Section 3.2
Biological Resources

SECTION SUMMARY

This section identifies the biological resources at the Project site and analyzes the effects of the proposed Project on biological resources at, and adjacent to, the Project site. The primary features of the proposed Project that could affect these resources include: removal of up to 900 creosote-treated timber piles, installation of steel pipe piles for the replacement platforms (including access trestles and catwalks), installation of pipe piles and platforms for new mooring dolphins, dredging approximately 4,000 cubic yards of sediment that may slough during wharf demolition and loading platform construction (up to 2,000 cubic yards per platform), and operation of the terminal through 2048.

Section 3.2, Biological Resources, covers the following:

- the environmental setting in the harbor area;
- the terrestrial habitats and biological communities;
- the aquatic habitats and biological communities;
- vessel collisions with marine mammals;
- Essential Fish Habitat (EFH) and managed species found in the proposed Project vicinity;
- applicable local, state, and federal regulations and policies regarding biological resources that are applicable to construction or operational activities associated with the proposed Project;
- the methodology used to determine whether the proposed Project adversely affect biological resources in the at the Project site or Project area;
- an impact analysis of the proposed Project; and
- mitigation measures proposed to reduce any potential impacts, as applicable.

Key Points of Section 3.2:

The proposed Project would construct a MOTEMS-compliant wharf and mooring system for the Shell Marine Oil Terminal. Operations would be consistent with other uses and oil terminals in the vicinity of the proposed Project.

The proposed Project's impacts on biological resources in the Harbor would include temporary increases in turbidity, noise, and vibration from in-water construction; potential discharges from in-water construction equipment and land runoff; and vessel activity during construction and operation. These impacts would be less than significant except in the case of noise generated during pile-driving. Underwater noise from impact driving of steel piles at the Project site could potentially result in Level A injury and Level B harassment to marine mammals (dolphins, sea lions, and seals) in the immediate vicinity of the construction site. This would be considered a significant impact. Eelgrass occurs in several locations in the Port, including adjacent to Berth 169. Increased turbidity during pile removal, pile installation, and/or dredging could smother or otherwise inhibit eelgrass growth. This impact would also be considered significant. However, with implementation of mitigation measures MM BIO-1 and MM BIO-2, these impacts would be less than significant.

MM BIO-1: Protect Marine Mammals.

MM BIO-2: Protect Eelgrass.

Impacts from construction activities that have the potential to introduce or redistribute invasive species would be less than significant because the construction area would be surveyed to determine the presence of *Caulerpa* before in-water construction activities. Although the proposed Project would increase the annual ship calls (166 annual vessel calls) relative to the CEQA baseline (86 annual vessel calls), compliance with applicable regulations would limit the potential for introduction of nonnative species into the Harbor via ballast water or vessel hulls. The potential for introduction of exotic species via vessel hulls would be increased in proportion to the increase in number of vessels. However, vessel hulls are generally coated with antifouling paints and cleaned at intervals to reduce the frictional drag from growths of organisms on the hull, which would reduce the potential for transport of exotic species. For these reasons, the proposed Project has a low potential to increase the introduction of nonnative species into the Harbor that could substantially disrupt local biological communities; therefore, impacts would be less than significant.

3.2.1 Introduction

This section identifies the existing conditions of biological resources at the Project site and analyzes the effects of the proposed Project on biological resources at, and adjacent to, the Project site. The primary features of the proposed Project that could affect these resources include:

- Demolishing the timber wharf, including removal and disposal of approximately 900 creosote-treated timber piles,
- Installing steel pipe piles for the replacement platforms (including access trestles and catwalks),
- Installing pipe piles and platforms for new mooring dolphins,
- Dredging approximately 4,000 cubic yards of sediment that may slough during wharf demolition and loading platform construction (up to 2,000 cubic yards per platform); and
- Operating the terminal through 2048.
- A potential product spill.

3.2.2 Environmental Setting

The Port of Los Angeles (the Port) is part of the larger Los Angeles-Long Beach Port Complex (Port Complex) in the San Pedro Bay. The Port consists of approximately 7,500 acres of land and water, approximately 3,200 acres of which is open-water habitat. In addition to extensive industrial cargo facilities, the Port supports other water-related activities, such as sportfishing and commercial fishing, recreational boating, and maritime support facilities.

Harbor waters are also subjected to continuous vessel traffic and periodic construction or modification, such as dredging and filling. Ambient noise in San Francisco Bay/Oakland Harbor has been estimated at 120 to 155 dB_{PEAK} (or the peak sound pressure level in decibels) (ICF and Illingworth & Rodkin, 2009). A baseline hydroacoustic study in Cerritos Channel (in both Los Angeles and Long Beach Harbors) recorded L_{90} values (sound levels that were exceeded 90 percent of the time during the measurement period) of 120 to 132 decibels (dB) (Tetra Tech, 2011). By comparison, ambient underwater noise in the open ocean has been estimated at 74 to 100 dB_{PEAK} on the central California coast.

Over the years, the Ports of Los Angeles and Long Beach have worked with the state and federal resource agencies to conduct periodic evaluations of biological resources within the Port Complex to assess baseline conditions of the various harbor habitats. The most recent comprehensive biological surveys within the Port Complex were completed in 2014 (MBC, 2016). The waters immediately adjacent to the Project site (west of Berths 167–169) are classified as Inner Harbor, but waters south of the Project site in the Turning Basin are considered Outer Harbor (LAHD, 2004) (Figure 3.2-1). The two Inner Harbor stations near the Project site were used to characterize biological resources.

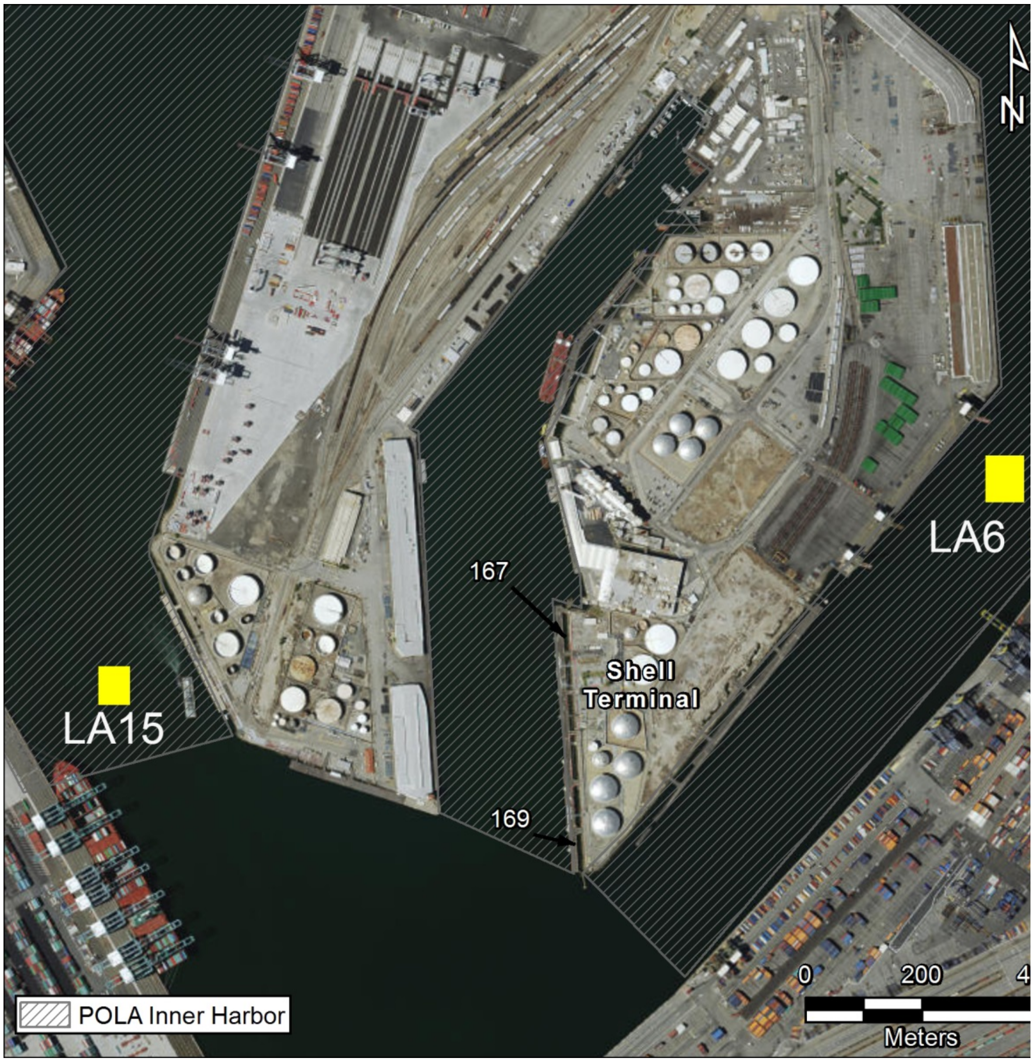

Figure 3.2-1: Location of the Project site in Los Angeles Harbor. Inner Harbor aquatic areas marked with cross hatched pattern, and non-hatched aquatic area is classified as Outer Harbor. Fish/invertebrate Stations LA6 and LA15 (MBC, 2016) marked with yellow squares.

Marine resources along the California Coast, and within the Harbor, fluctuate on both a seasonal basis due to differences such as water temperature and rainfall, and on an annual basis due to large-scale oceanographic processes such El Niño/La Nina events. In the Harbor, substantial improvements in water quality occurred in the period between the 1970s and mid-1980s as a result of the Clean Water Act of 1972 (CWA). Further improvements in marine resources have occurred since that time, though at a slower pace than in the previous period (MEC and Associates, 2002). The types of habitats (shallow and deep pelagic, benthic, riprap, and piling) in the Harbor, and most of the species associated with those habitats, have remained fairly stable over time, as described for each habitat below. Perhaps the most significant recent change has been the expansion of eelgrass habitat at Inner Cabrillo Beach and the Shallow Water Habitat/Seaplane Lagoon off Pier 300 (MEC and Associates, 2002; MBC, 2005; SAIC, 2010; MBC, 2016). The Shallow Water Habitat site off Pier 300 was constructed, and eelgrass (*Zostera marina*) was planted in winter 2002–2003, as mitigation for the Pier 400 project (which was implemented as part of the Los Angeles and Long Beach Harbors Deep Draft Navigation Improvements Project). The site was augmented with additional sediment and eelgrass plants in 2007 (SAIC, 2010).

Based on the information summarized above, data from 1999 to 2015 accurately reflect current environmental conditions in the Harbor because those conditions have remained relatively static or improved. Data from biological surveys prior to 1999 are used for context. The 2002 MEC report was the first survey that included quantification and identification of nonnative taxa that have been introduced over time to the Port Complex. Where possible, site-specific data from sampling locations (stations) adjacent to the Project site were used to characterize the biological communities.

3.2.2.1 Terrestrial Habitats

Most of the Project site and adjacent areas are developed and paved. As such, there are few areas with vegetation or terrestrial habitat on site (see Figure 2-1 in Chapter 2, Project Description of this Draft EIR). The wharf deck is paved with concrete and supported by timber piles. Based on biologist review of aerial photographs, the only visible vegetation within the terminal are some palm trees adjacent to one of the buildings.

3.2.2.2 Benthic Environments

3.2.2.2.1 Soft-Bottom Habitats

Benthic organisms are those associated with seafloor sediments. Those that live within soft sediments, primarily invertebrate species, are referred to as infauna, while those living on the sediment surface are referred to as epifauna. Benthic marine organisms are an important component of the food web and are indicators of environmental quality. Since the 1950s, improvements in water quality have aided the establishment of diverse assemblages of the benthic community in areas that were once largely devoid of marine life (MEC and Associates, 2002; SAIC, 2010; MBC, 2016).

In 2013–2014, infaunal abundance in the Port Complex was higher in summer than in spring, at Outer Harbor stations than at Inner Harbor stations, and at shallow stations than at deep stations (MBC, 2016). Overall, water circulation appears to influence infaunal communities. Abundance, species richness, diversity, and biomass were lower in the Inner Harbor, where most of the stations sampled were in dead-end slips and basins, than in the Outer Harbor.

In 2013–2014, the infauna station nearest to the Project site (Station LA15) was located approximately 0.4 mile west of Berths 167–169 at the entrance to West Basin at a depth of approximately 56 feet (MBC, 2016). In August 2013, 55 infaunal taxa were collected, and the most abundant species were the polychaete *Cossura* sp A, burrow pea crab (*Scleroplax granulata*), and ghost shrimp (*Neotrypaea* sp). In May 2014, both abundance and species richness (the number of species collected) were much lower than in summer; both were about six times lower than the values recorded in summer. The most abundant taxa in spring were the polychaete *Aphelochaeta petersenae* and the burrow pea crab. Only eight infaunal species collected in 2013–2014 were non-indigenous.

