to substantially disrupt local biological communities.

The Reduced Project Alternative would have the same types of effects on biological communities as previously described for the proposed Project because the potential for oil spills or MGO spills would be changed very little by the reduced throughput. Oil spills, however, could occur in the Port of Long Beach (Berths B76-78 and B84-87) as well as in the LAHD (Berths 238-240 and 408). For most small oil spills (less than 238 bbl) during unloading of oil at the berths and MGO at Berth 408, standard measures in use at the three existing oil terminals and those proposed as part of the Reduced Project Alternative to prevent, contain, and cleanup the spill would reduce impacts to less than significant. Effects of oil spills at the tank farms or along the pipeline routes would be the same as described for the proposed Project. Effects on marine birds of a moderate oil spill from Reduced Project Alternative vessels and MGO barges during transit in the Harbor would be the same as described for the proposed Project. Oil spills from vessels in transit to the additional berths for unloading oil would not change the potential for or level of effect on the Cabrillo Shallow Water Habitat or the Pier 300 Shallow Water Habitat from that described for the No Federal Action/No Project Alternative. Large offshore oil spills would have the potential to affect large numbers of marine birds, as described for the proposed Project.

Runoff of pollutants from Reduced Project facility sites would be the same as described for the proposed Project.

The number of vessels entering the Harbor would be up to 372 (171 more than for the proposed Project) due to increased import of oil in smaller vessels to other berths in the Harbor. The ~~, and the~~ potential for introduction of invasive species from ballast water and vessel hulls would be slightly greater than described for the proposed Project. However, risk would depend on other factors such as size of vessel, the last port of call, volume of ballast water discharged, and hull cleaning practices.

Alteration of the marine habitat would continue throughout operations in the same manner as noted for the proposed Project. The new structures in the water would be colonized by marine organisms and hard substrate biological communities would be increased correspondingly.

CEQA Impact Determination

Runoff of pollutants and habitat alteration would have impacts that are less than significant for the same reasons described under the proposed Project. For plankton

and fish, crude oil spills into Harbor and offshore waters would not substantially disrupt local communities, and impacts would be less than significant and short-term, with full recovery expected to occur within a few years as described for the proposed Project. Impacts to local intertidal invertebrate communities would also be less than significant in most cases because the small amount of such habitat affected would not substantially disrupt such communities. Impacts of oil spills in the Harbor and offshore to marine birds would be significant and unavoidable under worst-case scenarios, as described for the proposed Project because local communities could be substantially disrupted. Oil spills at the tank farms would be contained and would have no impacts to biological communities. Spills from buried pipelines would also be contained on land and would have no impacts to biological communities. Oil spills from the two above-ground pipeline segments into Harbor waters would be unlikely to occur (less than once in over a million years); however, if such a spill did occur from a Reduced Project pipeline rupture, impacts in waters of the Inner Harbor would be significant for local intertidal communities. An MGO spill during barge transit within the Harbor also could cause substantial disruption of local biological communities, resulting in a significant impact as described for the proposed Project. Although of low probability, operation of the Reduced Project facilities has the potential to result in the introduction of non-native species via vessel hulls or ballast water and, thus, could substantially disrupt local biological communities. Such impacts would, therefore, be significant under CEQA.

Mitigation Measures

No mitigation is feasible for significant crude oil and MGO spill impacts to local marine communities. However, implementation of **MM BIO-1.2c** would reduce the potential for impacts from an oil spill in the Outer Harbor to marine birds using the Pier 300 Shallow Water Habitat. No mitigation is required for the less than significant impacts of crude oil spills to other local biological communities. Existing regulations would reduce but not eliminate the potential for introduction of invasive species via vessels. Due to a lack of proven technology, no feasible mitigation is currently available to prevent introduction of invasive species via vessel hulls. New technologies are being explored, and if methods become available in the future they would be implemented as required at that time. No mitigation is required for the less than significant impacts from runoff and habitat alteration.

Residual Impact

As described for the proposed Project, residual impacts of most small spills would be less than significant while residual impacts of worst case crude oil spills on birds and intertidal invertebrates, MGO spills on local biological communities, and introduction of invasive species have the potential to be significant and unavoidable.

For runoff of pollutants and habitat alteration, residual impacts would be less than significant.

NEPA Impact Determination

The NEPA Baseline includes paving of Tank Farm Site 1 and Tank Farm Site 2 and 267 vessel calls per year to other berths in the San Pedro Bay Ports. Runoff of pollutants from the tank farm sites would be slightly greater than under the NEPA

