Appendix 3
Essential Fish Habitat Assessment

Berths 121-131 Container Terminal Redevelopment Project
Essential Fish Habitat Assessment

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EXECUTIVE SUMMARY

The Proposed Project would improve the existing container terminal located at Berths 121-131 in the West Basin of Los Angeles Harbor. This Essential Fish Habitat (EFH) Assessment has been prepared pursuant to the Magnuson-Stevens Fishery and Conservation Management Act (Act) to analyze potential impacts to federally managed fish and invertebrates from construction and operation of the Proposed Project.

Two alternatives to the Proposed Project are also considered: No Project and No Federal Action. The No Project and No Federal Action alternatives do not include in-water work; accordingly, potential impacts to EFH would only be related to discharges from vessels and runoff from the terminal during future operations.

Managed species that could be affected by the Proposed Project include four species in the Coastal Pelagics FMP (northern anchovy, Pacific sardine, Pacific mackerel, and jack mackerel) and four species in the Pacific Groundfish FMP (Pacific sanddab, English sole, California scorpionfish, and vermilion rockfish), as well as Ecosystem Component Species in both FMPs.

Impacts during in-water construction would be localized and temporary, lasting approximately four months. Potential impacts from dredging, pile installation, construction runoff, and accidental spills and shading would not be substantial. Shading by the new wharf structures would not have substantial impacts because the new wharf would be similar in dimension and design to the existing wharf. No net loss of marine habitat would occur because there would be no placement of fill beyond existing limits of the rock dike. Acoustic impacts from pile driving could result in adverse effects to fish species in the construction area. However, due to the limited area that would be affected, and with implementation of Mitigation Measure BIO-1 (Protect Marine Mammals), which would include a soft start to pile driving, any disruption to fish and EFH would not be substantial. Avoidance of the area by managed fish species would be temporary; pile driving would occur intermittently during limited periods of construction. The Proposed Project would not create physical barriers to movement, and the baseline condition for aquatic species would be essentially unchanged once construction was finished. Accordingly, impacts of construction of the Proposed Project on managed species and EFH would not be substantial.

Potential impacts on EFH resulting from operation of the Proposed Project and alternatives include effects on water quality resulting from accidental spills and runoff, disturbance from vessel movements, and introduction of invasive species through ballast water exchange or vessel fouling. With implementation of routine controls (e.g., storm water BMPs, spill prevention plans, and response measures), impacts resulting from accidental spills and runoff would not be substantial. Disturbance by vessel movements would have less than significant impacts because the number of additional vessels would be an insubstantial increment over baseline conditions. The Proposed Project's vessel traffic at full operation (156 calls per year) would be substantially lower than the NEPA baseline (208 calls per year). Because of that reduction, operation of the Proposed Project would reduce the potential for introduction of invasive species. Accordingly, impacts to EFH resulting from the introduction of invasive species are considered less than significant.

1.0 INTRODUCTION

The Proposed Project would improve the existing marine container terminal located at Berths 121–131 in the West Basin of Los Angeles Harbor (the Harbor) (Figure 1). Because the Proposed Project requires federal action (issuance of construction permits by the U.S. Army Corps of Engineers), federal law requires an assessment of Essential Fish Habitat (EFH). EFH is managed under the Magnuson-Stevens Fishery Conservation and Management Act (Act). This Act protects habitats (waters and substrate) necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1801 et seq.). The requirements of the Act are implemented through a system of fishery management plans (FMPs) for target groups of species of concern. NOAA Fisheries (2004a) defines specific EFH terms as follows (50 CFR. 600.05–600.930):

- “Waters” include all aquatic areas and their associated biological, chemical, and physical properties that are used by fish and may include aquatic areas historically used by fish where appropriate.
- ”Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- “Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “Spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle”.

The Port of Los Angeles (the Port) has been designated EFH for two FMPs: the Coastal Pelagics FMP and the Pacific Groundfish FMP. Habitat Areas of Particular Concern (HAPCs) are present in the Harbor in the form of eelgrass beds in shallow areas and kelp forests on rock dikes and breakwaters.

This EFH Assessment was prepared pursuant to the provisions of the Act to analyze potential impacts to federally managed fish and invertebrate species from construction and operation of the Proposed Project.

2.0 PROJECT DESCRIPTION

The Proposed Project area encompasses approximately 186 acres. The proposed improvements that could affect EFH are described in detail in Section 2.6 of the Draft EIS/EIR and would include:

- Dredging up to 310,000 cubic yards of sediment to deepen Berths 126-129 and disposing of the sediment at an approved upland disposal facility (approximately 260,000 cubic yards) and the approved LA-2 ocean disposal site (approximately 50,000 cubic yards);
- Demolishing the existing 1,260-foot wharf at Berths 126-129, removing approximately 900 piles, and reconstructing the rock dike (the existing pierhead line would not change);
- Installing approximately 650 24-inch-diameter concrete piles by impact driving to support the new wharf and constructing the new 1,260-foot wharf on top of the piles;
- Installing up to ten new wharf cranes on the new wharf; and
- Operating the terminal until 2055.

Construction of the Proposed Project is assumed to begin in 2026, and in-water construction activities would last approximately four months.