At Station LA6, approximately 0.5-mile northeast of Berths 167–169, 47 infaunal taxa were collected during the year-long study; 24 taxa in August 2013 and 34 taxa in May 2014 (MBC, 2016). The most abundant taxa in August were the Asian clam (*Theora* *lubrica*), the annelid *Pista wui*, and the annelid *Aphelochaeta glandaria* Cmplx. In May 2014 the most abundant species were the annelids *Paramage scutata*, *Aphelochaeta monilaris*, and *Pista wui*. Infaunal abundance at Station LA6 was higher in May (154 individuals) than in August (92 individuals).

In 2013–2014, the biomass of invertebrates in sediments at Station LA15 averaged 0.6 grams per 0.1 square meter (g/0.1 m^2) (MBC, 2016). Annelids (polychaetes) and mollusks comprised 60 percent and 21 percent, respectively, of the total biomass. At Station LA6, infaunal biomass averaged 3.11 g/0.1 m^2, and annelids accounted for 73 percent of the total biomass. 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).

Epifaunal invertebrates are associated with, but not living in, soft-bottom habitats. Epifaunal abundance varied spatially and temporally in the 2013–2014 surveys of the Port Complex. In 2013–2014, at total of 110 epibenthic macroinvertebrate taxa were collected throughout the Port Complex (MBC, 2016). Twelve taxa were collected at Station LA6 in spring and summer, while 10 epifaunal taxa were collected at Station LA15 in summer, and 20 taxa were collected at Station LA15 in spring. Xantus swimming crab (*Portunus xantusii*) was the most abundant epifaunal invertebrate collected at Station LA15 during both day and night trawls in summer, and during night in spring (MBC, 2016). During daytime in spring, the most abundant species was tuberculate pear crab (*Pyromaia tuberculata*). At Station LA6, the most abundant species were blackspotted bay shrimp (*Crangon nigromaculata*), blacktail bay shrimp (*Crangon nigricauda*), and Xantus swimming crab. At both stations combined, the most abundant species were blackspotted bay shrimp (34 percent of total abundance), blacktail bay shrimp (24 percent) and Xantus swimming crab (24 percent).

3.2.2.2.2 Hard Substrates

Surveys of aquatic invertebrate communities on riprap, pilings, and concrete were conducted at eight stations throughout the Port Complex in 2013–2014 (MBC, 2016). The surveys included quantitative observations by biologist-divers, as well as scraping samples that were preserved and analyzed in the laboratory. Elevations/depths of sampling stations were: the upper intertidal, middle-lower intertidal (mid-low), and subtidal zones.

During the 2013-2014 survey, the upper intertidal zone (as measured in the scraped quadrats) was dominated by the barnacles *Chthamalus fissus* and *Balanus glandula*, with the reddish lepton clam (*Lasaena adansoni*) abundant in scraped quadrats at several stations, and limpets (*Lottia* spp) frequently noted in photo quadrats (MBC, 2016). The dominant members of the lower intertidal and subtidal communities included the amphipods *Monocorophium acherusicum* (which was taken almost exclusively at one station in summer 2013) and *Caprella californica* (which was most common in spring 2013), unidentified harpacticoids in summer and the tanaids *Zeuxo normani* and *Zeuxo paranormani* during both seasons in the scrapings. In photo quadrats, sponges (Porifera), tube snails (*Serpulorbis squamigerus*) and barnacles were common at the lower intertidal level and sponges, cup corals (*Balanophyllia elegans* and *Corynactis californica*), gorgonians (Anthozoa), tube snails, California sea cucumbers (*Parastichopus californicus*) and sea urchins (*Strongylocentrotus* spp) were common at subtidal stations.

Hard substrate habitats that are shallow enough for light penetration also support algal communities. As would be expected, algae were uncommon at upper and lower intertidal stations in 2013–2014, but *Ulva* spp and other leafy green algae, larger brown algae like

Colpomenia spp, *Dictyopteris undulata*, *Dictyota flabellata*, giant kelp (*Macrocystis pyrifera*) and *Sargassum* spp, and articulated, crustose and turf red algae (Rhodophyta) were common at subtidal stations (MBC, 2016).

Overall, results suggested improved conditions in the riprap communities since 2000. The riprap studies in 2000 identified a more robust community in Outer Harbor areas compared with the Inner Harbor (MEC and Associates, 2002); however, in 2013–2014, as in 2008, the communities appeared to be relatively similar among locations with no distinct gradient between the Inner and Outer Harbors (SAIC, 2010; MBC, 2016).

Of the 558-species reported in scraped quadrat samples in 2013–2014, 18 were introduced, another 58 species were considered cryptogenic (of unknown origin), and 6 were unresolved (species complexes that may include introduced species), indicating up to 15 percent of the riprap biota was potentially nonnative in origin (MBC, 2016). The most conspicuous nonnative species observed during 2013–2014 were the bay mussel (or Mediterranean mussel, *Mytilus galloprovincialis*) and Pacific oyster (*Crassostrea gigas*), and the most frequently encountered species among the eight stations included the amphipod *Aoroides secundus* and the bryozoan *Watersipora arcuata*.

3.2.2.3 Water Column Habitats

Organisms in the water column include plankton (including fish eggs and larvae [ichthyoplankton], and small, free-floating plants [phytoplankton] and animals [zooplankton]), as well as juvenile and adult fish. Plankton abundances in the Inner Harbor vary seasonally, but the zooplankton community is dominated by copepods (Allan Hancock Foundation, 1980). 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 (MBC, 1984; MEC, 1988; MBC et al., 2007).

There is distinct stratification in the vertical distribution of ichthyoplankton in Los Angeles and Long Beach Harbors. In 2013–2014, fish eggs were nearly six times as abundant (2,265 eggs per 100 cubic meters [m^3]) in the neuston, or surface waters, then in midwater (342 eggs per 100 m^3) or epibenthos (382 eggs per 100 m^3) (MBC, 2016). Fish larvae, however, were more abundant in epibenthic tows (211 larvae per 100 m^3) than in midwater (112 larvae per 100 m^3) or in the neuston (120 larvae per 100 m^3). The overall weighted mean densities throughout the water column during summer, winter and spring sampling in 2013–2014 were 911,991 fish eggs and 9,998 fish larvae per 100 m^2 of surface area.

During three ichthyoplankton surveys throughout the Port Complex in 2013-2014, density of both fish eggs (average 22,302/100 m^2) and larvae (average 14,626/100 m^2 were highest during the winter 2014 survey, while mean egg densities were lowest (6,239/100 m^2) in spring 2014 and mean fish larvae densities were lowest (7,364/100 m^2) during summer 2013 (MBC, 2016). The most abundant larval fish taxa in 2013–2014 included CIQ gobies (gobies of the genus *Clevelandia*, *Ilypnus*, and *Quietula*), unidentified anchovies (Engraulidae), Combtooth Blennies (*Hypsoblennius* spp.), White Croaker (*Genyonemus lineatus*), Northern Anchovy (*Engraulis mordax*) and Bay Goby (*Lepidogobius lepidus*). Most of the fish eggs could not be identified during the study. In the water adjacent to the Project area at Stations LA6 and LA15 White Croaker comprised 31 percent of ichthyoplankton density collected over three seasons in 2013-2014, followed by unidentified anchovies (24 percent) and CIQ gobies (14 percent). Results from 2013–2014 were relatively similar to those recorded during three seasonal surveys in 2008 (SAIC, 2010), biweekly surveys in 2006 (MBC et al., 2007) and quarterly surveys in 2000 (MEC and Associates, 2002).

The Port Complex consists of habitat for more than 130 species of juvenile and adult fish; some of them are transient visitors and some are permanent residents (USACE and LAHD, 1980; Horn and Allen, 1981; Brewer, 1983; MEC, 1988; MEC and Associates, 2002; Allen and Pondella, 2006; SAIC, 2010, MBC, 2016). Several species, however, have dominated fish populations in the harbors: White Croaker, Northern Anchovy, Queenfish (*Seriphus politus*), Pacific Sardine (*Sardinops sagax*), and Topsmelt (*Atherinops affinis*) (Brewer, 1983; MEC and Associates, 2002; SAIC, 2010). In 2013–2014 these species, as well as California Grunion (*Leuresthes tenuis*), Pacific Mackerel (*Scomber japonicus*) and California Lizardfish (*Synodus lucioceps*) were also common (MBC, 2016). The Harbor also provides habitat for recreationally important species such as California Halibut (*Paralichthys californicus*), Barred Sand Bass (*Paralabrax nebulifer*), and Pacific Barracuda (*Sphyraena argentea*).

At Station LA15, located 0.4-mile west of the Project site at the entrance to West Basin, mean numbers of pelagic, or water column, fishes as sampled by lampara net[1] were 141 individuals during the day and 1,060 at night (MBC, 2016). At Station LA6, located 0.5-mile northeast of the Project site, mean numbers of pelagic fishes were 67 individuals during the day and 1,106 at night. The total numbers of species collected at Station LA15 were similar to the harbor-wide means: five species collected during the day and nine species at night (eleven species overall). At Station LA6, four species were collected during the day, and 10 were collected at night (10 species overall). The most abundant species collected by lampara off the Project site during both spring and summer were Northern Anchovy and Topsmelt (*Atherinops affinis*).

Abundance of demersal fishes, those that live and feed on or near the bottom, sampled by a bottom-sampling net (otter trawl) in 2013–2014 at Station LA15 was a mean of 41 individuals during the day and 78 at night (MBC, 2016). At Station LA6, abundance of fishes was a mean of 10 individuals during the day and 143 at night. The total number of species collected at Station LA15 was 15 species during the day, 16 at night and 19 overall. At Station LA6, seven species were collected during the day, 13 were collected at night, and 14 species were collected overall. The most abundant species collected by otter trawl at Station LA15 was California Lizardfish (*Synodus lucioceps*), and the most abundant species at Station LA6 was Northern Anchovy.

3.2.2.4 Water Birds

Numerous water-associated birds use the Harbor as residents and as seasonal visitors. Surveys in 2013 and 2014 recorded 96 bird species in the Port Complex (MBC, 2016). Waterfowl, gulls, and aerial fish foragers were the dominant groups observed throughout the Port Complex in 2000, 2008, and 2013–2014. Adjacent to the Project site, the most abundant water-associated birds, in order of decreasing abundance, were Western Gull (*Larus occidentalis*), California Brown Pelican (*Pelecanus occidentalis californicus*), Double-crested Cormorant (*Phalacrocorax auritus*), Heermann's Gull (*Larus heermanni*), and Eared Grebe (*Podiceps nigricolis*) (MBC, 2016). These species were observed during at least seven months of the survey year. Rock Dove (Rock Pigeon; *Columba livia*) was the second most abundant bird species observed near the proposed Project site during the year-long study, but it is not considered a water bird. The areas in

[1] A spoon-shaped, surrounding net typically used on schooling fish found in large dense shoals.

the Harbor with the highest reported bird observations in 2013–2014 were the Outer Harbor waters adjacent to Pier 400 and the Middle Breakwater, and the Main Channel.

3.2.2.5 Special-Status Species

Four state and federally listed threatened or endangered species have historically been observed, or have the potential to occur in the Port Complex (Table 3.2-1). One state and federally listed endangered bird species, the California Least Tern (*Sternula antillarum browni*), uses the Port Complex seasonally. The California Least Tern is present in the harbor area during its breeding season (April to September). The federally threatened Western Snowy Plover (*Charadrius alexandrinus nivosus*) is a transient migratory visitor, and a few individuals have been observed on Pier 400 in the last decade (Keane Biological Consulting, 2005, 2005b). Western Snowy Plover forages on sandy beaches, has occasionally been observed on Pier 400 at the California Least Tern nesting site (SAIC, 2010; Keane Biological Consulting, 2012), and has also been observed outside the Port Complex at Point Fermin and outer Cabrillo Beach (Ryan et al., 2009). Snowy Plover was not observed during the year-long bird surveys of 2007–2008 and 2013–2014 (SAIC, 2010; MBC, 2016). The state-listed endangered Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*) inhabits pickleweed marshes exclusively (USACE and LAHD, 1992). No suitable habitat for this species is present in the area of the proposed Project, and there have been no known sightings of this species in Los Angeles Harbor. A single Scripps's Murrelet (*Synthliboramphus scrippsi*) was observed in April 2014 in the open-water habitat at Fish Harbor (MBC, 2016). Scripps's Murrelet is listed as endangered by the state, and is a candidate for federal protection.

Table 3.2-1: Threatened and Endangered Bird Species in the Proposed Project Area.

Species	Status		Notes
	Federal	State	
California Least Tern	E	E	Breeds on Pier 400 from about approximately April through August; forages preferentially over shallow waters; No individuals observed near Berths 167–169 in 2013–2014 surveys.
Western Snowy Plover	T, BCC	--	Infrequent visitor to Harbor; observed on Pier 400. No observations during 2013–2014 surveys.
Belding's Savannah Sparrow	--	E	Inhabits pickleweed marsh. No individuals observed in 2013–2014.
Scripps's Murrelet	--	E	Single individual observed flying over Fish Harbor in April 2014.