Baseline, but impacts would be less than significant for the reasons presented in the CEQA analysis. Habitat alteration would have impacts that are less than significant for the reasons described above under the proposed Project. The potential for introduction of invasive species would be considerably less than in the CEQA analysis because vessel traffic would be increased by 105 calls per year relative to the NEPA Baseline as compared to 372 relative to the CEQA Baseline. Impacts, however, could be significant if such an introduction were to occur and substantially disrupt local biological communities. For plankton and fish, impacts of crude oil spills into the Harbor and offshore waters would not substantially disrupt local communities, and impacts would be less than significant and short-term, with full recovery expected to occur within a few years as described above for CEQA. Impacts to local intertidal invertebrate communities would also be less than significant in most cases because the small amount of such habitat affected would not substantially disrupt such communities. Impacts to marine birds would be significant and unavoidable under worst-case oil spill scenarios (offshore and in the Harbor), as described above under the proposed Project because local communities could be substantially disrupted. The potential for oil spills from tankers, however, would be less than described for the CEQA analysis because fewer oil tankers would enter the Harbor compared to the NEPA Baseline. Oil spills at the tank farms would be contained and would have no impacts to biological communities. Spills from buried pipelines would also be contained on land and would have no impacts to biological communities. Oil spills from the two above-ground pipeline segments into Harbor waters would be unlikely to occur (less than once in over a million years); however, if such a spill did occur from a Reduced Project pipeline rupture, impacts in waters of the Inner Harbor would be significant for local intertidal communities. An MGO spill during barge transit within the Harbor also could cause substantial disruption of local biological communities, resulting in a significant impact as described for the proposed Project.

Mitigation Measures

No mitigation is feasible for significant crude oil and MGO spill impacts to local marine communities. However, implementation of **MM BIO-1.2c** would reduce the potential for impacts from an oil spill in the Outer Harbor to marine birds using the Pier 300 Shallow Water Habitat. No mitigation is required for the less than significant impacts of crude oil spills to other local biological communities. Existing regulations would reduce but not eliminate the potential for introduction of invasive species via vessels. Due to a lack of proven technology, no feasible mitigation is currently available to prevent introduction of invasive species via vessel hulls. New technologies are being explored, and if methods become available in the future they would be implemented as required at that time. No mitigation is required for the less than significant impacts from runoff and habitat alteration.

Residual Impact

As described for the proposed Project, residual impacts of most small spills would be less than significant while impacts of worst case crude oil spills on birds and intertidal invertebrates, MGO spills on local biological communities, and introduction of invasive species have the potential to be significant and unavoidable.

For runoff of pollutants and habitat alteration, residual impacts would be less than significant.

3.3.4.3.4 Summary of Impact Determinations

Table 3.3-~~3~~4 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 3.3.4.3.3. 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, or City of Los Angeles significance criteria, Port criteria, and the scientific judgment of the report preparers.

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, or City of Los Angeles significance criteria, Port 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. Note that impact descriptions for each of the alternatives are the same as for the proposed Project, unless otherwise noted.

Table 3.3-~~3~~4: 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	**BIO-1.1:** Construction of proposed Project facilities could affect individuals of or habitat for the California least tern and other special status species.	CEQA: California Least Tern: **Potential for significant** impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern, Black Skimmer, Burrowing Owl: **MM BIO-1.1a**: Monitor the California Least Tern and Other Bird Nesting **MM BIO-1.1b**: Stone Column Installation Monitoring **MM BIO-1.1c**: Construction Schedule **MM BIO-1.1d**: Construction Contractor Environmental Training **MM BIO-1.1e**: Perches **MM BIO-1.1f**: Lighting **MM BIO-1.1g**: Vegetation Clearing **MM BIO-1.1h**: Protection of Special Status Species Nesting Birds **MM BIO-1.1i**: Protection of California Least Tern Nesting **MM BIO-1.1j**: Noise Buffer Other Special Status Species: **MM BIO-1.1k**: Noise Reduction during Pile Driving ~~Mitigation not required~~	CEQA: California Least Tern: Less than significant impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: Less than significant impact Other Special Status Species: Less than significant impact

Table 3.3-43. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
Proposed Project (continued)	**BIO-1.1 (continued)**	NEPA: California Least Tern: **Potential for significant** impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern, Black Skimmer, Burrowing Owl: **MM BIO-1.1a** through **MM BIO-1.1j** Other Special Status Species: ~~Mitigation not required~~**MM BIO-1.1k**	NEPA: California Least Tern: Less than significant impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: Less than significant impact Other Special Status Species: Less than significant impact
	BIO-2.1: Construction of proposed Project facilities would not substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands.	CEQA: Less than significant impact	**MM BIO-1.1k** ~~Mitigation not required~~	CEQA: Less than significant impact
		NEPA: Less than significant impact	**MM BIO-1.1k**~~Mitigation not required~~	NEPA: Less than significant impact
	BIO-3.1: Construction of proposed Project facilities would not interfere with any wildlife migration/movement corridors.	CEQA: No impact	Mitigation not required	CEQA: No impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-4.1: Proposed Project construction activities could substantially disrupt local biological communities.	CEQA: **Potential for significant** impact	**MM BIO-1.1g** and **MM BIO-1.1h**	CEQA: Less than significant impact
		NEPA: **Potential for significant** impact	**MM BIO-1.1g** and **MM BIO-1.1h**	NEPA: Less than significant impact