All of the dredged material from berth deepening (up to 310,000 cy) would be disposed of at an approved site, assumed to be an upland disposal site and the LA-2 ocean disposal site. Sampling and analysis in the dredge area to determine suitability for unconfined aquatic disposal has not been completed, but recent sediment testing at Berths 126-129 indicates generally low levels of contamination, suggesting that some of the material may be found suitable for disposal at LA-2; this analysis assumes 50,000 cy would be disposed of at LA-2. Effects of sediment disposal at LA-2 were evaluated under NEPA and Section 102 of the Marine Protection, Research and Sanctuaries Act during the site designation process (EPA 1988) and subsequently evaluated in consideration of higher maximum annual disposal volumes (EPA and USACE 2005).

Two alternatives to the Proposed Project are also considered: Alternative 1 (No Project) and Alternative 2 (No Federal Action). There is no dredging, wharf construction/demolition, or installation of piles proposed for either alternative; therefore, potential impacts to EFH from those alternatives would only be related to future operations (i.e., vessel activity and runoff from the terminal), which would be similar to the corresponding impacts for the Proposed Project. Accordingly, neither of the alternatives is considered further in this analysis.

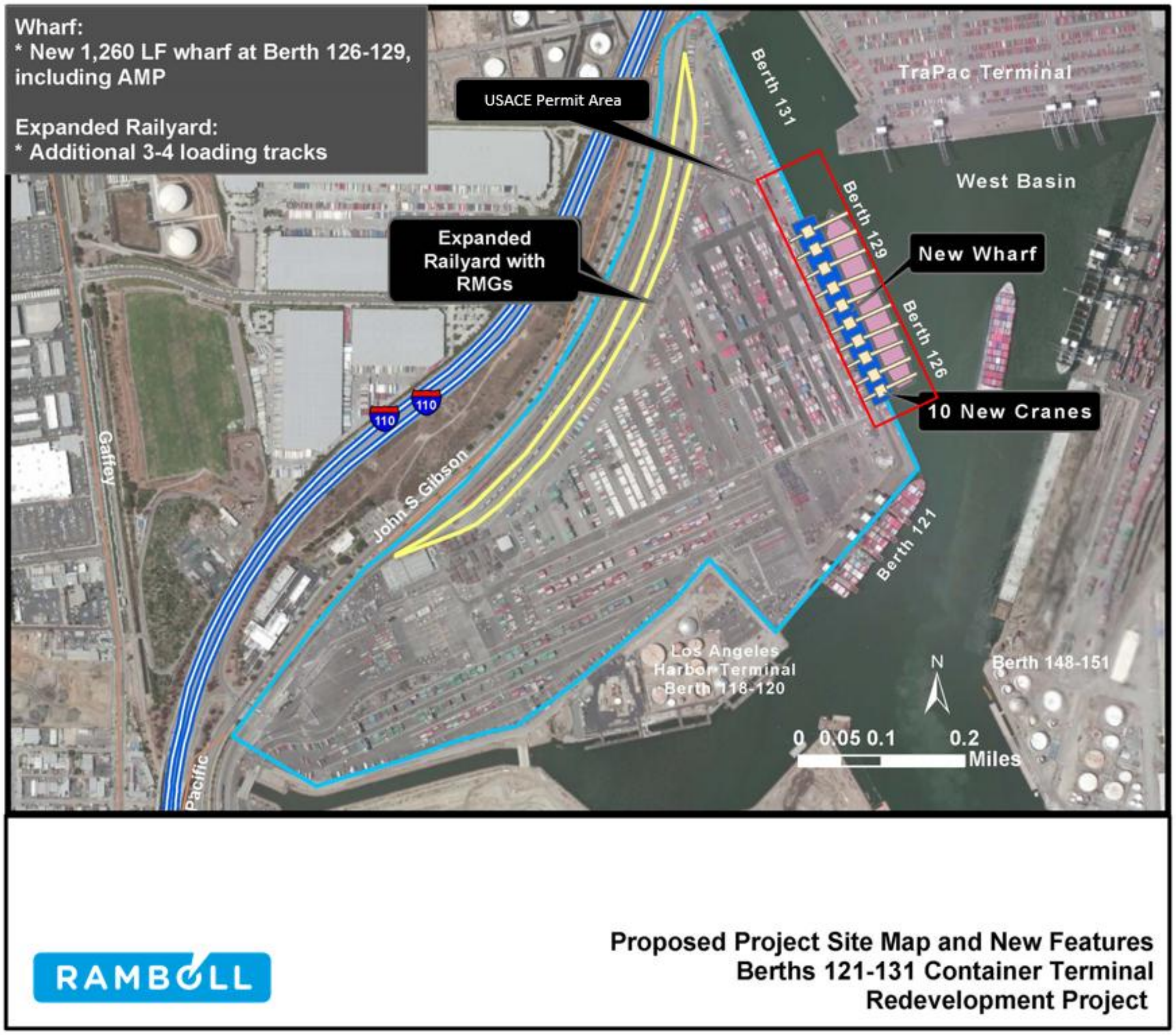

Figure 1. Configuration of the Proposed Project in Los Angeles Harbor.

3.0 DESCRIPTION OF THE STUDY AREA

Los Angeles-Long Beach Harbor (the Port Complex), in which the project site is located, was historically an estuary formed at the mouth of the San Gabriel and Los Angeles Rivers. It was characterized by extensive mudflats and marsh areas that provided habitat for birds, fish, and invertebrates. Urbanization and development led to the construction and modifications associated with the current configuration of the Harbor. Dredging, filling, channelization, and construction over the past 100 years has completely altered the local estuarine physiography. The Port Complex is no longer a true estuary because it does not maintain significant year-round fresh water input, and the biota is not distributed along salinity gradients as it is in most estuarine systems.