Notes: E = Endangered, T = Threatened, SSC = CDFG Species of Special Concern, BCC = USFWS Birds of Conservation Concern. Designations from CDFG 2015a.

Data in Notes from MBC (2016) and Keane (2009, 2010).

There are multiple bird species that are not listed by the state or federal governments as threatened or endangered, but have special status designated by either the California Department of Fish and Wildlife (CDFW; state) or USFWS (federal) (Table 3.2-2) (CDFW, 2015b). These include:

- **CDFW Species of Special Concern:** Vertebrates with declining population levels, limited ranges, and/or continuing threats make them vulnerable to extinction.
- **CDFW Watch List:** Birds that are: (1) not on the Bird Species of Special Concern list, but were on previous lists, and have not been listed under the California Endangered Species Act (CESA); (2) were previously state or federally listed, and now are on neither list; or (3) are on the list of Fully Protected Species.
- **CDFW Fully Protected:** This was the state's initial effort to identify and protect animals that were rare or faced possible extinction. Most of the animals on the Fully Protected list were subsequently listed under state and/or federal ESAs. It is unlawful to take these species except with an authorization for necessary scientific research.
- **USFWS Birds of Conservation Concern:** Birds of Conservation Concern (BCC) are those identified by USFWS that represent the highest conservation priorities. The designation is meant to draw attention to species in need of conservation action.

Table 3.2-2: Special Status Bird Species (Designated by CDFW and USFWS) in the Proposed Project Area

Species	Status / Designation	Notes
Black Oystercatcher	USFWS – BCC	Nested in Port Complex in 2007–2008; no individuals observed near Berths 167–169 in 2013–2014.
Black Skimmer	CDFW – SSC, USFWS – BCC	Approx. 50 nests observed at Pier 400 in 2014; no individuals observed near Berths 167–169 in 2013–2014.
Brant	CDFW – SSC	Two individuals observed in April 2014; no observations near Berths 167–169.
Burrowing Owl	CDFW – SSC, USFWS – BCC	Observed on Pier 400 in 2007–2008; nesting status within the Port Complex unknown.
California Brown Pelican	CDFW – FP	Abundant throughout Port Complex.
Caspian Tern	USFWS – BCC	Nested on Pier 400 in 2011 and 2012. Two individuals observed off Berths 167–169 in May 2014.
Common Loon	CDFW – SSC	Fourteen individuals observed throughout Port Complex in 2013–2014; no observations near Berths 167–169.
Double-crested Cormorant	CDFW – Watch List	Among most abundant birds in the Harbor; fourth most abundant bird species observed near Berths 167–169 in 2013–2014.
Elegant Tern	CDFW – Watch List	Nested on Pier 400 in 1998–2005 and 2012; seven individuals observed off Berths 167–169 in September 2013.

Table 3.2-2: Special Status Bird Species (Designated by CDFW and USFWS) in the Proposed Project Area

Species	Status / Designation	Notes
Loggerhead Shrike	CDFW – SSC, USFWS – BCC	Observed in Inner Harbor areas of Port Complex in 2001–2002; no observations near Berths 167–169 in 2007–2008 or 2013–2014.
Long-billed Curlew	CDFW – Watch List, USFWS – BCC	No observations near Berths 167–169 in 2007–2008 or 2013–2014.
Merlin	CDFW – Watch List	One individual observed on riprap in Long Beach Outer Harbor in December 2007; no observations near Berths 167–169 in 2007–2008 or 2013-2014.
Osprey	CDFW – Watch List	Fifteen observations in Port Complex during 2013–2014; no observations near Berths 167–169.
Peregrine Falcon	CDFW – FP, USFWS – BCC	Nests on the Schuyler Heim and Gerald Desmond Bridges. Usually observed near nesting sites; single individual observed off Berths 167–169 in January 2014.

Notes: USFWS BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern; CDFW = California Dept. of Fish and Wildlife; SSC = Species of Special Concern; FP = Fully Protected.

Data in Notes from SAIC (2010), Keane (2009, 2010), eGIS (2015), and MBC (2016).

3.2.2.5.1 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 California Least Tern has been known to nest during the summer in the Los Angeles Harbor area since the late 1800s, with regular nest monitoring on Terminal Island since 1973 (Keane Biological Consulting, 2013). In 1979, LAHD began providing nesting habitat for the species and in 1984 entered into a Memorandum of Agreement (MOA) with USFWS, the U.S. Army Corps of Engineers (USACE), and CDFW (formerly California Department of Fish and Game) for management of a 6-hectare (15-acre) California Least Tern nesting site. In 1997, LAHD prepared a new nesting site located at the southern tip of Pier 400 (Keane Biological Consulting, 2013). Since 1997, the only successful California Least Tern nesting on Terminal Island has occurred at the Pier 400 nesting site.

California Least Terns are plunge divers that dive head first into water to catch small fish, including northern anchovies and Topsmelt. These schooling species are frequently very abundant in open water, although locations of the schools can be highly variable. California Least Terns have also been observed feeding on larval fish associated with kelp forests. Foraging studies conducted in the Harbor have demonstrated that Outer Harbor shallow water areas (less than 20 feet deep), especially near the nesting site, provide important foraging areas for the California Least Tern (Keane Biological Consulting, 1998). During harbor-wide least tern foraging studies in 2001 and 2002, very few foraging flights, dives, and transits were observed in Inner Harbor areas (Keane Biological Consulting, 2003). During a study of least tern foraging in 2014, there were no observed foraging flights or foraging dives at the two stations nearest the proposed Project site (eGIS, 2015).

3.2.2.5.2 Other Special-Status Bird Species

California Brown Pelican was previously federally listed as endangered and was a state Fully Protected species; however, this species was delisted by the state of California in

June 2009 and by USFWS in November 2009 as a result of population recovery. California Brown Pelican is present year-round throughout the Port Complex. It accounted for 9.6 percent of the total bird observations in 2013–2014, with most of the individuals observed roosting on the breakwaters of the Outer Harbor (MBC, 2016). Individual brown pelicans were observed in the waters off the Project site during nine of the twelve survey months in 2013–2014. This species was absent from January through March 2014, and was most abundant in September 2013 and August 2014.

Peregrine Falcon (*Falco peregrines*), which was previously listed as endangered, was delisted by USFWS in 1999 and by the state of California in November 2009 (CDFW, 2015). It is designated as Fully Protected by CDFW and a Bird of Conservation Concern by USFWS. Peregrine Falcon previously nested on the Schuyler Heim Lift Bridge and the Gerald Desmond Bridge (SAIC, 2010). However, no evidence of nesting was observed during the 2013–2014 study (MBC, 2016). This may be related, in part, to ongoing re-construction of both bridges. A single individual of this species was observed in the waters adjacent to the Project site during the January 2014 survey (MBC, 2016).

Black Oystercatcher (*Haematopus bachmani*) nested on the breakwaters during the 2000–2001 and 2007–2008 biological surveys of the Port Complex (SAIC, 2010). No nesting was observed during 2013–2014, but this species was observed during every survey month. However, no individuals were observed near the proposed Project site.

Black Skimmer (*Rynchops niger)* nested in the Harbor at Pier 400 from 1998 through 2000, but stopped nesting there after 2000 (SAIC, 2010). However, approximately 50 Black Skimmers nested at Pier 400 in 2014 (eGIS, 2015). No Black Skimmers were observed near Berths 167–169 during 2013–2014 (MBC, 2016).

Six Brant (*Branta bernicla*) were observed in Long Beach Harbor in February 2008, and two were seen in April 2014. This species (a "sea goose") is considered a common migrant offshore Los Angeles County, but is rarely observed in Harbor and estuarine habitats (SAIC, 2010; MBC, 2016). It was not observed near the proposed Project site.

The Burrowing Owl (*Athene cunicularia*) was sighted on Pier 400 in 2007 and 2008, but its nesting status within the Port Complex is unknown. It was not observed near the Project site in 2007–2008 (SAIC, 2010) or 2013–2014 (MBC, 2016).

Fourteen Common Loon (*Gavia immer*) were observed during the 2013–2014 bird surveys in the Port Complex; none of the observations were near the Project site (MBC, 2016).

Double-crested Cormorant (*Phalacrocorax auritus)* is one of the most abundant species in the Port Complex, and it nests on transmission towers in Long Beach Harbor. It was the most abundant special-status bird species observed near the Project site in 2013–2014 with 41 observations (MBC, 2016).

The Elegant Tern nested on Pier 400 from 1998 through 2005, but did not return to nest at that site from 2006 through 2011 (Keane Biological Consulting, 2009, 2010, 2013). However, approximately 58,000 Elegant Tern nested at Pier 400 in 2014 (eGIS, 2015). Seven Elegant Terns were observed near Berths 167–169 during bird surveys in 2013–2014 (all seven were observed during September 2013).

Caspian Terns nested on Pier 400 from 1997 until 2005, when they left the area due to a nocturnal predator. No Caspian Terns nested at Pier 400 from 2006 through 2010, but 50 nested in 2014 (Keane Biological Consulting, 2013; eGIS, 2015). Only two observations of this species were made near the Project site in 2013–2014 (MBC, 2016).

Loggerhead Shrike (*Lanius ludovicianus*) was observed in 2001 and 2002, but not during the latest yearlong bird study (MBC, 2016). In 1984, Loggerhead Shrike was one of only five bird species known to nest in the Port Complex (USACE, 1984), but it has not been observed nesting in the Port Complex since.

Long-billed Curlew (*Numenius americanus*) is common in Southern California, but it was not observed in the survey zone near the Project site in 2013–2014 (MBC, 2016).

Fifteen Osprey (*Pandion haliaetus*) were observed during all surveys in 2013–2014. However, no osprey observations were made near the proposed Project site (MBC, 2016).

3.2.2.6 Marine Mammals and Vessel Collisions

All marine mammals are protected under the Marine Mammal Protection Act (MMPA) of 1972, and some (Table 3.2-3) are also protected by the Endangered Species Act (ESA) of 1973. Marine mammal species may forage in the Harbor but do not breed there. Sightings of marine mammals were recorded during the 2013–2014 biological surveys of the Port Complex (MBC, 2016). During 2013–2014, California sea lions (*Zalophus californianus*) were observed throughout the Port Complex, including one individual near the Project site, while Pacific harbor seals (*Phoca vitulina*) were mostly limited to Outer Harbor waters. Neither of these pinniped species is endangered, and there are no designated significant ecological areas for either species within the Port Complex.

Table 3.2-3: Special-Status Marine Mammal Species (Designated by CDFW and USFWS) in the Project Area

	Status		
Species	Federal	State	Notes
Guadalupe fur seal	T	T	Occasional visitor to Southern California.
Stellar sea lion	T		Once common in Southern California, now rare.
Southern sea otter	T		USFWS stopped enforcing no-otter zone in 2011. Observations of sea otters in Southern California have been increasing since, including reports of otters at Palos Verdes and in Huntington Harbor.
Gray whale	delisted		Migrate through Southern California twice per year. Individuals have been observed in the Harbor.
Sei whale	E		Offshore species rare in California.
Blue whale	E		Abundance in Southern California has increased, probably due to increased use of feeding areas. Observations include feeding offshore of Palos Verdes and multiple locations in Orange County.
Fin whale	E		Abundance has increased in California coastal waters.
Humpback whale	E		Occasional visitor to Southern California.

Table 3.2-3: Special-Status Marine Mammal Species (Designated by CDFW and USFWS) in the Project Area

	Status		
Species	Federal	State	Notes
North Pacific right whale	E		Only 12 sightings in California since 1950.
Sperm whale	E		Occasional visitor to Southern California.

Note: E = Endangered; T = Threatened. Data in Notes from Bonnell and Daily (1993), SAIC (2010), L.A. Times (2011), Bay (pers. comm. 2012), Carretta et al. (2013), OC Register (2013), NOAA (2013).

Outside the breakwaters, a variety of marine mammals use nearshore waters. These include the gray whale (*Eschrichtius robustus*), which migrates from the Bering Sea to Mexico and back each year. This and other species of baleen whales generally are found as single individuals or in pods of a few individuals. Toothed whales, and particularly dolphins, can be found in larger groups of up to a thousand or more (Leatherwood and Reeves, 1983). Several species of dolphin and porpoise are commonly found in coastal areas near Los Angeles, including the Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), Risso's dolphin (*Grampus griseus*), Dall's porpoise (*Phocoenoides dalli*), bottlenose dolphin (*Tursiops truncatus*), northern right-whale dolphin (*Lissodelphis borealis*), and common dolphin (*Delphinus delphis*), with the common dolphin the most abundant (Forney et al., 1995). Bottlenose and common dolphin were observed during the 2013–2014 biological surveys; except for dolphins sighted near the San Pedro Waterfront in the Main Channel, all other observations were in the Outer Harbors (MBC, 2016).