Table 3.3-43. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
Proposed Project (continued)	**BIO-1.2:** Operation of proposed Project facilities could affect individuals of or habitat for the California least tern and other special status species.	CEQA: California Least Tern: **Potential for significant** impact California Brown Pelican: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern: **MM BIO-1.2a:** Structure Perches **MM BIO-1.2b:** Predator Control **MM BIO-1.2c:** Oil Spill Containment **MM BIO-1.2d**: Security Lighting **MM BIO-1.2e**: Operations Personnel Environmental Training California Brown Pelican: **MM BIO-1.2c** Other Special Status Species: **MM BIO-1.2f:** Vessel Speed Reduction Program	CEQA: California Least Tern: **Significant** and unavoidable impact California Brown Pelican: **Significant** and unavoidable impact Other Special Status Species: Less than significant impact
		NEPA: California Least Tern: **Potential for significant** impact California Brown Pelican: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern: **MM BIO-1.2a** through **MM BIO-1.2e** California Brown Pelican: **MM BIO-1.2c** Other Special Status Species: **MM BIO-1.2f**	NEPA: California Least Tern: **Significant** and unavoidable impact California Brown Pelican: **Significant** and unavoidable impact Other Special Status Species: Less than significant impact
	BIO-2.2: Operation of proposed Project facilities would have the potential to substantially reduce or alter a state-, federally-, or locally-designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: **Potential for significant** impact	**MM BIO-1.2c**	CEQA: **Significant** and unavoidable impact
		NEPA: **Potential for significant** impact	**MM BIO-1.2c**	NEPA: **Significant** and unavoidable impact

Table 3.3-43. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
Proposed Project (continued)	**BIO-3.2:** Operation of proposed Project facilities would not interfere with wildlife migration/movement corridors.	CEQA: No impact	Mitigation not required	CEQA: No impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-4.2: Proposed Project operations, including accidental oil spills and introduction of invasive species, have the potential to substantially disrupt local biological communities.	CEQA: Oil Spills: **Potential for significant** impact Runoff of Pollutants: Less than significant impact Invasive Species: **Potential for significant** impact Habitat Alteration: Less than significant impact	Oil Spills: **MM BIO-1.2c** Runoff of Pollutants: Mitigation not required Invasive Species: None feasible Habitat Alteration: Mitigation not required	CEQA: Oil Spills: **Significant** and unavoidable impact Runoff of Pollutants: Less than significant impact Invasive Species: **Significant** and unavoidable impact Habitat Alteration: Less than significant impact
		NEPA: Oil Spills: **Potential for significant** impact Runoff of Pollutants: Less than significant impact Invasive Species: Less than significant impact Habitat Alteration: Less than significant impact	Oil Spills: **MM BIO-1.2c** Runoff of Pollutants: Mitigation not required Invasive Species: Mitigation not required Habitat Alteration: Mitigation not required	NEPA: Oil Spills: **Significant** and unavoidable impact Runoff of Pollutants: Less than significant impact Invasive Species: Less than significant impact Habitat Alteration: Less than significant impact

Table 3.3-43. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
No Federal Action/No Project Alternative	**BIO-1:** Construction and operation of the No Federal Action/No Project Alternative could affect individuals of or habitat for the California least tern and other special status species.	CEQA: California Least Tern: **Potential for significant** impact California Brown Pelican: **Potential for significant** impact Black Skimmer, Burrowing Owl: **Potential for significant** impact Other Special Status Species: Less than significant impact	**MM BIO-1.1a** **MM BIO-1.1c** **MM BIO-1.1e** **MM BIO-1.1f** **MM BIO-1.1g** **MM BIO-1.1h** **MM BIO-1.1i** **MM BIO-1.2b** **MM BIO-2**: Container Movement **MM BIO-3**: Trash **MM BIO-4**: Oil Spill Containment **MM BIO-5**: Construction and Operations Personnel Environmental Training	CEQA: California Least Tern: **Significant** and unavoidable impact California Brown Pelican: **Significant** and unavoidable impact Black Skimmer, Burrowing Owl: Less than significant impact Other Special Status Species: Less than significant impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-2: Construction and operation in the No Federal Action/No Project Alternative would have the potential to substantially reduce or alter a state-, federally-, or locally-designated natural habitat, special aquatic site, or plant community, including wetlands.	CEQA: **Potential for significant** impact	**MM BIO-4**	CEQA: **Significant** and unavoidable impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-3: Construction and operation of No Federal Action/No Project Alternative facilities would not interfere with any wildlife migration/movement corridors.	CEQA: No impact	Mitigation not required	CEQA: No impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-4.1: No Federal Action/No Project Alternative construction activities would not substantially disrupt local biological communities.	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: No impact	Mitigation not required	NEPA: No impact