The habitats available for plants and animals have also changed as a result of harbor modifications. Very little sandy beach, shallow subtidal, or salt marsh habitat remains. Dredge and fill activities have resulted in changes to the benthic (bottom) habitat, including conversion of shallow marsh and tidal channels to deep water channels and dry land. The placement of shoreline structures, such as bulkheads, riprap, and pier pilings, has greatly increased the hard substrate available for organisms such as mussels and barnacles, which has also increased the diversity of marine plants and animals in San Pedro Bay by providing more intertidal habitat, with its high diversity compared to soft-bottom habitat (e.g., Wood E&IS 2021). Physical Features

Los Angeles Harbor consists of Inner and Outer Harbor areas, and is defined by the breakwaters described above and the land masses created by dredge-and-fill operations. The Outer Harbor consists of deep, open-water areas and channels that lead to basins, slips, and marine terminals, as well as basins and slips farther into the Harbor. The channels, basins, and slips vary in size and distance from the harbor entrances. When assessing potential impacts from project development, the term Inner Harbor refers specifically to channels and basins in which marine habitat value, as assessed by an interagency biomitigation team, is lower than in Outer Harbor areas. The West Basin of Los Angeles Harbor, where the Proposed Project is located, is Inner Harbor.

The Port of Los Angeles is the leading port by container volume and cargo value in the United States. In addition, the Port provides berthing for cruise ships, sportfishing vessels, commercial fishing vessels, pleasure boats, and support vessels. The physical size of the Port, the diversity of uses, and ongoing upgrade and development projects result in nearly continuous in-water activity throughout the Port. 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% 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 coast of central California has been estimated at 74 to 100 dBPEAK (Andrew et al. 2011).

3.1 Water Quality Parameters

Waters within Los Angeles Harbor are primarily marine (saline), although there are fresh water inputs from regulated discharges, urban runoff, and flows from Dominguez Channel and the Los Angeles River. Water quality is considered in more detail in Section 3.7 of the Draft EIS/EIR, but the following summarizes water quality parameters measured during monthly sampling between January and December 2019 (the baseline for analysis) at three stations (32B, 33, 35) off the Berths 121-131 Terminal (LAHD 2021) and the Regional Monitoring Coalition's 2019/2020 sampling in the Turning Basin east of the project site (Anchor QEA 2020):

- Water temperatures ranged from 13.7° C in March to 20.0° C in September;
- Salinity values ranged between 32.4 and 33.6 practical salinity units (psu, which is essentially equivalent to parts per thousand [ppt] in southern California);
- Dissolved oxygen (DO) concentrations ranged from 4.8 to 8.4 mg/L;
- pH was typically between 7.9 to 8.4;
- Transmissivity at the three stations ranged between 0.1% and 85%, with typical values between 50% and 75%; and
- Dissolved metals in near-surface water were very low relative to regulatory criteria and concentrations of chlorinated pesticides and PCBs were below detection limits.

3.2 Tides and Currents

Tides in southern California are classified as mixed, semi-diurnal, with two unequal high tides (lower high water and higher high water) and two unequal low tides (higher low water and lower low water) each lunar day (approximately 24.5 hr). From 2003 through 2019, the highest tide measured at the Los Angeles Harbor tide station (NOAA No. 9410660) was +7.82 feet (+2.38 meters) MLLW, measured in January 2005, and the lowest was -2.34 feet (-0.71 meters) MLLW, measured in January 2009 (NOAA 2016).

To better understand circulation patterns and watershed inputs into Los Angeles-Long Beach Harbor, the Ports undertook a program to develop a hydrodynamic and water quality model to improve their predictions of the effectiveness of current and future control measures (the WRAP Model) (POLA and POLB 2009). Circulation patterns are established and maintained by tidal currents. Flood tides flow into the harbors and up the channels, while ebb tides flow down the channels and out of the harbors (POLA and POLB 2009). The harbors are protected from incoming waves by the Federal Breakwater. In addition to protecting the ports from waves, the Federal Breakwater reduces the exchange of the water between the harbors and the rest of San Pedro Bay, hence creating unique tidal circulation patterns. Modeled current direction and velocity throughout the Port Complex during both ebb and flood tides are summarized in Figure 2. As the figure shows, current speeds in the West Basin are very slow.