Ship strikes involving marine mammals, although uncommon, have been documented for the following listed species in the eastern North Pacific: blue whale (*Balaenoptera musculus)*, fin whale (*Balaenoptera physalus)*, gray whale, humpback whale *(Megaptera novaeangliae)*, sperm whale (*Physeter macrocephalus)*, southern sea otter (*Enhydra lutris nereis*) (Carretta et al., 2009; NMFS, 2010; NMFS, 2013). The blue whale, fin whale, humpback whale, sperm whale, and gray whale are all listed as endangered under the ESA; however, the Eastern Pacific gray whale population was delisted by the NOAA in 1994.

Determining the cause of death for marine mammals that wash ashore dead or are found adrift is not always possible, nor is it always possible to determine whether propeller slashes were inflicted before or after death. In the case of a sea otter for example, wounds originally thought to represent propeller slashes were determined to have been inflicted by great white sharks (Ames and Morejohn, 1980). In general, dead specimens of marine mammals showing injuries consistent with vessel strikes are not common.

The National Marine Fisheries Service (NMFS), a division of NOAA, keeps records of vessel strikes with whales in U.S. coastal waters. From January 2004 through June 2013, 30 whales were believed to have been struck by ships in Southern California (NMFS, 2013). These included 11 gray whales, nine fin whales, six blue whales, one humpback whale, and three unidentified whales. Of these 30 whales, 12 were struck by a vessel and their final disposition was unknown. The other 18 were either found dead with wounds consistent with ship strikes or were found dead on the bow of cargo vessels. Of these 18, eight were found in or near the Port Complex, including one blue whale and four fin whales found dead on the bows of freighters. From January 2004 through June 2013, the number of strikes per year in Southern California ranged from one (2005) to five (2007, 2009, and 2010) and averaged two to three strikes per year, but the actual number is likely to be greater because not all strikes are reported. The type of vessel involved often was not known, but of the 30 reported strikes three involved U.S. Naval vessels, three involved commercial island passenger vessels, five involved freighters at the Port Complex, and four involved private pleasure vessels.

In Southern California, potential strikes to blue whales are of particular concern, in part due to low population numbers compared to historical populations. Blue whales normally pass through the Santa Barbara Channel en route from breeding grounds in Mexico to feeding grounds farther north, a migration pattern along the California coast that at times runs perpendicular to the established shipping channels in and out of California ports, increasing the opportunities for whale/vessel collisions. Along the California coast, there is evidence that despite vessel strikes blue whale abundance has increased over the past three decades (Calambokidis et al., 1990; Barlow, 1995; Calambokidis, 1995; Carretta et al., 2009).

According to NMFS records, the average number of blue whale mortalities in California attributed to ship strikes was 0.2 per year from 1991 to 1995 and from 1998 to 2002 (Carretta et al., 2009). From 2009 through 2013, blue whale mortality and injuries attributed to ship strikes in California waters averaged 0.9 per year (Carretta et al., 2016). Despite ship strikes, the blue whale population is estimated to be at 97 percent of its carrying capacity, suggesting density dependence (not ship strikes) is the primary factor affecting population size (Monnahan et al., 2015). Other potential causes of whale mortality in the region include domoic acid, mid-frequency acoustic testing, ambient noise, and infectious disease (Abramson and Petras, 2009).

Vessel speed seems to influence whale/ship collision incidences. 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, 14.9 percent (20 cases) involved container/cargo ships/freighters, and 6.0 percent (eight cases) involved tankers. Of the 134 cases, vessel speed was known for 58 cases (43.3 percent). Of these, most vessels were traveling at 13 to 15 knots. According to a report from NOAA, which was based on information in the Jensen and Silber (2003) whale-strike database and on Laist et al. (2001), as a majority of vessel collisions with whales occurred at speeds between 13 and 15 knots, NOAA recommends:

> *"…. 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."*

In 2013, the International Maritime Organization (IMO) amended the Traffic Separation Scheme (TSS) in the Santa Barbara Channel and the approach to the Ports of Los Angeles and Long Beach. Traffic Separation Schemes are maritime traffic management systems used to regulate vessel traffic in busy waterways, and to minimize the risk of head-on collisions. The TSS amendment reduced the width of the separation zone from two nautical miles (nm) to one nm by shifting the inbound lane shoreward and away from known whale concentrations (NOAA, 2013). The outbound lane remained unchanged. Narrowing the separation zone is expected to reduce co-occurrence of ships and whales while maintaining navigational safety.

3.2.2.7 Invasive Species

There are at least 27 nonnative aquatic species in the Port Complex, 95 cryptogenic species (those species whose origin cannot be demonstrated as either native or introduced, and an additional 12 species classified as "unresolved", meaning they could not be classified beyond the family, class, order, or genus level, and could not be confidently classified as introduced, cryptogenic, or native (MBC, 2016). Nonnative species can become invasive, competing with or preying upon indigenous species, thereby altering the local ecology. This may cause economic impacts as well. Invasive species in the Port Complex include a Japanese brown alga (*Sargassum muticum*), New Zealand bubble snail, Japanese mussel (*Musculista senhousia*), an isopod (*Sphaeroma quoyanum*), and Yellowfin Goby. Asian clam (*Theora lubrica*) occurred at 31 of the 32 infauna stations during surveys in 2013–2014. It ranked second in abundance in summer, and fourth in spring (MBC, 2016). Another species of *Sargassum* (*S. horneri*) was discovered in Long Beach Harbor during annual subtidal surveys in 2003 (MBC, 2009b). It was observed at 10 of 20 macroalgae stations in 2013–2014 (MBC, 2016).

The primary sources of invasive organisms are believed to be hull fouling (organisms that grow on the exterior surfaces of ships) and the discharge of ballast water from cargo vessels (CDFG, 2008). Other potential sources include fisheries, natural dispersal, aquatic plant shipments, discarded seafood, pet releases, discarded bait, aquaculture escape, biocontrol, cargo, scientific escape, and habitat restoration (CDFG, 2008).

The number of nonnative taxa collected during the 2013–2014 Port-wide surveys was similar to the numbers collected during the 2000 and 2008 surveys for some of the study elements: riprap, macroalgae, and fish (MEC, 2002; SAIC, 2010; MBC, 2016). The number of nonnative infauna species in 2013–2014 (eight) was similar to that from 2008 (nine), but much lower than in 2000 (24). Conversely, the number of nonnative epifaunal species in 2013–2014 (eight) was much higher than in 2000 and 2008 (one). The nonnative species collected in 2013–2014 consisted of attached organisms and motile organisms. At the trawl station closest to the proposed Project site (Station LA15), vase tunicate (*Ciona intestinalis*), stalked sea squirt (*Styela clava*), and the sea squirt *Styela plicata* were collected; all are classified as nonnative. The nonnative algae *Sargassum muticum* and *Undaria pinnatifida* were also observed at the macroalgae station adjacent to the Project site.

The aquarium strain of *Caulerpa* (*Caulerpa taxifolia*) is an invasive algal species that has infested more than 30,000 acres in the Mediterranean Sea and is listed as a federal noxious weed under the U.S. Plant Protection Act. *Caulerpa* was found in two Southern California locations in 2000. This species has never been identified in the Port Complex 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* can grow rapidly and quickly overtake native species. 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. In the Mediterranean, *Caulerpa* has caused ecological devastation by overwhelming local seaweed species and altering fish distributions. Its rampant growth also has resulted in huge economic losses by harming tourism, pleasure boating, fishing, and the diving industry. Because of this threat, it is now illegal to possess, sell, or transport *Caulerpa taxifolia* in California (NOAA, 2018). Due to its potential to create severe ecological and economic losses, a *Caulerpa* survey must be completed in accordance with the *Caulerpa* Control Protocol prior to specific underwater disturbances (such as bulkhead repair, dredging, and placement of navigational aids) (NMFS and CDFG, 2008).

3.2.2.8 Significant Ecological Areas

The County of Los Angeles has established Significant Ecological Areas (SEAs) to preserve a variety of biological communities for public education, research, and other non-disruptive outdoor uses. SEAs limit but do not preclude development that is compatible with the biological community. Policies and regulations for SEAs do not apply within city boundaries. The closest designated SEA, and the only SEA located in the Harbor, is the Terminal Island SEA, which is limited to the Pier 400 California Least Tern nesting site (County of Los Angeles, 1980; 2015); this SEA is approximately 2.6 miles from the proposed Project site. There are no designated Marine Protected Areas (MPAs) within the Harbor.

3.2.2.9 Area Contingency Plan

An Area Contingency Plan (ACP) is a reference document prepared for the use of all agencies engaged in responding to environmental emergencies within a defined geographic area. The agencies having a direct, field-oriented role in the discharge (or substantial threat of discharge) of oil in the Los Angeles-Long Beach area include: the U.S. Coast Guard; California Department of Fish and Wildlife, Office of Spill Prevention and Response; California State Lands Commission; California Office of the State Fire Marshal (Pipeline Safety Division); Bureau of Ocean Energy Management, Regulation, and Enforcement; County District Attorney’s Office; City Attorney’s Office; and local enforcement authorities (e.g., Los Angeles Port Police). The ACP applicable to the Port Complex described below lists and describes ‘environmentally sensitive sites’ within the Port Complex. The ACP also identifies potential mitigation measures and/or strategies to protect these sites from spills. Within each ACP, environmentally sensitive sites are categorized by importance as follows:

Category	Description
A	**Extremely Sensitive** - first priority for protection: Wetlands, estuaries and lagoons with emergent vegetation; Sheltered tidal flat; and Habitats for rare, threatened or endangered species (State or Federal); Sites of significant concentrations of vulnerable and sensitive species (e.g. pinniped pupping)
B	**Very Sensitive** - second priority for protection: Major pinniped haulout areas during non-pupping seasons; Moderate concentrations of vulnerable and sensitive species; other low energy habitats
C	**Sensitive** - third priority for protection: Higher energy habitats, for example: Habitats important to large numbers of species of sport, commercial value, and scientific interest or species experiencing significant population declines though not yet threatened.

Within the Port Complex, four environmentally sensitive sites are identified in the ACP. (Table 3.2-4). A list of the environmentally sensitive sites within 25 nm of Point Fermin is presented in Appendix C1.

Table 3.2-4: Environmentally Sensitive Sites in the Ports of Los Angeles and Long Beach

Category	Site	Comments	Approx. Travel Distance to Shell Marine Oil Terminal (miles)
A	Cabrillo Beach Wetlands	Mudflat-marsh ecosystem with resting/feeding waterfowl, seabirds, and shorebirds	3.8
A	Los Angeles Harbor Breakwater	High numbers of seabirds and mammals. Seabird roosting site.	3.7
A	Middle Breakwater	High numbers of seabirds and mammals. Seabird roosting site.	4.1
A	Long Beach Breakwater	High numbers of seabirds and mammals. Seabird roosting site.	7.8

3.2.2.10 Essential Fish Habitat (EFH)

In accordance with the 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act, an assessment of EFH was prepared for the proposed Project, which includes impacts of dredging, pile removal, and pile installation along Berths 167–169 (see Appendix C2). The Project area is located in an area designated as EFH for federally managed species under two Fishery Management Plans (FMPs): the Coastal Pelagics Management Plan and the Pacific Groundfish Management Plan. Of the 95-species included under these plans, 24 are known to occur in the Port Complex and could potentially be affected by the proposed Project. However, most of these 24 species have been collected only sporadically and in very low numbers, and habitat near the Project site is not suitable for these species. The species with the highest potential to be affected by the proposed Project are identified in Table 3.2-5.