Table 3.3-43. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
No Federal Action/No Project Alternative (continued)	**BIO-4.2:** No Federal Action/No Project operations, including accidental oil spills and introduction of invasive species, have the potential to substantially disrupt local biological communities.	CEQA: Oil Spills: **Potential for significant** impact Runoff of Pollutants: Less than significant impact Invasive Species: **Potential for significant** impact	Oil Spills: **MM BIO-4** Runoff of Pollutants: Mitigation not required Invasive Species: None feasible	CEQA: Oil Spills: **Significant** and unavoidable impact Runoff of Pollutants: Less than significant impact Invasive Species: **Significant** and unavoidable impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
Reduced Project Alternative	**BIO-1.1:** Construction of the Reduced Project Alternative could affect individuals of or habitat for the California least tern and other special status species.	CEQA: California Least Tern: **Potential for significant** impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern, Black Skimmer, Burrowing Owl: **MM BIO-1.1a** through **MM BIO-1.1j** Other Special Status Species: ~~Mitigation not required~~**MM BIO-1.1k**	CEQA: California Least Tern: Less than significant impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: Less than significant impact Other Special Status Species: Less than significant impact
		NEPA: California Least Tern: **Potential for significant** impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern, Black Skimmer, Burrowing Owl: **MM BIO-1.1a** through **MM BIO-1.1j** Other Special Status Species: **MM BIO-1.1k**~~Mitigation not required~~	NEPA: California Least Tern: Less than significant impact California Brown Pelican: Less than significant impact Western Snowy Plover: No impact Black Skimmer, Burrowing Owl: Less than significant impact Other Special Status Species: Less than significant impact

Table 3.3-~~43~~. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
Reduced Project Alternative (continued)	**BIO-2.1:** Construction of Reduced Project Alternative facilities would not substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands.	CEQA: Less than significant impact	**MM BIO-1.1k**~~Mitigation not required~~	CEQA: Less than significant impact
		NEPA: Less than significant impact	**MM BIO-1.1k**~~Mitigation not required~~	NEPA: Less than significant impact
	BIO-3.1: Construction of Reduced Project Alternative facilities would not interfere with any wildlife migration/movement corridors.	CEQA: No impact	Mitigation not required	CEQA: No impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-4.1: Reduced Project Alternative construction activities could substantially disrupt local biological communities.	CEQA: **Potential for significant** impact	**MM BIO-1.1g** and **MM BIO-1.1h**	CEQA: Less than significant impact
		NEPA: **Potential for significant** impact	**MM BIO-1.1g** and **MM BIO-1.1h**	NEPA: Less than significant impact
	BIO-1.2: Operation of the Reduced Project Alternative could affect individuals of or habitat for the California least tern and other special status species.	CEQA: California Least Tern: **Potential for significant** impact California Brown Pelican: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern: **MM BIO-1.2a** through **MM BIO-1.2e** California Brown Pelican: **MM BIO-1.2c** Other Special Status Species: **MM BIO-1.2f**	CEQA: California Least Tern: **Significant** and unavoidable impact California Brown Pelican: **Significant** and unavoidable impact Other Special Status Species: Less than significant impact
		NEPA: California Least Tern: **Potential for significant** impact California Brown Pelican: **Potential for significant** impact Other Special Status Species: Less than significant impact	California Least Tern: **MM BIO-1.2a** through **MM BIO-1.2e** California Brown Pelican: **MM BIO-1.2c** Other Special Status Species: **MM BIO-1.2f**	NEPA: California Least Tern: **Significant** and unavoidable impact California Brown Pelican: **Significant** and unavoidable impact Other Special Status Species: Less than significant impact

Table 3.3-43. Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.3 Biological Resources (continued)				
Reduced Project Alternative (continued)	**BIO-2.2:** Operation of Reduced Project Alternative facilities would have the potential to substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands.	CEQA: **Potential for significant** impact	**MM BIO-1.2c**	CEQA: **Significant** and unavoidable impact
		NEPA: **Potential for significant** impact	**MM BIO-1.2c**	NEPA: **Significant** and unavoidable impact
	BIO-3.2: Operation of Reduced Project Alternative facilities would not interfere with any wildlife migration/movement corridors.	CEQA: No impact	Mitigation not required	CEQA: No impact
		NEPA: No impact	Mitigation not required	NEPA: No impact
	BIO-4.2: Reduced Project Alternative operations, including accidental oil spills and introduction of invasive species, have the potential to substantially disrupt local biological communities.	CEQA: Oil Spills: **Potential for significant** impact Runoff of Pollutants: Less than significant impact Invasive Species: **Potential for significant** impact Habitat Alteration: Less than significant impact	Oil Spills: **MM BIO-1.2c** Runoff of Pollutants: Mitigation not required Invasive Species: None feasible Habitat Alteration: Mitigation not required	CEQA: Oil Spills: **Significant** and unavoidable impact Runoff of Pollutants: Less than significant impact Invasive Species: **Significant** and unavoidable impact Habitat Alteration: Less than significant impact
		NEPA: Oil Spills: **Potential for significant** impact Runoff of Pollutants: Less than significant impact Invasive Species: **Potential for significant** impact Habitat Alteration: Less than significant impact	Oil Spills: **MM BIO-1.2c** Runoff of Pollutants: Mitigation not required Invasive Species: None feasible Habitat Alteration: Mitigation not required	NEPA: Oil Spills: **Significant** and unavoidable impact Runoff of Pollutants: Less than significant impact Invasive Species: **Significant** and unavoidable impact Habitat Alteration: Less than significant impact

3.3.4.4 Mitigation Monitoring

Significant impacts have the potential to occur during proposed Project construction and operations. The following measures would be incorporated into contract specifications to ensure impacts to biological species are minimized to the greatest extent feasible.