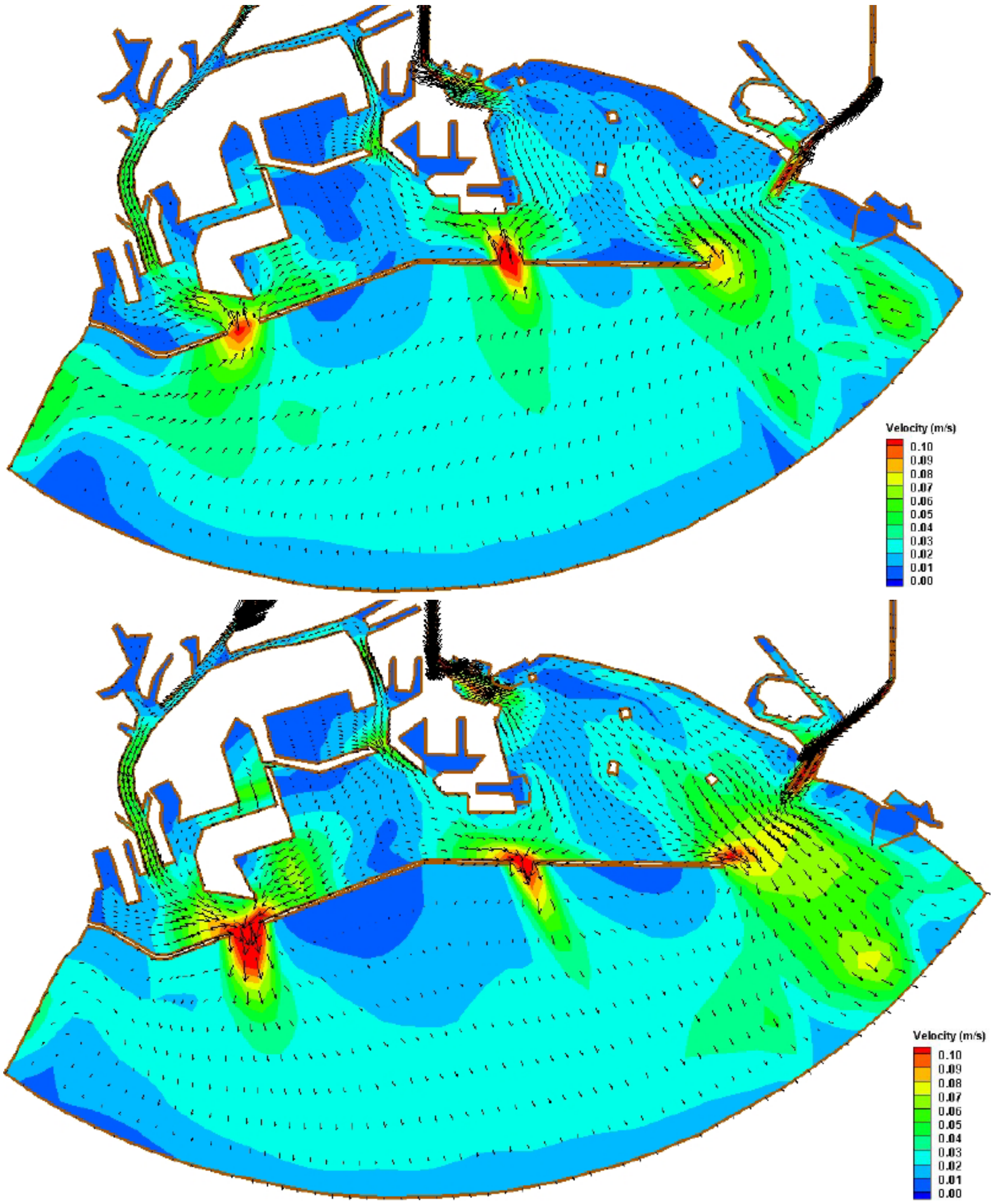

Figure 2. Current patterns in Los Angeles and Long Beach Harbors predicted by the WRAP Model (POLA and POLB 2009). Top: Typical flood tide currents. Bottom: Typical ebb tide currents.

3.3 Sediment Characterization

A sediment characterization study to support permits for dredging and disposal at Berths 121-131 has not been completed. However, sediment chemistry data are available from a preliminary study conducted in 2016 to support planning for dredging and disposal (KLI 2017).

That study found that the surface sediments at the project site consist largely of silt and clay, underlain by medium and fine sands and silt. Portions of the material that would be dredged for the Proposed Project showed somewhat elevated concentrations of arsenic, copper, PCBs, and polyaromatic hydrocarbons (PAHs), and tissues of test organisms showed some level of bioaccumulation of DDT, PCBs, and PAHs. However, the bulk of the sediments did not demonstrate toxicity to test organisms. Accordingly, it is possible that some of the sediments to be dredged as part of project construction will be found to be suitable for unconfined aquatic disposal and could be disposed of at the approved LA-2 ODMDS. Dredge material not found suitable for unconfined aquatic disposal would be disposed of at an approved upland site outside the Port.

3.4 Project-Area Habitats

Although there are a number of habitat types in the Port, including soft-bottom (mud and sand), hard-substrate (pilings and riprap), shallow water, eelgrass beds, kelp beds, and beaches, the marine habitat in the West Basin, where the Proposed Project is located, consists entirely of deep-water soft bottom and hard substrate.

Giant kelp (*Macrocystis pyrifera*) has not been observed in the West Basin (Wood E&IS 2021). Eelgrass (*Zostera marina*), considered a “special aquatic site” under the CWA (40 CFR 230.43), occurs in a number of places in the Harbor, including some areas along Inner Harbor shorelines (Wood E&IS 2021). Eelgrass has not been documented in the West Basin, and existing depths would not be expected to support it. The most recent harbor-wide study documented eelgrass in extensive beds along Inner Cabrillo Beach, about two miles from the Proposed Project site, in the Pier 300 Shallow Water Habitat/Seaplane Lagoon area, about 1.5 miles from the Project site and in the marinas of the East Basin, about 1.5 miles from the Project site; and in small patches in Slip 1, approximately 0.5 mile from the Project site (Wood E&IS 2021). The nearest beaches are at Pier 300 and Cabrillo Beach, both more than a mile from the project site. Accordingly, there are no HAPCs at or near the project site.

Numerous pilings support piers and wharves along in the West Basin. Many fish species, including some Pacific Groundfish species (i.e., rockfishes), are attracted to structures. Pier pilings support intertidal/subtidal invertebrate communities characterized by algae, barnacles, and mussels that provide forage for other invertebrates and many fish species, including some rockfishes. Riprap quarry rock placed as shoreline protection also provides hard surfaces that function ecologically much like natural reefs (the subtidal portion) and rocky shoreline (the intertidal). In addition to supporting diverse invertebrate communities, riprap provides abundant shelter and forage opportunities for a variety of fishes, including some of the Pacific Groundfish species.