Table 3.2-5: Managed Fish/Invertebrate Species Most Likely to Occur Off the Project Site in Los Angeles Harbor Based on Past Occurrences

Common Name	Potential Habitat Use	Larval Occurrence [a, b, d, f]	Juvenile/Adult Occurrence [b, c, d, e, f]
Coastal Pelagics			
Northern Anchovy	Open water.	Abundant	Abundant
Pacific Sardine	Open water.	Uncommon	Common
Pacific (Chub) Mackerel	Open water, juveniles off sandy beaches and around kelp beds.	Absent	Common
Jack Mackerel	Open water, young fish over shallow banks and juveniles around kelp beds.	Rare	Common
Market squid	Open water; rare near bays, estuaries, and river mouths.	Rare	Rare

Table 3.2-5: Managed Fish/Invertebrate Species Most Likely to Occur Off the Project Site in Los Angeles Harbor Based on Past Occurrences

Common Name	Potential Habitat Use	Larval Occurrence [a, b, d, f]	Juvenile/Adult Occurrence [b, c, d, e, f]
Pacific Groundfish			
English Sole	Soft bottom habitats.	Rare	Uncommon
Pacific Sanddab	Soft bottom habitats.	Rare	Uncommon
Butter Sole	Soft bottom habitats.	Rare	--
Black Rockfish	Along breakwater, near deep piers and pilings; associated with kelp, eelgrass, and high relief reefs.	NA	Rare
Bocaccio	Multiple habitat associations, including soft and hard bottom, kelp, eelgrass, etc.	NA	Rare
Brown Rockfish	Multiple habitat associations but prefer hard substrata and rocky interfaces.	--	Rare
Calico Rockfish	Multiple habitat associations but prefer hard substrata and rocky interfaces.	NA	Rare
California Scorpionfish	Benthic, on soft and hard bottoms, as well as around structures.	NA	Uncommon
Grass Rockfish	Common on hard substrate, kelp, and eelgrass habitats.	NA	Rare
Kelp Rockfish	Common on hard substrate, kelp; reported along breakwater.	NA	Rare
Olive Rockfish	Common around hard substrate, kelp; reported along breakwater.	NA	Rare
Vermilion Rockfish	Juveniles over soft-bottom and kelp, adults associated with hard substrate.	NA	Uncommon
Lingcod	Multiple habitat associations but prefer hard substrata and rocky interfaces.	NA	Rare
Cabezon	Multiple habitat associations but prefer hard substrata and rocky interfaces.	Rare	Rare
Pacific Hake	Common offshore, juveniles in open water.	Rare	--

Table 3.2-5: Managed Fish/Invertebrate Species Most Likely to Occur Off the Project Site in Los Angeles Harbor Based on Past Occurrences

Common Name	Potential Habitat Use	Larval Occurrence [a, b, d, f]	Juvenile/Adult Occurrence [b, c, d, e, f]
Leopard Shark	Multiple habitat associations, including soft bottoms, and near structures, kelp, and eelgrass.	N/A	Rare
Spiny Dogfish	Pelagic and on muddy bottoms.	N/A	--
Big Skate	Soft bottom habitat.	N/A	Uncommon
California Skate	Soft bottom habitat.	N/A	Uncommon

Sources: [a] MBC et al. (2007); [b] MEC and Associates (2002); [c] MBC (2009, 2009b); [d] SAIC (2010); [e] MEC (1988); [f] MBC (2016).

N/A = Not applicable, internal fertilization. Abundant > Common > Uncommon > Rare.

Note - Most rockfish larvae not identifiable to species.

One coastal pelagic fish—Northern Anchovy—is likely to occur in the Project vicinity. Northern anchovy is among the most common and abundant fish species in the Port Complex. In 2006, anchovy larvae were present in the Port Complex during two seasonal periods: a greater peak in March–July and a lesser peak in October–December (MBC et al., 2007). Juvenile and adult anchovies have consistently been collected during fish sampling near the Project site (MEC and Associates, 2002; SAIC, 2010; MBC, 2016). Northern Anchovy are found from the surface to depths of 1,017 feet, though juveniles are generally more common inshore and in estuaries (Davies and Bradley, 1972).

Pacific Sardine is an epipelagic species (occurring in about the upper 200 meters of the ocean) that forms loosely aggregated schools mostly offshore (Wolf et al. 2001). Pacific Sardine larvae are uncommon in the Port; none were collected in the most recent survey (MBC, 2016) and only occasional individuals have been collected in previous surveys, always in the Outer Harbor (e.g., MBC et al., 2007). Adult and juvenile Pacific Sardine are much less common than Northern Anchovy in the Port. Fewer than 200 were collected in lampara samples in 2013-2014, only eight of these at stations LA6 and LA16 (MBC, 2016). However, in the past Pacific Sardine has been one of the ten most abundant pelagic species in the Harbor (MEC and Associates, 2002; SAIC, 2010), and therefore is considered common (Table 3.2-5).

In past harbor-wide surveys, Jack Mackerel (*Trachurus symmetricus*) and Pacific Mackerel (*Scomber japonicus*) were collected much less frequently and in much lower numbers than Northern Anchovy and Pacific Sardine. However, in the 2013-2014 study, both species were among the ten most abundant pelagic (i.e., lampara-caught) species (MBC, 2016), and therefore are currently considered common.

Although no mature market squid (*Doryteuthis opalescens*) have been reported in recent surveys near Berths 167–169, market squid paralarvae were collected in Inner and Outer Harbor areas in 2006 (MBC et al., 2007). All coastal pelagics are associated with the water column (as opposed to the seafloor like many of the groundfish); however, female squid also lay egg masses on sandy bottoms during spawning (at depths of about 16–180 feet, with most occurring between 66 and 115 feet) (PFMC, 2011).

In 2005, krill (Euphausiids) were added as a managed unit under the Coastal Pelagic Species FMP, and their harvest is prohibited in U.S. waters (PFMC, 2011). This is intended to ensure that, to the extent practicable, fisheries would not develop that could put krill stocks at risk and impact other marine resources that depend on krill. EFH for krill varies by species, but the waters of the Port are considered EFH. Due to their small size, they are not typically identified during biological surveys within the Ports.

In 2010, Jacksmelt (*Atherinopsis californiensis*) and Pacific Herring (*Clupea pallasii pallasii*) were added as "Ecosystem Component Species" to the Coastal Pelagics FMP (PFMC, 2011). Ecosystem Component Species must: (1) be a non-target stock/species; (2) not be subject to overfishing, approaching overfished, or overfished and not likely to become subject to overfishing or overfished in the absence of conservation and management measures; and (3) not generally retained for sale or personal use, although "occasional" retention is not by itself a reason for excluding a species from the Ecosystem Component category. The incidental catch of these two species would continue to be monitored by the Pacific Fishery Management Council (PFMC). The Port Complex is near the southern extent for Pacific Herring (Miller and Lea, 1972), and it has not been collected during harbor-wide fish studies (MEC, 1988; MEC and Associates, 2002; SAIC, 2010; MBC, 2016).

In 2016, additional species were added to the Coastal Pelagics FMP as Ecosystem Component Species (PFMC, 2016). However, the only additional species that are known to occur in or near the Port Complex are silversides (Atherinopsidae, including Jacksmelt, Topsmelt, and California Grunion). Silversides were abundant in pelagic fish surveys in 2013–2014, but not adjacent to the proposed Project site (MBC, 2016).

None of the species covered under the Pacific Groundfish FMP are considered abundant in the area of the proposed Project (PFMC, 2011b). However, many are associated with hard substrate, kelp, and/or eelgrass (*Zostera marina*), and these habitats are sampled less frequently than soft bottoms. No Big Skate were collected during the last two surveys, but 23 California Skate were collected in 2008, and 62 were collected in 2013–2014 (SAIC, 2010; MBC, 2016). Eight of the 62 California Skate were collected adjacent to Berths 167–169 in 2013–2014 (MBC, 2016).

California Scorpionfish (*Scorpaena guttata*) was collected in all four harbor-wide surveys. Twenty-nine individuals were collected in 2014, but none were collected at Stations LA6 or LA15. Eleven Vermilion Rockfish were collected at Stations LA6 and LA15 in 2014 (MBC, 2016). Vermilion Rockfish occur between 20 and 1,440 feet (6 and 436 meters), but are most common between 165 and 495 feet (50 and 50 meters). Juveniles are common in shallower water (20 to 120 feet, or 6 to 36 meters), where they hover over sand patches near alga or structures, including pier pilings (Love et al., 2002).

California Skate and Big Skate are designated as Ecosystem Component Species. Eight California Skate were collected by trawl at Stations LA6 and LA15 in 2014 (MBC, 2016). Although they have been collected in other studies of the Port Complex, no Big Skate were collected in 2014 (MBC, 2016). California Skate has been collected in all four harbor-wide biological surveys, whereas Big Skate was collected in 2000, and in West Basin during annual trawl surveys. Both species have been collected at West Basin in the last seven years. Both Skate species prefer soft bottom habitat, although California Skate occurs in much deeper waters (60 to 2,200 feet [18 to 671 meters]) than Big Skate (10 to 360 feet [10 to 110 meters]) (Miller and Lea, 1972).

The remaining species in Table 3.2-5 have only been collected sporadically and in low numbers.

3.2.2.11 Wetlands and Other Special Habitats

The definition of wetlands varies among state and federal agencies, but the USACE uses a three-parameter method that includes assessments of vegetation, hydrology, and soils. Wetlands in marine and estuarine habitats are commonly dominated by salt-tolerant plants species, such as pickleweed (*Salicornia* spp.). There are no wetlands under state or federal jurisdiction at or near the Project site. The nearest wetlands to the proposed Project site are approximately 1.4 miles east-northeast at the Anchorage Road Mitigation Site.

Eelgrass beds, as with wetlands, are considered “vegetated shallows” under the Clean Water Act (CWA; 40 CFR Part 230). Eelgrass 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). Eelgrass can form dense beds that provide substrate, food, and shelter for a variety of organisms. Most eelgrass beds in bays and estuaries are found in waters less than 20 feet deep, and light is the primary limiting factor. Surveys in 2000 and 2008 documented eelgrass along Inner Cabrillo Beach and in three beds in the Pier 300 Shallow Water Habitat/Seaplane Lagoon area (MEC and Associates, 2002; SAIC, 2010). By 2013, more than 60 acres of eelgrass was growing in multiple locations throughout the Port Complex, although 95 percent of it was at Inner Cabrillo Beach and the Pier 300 Shallow Water Habitat. Almost all (>99 percent) of the eelgrass in Los Angeles Harbor occurs between depths of +0.5 and -15 feet MLLW. Approximately 275 m^2 of eelgrass (*Zostera marina*) was present at the southern end of the Project site (beneath the Berth 169 mooring dolphin) in September 2013, and 364 m^2 was present in May 2014 (Figure 3.2-2) (MBC, 2016).

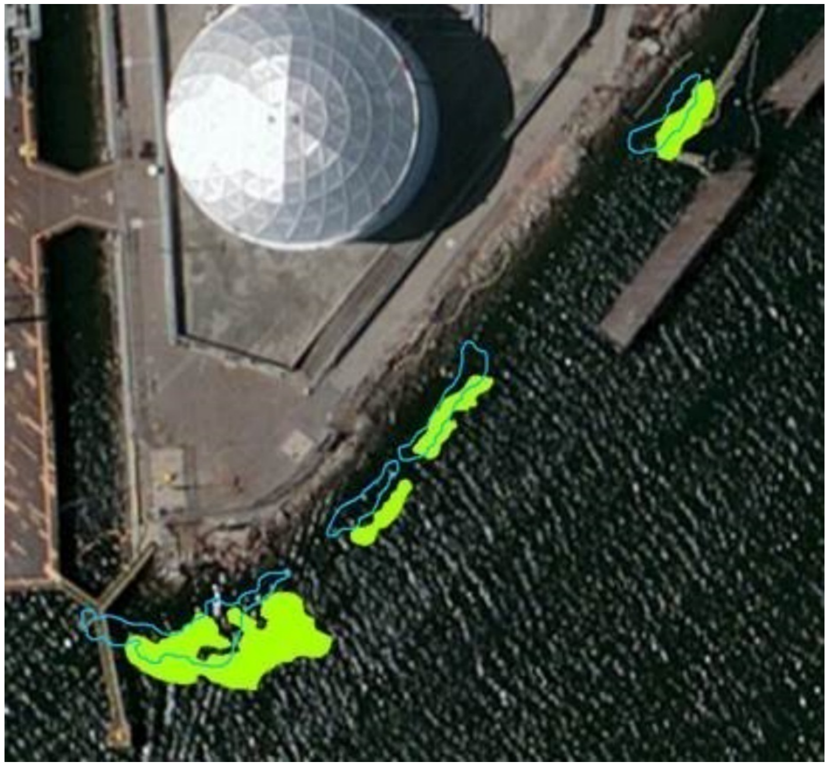

Figure 3.2-2: Eelgrass at the southern end of the Project site outlined in blue (September 2013) and green (May 2014).

3.2.3 Applicable Regulations

3.2.3.1 Clean Water Act

The CWA (33 USC 1251 *et seq*.) provides for the restoration and maintenance of the physical, chemical, and biological integrity of waters of the United States. Specifically, Section 401 and Section 402 are applicable to various elements of the proposed Project. Because the proposed Project would not result in a discharge of dredged or fill material, the requirements of Section 404 of the Clean Water Act do not apply to the proposed Project.

Through the authority of the State Water Resources Control Board (SWRCB), the state administers requirements and permitting under Sections 401 and 402 of the CWA through agreement with the U.S. Environmental Protection Agency (EPA). As implemented by the Regional Water Quality Control Board (RWQCB), the proposed dredging and pile-driving would result in a discharge of dredged or fill material into waters of the U.S. and a Section 401 water quality certification or waiver from the RWQCB) is required. Section 402 of the CWA created the National Pollutant Discharge Elimination System (NPDES) to enforce effluent limitations. The NPDES program prohibits the point-source discharge of pollutants unless an NPDES discharge permit has been obtained. The ultimate goal of the NPDES program is the complete elimination of all non-stormwater discharges. The NPDES program was expanded in 1987 to regulate non-point source stormwater discharges (runoff) originating from municipal and industrial sources. Compliance with the Section 402 NPDES General Construction

Permit for Storm Water Discharges Associated with Construction Activity (including the development of a Storm Water Pollution Prevention Plan [SWPPP]) issued by the SWRCB) for projects that would disturb one or more acres may also be required for the proposed Project.