Note that **MM 4D-7** and **MM 4D-9** from the Deep Draft FEIS/FEIR are applicable to impacts of the proposed Project and Reduced Project Alternative. However, the more project-specific measures below cover the intent of **MM 4D-7** and **MM 4D-9**, so they are not included in the list of mitigation measures below.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR

Proposed Project Impact BIO-1.1: Construction of proposed Project facilities could affect individuals of or habitat for the California least tern and other special status species.	
MM BIO-1.1a: Monitor California Least Tern and Other Bird Nesting	
Mitigation Measure	A qualified least tern biologist hired by the Port shall monitor the California least tern and other special status bird nesting during construction activities on Pier 400, including installation of Pipeline Segment 1 to Tank Farm Site 2 and use of staging area 412 ~~that would occur from April through August~~. Monitoring shall occur from 2 weeks prior to the nesting season start (April) to the end of the nesting season (September or when the last bird has vacated the site and no birds return for at least two weeks). Monitoring shall occur at a minimum of three days a week during the nesting season, which, for the least terns, generally extends from mid-May through the beginning of August. In the event of an imminent threat to nesting special status species, and the Construction Manager is not immediately available, the monitor shall have the authority to redirect construction activities. If construction activities need to be redirected to prevent impacts to special status birds, the monitor shall immediately contact the LAHD Environmental Management Division, Port Inspector, and Construction Manager. The Construction Manager has the authority to halt construction if determined to be necessary.
Timing	During Project construction on Pier 400 and along the Pipeline Segment 1 route.
Methodology	The construction contractor shall instruct construction personnel as part of normal construction procedures. LAHD shall arrange for the presence of the monitor during construction activity.
Responsible Parties	Construction contractor; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts on biological resources during construction to less-than-significant. Based on existing (2006 and 2007) conditions at Tank Farm Site 1 (vegetated), impacts to black skimmer nesting would be less than significant. This does not account for potential future clearing.
MM BIO-1.1b: Stone Column Installation Monitoring	
Mitigation Measure	At Tank Farm Site 1, no stone column construction shall occur at night (sunset to sunrise), and if possible, stone column construction during daytime hours should be conducted outside the least tern nesting season. If stone column installation is unavoidable during the nesting season, the work shall be phased so that installation nearest the nesting site is conducted prior to or after the nesting season, and a qualified biologist shall monitor the least terns at the nesting site during stone column installation to identify adverse reactions of the birds to this activity. If the terns react adversely to work at any of these sites, work will be temporarily stopped. The LAHD Environmental Management Division, least tern biologist, and Construction Manager shall confer with the USFWS and CDFG regarding necessary further actions.
Timing	During stone column installation at Tank Farm Site 1.
Methodology	The construction contractor shall instruct construction personnel as part of normal construction procedures. LAHD shall arrange for the presence of the monitor during construction activity.
Responsible Parties	Construction contractor; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts on biological resources during construction to less than significant.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
MM BIO-1.1c: Construction Schedule.	
Mitigation Measure	All construction activities that are within 200 ft (61 m) of the California least tern nesting site and foraging areas shall be scheduled to occur between September and March, unless otherwise approved by the USFWS and CDFG. This includes installation and removal of mooring piles as well as gravel delivery at staging area 412 (See Port brochure in Appendix J).
Timing	During proposed Project construction at Tank Farm Site 1 on Pier 400 and along the Pipeline Segment 1 route.
Methodology	The construction contractor shall be responsible for scheduling the construction activity during the allowed time periods and for instructing construction personnel on least tern sensitivity issues to be observed as part of normal construction procedures. LAHD shall perform periodic inspections to ensure the schedule is being followed.
Responsible Parties	Construction contractor; LAHD.
Residual Impacts	Implementation of this measure would reduce construction impacts on special status species to less than significant.
MM BIO-1.1d: Construction Contractor Environmental Training.	