The 2016 sediment sampling at Berths 121-131 (KLI 2017) characterized the surface sediments as “wet, loose silty clay or clayey silt with some fine sand” and reported a grain size distribution of 35 to 62% silt and clay. Soft-bottom sediments support a variety of invertebrate species both in and on the sediment surface. The infauna of the West Basin is dominated by various polychaete worms and amphipod crustaceans, but clams and snails are also abundant. The epifauna is dominated by shrimp and crabs. These organisms provide forage for numerous fish species, including a number of the Pacific Groundfish species.

Although bays and estuaries in southern California, including harbors, function as a nursery grounds for juveniles of coastal fish species (Allen et al., 2006), the biological studies conducted over the past 30 years have not identified the West Basin as supporting more juvenile fish than other areas, or as being a significant nursery habitat for fish or invertebrates. Given that the most productive nursery habitats in the Port are shallow, especially when vegetated with eelgrass (Wood E&IS 2021), and that water depths at the project site exceed 40 feet, the lack of a substantial juvenile fish nursery function is not surprising.

4.0 FISH AND INVERTEBRATE COMMUNITIES

The four recent harbor-wide biological surveys of the Port Complex (MEC and Associates 2002, SAIC 2010, MBC 2016, Wood E&IS 2021), as well as long-term monitoring data from the Los Angeles West Basin (MBC 2013), have documented fish and invertebrate communities that appear to have changed slowly over the past two decades. The fish community, in particular, has been stable. By contrast, an earlier study of Los Angeles Harbor documented substantial changes in the invertebrate community as a result of improved water and sediment quality (MEC 1988).

4.1 Fish

In the harbor-wide biological surveys, more than 130 fish species have been collected, 60 to 70 of which occur commonly. The results of those surveys are described in some detail in Wood E&IS (2021), which is summarized in the following sections.

4.1.1 Ichthyoplankton

The four harbor-wide biological surveys and several more focused studies (e.g., MBC et al. 2007, MEC 1988) found that white croaker (*Genyonemus lineatus*), blennies (*Hypsoblennius* spp.), gobies (CIQ complex, yellowfin, and bay gobies), anchovies (Engraulidae), and clingfish (Gobiesocidae) comprised nearly 90 percent of fish larvae in the Port Complex. Overall, the greatest concentrations of larval fishes occurred in spring and summer, the fewest in fall and winter. Samples collected in the 2018 Biological Surveys at Station LA-5 in the West Basin and LA-15 at the entrance to the West Basin (Figure 3) were dominated by goby and blenny larvae (Wood E&IS 2021).

4.1.2 Adult and Juvenile Fishes

MEC and Associates (2002), SAIC (2010), MBC (2013, 2016) and Wood E&IS (2021) have shown that the most consistently abundant pelagic fish species in the Port are northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis*), California grunion (*Leuresthes tenuis*), and Pacific mackerel (*Scomber japonica*). Sampling for pelagic fish conducted during the 2018 Biological Surveys at Station LA-5, in the West Basin near the Berths 121-131 Terminal, captured a total of 427 fish; sampling at Station LA-15, in the LA Turning Basin adjacent to the West Basin, collected 381 fish. The majority of the fish captured at both stations were topsmelt, and most were caught at night (Wood E&IS 2021).

The demersal fish assemblage of the Port is consistently dominated by white croaker and queenfish. Other consistently abundant species include California tonguefish (*Symphurus atricauda*), speckled sanddab (*Citharichthys stigmaeus*), barred sand bass (*Paralabrax nebulifer*), staghorn sculpin (*Leptocottus armatus*), California halibut (*Paralichthys californicus*), specklefin midshipman (*Porichthys myriaster*), shiner surfperch (*Cymatogaster aggregata*), and fantail sole (*Xystreurys liolepis*). In the 2013 and 2018 biological surveys, California lizardfish (*Synodus lucioceps*) was among the ten most abundant demersal species (MBC 2016, Wood E&IS 2021), whereas previously it was a minor component of the assemblage. The 2018

Biological Surveys collected an average of 12 species and 174 fish per sample at Station LA-5 and 16 species and 142 fish per sample at LA-15 (Wood E&IS 2021). The most abundant species collected by otter trawl at the two stations were white croaker, barred sand bass, queenfish, and specklefin midshipman. The relatively low number of species likely reflects the lack of habitat diversity in the West Basin.

Figure 3. Fish and benthic invertebrate sampling stations near the Proposed Project. Source: Wood E&IS 2021.

4.2 Invertebrates

The invertebrate fauna of the Port is important to managed species because invertebrates provide food for many, if not most, of them. Invertebrates include planktonic animals, epibenthic invertebrates that live on the sediment surface, infaunal invertebrates that live in the sediments, and riprap organisms that live on hard substrates.

4.2.1 Planktonic Invertebrates

Plankton (small, free-floating animals) is an important food source for many species of fish, including the most abundant species of the Coastal Pelagics (northern anchovy, Pacific sardine, and jacksmelt). Planktonic animals in the Port include a variety of invertebrate species, some of which are permanent residents of the plankton (e.g., copepods, cladocerans, jellyfish and ctenophores) and some of which spend only part of their life cycles in the plankton (e.g., fish and shellfish larvae). Planktonic invertebrates are not studied during the periodic biological surveys of the Port Complex; the description above summarizes studies performed in the 1970s and 1980s (e.g., Soule and Oguri 1979).