Dredging in navigable waters is defined as “work” and requires a permit under Section 10 of the Rivers and Harbors Appropriations Act (33 USC 403; see Section 3.2.3.2, below). Disposal of dredged material from the proposed Project would occur at the Berths 243–245 Confined Disposal Facility (CDF). The Berths 243–245 CDF was previously authorized under CWA Section 404 by USACE for the Port of Los Angeles Channel Deepening Project (USACE Permit No. SPL-2008-00662-AOA).

Under the authority of Section 311, the Oil Pollution Prevention regulation sets forth requirements for the prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. The goal of Section 311 is to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil. The regulation requires these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establishes procedures, methods, and equipment requirements.

3.2.3.2 Rivers and Harbors Appropriations Act of 1899

Section 10 of the Rivers and Harbors Appropriations Act (33 USC 403) regulates work and structures in, over, and under navigable waters that would affect the course, location, condition or capacity of navigable waters of the United States, including dredging, wharf improvements, overwater cranes, and artificial islands and installations on the outer continental shelf (33 CFR 322.3). The General Bridge Act applies to bridges and causeways over navigable waters, and is administered by USCG. Under Section 10, USACE issues permits for work (e.g., dredging) and structures (e.g., cranes and piles) in, over, and under navigable waters.

3.2.3.3 Federal Endangered Species Act

The ESA (16 USC 1531 *et seq.*) protects threatened and endangered species, as well as the ecosystems upon which they depend. Section 9 prohibits such take, and defines take as to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. Take, when incidental to otherwise lawful activities can be authorized under Section 7 when there is a federal nexus (e.g., federal funding, license, or authorization) and under Section 10 when there is no federal nexus. USFWS and NMFS share responsibilities for administering the ESA. Whenever actions authorized, funded, or carried out by federal agencies could adversely affect listed species or designated critical habitat, the federal lead agency must consult with USFWS and/or NMFS under Section 7.

3.2.3.4 Magnuson-Stevens Fishery Conservation and Management Act

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (16 USC 1801 *et seq.*) require federal agencies that fund, permit, or carry out activities that may affect EFH or federally managed species to consult with NMFS and respond in writing to the conservation recommendations provided by NMFS. In addition, NMFS is required to comment on any state agency activities that would affect EFH or federally managed species.

3.2.3.5 Marine Mammal Protection Act (MMPA)

The MMPA (16 USC 1361 *et seq*.) prohibits the taking (including harassment, disturbance, capture, and death) of any marine mammals, except as set forth in the act. Marine mammal species that may be found in the Harbor are under the jurisdiction of NMFS.

3.2.3.6 California Endangered Species Act (CESA)

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

3.2.3.7 California Eelgrass Mitigation Policy

The California Eelgrass Mitigation Policy (NMFS, 2014) establishes a framework for the protection of eelgrass (*Zostera* spp.) in California. The Policy and Implementing Guidelines provide mitigation requirements for impacts to eelgrass, but only after avoidance and minimization of impacts have been pursued to the maximum practical extent feasible. The Policy includes requirements for pre-construction surveys, impact assessments, mitigation requirements, mitigation surveys, and reporting. Performance standards for eelgrass mitigation projects are also outlined in the Policy. Mitigation options include in-kind mitigation (i.e., eelgrass transplants), out-of-kind mitigation, and in-lieu fee programs/mitigation banks.

3.2.3.8 Ballast Water Management for Control of Nonindigenous Species Act

The California Marine Invasive Species Act of 2003 renewed and expanded on the Ballast Water Management for Control of Nonindigenous Species Act of 1999 to address the threats posed by the introduction of nonindigenous species. The law charged the California State Lands Commission with oversight and administration of the state's program to prevent or minimize the release of nonindigenous species from vessels that are 300 gross registered tons and above. Both USCG (Ballast Water Management) and EPA (Vessel General Permit) regulate ballast water discharges, and both agencies currently require ballast water exchange for most vessels operating in U.S. waters. In addition, California requires ballast water exchange on coastwise voyages (e.g., between Los Angeles and Oakland). However, at present, the discharge standards in California are more stringent than federal regulations. In accordance with governing statutes and regulations, vessels have four options to comply with California's performance standards: (1) retention of all ballast water on board, (2) use of potable water as an alternative ballast water management method, (3) discharge to a shore-based ballast water reception and treatment facility, and (4) treatment of all ballast prior to discharge by a shipboard ballast water treatment system. The State Legislature delayed implementation of the performance standards in 2013 because the state lacks the scientific protocols and capacity to measure compliance (Scianni et al., 2013), and no shipboard ballast water treatment systems are currently available to meet all of California's performance standards for the discharge of ballast water (Dobroski et al., 2015).

3.2.3.9 Tanker Vessel Safety and Spill Response Regulations

There are several regulations and protocols that apply to spill response and tank vessel safety. These regulations are itemized below (detailed descriptions of these regulations are provided in Section 3.4, Hazards in the listed sections):

- International Maritime Organization Regulations (Section 3.4.3.1);
- Dept. of Transportation Hazardous Materials Regulations, Oil Pollution Act, U.S. Coast Guard Titles 34 and 46, and Maritime Transportation Security Act (Section 3.4.3.2);
- Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, California Coastal Act, California Pipeline Safety Act, and Tank Vessel Escort Program (Section 3.4.3.3); and
- Los Angeles Municipal Code, Port of Los Angeles Risk Management Plan, and the Area Contingency Plan (Section 3.4.3.4).
- Tank Vessel Escort Program
- Vessel Traffic Service
- Traffic Separation Schemes
- Pilot Requirements

3.2.4 Impacts and Mitigation Measures

3.2.4.1 Methodology

Impacts on biota were assessed by: (1) estimating the amount of habitat that would be gained/lost or disturbed; (2) evidence from similar, past projects in the Port and other locations in California; (3) biological resources that may be present or may use the area adjacent to Berths 167–169; and (4) from preparer expertise and judgment. The assessment of impacts is based on the assumption that the proposed Project would include the following:

- A Section 401 (of the CWA) Water Quality Certification would be obtained from the RWQCB for construction dredging activities that contains conditions including standard Waste Discharge Requirements (WDRs).
- A Section 10 Rivers and Harbors Act permit would be obtained from USACE for dredging and in-water construction activities in waters of the U.S.
- During dredging, water quality monitoring program would be implemented by LAHD's Construction Division in compliance with both USACE and RWQCB permit requirements, wherein dredging effects are measured *in situ*. The objective of the monitoring program is adaptive management of the dredging operation, whereby potential exceedances of water quality objectives are measured and dredging operations subsequently modified. If potential

exceedance levels are approached, LAHD's Construction Division would immediately meet with the construction manager to discuss modifications of dredging operations to reduce turbidity and to keep it at acceptable levels. This could include alteration of dredging methods, and/or implementation of additional Best Management Practices (BMPs) such as a silt curtain (which may be required by permit conditions).

- The tenant would obtain and implement the applicable stormwater discharge permit (such as the General Industrial Activities Stormwater Permit [GIASP]). LAHD would incorporate Low Impact Development (LID) measures into the proposed Project design, as applicable, for review and approval by the City of Los Angeles Department of Building and Safety.
- Spill Prevention, Control and Countermeasure (SPCC) regulations would be implemented. The SPCC would be the responsibility of the LAHD during construction, and the responsibility of the terminal during operations. The SPCC regulations require that LAHD (during construction) and the tenant (during operation) have in place measures that help ensure oil spills do not occur, but, if they do, that there are protocols in place to contain the spill and neutralize the potential harmful impacts.
- The assessment of potential impacts from an accidental release from a vessel was limited to within 25 nm of Point Fermin (i.e., the limits of the Vessel Traffic Service Area and Harbor Safety Plan).

3.2.4.2 CEQA Baseline

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the Revised NOP. These environmental conditions normally constitute the baseline conditions by which the CEQA lead agency determines if an impact is significant. The Revised NOP for the proposed Project was published in April 2016.

The Shell Marine Oil Terminal has experienced wide fluctuations in throughput during the past several years (due to supply and demand changes for petroleum products and other unforeseen business changes such as refinery restrictions, etc.). For example, this terminal unloaded 10.2 million barrels in 2014 and 20.6 million barrels in 2015. In order to best represent and evaluate "existing" conditions, five years' worth of data was used.

Using a five-year average (January 2011 through December 2015) as a baseline for the proposed Project consists of an average annual throughput of approximately 13.25 million barrels and 86 annual vessel calls.

3.2.4.3 Thresholds of Significance

The significance criteria have been developed using the L.A. CEQA Thresholds Guide (City of Los Angeles, 2006). They were modified to address potentially significant impacts of the proposed Project as determined by the Notice of Preparation in Appendix A of this Draft EIR. Consequently, the thresholds have been modified to address only impacts to candidate or special-status species (BIO-1) and disruption of local biological communities (BIO-2 and BIO-3). Impacts on biological resources are considered to be significant if the proposed Project would result in any of the following:

BIO-1: Would the proposed project result in the loss of individuals, or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally designated critical habitat.

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

BIO-3: Would the proposed project result in a substantial disruption of local biological communities (e.g., from construction impacts or the introduction of noise, light, or invasive species).

3.2.4.4 Impact Determination

Impact BIO-1: The proposed Project has the potential to result in the loss of individuals, or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally designated critical habitat.

Construction

Construction of the proposed Project would involve in-water and over-water construction activities that could affect state or federally listed and other sensitive species in the Project area through temporary increases in turbidity, which could reduce foraging ability and change the behavior of prey species; noise from in-water construction, which could cause damage to sensory organs of marine mammals and disrupt feeding and other activities; and by vessel activity, which could cause animals to avoid the construction area, thereby denying them a portion of their habitat, and expose them to spills and leaks.

There are several state or federally listed and other sensitive species that have been observed in the Harbor. These include: three endangered bird species (California Least Tern, Belding's Savannah Sparrow, and Scripps's Murrelet); one threatened bird species (Western Snowy Plover); 14 other bird species with state and/or federal protection or designation (see Table 3.2-2), and two pinnipeds protected by the MMPA (California sea lion and Pacific harbor seal). Impacts to special-status bird species were evaluated in the Notice of Preparation (Appendix A) and determined to be less than significant. Impacts to marine mammals and EFH are discussed in this section.

Sediments would be placed at the Berths 243–245 CDF. Potential biological impacts from disposal of dredged sediments at the CDF (including impacts from the construction and fill of the CDF), as well as potential impacts to water quality from turbidity or contaminants and smothering of resident fishes and invertebrates, were evaluated in the Final Supplemental EIS/EIR for the Port of Los Angeles Channel Deepening Project (USACE and LAHD, 2009). That evaluation included mitigation for habitat loss at the Berths 243–245 CDF.

Turbidity: Dredging and in-water construction (pile removal and installation) could affect water-associated birds and marine mammals through temporary increases in noise, vibration, and turbidity, as well as the potential for displacement of individuals that may forage in the work area. However, birds and marine mammals would be able to use other areas in the Harbor if construction activities occurred when they were present and if the disturbances caused them to avoid the work area.

Dredging activities and the resultant temporary turbidity have the potential to affect foraging by bird species in the general area, such as Elegant, Caspian, and Least Terns. However, impacts would be temporary, limited to the construction areas, and conditions would return to normal after conclusion of dredging activities. Moreover, high levels of turbidity and total suspended solids are usually not measured during dredging operations in Southern California (Anchor Environmental, 2003). In addition, implementation of required water quality monitoring during dredging according to the requirements of the RWQCB, as well as implementation of standard dredging BMPs via adaptive management of the dredging, would minimize impacts to birds that might forage in the Project area.

Based on water quality monitoring data from other Harbor dredge projects using suction and clamshell dredge equipment (Jones & Stokes, 2007; 2007b), water quality effects are expected to be transitory, lasting for less than one tide cycle following active dredging, and covering an area generally within 1,000 feet of the activity, and often less than 300 feet. Turbidity may also increase during installation of piles. However, the extent would generally be much less than the area affected by dredging, likely affecting no more than a few hundred feet from the activity. The proposed Project's dredging is 'clean-up dredging' associated with sediment that may slough off the slope to the harbor bottom during the wharf demolition and pile driving activities. The clean-up dredging is expected to take less than one week; therefore, biological effects due to dredging and disposal would be less than significant.