Mitigation Measure	The Port shall provide environmental training by a qualified biologist to all construction contractor personnel working at the site. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and other special status species (e.g., black skimmer and burrowing owl) and measures required to avoid or minimize the potential for impacts to these species. The latter measures shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals during construction; prohibition of pets or animals of any kind during work on Pier 400; limiting activities within 200 ft (61m), or other established buffer distance, of the nesting site from March through August, to the extent feasible; and scheduling construction activities that would be near the nesting site for the period between September and March.
Timing	Prior to and during proposed Project construction.
Methodology	The Port shall provide the qualified biologist to give the environmental training to all construction contractor personnel working at the site. LAHD shall perform periodic inspections to ensure this measure is being implemented.
Responsible Parties	Construction contractor; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts on biological resources to less than significant.
MM BIO-1.1e: Perches.	
Mitigation Measure	When California least terns are present at the nesting site, idle construction equipment and stockpiles of materials exceeding approximately 8 ft (2.4 m) in height shall be placed so they do not provide perches for birds that could prey on least terns.
Timing	During proposed Project construction at Tank Farm Site 1 on Pier 400 when least terns are present at the nesting site.
Methodology	The construction contractor shall instruct construction personnel on these requirements as part of normal construction procedures. LAHD shall perform periodic inspections to ensure these measures are being implemented.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
Responsible Parties	Construction contractor; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts to the least tern to less than significant.
MM BIO-1.1f: Lighting.	
Mitigation Measure	Night time construction at Tank Farm Site 1 and construction staging area 412 during the least tern nesting season should be avoided. All lighting (temporary and security) shall be directed away from the California least tern nesting site and shielded to minimize increased light in the nesting area.
Timing	During proposed Project construction at Tank Farm Site 1 and use of staging area 412 on Pier 400 when least terns are present at the nesting site.
Methodology	The construction contractor shall instruct construction personnel on these requirements as part of normal construction procedures. LAHD shall perform periodic inspections to ensure these measures are being implemented.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Implementation of this measure would reduce impacts to the least tern to less than significant.
MM BIO-1.1g: Vegetation Clearing.	
Mitigation Measure	Vegetation growing at Tank Farm Site 1 shall be cleared immediately prior to construction activities occurring from April through August to discourage and protect least terns and black skimmers from nesting within the work area. Areas cleared at other times of the year will not be left barren and vacant during the nesting season.
Timing	During proposed Project construction at Tank Farm Site 1 on Pier 400.
Methodology	The construction contractor shall instruct construction personnel on these requirements as part of normal construction procedures. LAHD shall perform periodic inspections to ensure these measures are being implemented.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Implementation of this measure would reduce impacts to the black skimmer and least tern to less than significant.
MM BIO-1.1h: Protection of Special Status Species Nesting Birds.	
Mitigation Measure	To avoid impacts to nesting special status species, such as the California least tern, black skimmer, and burrowing owl, a preconstruction survey shall be conducted by a qualified biologist if construction commences during the normal nesting season for most bird species (February 1 to August 1) to determine if any are nesting there. If any nesting is found, a buffer area of 200 ft (61 m) shall be established and protective measures shall be finalized in coordination with USFWS and CDFG (and the USACE for federally listed species). If any nesting is found, an initial buffer area of 200 ft (61 m) shall be established, and the biological monitor would work with the LAHD Environmental Management Division (EMD) and their CLT consultant, Port Inspector, and Construction Manager to ensure protection of the least terns while nesting. As appropriate, the USACE, USFWS, and CDFG would be consulted regarding the safe distance setback requirements. Nesting birds shall be protected until nesting is complete or young have fledged as determined by a qualified biologist.~~Nesting birds shall be protected until nesting is complete or young have fledged as determined by a qualified biologist.~~