4.2.2 Epibenthic Invertebrates

Epibenthic invertebrates represent an important forage resource for many managed fish species, particularly Pacific Groundfish. Biological surveys of the Port have documented more than 110 epibenthic invertebrate taxa throughout Los Angeles-Long Beach Harbor (MEC and Associates 2002, SAIC 2010, MBC 2016, Wood E&IS 2021). The most abundant species were several shrimp (*Crangon* spp., *Sicyonia* spp.), tuberculate pear crab, Xantus swimming crab, New Zealand bubble snail, and spotwrist hermit crab. The 2018 Biological Surveys collected 31 species and 845 organisms at Station LA-5 in the West Basin, and 27 species and 691 individuals at Station LA-15 in the nearby Turning Basin (Wood E&IS 2021). Target shrimp (*Sicyonia penicillata*), tunicates (*Styela* spp., *Mogula* sp., and *Ciona* sp.), and swimming crabs (*Portunus xanthusi*) were the most abundant species collected at LA-5 and LA-15.

4.2.3 Benthic Infauna

Infaunal invertebrates also represent an important forage resource for many managed fish species, including some of the Pacific Groundfish FMP species. Studies throughout Los Angeles-Long Beach Harbor since the 1970s have documented gradual but distinct changes in the composition of the benthic infaunal community. From an Inner-Harbor assemblage dominated by pollution-tolerant polychaete worms in the 1970s (Allen Hancock Foundation 1980), the infauna has changed to an assemblage largely characterized by species indicative of relatively unpolluted conditions.

The most recent harbor-wide biological surveys (Wood E&IS 2021) found that the benthic community at three sampling stations in and near the West Basin (LA-5, LA-13, and LA-15, Figure 3) was made up of from 22 to 48 different species, dominated by polychaete worms, crustaceans (mostly amphipods), and molluscs (small clams and snails). The most abundant species at those three stations were oligochaete worms; the polychaetes *Cossura* sp., *Mediomastus sp., Euchone limnicola*, *and Kirkegaardia (formerly Montecellina) siblina*; *the crustaceans Eochelidium sp.A, Scleroplax granulata, Listriella goleta, Amphideutopus oculatus* and *pinnotherid crabs*; the phoronid worm *Phoronis* sp.; and the Asian clam *Theora lubrica* (a non-native species). The biomass of infauna near the Project site ranged between 0.5 and 4.1 g/m^2. About five percent of the benthic infaunal species collected throughout the Port Complex in the 2018 Biological Surveys were non-native (Wood E&IS 2021). The most abundant non-native species in the West Basin was the Asian clam.

4.2.4 Hard Substrate (Riprap) Biota

One of the major habitat types in the project area is hard substratum: intertidal and subtidal riprap and concrete pilings that line the shoreline and support the wharves. Many species of the Pacific Groundfish FMP, especially rockfish and scorpaenids, feed on the biota of hard substrata. The most recent harbor-wide biological surveys sampled the biota on riprap and wharf pilings at Berth 147, across the West Basin from the Berths 121-131 Terminal (near Station LA-5 in Figure 3). The high intertidal zone of both pilings and riprap was dominated by barnacles and bare surfaces. The mid-lower intertidal of the pilings supported a rich flora and fauna, including among the invertebrates an introduced mussel (*Mytilus galloprovincialis*), tunicates (*Ascidea ceratodes*), sponges, encrusting ectoproct colonies, several amphipod species, brittle stars and bat stars, a tanaid crustacean, spirorbid and serpulid worms, and several polychaete worms. The algal community included turf-forming and coralline red algae, the green alga *Ulva* sp., and the brown algae *Colpomenia* and *Undaria pinnatifida*. The subtidal level was dominated by tunicates, sponges, ectoprocts, a variety of small crustaceans (caprellid and gammarid amphipods, isopods, and ostracods), and a small clam. Macroalgae were scarce in the subtidal zone. The riprap assemblages were generally similar to the piling assemblages, differing primarily in the relative proportions of species present.

5.0 EFH AND MANAGED SPECIES

Off southern California, species managed by the Pacific Fishery Management Council (PFMC) under the Act are included in the Coastal Pelagics FMP and the Pacific Coast Groundfish FMP. Key goals of the management plans include: the promotion of efficient and profitable fisheries; achievement of optimal yield; provision of adequate forage for dependent species; prevention of overfishing; and development of long-term research plans (PFMC 2016, 2020).

5.1 Coastal Pelagics FMP

EFH for Coastal Pelagics is defined as all marine and estuarine waters above the thermocline (the zone of the water column where water temperature changes rapidly between warmer surface waters and cold deep waters) from the shoreline of the coast of California offshore to the limits of the Exclusive Economic Zone. The Coastal Pelagics FMP (PFMC 2016) currently covers four managed fish species (Table 1) and two managed invertebrate species (market squid, *Doryteuthis opalescens*, and krill [small, planktonic shrimp-like crustaceans]).

Table 1. Coastal Pelagics FMP Species in Los Angeles Harbor.