Noise: The proposed improvements to Berths 167-168 that would create in-water noise and vibration would include the installation of pipe piles to support catwalks and loading platforms and to support new mooring dolphins. The pipe piles would range in size from 42-inch diameter to 72-inch diameter. Installation of the piles would be accomplished using a combination of vibratory and impact-hammer, starting with vibratory, and then transitioning to impact at a certain depth. The size and type of pilings affect the sound volume produced during pile-driving. For instance, larger piles generally produce higher sound volume than smaller ones. In addition, the extent and intensity of noise effects would also depend on the underwater geography and water depth in the vicinity of the piles that are driven in the seaside portion of the terminal.

Sound transmission in the underwater environment can be affected by local bathymetry, substrates, currents, and stratification of the water column. Underwater noise is of concern because marine mammals can be disturbed and even injured by high sound levels. Technical guidance from NOAA (NMFS, 2016) establishes a disturbance threshold (Level B harassment) of 160 dB_{RMS} (decibels Root Mean Square) for marine mammals. Exposure to sound at this level would likely cause avoidance, but not injury, for marine mammals. The current Level A harassment (injury) threshold for impulsive sounds (e.g., pile driving) is 155 to 230 dB_{RMS} (depending on frequency range and exposure time) for cetaceans, from 185 dB to 218 dB for seals, and from 203 dB to 232 dB for sea lions (LAHD, 2017).

In-water pile installation at the Project site is anticipated to result in disturbance (Level B harassment) to marine mammals in the vicinity of construction operations, and could potentially result in Level A injury during impact driving of pipe piles at very close range. As a result of this potentially significant impact could occur to marine mammals near the Project site during pile installation.

No state or federal ESA-listed marine mammals are expected to occur in the Project area. California sea lions have been observed in waters surrounding the Project site, and Pacific harbor seals may also be present. Noise from impact in-water pile-driving during pile installation could cause seals and sea lions to avoid construction areas during pile-driving, but would not result in the loss of individuals or habitat.

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, 2004). The sound pressure waves from in-water pile-driving could result in temporary avoidance of the construction areas as well as cause mortality of some fish in the Coastal Pelagics FMP, especially smaller fish such as Northern Anchovy, Pacific Sardine, and Topsmelt, which are more susceptible to acoustic injury or mortality. These species play important roles in the cycling of energy and nutrients in the Harbor, which has been designated as EFH for both Northern Anchovy and Pacific Sardine. Northern Anchovy are abundant in the Harbor, and although individuals of these species could be adversely affected by pile-driving, populations of these species in the Harbor are not expected to be substantively reduced, nor would the energy and nutrient cycles be substantively degraded due to the limited area of potential effect from pile-driving. Pacific Sardine was collected in relatively small numbers in 2013–2014. The numbers of fish exposed to harmful pressure waves would represent a very small proportion of the number of fish in the Port Complex at any given time. Due to the limited extent of acoustic impacts, the wide dispersion of fishes throughout the Harbor, and the temporary construction period, effects to EFH would be less than significant.

Construction impacts to fish would not be significant. Avoidance of the area would be temporary; in-water construction would take place for approximately 14 months per platform and related improvements, and occur mostly during daylight hours. There would be no physical barriers to movement, and the baseline condition for fish and wildlife access would be essentially unchanged.

Operation

Operation of new and upgraded terminal facilities at the Project site would not adversely affect any of the threatened, endangered, or special-status bird species listed in Tables 3.2-1 and 3.2-2. Those species that currently use the Project site for foraging or resting could continue to do so because the proposed Project would not appreciably change the industrial activities at the Project site or cause a loss of habitat for those species.

Noise: The existing marine terminal vessel call average is 86 vessels annually. Under the proposed Project, it is estimated that the marine terminal could accommodate up to 166 annual vessel calls during the new 30-year lease period. However, even under the proposed Project, the marine terminal would continue to only have the ability to have two vessels at a time at its two berths. Therefore, the proposed Project would not be expected to result in a measurable change in overall noise. Additionally, transits would be of short duration and distance within the Harbor so few sensitive bird species would be affected (large numbers are not present in the Harbor), and harbor seals and sea lions would be expected to avoid sound levels that could cause damage to their hearing. Therefore, any increase in vessel traffic would not adversely affect sensitive species in the Outer Harbor or the approach to the Shell Marine Oil Terminal.

Vessels approaching Angel's Gate would pass through nearshore waters, and sound from their engines and drive systems could disturb marine mammals that happen to be nearby. However, few whales and dolphins would be affected because the animals are generally sparsely distributed offshore, and are not abundant in the Port Complex (Forney et al., 1995; SAIC, 2010; MBC, 2016). These animals would likely move away from the sound as it increased in intensity from the approaching vessel, and exposure would be of short duration (Blackwell et al., 2004). Pinnipeds would be expected to avoid sound levels that could cause damage to their hearing, and overall underwater noise levels would not be measurably increased. Noise levels associated with vessel traffic, including near heavily used ferry terminals, generally range between 120 and 143 dB (WSDOT, 2010; ICF and Illingworth & Rodkin, 2009), which is below the disturbance level of 160 dB_{RMS} for cetaceans, and the injury threshold of 180 dB_{RMS} for cetaceans and 190 dB_{RMS} for pinnipeds.

Vessel Activity: Tanker ships transiting the coastal waters of Southern California could potentially cause harm from vessel collisions with endangered, threatened, or species of concern, such as marine mammals. Because vessel traffic could increase as part of the proposed Project, there would be a proportional increase in the potential for vessel strikes with marine mammals. In addition, such collisions do occur and could impact whales, including federally listed species such as blue whales. However, because of the small potential increase in vessel calls relative to all vessels transiting to and from the Port, and due the low probability of an actual whale strike, the increase is not considered significant. Therefore, the impact is considered less than significant. No critical habitat for any listed species is present in the vicinity of the Project site; therefore, no critical habitat would be affected by operation of the proposed Project.

Spills and Leaks: Product spills can range from small, incidental spills that are unlikely to affect protected birds, marine mammals, and fishes, to large, catastrophic spills that could affect many individuals. An incidental spill is not likely to interfere with protected species or habitats because it would likely be contained and cleaned up. Substantial spills and runoff could affect marine mammals, specifically sea lions and seals. However, compliance with existing spill prevention and clean-up federal, state, and local regulations (see Sections 3.2.3.1 and 3.2.3.9), as well as the standard controls summarized in Section 3.2.4.1, would limit the size, likelihood, and impacts of such events (also refer to the analysis in Section 3.4, Hazards).

In addition, the nearest wetlands to the Project site are approximately 1.4 miles east-northeast at the Anchorage Road Mitigation Site. Environmentally sensitive sites (Table 3.2-4 above) are also far enough away (3.7 to 7.8 miles) that spilled petroleum product at the terminal would not likely reach the sites before the spill could be contained and cleaned (a boom is placed around the vessel and berth prior to loading and unloading operations) or the before the sites could be protected.

Impact Determination

As described above, construction of the proposed Project is not likely to result in the loss of individuals or the reduction of existing critical habitat of a state or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a Species of Special Concern. There are no known special-status species or habitats at the proposed Project site. Impacts to special-status bird species were evaluated in the Notice of Preparation (Appendix A of this Draft EIR) and determined to be less than significant.

As described above, turbidity and noise caused by in-water construction would be temporary and localized. The small size of the Project area relative to the Port would further reduce the likelihood and severity of potential adverse effects on sensitive species. Turbidity would not substantially reduce foraging by marine mammals in the vicinity of the construction zone because turbidity would be localized and temporary. Underwater noise from construction, especially pile driving, would likely exceed criteria for Level B harassment of sea lions and seals that could be present at the project site. This exceedance represents a significant impact on federally-protected marine mammal species, and requires the implementation of mitigation, if feasible. Impacts to fish from noise generated during pile-driving would not be significant.

Impacts of operation on marine mammals would be less than significant because activity levels would be unchanged from baseline conditions. Accordingly, no mitigation is required.

Vessel traffic could increase due to the proposed Project relative the baseline conditions; however, no impacts on critical habitat would occur because no critical habitat is present in the in the vicinity of the Project site. The likelihood of a vessel collision with a marine mammal, which could result in injury or mortality, would increase proportionally with the increase in vessel traffic. However, this impact is considered less than significant because of the low probability of vessel strikes. In addition, mitigation measure MM AQ-5: Vessel Speed Reduction Program, as detailed in Section 3.1, Air Quality and Meteorology, would further reduce the probability of impacts to marine mammals from vessel strikes.

Discharges due to spills, leaks, and erosion runoff during construction could introduce toxic substances into the water. Spill prevention and clean-up regulations and standard controls would limit the size and likelihood of such events. There are no environmentally sensitive sites near the Project site that could be affected by a spill. Therefore, the proposed Project is not expected to result in the loss of individuals, or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally designated critical habitat, associated with an accidental releases and impacts would be less than significant.

Mitigation Measures

Implementation of the following mitigation measure, MM BIO-1 has been proposed to reduce the potential for impacts to marine mammals during construction:

MM BIO-1. Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or “soft start” of pile driving activities, as a precautionary measure, pile driving activities will include establishment of a safety zone, by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer.[1] The pile driving site will move with each new pile; therefore, the safety zones will move accordingly.

[1] Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic

Sound on Marine Mammal Hearing (NMFS, 2016) in consultation with the Acoustic Threshold White paper prepared for this purpose by LAHD (LAHD, 2017). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions prior to commencement of pile driving.

Mitigation measure MM BIO-1 would also further reduce construction impacts to fish.

Residual Impacts

Impacts would be less than significant.

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

Construction

There are no wetlands or riparian habitats at the Project site or in the vicinity. Wharf demolition and replacement activities would temporarily disrupt marine biota through resuspension of sediments and disturbance to benthic communities. However, the impacts would be limited in areal extent and duration (limited to the period of construction). After construction, the soft-bottom benthic communities would begin colonizing the substrate, as a consequence, these activities would not result in a substantial adverse impact to marine biota, and impacts would be less than significant.

Eelgrass occurs in several locations in the Port Complex, including adjacent to Berth 169 (the southernmost area of the Project site). Eelgrass beds are classified as vegetated shallows, which are considered a special aquatic site (40 CFR 230.43). The distribution of eelgrass is limited in California, and it is protected by the California Eelgrass Mitigation Policy. Impacts such as increased turbidity during pile removal, pile and mooring dolphin (e.g., MD7) installation, and/or dredging, could smother eelgrass or reduce the amount of light available for photosynthesis, which could result in the loss of eelgrass. This impact is considered significant.

Operation

Operation of the proposed Project is not expected to result in the permanent loss of marine habitat, or the reduction of marine habitat. There are no wetlands in the vicinity of Berths 167–169, and eelgrass is not located in the areas where vessels would maneuver or berth. An incidental spill is not likely to interfere with wetlands or eelgrass because it would likely be contained and cleaned up, given the level of regulatory compliance and emergency response requirements for vessels and marine oil terminals (see Section 3.4, Hazards). Therefore, impacts would be less than significant.

Impact Determination

The proposed Project would not result in a permanent loss of marine habitat. There are no wetlands or riparian habitats at the Project site or in the vicinity. Wharf demolition and replacement activities would temporarily disrupt marine biota through resuspension of sediments and disturbance to benthic communities, but due to the limited areal extent and duration of the impacts, they would be less than significant

Eelgrass occurs in several locations in the Port Complex, including adjacent to Berth 169. Increased turbidity during pile removal, pile installation, and/or dredging could smother or otherwise inhibit eelgrass growth. This impact is considered significant.

Operation of the proposed Project would not result in the permanent loss of marine habitat, or the reduction of marine habitat. An incidental spill is not likely to interfere with wetlands or eelgrass because it would likely be contained and cleaned up before it could affect such habitats, given the separation distances and given the regulatory and emergency response requirements for vessels and marine oil terminals. No such habitats are located where they are likely to be affected by a product spill at the terminal (eelgrass near the terminal is subsurface and a product spill or event would likely remain at the surface). There are no other eelgrass beds along the Main Channel between the Shell Marine Oil Terminal and the Harbor entrance. The nearest wetland along the transit route from the Shell Marine Oil Terminal to the Harbor entrance is the Cabrillo Beach Wetlands, and it is 0.75 mile from the Main Channel. Therefore, impacts due to Project operations would be less than significant.

Mitigation Measures

Implementation of the following mitigation measure, MM BIO-2, has been proposed to reduce the potential for impacts to eelgrass:

MM BIO-2. Protect Eelgrass. The proposed Project shall comply with the California Eelgrass Mitigation Policy. Pursuant to the Policy, the following activities shall be performed:

- A pre-construction eelgrass survey to map the location and extent of eelgrass that could potentially be affected by wharf demolition and construction;
- Use of minimization measures or Best Management Practices, such as silt curtains, to reduce potential effects to eelgrass during Project construction (if present);
- A post-construction eelgrass survey to map the location and extent of eelgrass after completion of wharf demolition and construction;
- If eelgrass is lost due to Project construction, eelgrass shall be mitigated at a ratio of at least 1.2 to 1.

Timing of eelgrass surveys, including the frequency of post-mitigation surveys (if applicable), shall comply with provisions in the California Eelgrass Mitigation Policy.