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
Timing	Prior to construction at Tank Farm Site 1 on Pier 400.
Methodology	The construction contractor shall instruct construction personnel as part of normal construction procedures. LAHD shall arrange for the presence of the qualified biologist prior to construction.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Implementation of this measure would reduce impacts to the least tern, black skimmer, and burrowing owl to less than significant.
MM BIO-1.1i: Protection of California Least Tern Nesting.	
Mitigation Measure	During construction, no unauthorized vehicles or persons shall be allowed within 200 ft (61 m) ~~100 ft (30 m)~~ of the east side and northeast corner of the least tern nesting site (the "at grade portion") during the nesting season. Signs shall be posted, and barriers (e.g., temporary fencing) shall be provided if signage is not adequate.
Timing	During proposed Project construction at Tank Farm Site 1 on Pier 400.
Methodology	The construction contractor shall instruct construction personnel on these requirements as part of normal construction procedures. LAHD shall perform periodic inspections to ensure these measures are being implemented.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Implementation of this measure would reduce impacts to the least tern to less than significant.
MM BIO-1.1j: Noise Buffer.	
Mitigation Measure	Construction of the north-south oriented containment dikes at Tank Farm Site 1 should occur early in site development to aid as noise buffers during construction.
Timing	During proposed Project construction at Tank Farm Site 1 on Pier 400.
Methodology	The construction contractor shall instruct construction personnel on these requirements as part of normal construction procedures. LAHD shall perform periodic inspections to ensure these measures are being implemented.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Implementation of this measure would reduce impacts to the least tern to less than significant.
MM BIO-1.1k: Noise Reduction during Pile Driving. (Also applies to Impact BIO-2.1.)	
Measure	The contractor shall be required to use sound abatement techniques to reduce both noise and vibrations from pile driving activities. Sound abatement techniques shall include, but are not limited to, vibration or hydraulic insertion techniques, drilled or augured holes for cast-in-place piles, bubble curtain technology, and sound aprons where feasible. At the initiation of each pile driving event, the pile driving shall also employ a "soft-start" in which the hammer is operated 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. In addition, a qualified biologist shall be required to monitor the area in the vicinity of pile driving activities for any fish kills during pile driving. If there are any reported fish kills, pile driving shall be halted and the USACE and NMFS shall be notified via the Port's Environmental Management Division. The biological monitor shall also note (surface scan only) whether marine mammals are present within 100 meters of the pile driving, and if any are observed, temporarily halt pile driving until the observed mammals move beyond this distance.
Timing	During the bid process and during construction.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
Methodology	The construction contractor shall ensure that the proposed pile driving equipment and measures are used during construction. The LAHD shall evaluate the contractor proposals with regard to reducing pile driving noise. The LAHD would subsequently perform periodic inspections to ensure that the approved equipment and methods are being used.
Responsible Parties	Construction contractor; LAHD.
Proposed Project Impact BIO-1.2: Operation of proposed Project facilities would affect individuals of or habitat for the California least tern and other sensitive species.	
MM BIO-1.2a: Structure Perches.	
Mitigation Measure	The portions of all structures (buildings, lights, etc.) at the proposed Tank Farm Site 1 on Pier 400 that have a direct line of sight to the California least tern nesting site shall be designed to prevent birds from perching on them. The prevention measures cannot be specified at this time but shall be those approved by the USFWS at the time of installation (e.g., Nixalite currently used on high mast lights) and shall be monitored during the least tern nesting season to verify that predatory birds are not perching on proposed Project structures and to identify repairs needed to keep the measures in good working order. Any such repairs will be implemented immediately (i.e., within one day when least terns are present).
Timing	Prior to issuance of construction permits (design of structures) and during proposed Project operation (monitor prevention measures).
Methodology	The project applicant shall prepare and submit detailed plans for approval identifying prevention measures for all Pier 400 Tank Farm Site 1 structures. CDFG, USFWS, and LAHD shall review and approve these plans. LAHD shall arrange for the presence of the monitor during operations.
Responsible Parties	Project applicant; CDFG; USFWS; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts on the least tern nesting area from predatory birds to less than significant.
MM BIO-1.2b: Predator Control.	
Mitigation Measure	A qualified biologist shall monitor Tank Farm Site 1 for predators during the California least tern nesting season. Any predators found will be controlled in coordination with CDFG and USFWS.
Timing	During proposed Project operation (monitor and remove predators).
Methodology	The project applicant shall prepare a predator control plan for approval by the CDFG, USFWS, and LAHD.
Responsible Parties	Project applicant; CDFG; USFWS; LAHD. LAHD shall arrange for the presence of the monitor during operations.
Residual Impacts	Implementation of this measure would reduce the potential for impacts of predators on least terns to less than significant.
MM BIO-1.2c: Oil Spill Containment.	
Mitigation Measure	If a project-related oil spill occurs during the least tern nesting season and has the potential to enter the Pier 300 Shallow Water Habitat, booms shall be deployed to prevent oil from entering this important foraging area. The applicant shall ensure quick deployment of oil booms at the south entrance of the Pier 300 Shallow Water Habitat or at the causeway gap bridge, either through storage of booms at the south entrance to the Pier 300 Shallow Water Habitat and at the causeway gap bridge or through deployment at these locations in accordance with the approved oil spill response plan.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
Timing	Prior to operations (included in oil spill response plan) and during operations.
Methodology	The project applicant shall prepare and submit detailed plans for approval identifying oil spill containment measures for the Pier 300 Shallow Water Habitat. CDFG and LAHD shall review and approve these plans.
Responsible Parties	Project applicant; CDFG; LAHD.
Residual Impacts	Implementation of this measure would reduce, but not eliminate, the potential for effects of oil spills on the California least tern and California brown pelican. Residual impacts could be significant and unavoidable.
MM BIO-1.2d: Security Lighting.	