Species	Potential Habitat Use	Larvae	Juvenile/ Adult
Managed Species			
Northern anchovy (*Engraulis mordax*)	Open water.	Abundant	Abundant
Pacific sardine (*Sardinops sagax*)	Open water.	Uncommon	Common
Pacific (chub) mackerel (*Scomber japonicus*)	Open water, juveniles off sandy beaches and around kelp beds.	-	Common
Jack mackerel (*Trachurus symmetricus*)	Open water, young fish over shallow banks and juveniles around kelp beds.	Rare	Common
Ecosystem Component Species			
Jacksmelt (*Atherinopsis californiensis*)	Nearshore coastal waters and bays, eelgrass beds, sandy shores	-	Common
California grunion (*Leuresthes tenuis*)	Open water over shallow bottoms, spawn on sandy beaches	-	Common
Topsmelt (*Atherinops affinis*)	Surface waters, common in estuaries, kelp beds and along sandy shores	-	Common

Sources: MBC et al. (2007), MEC and Associates (2002), MBC (2013), SAIC (2010), MEC (1999), MBC (2016), Wood E&IS 2021
N/A: not applicable: internal fertilization
- : Not collected/not identified in LA/LB Harbor; Most atheriniid larvae not identifiable to species

The FMP also covers a number of “Ecosystem Component Species” (ECS), including Pacific herring (*Clupea pallasii pallasii*) and several “silversides” species, which in the Port area comprise jacksmelt, grunion, and topsmelt (Table 1). The ECS, along with krill, were added to reflect their importance as forage for other managed species. The Port area is at the southern end of the Pacific herring’s range (Miller and Lea (1972) and the species has not been collected in the Port Complex; krill, although abundant in offshore coastal waters, are not known from the Port; and squid, although occasionally collected as larvae in the Port, have not been collected as adults in recent port-wide surveys. Accordingly, those species are not considered further in this analysis.

5.2 Pacific Coast Groundfish FMP

EFH for Pacific Coast Groundfish includes all waters off southern California between Mean Higher High Water (MHHW) and depths less up to 11,500 ft (3,500 m), and the upriver extent of saltwater intrusion (PFMC 2020). Not including ECS, there are 85 fish species covered under the Pacific Coast Groundfish FMP, most of them rockfish species that occur primarily in deep water well outside the Port. The FMP also includes 12 flatfish species, three shark species, and six other species. Specific Habitat Areas of Particular Concern (HAPCs) have been identified for Pacific Coast Groundfish, including estuaries, canopy kelp, seagrass (i.e., eelgrass), rocky reefs, and other areas of interest.

In 2016, some species that were previously covered under the Pacific Coast Groundfish FMP were removed from the list of managed species and designated as ECS. These included big skate (*Raja binoculata*) and California skate (*R. inornata*), both of which are common in southern California coastal waters. The ECS for the Pacific Coast Groundfish FMP also includes a number of other skate species, a group of fish known as grenadiers, and several groups of forage fish, including silversides, which are shared with the Coastal Pelagics FMP. As with Coastal Pelagics, the development of commercial fisheries for the Pacific Coast Groundfish ECS is prohibited at this time. Of the nearly 100 species in the Pacific Coast Groundfish FMP, only 19 (including two ECS species) have been collected in the Port (Table 2).

5.3 Occurrence of Managed Species at the Project Site

5.3.1 Coastal Pelagics

Northern anchovy are generally the most abundant fish in the Port, and larval, juvenile, and adult anchovies have consistently been collected during fish sampling near the Project site (MEC and Associates 2002, SAIC 2010, MBC 2016, Wood E&IS 2021). The species is a widespread schooling fish that is an important food resource for fish, marine mammals, and marine birds. In the 2019 biosurvey (Wood E&IS 2021), however, fewer than 50 of the 808 pelagic fish caught at stations LA-5 and LA-15 were northern anchovies.

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 2018 Biological Surveys (Wood E&IS 2021) 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 sardines are much less common than northern anchovy in the Port. Fewer than 200 were collected in lampara samples in the 2013 Biological Surveys, only four of them in the West Basin (MBC 2016), but in the past it has been one of the ten most abundant pelagic species in the Port Complex (MEC and Associates 2002; SAIC 2010). Night sampling at Station LA-5 in the West Basin during the 2018 Biological

Surveys collected 259 individuals (Wood E&IS 2021). Accordingly, the species is considered common in the Port Complex.

Table 2. Pacific Coast Groundfish FMP Fish Species Found in Los Angeles Harbor.