Residual Impacts

Impacts would be less than significant.

Impact BIO-3: The proposed Project would not result in a substantial disruption of local biological communities (e.g., from construction impacts or the introduction of noise, light, or invasive species).

Biological communities, the collection of species inhabiting a particular habitat or ecosystem, can potentially be disrupted by changes in environmental conditions that favor a different assemblage of species, or alter the dynamics among species that make up a biological community. The significance of changes in local conditions depends on the extent and duration of those changes, as well as the species or groups of species affected. Because the Project site is largely developed, there would be no impacts on established terrestrial biological communities. Construction-related impacts on marine biological communities are expected to be temporary, lasting through the construction period and for a short time thereafter. These include physical disturbance, underwater and overwater noise, and turbidity resulting from dredging, pile removal, and pile-driving. Physical effects due to dredging, pile installation, and pile removal are also discussed in Impact BIO-1.

Impacts to biological communities were evaluated in the Notice of Preparation (Appendix A), and most were determined to be less than significant. Impacts to marine mammals and EFH are discussed in Impact BIO-1, impacts to eelgrass are discussed in Impact BIO-2, and impacts due to biological communities resulting from increased noise, changes in light, and the introduction of invasive species are summarized in this section.

Construction

Noise: Impacts to fishes due to construction noise are described under Impact BIO-1. Sound pressure waves in the water from pile-driving can affect fish, particularly those with a swim bladder. The most common behavioral changes include temporary dispersal of fish schools, although more intense (or louder) sounds can cause injury and mortality. Although fishes could be adversely affected by pile-driving, fish populations in the Port Complex are not expected to be substantively reduced, nor would the energy and nutrient cycles be substantively disrupted due to the limited area of potential effect from pile-driving. The numbers of fish exposed to harmful pressure waves would represent a very small proportion of the number of fish in the Port Complex at any given time. Due to the limited extent of acoustic impacts, the wide dispersion of fishes throughout the Harbor, and the temporary construction period, effects to fishes would be less than significant.

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

Invasive Species: Construction activities have the potential to introduce or redistribute invasive species if those species are present in the construction area and are disturbed by boat anchors or other equipment, or if in-water equipment or construction vessels bring those species into the Project area. However, the potential for introduction during construction activity would be essentially the same as under normal Port operations (i.e., sediments can be disturbed and/or invasive species can be introduced during normal terminal operations throughout the Port Complex). The invasive green alga, *Caulerpa*, has the potential to spread by fragmentation. Prior to in-water work (including dredging), an underwater survey for the invasive alga *Caulerpa* would be conducted (in accordance with the Caulerpa Control Protocol) to ensure that no *Caulerpa* is present at the Project site. In the unlikely event that *Caulerpa* is detected during preconstruction surveys, an eradication program would be implemented per the requirements of the *Caulerpa* Control Protocol (NMFS and CDFG, 2008). Construction would commence only after the area is certified to be free of this invasive species. Since 2002 *Caulerpa* surveys have been conducted in the Port as a standard procedure in accordance with the Caulerpa Control Protocol, and no *Caulerpa* has been found. Considering the *Caulerpa* survey requirement and absence of *Caulerpa* to date, and with implementation of the aforementioned *Caulerpa* protocols, the potential for proposed underwater construction activities to spread this species is unlikely.

Operation

Vessel traffic at the Project site would have minimal direct effects on marine organisms as a result of disturbance, such as propeller wash (USACE and LAHD, 1992). The number of tankers calling at Berths 167–169 would increase as part of the proposed Project. Accidental spills of fuel or other vessel fluids during operation could occur as a result of a vessel collision, although the likelihood is considered remote because Port pilots are experienced navigators within the Harbor, vessels are required to travel in the Harbor at slow speeds, and tugs accompany and assist vessels to and from the berths. SPCC regulations require that the tenant have in place measures that help ensure oil spills do not occur, but, if they do, that there are protocols in place to contain the spill and neutralize the potential harmful impacts. The SPCC plan would detail and implement spill prevention and control measures. An incidental spill is not likely to substantially disrupt biological resources because it would likely be contained and cleaned up.

Vessels calling at Berths 167–169 hold larger amounts of petroleum products (e.g., gasoline and other refined petroleum products) than construction-related vessels. If an accident occurs and fuels are spilled into harbor or ocean waters, the fuel could harm biological resources, depending on the extent of the spill. However, based on compliance with applicable regulations, and the likelihood of spills, significant impacts from accidental spills are highly unlikely (see Section 3.4, Hazards). Accidental spills of pollutants during terminal operations on land would be small because compliance with standard laws and would prevent upland spills from reaching navigable waters. In addition, oil spill contingency plans are required to address spill cleanup measures after a spill has occurred, which would address containment and other countermeasures at the terminal facility. These measures reduce the likelihood of upland spills from terminal operations.

Spilled petroleum products can affect water quality in a variety of ways, such as:

- Increasing chemical oxygen demand (COD) and/or biological oxygen demand (BOD), thereby lowering DO;
- Decreasing water clarity; and
- Increasing concentrations of hazardous substances, such as volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), etc.

If an incidental product spill occurs at the terminal or Vessel Traffic Service Area, a temporary and localized impact to water quality could occur, which could in turn affect biological communities. The materials handled at the Shell Marine Oil Terminal are relatively light (relative to the density of water); therefore, an incidental spill would be more likely to affect the immediate water surface than the seafloor. As addressed above and under Impact BIO-1, discharges due to spills and leaks, would be limited in size and likelihood due to existing spill prevention and clean-up regulations and standard controls; therefore, potential impacts on local biological communities would be less than significant.

The amount of ballast water discharged into the waters adjacent to Berths 167–169 and, thus, the potential for introduction of invasive exotic species (LAHD, 1999) could increase because the number of vessels calling at the terminal could increase as a result of the proposed Project. Some of these vessels would come from outside the U.S. Exclusive Economic Zone (EEZ; extending 200 nm from the coastline) and would be subject to regulations to minimize the introduction of nonnative species in ballast water as described in Section 3.2.3.8. In addition, tankers coming into the Port loaded would primarily be taking on local water while unloading and discharging when reloading. This would also diminish the opportunity for discharge of nonnative species. Thus, it is unlikely that ballast water discharges during petroleum transfers in the Port would contain nonnative species.

Nonnative invertebrate species can also be introduced via vessel hulls. The California State Lands Commission (CSLC) issued a report on commercial vessel fouling in California (CSLC, 2006), recommending that the state legislature broaden the state program and adopt regulations to prevent non-indigenous species introductions by ship fouling. Risk of introduction of *Caulerpa* is associated primarily with movement of plant fragments from infected to uninfected areas through activities such as dredging and/or anchoring. It is important to note that introduced species may not disrupt native communities. That is, nonnative species may be introduced, but not become established. Native and nonnative species may also colonize the same habitats. LAHD conducts surveys, in accordance with the *Caulerpa* Control Protocol (NMFS and CDFG, 2008) prior to every water-related construction project to verify that *Caulerpa* is not present. This species has not been detected in the Port Complex and has been eradicated from known localized areas of occurrence in Southern California. Therefore, there is little potential for additional vessel operations from the proposed Project to introduce or spread these species. *Undaria pinnatifida*, which was discovered in the Port Complex in 2000 (MEC and Associates, 2002), and *Sargassum filicinum* (or *S. horneri*), may be introduced and/or spread as a result of hull fouling or ballast water and, therefore, might have the potential to increase in the Harbor via vessels traveling between ports in the EEZ. Invertebrates that attach to vessel hulls could be introduced in a similar manner.

The number of ships calling at Berths 167–169 as part of the proposed Project could increase above the CEQA baseline (from 86 vessel calls annually to 166). The potential for introduction of exotic species via vessel hulls would be increased in proportion to the increase in number of vessels. Therefore, the potential for introduction of nonnative species could increase. However, vessel hulls are generally coated with antifouling paints and cleaned at intervals to reduce the frictional drag from growths of organisms on the hull (Dobroski et al., 2015), which would reduce the potential for transport of exotic species. In addition, vessels would be subject to regulations to minimize the introduction of nonnative species in ballast water as described in Section 3.2.3.8. For these reasons, the proposed Project has a low potential to increase the introduction of nonnative species into the Harbor that could substantially disrupt local biological communities.

The proposed Project would remove approximately 900 creosote-treated timber piles and the 64,400 square-foot wharf. These elements would be replaced by 38 steel pipe piles, steel catwalks, and loading platforms. The loading platforms would each be approximately 3,720 square feet, and additional area would be associated with the catwalks and access trestles. Therefore, the new wharf area at Berths 167–169 is expected to reduce the amount of shading by up to approximately 56,960 square feet.

Impact Determination

As described above, construction activities at the Project site could increase noise and alter light levels (i.e., increased daytime shade and nighttime lighting) in the immediate vicinity of construction activities. However, no substantial disruption of biological communities, including impacts to fishes and EFH, would result from proposed Project construction, and impacts are considered to be less than significant. Impacts from construction activities that have the potential to introduce or redistribute invasive species would be less than significant because the construction area would be surveyed to determine the presence of *Caulerpa* before in-water construction activities.

Effects to local biological communities from a spill is considered less than significant due to existing spill prevention and clean-up regulations and standard controls.

The presence of new terminal structures (such as pipe piles and catwalks) or increased vessel traffic (by 80 vessel calls per year) would not substantially disrupt biological communities in the Harbor.

The proposed Project would increase the annual ship calls (166 annual vessel calls) relative to the CEQA baseline (86 annual vessel calls). With vessel hull coating with antifouling paints and cleaning intervals and ballast water control regulations, the proposed Project has a low potential to increase the introduction of nonnative species into the Harbor that could substantially disrupt local biological communities.

Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.2.4.5 Summary of Impact Determinations

Table 3.2-6 summarizes the CEQA impact determinations of the proposed Project related to Biological Resources, as described in the detailed discussions above. For each impact threshold, the table describes the impact, notes the impact determination, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation).

Table 3.2-6: Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
Impact BIO-1: The proposed Project has the potential to result in the loss of individuals, or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally designated critical habitat.	Construction: Significant	**MM BIO-1. Protect marine mammals**	Less than significant
	Operation: Less than significant	No mitigation is required.	Less than significant
Impact BIO-2: The proposed Project has the potential to result in a substantial reduction or alteration of a state, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	Construction: Significant	**MM BIO-2. Protect eelgrass**	Less than significant
	Operation: Less than significant	No mitigation is required.	Less than significant
Impact BIO-3: The proposed Project would not result in a substantial disruption of local biological communities (e.g., from construction impacts or the introduction of noise, light, or invasive species).	Less than significant	No mitigation is required.	Less than significant

3.2.4.6 Mitigation Monitoring

The following mitigation monitoring program is applicable to the proposed Project:

Impact BIO-1: The proposed Project could result in the loss of individuals, or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally designated critical habitat.

Mitigation Measure	**MM BIO-1: Protect Marine Mammals:** Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities will include establishment of a safety zone, by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer.[1] The pile driving site will move with each new pile; therefore, the safety zones will move accordingly. [1] Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical

	Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS, 2016) in consultation with the Acoustic Threshold White paper prepared for this purpose by LAHD (LAHD, 2017). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions prior to commencement of pile driving.
Timing	During pile installation at Berths 167–169.
Methodology	Qualified observers in communication with construction crew.
Responsible Parties	LAHD Construction.
Residual Impacts	Less than significant.
Impact BIO-2: The proposed Project could result in a substantial reduction or alteration of a state, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	
Mitigation Measure	**MM BIO-2: Protect Eelgrass:** The proposed Project shall comply with the California Eelgrass Mitigation Policy. Pursuant to the Policy, the following activities shall be performed: • A pre-construction eelgrass survey to map the location and extent of eelgrass that could potentially be affected by wharf demolition and construction; • Use of minimization measures or Best Management Practices, such as silt curtains, to reduce potential effects to eelgrass during Project construction; • A post-construction eelgrass survey to map the location and extent of eelgrass after completion of wharf demolition and construction; • If eelgrass is lost due to Project construction, eelgrass shall be mitigated at a ratio of at least 1.2 to 1. Timing of eelgrass surveys, including the frequency of post-mitigation surveys (if applicable), shall comply with provisions in the California Eelgrass Mitigation Policy.
Timing	Prior to construction, and if eelgrass is present, following completion of construction. If mitigation is required (i.e., eelgrass transplant or other mitigation technique), mitigation site monitoring would be required at specific intervals.
Methodology	As required in the California Eelgrass Mitigation Policy, including but not limited to visual survey by divers, remotely operated vehicle, or sidescan sonar.
Responsible Parties	LAHD Construction and Environmental.
Residual Impacts	Less than significant.

3.2.5 Significant Unavoidable Impacts

The introduction of nonnative (invasive) species during Project operations that substantially disrupt local biological communities would remain significant and unavoidable because no feasible mitigation is currently available.