Mitigation Measure	Security lighting standards on the eastern side of Tank Farm Site 1 near the least tern nesting site shall be no greater than 30 ft (9.1 m) in height and directed away from the nesting site.
Timing	During construction.
Methodology	The project applicant shall prepare and submit detailed plans for the lighting. LAHD shall review and approve these plans.
Responsible Parties	Project applicant; LAHD.
Residual Impacts	Implementation of this measure would reduce the potential for impacts of lighting on least terns to less than significant.
MM BIO-1.2e: Operations Personnel Environmental Training.	
Mitigation Measure	The Port shall provide environmental training by a qualified biologist to all operational workers at the PLAMT Pier 400 Marine Terminal and Tank Farm Site 1. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and measures required to avoid or minimize the potential for adverse effects to the species. The latter measure shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals; prohibition on bringing pets or animals of any kind to work on Pier 400; and scheduling significant maintenance/construction activities that would occur near the nesting site for the period between September and March.
Timing	Annually during proposed Project operations of Tank Farm Site 1 and the Marine Terminal on Pier 400.
Methodology	LAHD shall include the environmental training requirement in the tenant lease agreement.
Responsible Parties	Project applicant; LAHD shall arrange for the presence of the qualified biologist during operations.
Residual Impacts	Implementation of this measure would further reduce the potential for impacts of operations on least terns.
MM BIO-1.2f: Vessel Speed Reduction Program.	
Mitigation Measure	All ships calling (100 percent) at Berth 408 shall comply with the expanded VSR Program of 12 knots between 40 nm from Point Fermin and the Precautionary Area from Year 1 of operation.
Timing	During operations.
Methodology	LAHD shall require VSRP as a requirement of the applicant's lease.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
Responsible Parties	PLAMT/LAHD
Residual Impacts	Less than Significant.
No Federal Action/No Project Alternative Impact BIO-1: Construction and operation of No Federal Action/No Project Alternative facilities on Pier 400 could affect individuals of or habitat for the California least tern and other special status species. In addition to **MM BIO-2** through **MM BIO-5** detailed below, **MM BIO-1.1a, MM BIO-1.1c, MM BIO-1.1e** through **MM BIO-1.1i,** and **MM BIO-1.2b** would also apply	
MM BIO-2: Container Movement.	
Mitigation Measure	Containers shall be parked at least 200 ft (61 m), or other buffer distance established through consultation with USFWS and CDFG, from the western edge of the California least tern nesting area from April through August. No movement activities shall occur within the nesting site buffer during that time.
Timing	During No Federal Action/No Project Alternative operations.
Methodology	LAHD shall include restrictions on container parking and movement in the lease agreement for the site. Lessee will be responsible for implementing the measures.
Responsible Parties	LAHD; lessee.
Residual Impacts	Implementation of this measure would reduce impacts on the least tern to less than significant.
MM BIO-3: Trash.	
Mitigation Measure	Trash shall be removed from the Pier 400 temporary container storage area at least weekly from April through August and monthly the remainder of the year to minimize predator use of the area.
Timing	During No Federal Action/No Project Alternative operations on Pier 400.
Methodology	Lessee will implement trash pickup. LAHD shall include trash clean-up specifications in lease agreement and will perform periodic inspections to ensure these measures are being implemented.
Responsible Parties	Lessee; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts to the least tern to less than significant.
MM BIO-4: Oil Spill Containment.	
Mitigation Measure	Containment booms shall be stored at the south entrance to the Pier 300 Shallow Water Habitat and at the causeway gap bridge. If a project-related oil spill occurs during the least tern nesting season and has the potential to enter the Pier 300 Shallow Water Habitat, these booms shall be deployed to prevent oil from entering this important foraging area.
Timing	Prior to operations (to be included in an oil spill response plan) and during operations
Methodology	LAHD shall prepare and submit detailed plans for approval identifying oil spill containment measures for the Pier 300 Shallow Water Habitat. CDFG shall review and approve these plans.
Responsible Parties	CDFG; LAHD.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR (continued)	
Residual Impacts	Implementation of this measure would reduce, but not eliminate, the potential for effects of oil spills on the California least tern and California brown pelican. Residual impacts could be significant and unavoidable.
MM BIO-5: Construction and Operations Personnel Environmental Training.	
Mitigation Measure	The Port shall provide environmental training by a qualified biologist to all construction contractor and operations personnel working at the site. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and other special status species (e.g., black skimmer and burrowing owl) and measures required to avoid or minimize the potential for impacts to these species. The latter measures shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals during construction; prohibition of pets or animals of any kind to work on Pier 400; limiting activities within 200 ft (61m), or other established buffer distance, of the nesting site from March through August; and scheduling construction activities that would be near the nesting site for the period between September and March.
Timing	Prior to and during construction at the temporary container storage site on Pier 400 and annually during operation of the facility
Methodology	LAHD shall include the environmental training requirement in the lease agreement. The Port shall provide the qualified biologist to give the training to construction and operations personnel. LAHD shall perform periodic inspections to ensure this measure is being implemented.
Responsible Parties	Construction contractor; LAHD.
Residual Impacts	Implementation of this measure would reduce impacts on special status species.
Reduced Project Impact BIO-1.1: Construction of the Reduced Project Alternative could affect individuals of or habitat for the California least tern and other special status species. **MM BIO-1.1a** through **MM BIO-1.1~~j~~k** described for the proposed Project would apply.	
Reduced Project Impact BIO-2.1: Construction of Reduced Project Alternative facilities would not substantially reduce or alter a state-, federally-, or locally-designated natural habitat or plant community, including wetlands. **MM BIO-1.1k** described for the proposed Project would apply.	
Reduced Project Impact BIO-1.2: Operation of the Reduced Project Alternative could affect individuals of or habitat for the California least tern and other special status species. **MM BIO-1.2a** through **MM BIO-1.2f** described for the proposed Project would apply.	

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