Species	Potential Habitat Use	Larvae	Juvenile/ Adult
Managed Species			
English sole (*Parophrys vetulus*)	Soft bottom habitats.	Rare	Uncommon
Pacific sanddab (*Citharichthys sordidus*)	Soft bottom habitats.	Rare	Common
Butter sole (*Isopsetta isolepis*)	Soft bottom habitats.	Rare	--
Black rockfish (*Sebastes melanops*)	Along breakwater, near deep piers and pilings. Associated with kelp, eelgrass, high relief reefs.	-	Rare
Bocaccio (*Sebastes paucispinis*)	Multiple habitat associations, including soft and hard bottom, kelp, eelgrass, etc.	-	Rare
Brown rockfish (*Sebastes auriculatus*)	Prefer hard substrata and rocky interfaces.	--	Rare
Calico rockfish (*Sebastes dallii*)	Multiple habitat associations but prefer hard substrata and rocky interfaces.	-	Rare
California scorpionfish (*Scorpaena guttata*)	Benthic, on soft and hard bottoms, as well as around structures.	-	Uncommon
Grass rockfish (*Sebastes rastrelliger*)	Found around hard substrate, kelp, and eelgrass habitats.	-	Rare
Kelp rockfish (*Sebastes atrovirens*	Found around hard substrate and kelp.	-	Rare
Olive rockfish (*Sebastes serranoides*)	Found around hard substrate and kelp.	-	Rare
Vermilion rockfish (*Sebastes miniatus*)	Juveniles over soft-bottom and kelp, adults associated with hard substrate.	-	Uncommon
Lingcod (*Ophiodon elongatus*)	Multiple habitat associations but prefer hard substrata and rocky interfaces.	-	Rare
Cabezon (*Scorpaenichthys marmoratus*)	Multiple habitat associations but prefer hard substrata and rocky interfaces.	Rare	Rare
Pacific hake (*Merluccius productus*)	Offshore, juveniles in open water.	Rare	--
Leopard shark (*Triakis semifasciata*)	Multiple habitat associations, including soft bottoms, and near structures, kelp, and eelgrass.	N/A	Rare
Spiny dogfish (*Squalus acanthias*)	Pelagic and on muddy bottoms.	N/A	Rare
Ecosystem Component Species			
Big skate (ECS) (*Raja binoculata*)	Soft bottom habitat.	N/A	Rare
California skate (ECS) (*Raja inornata*)	Soft bottom habitat.	N/A	Common

Sources: MBC et al. (2007), MEC and Associates (2002), MBC (2013), SAIC (2010), MEC (1999), MBC (2016)
N/A: not applicable: internal fertilization
- : Not collected/not identified in LA/LB Harbor; Most rockfish larvae not identifiable to species

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. In the two most recent biological surveys, however, both species were among the ten most abundant pelagic (i.e., lampara-caught) species (MBC 2016, Wood E&IS 2021), and are therefore currently considered common. Most individuals of both species were caught in the Outer Harbor, but in the 2018 Biological Surveys, only a few individuals were captured in or near the West Basin.

Although common in nearshore waters of southern California (Miller and Lea 1972), jacksmelt have been uncommon in the Harbor until the most recent biological surveys (MEC and Associates 2002, SAIC 2010, MBC 2016, Wood E&IS 2021). In the 2013 Biological Surveys, jacksmelt was the fifth most abundant pelagic species in the Port Complex and was caught in modest numbers at stations LA-5 and LA-15, near the Proposed Project (MBC 2016). In the 2018 Biological Surveys, however, fewer than 200 jacksmelt were captured in the Port Complex, none of them in or near the West Basin (Wood E&IS 2021). Topsmelt were collected in moderate numbers at both stations during both of the most recent biological surveys (MBC 2016, Wood E&IS 2021). While no California grunions were collected at either station in 2013-2014 (MBC 2016), grunions were abundant in pelagic and shallow nearshore samples in the 2018 biosurvey and a few were collected in the West Basin (Wood E&IS 2021). California grunion are common in the region, as evidenced by the regular grunion runs at Cabrillo Beach.

5.3.2 Pacific Coast Groundfish

None of the species covered under the Pacific Coast Groundfish FMP is considered abundant in the Proposed Project area. Pacific sanddab (*Citharichthys sordidus*) can be considered common in the Port Complex as a whole because it was collected by trawl in three previous harbor-wide biological studies, although not in great numbers and not in the area of the Proposed Project (MEC 1988; MEC and Associates 2002; SAIC 2010); the species was not collected at all in the 2013 Biological Surveys (MBC 2016) and only one individual was collected in the 2018 Biological Surveys (Wood E&IS 2021).

English sole (*Parophrys vetulus*) has been collected during all four of the cited harbor-wide biological surveys, but in low numbers and not in the West Basin: 3 in 2000, 24 in 2008, 2 in 2013, and 1 in 2018. Larvae of English sole were collected in the 2008 Biological Surveys (SAIC 2010), probably not collected in the 2013 Biological Surveys (unidentified Paralichthyidae larvae were collected but could not be identified to genus or species; MBC 2016), and not collected in the 2018 Biological Surveys (Wood E&IS 2021).

California scorpionfish (*Scorpaena guttata*) is another species collected in all four harbor-wide biological surveys, with 11 individuals in 2008, 29 in 2013, and 50 in 2018; three of the individuals in the 2013 Biological Surveys were caught at stations near the Proposed Project site (Wood E&IS 2021).

Vermilion rockfish (*Sebastes miniatus*) was collected during the 2000 (4 individuals), 2008 (20 individuals), 2013 (45 individuals) and 2018 (11 individuals) biological surveys; four of the individuals in the 2018 Biological Surveys were caught at West Basin stations. Although adult vermilion rockfish occur between 20 and 1,440 feet, they are most common between 165 and

495 feet, meaning that the Port is at the very shallow end of their depth preference. Juveniles are common in shallower water (20 to 120 feet), where they hover over sand patches near algae or structures, including pier pilings (Love et al. 2002).

One gopher rockfish (*Sebastes carnatus*) and one brown rockfish (*S. auriculatus*) were captured in the 2018 Biological Surveys, neither near the Project site. These species have been collected in previous harbor-wide surveys, but never more than a few individuals.

The two ECS species that occur in the Port, California skate (*Raja inornata*) and big skate (*R. binoculata*), have been collected by trawl during harbor-wide biological surveys. In 2008, only 23 California skates were collected, in 2013 62 individuals were collected, 7 of them in the vicinity of the Proposed Project, and in 2018 six individuals were collected, none of them in the vicinity of the Proposed Project. No big skates have been collected in any biological surveys since 2000. Both species prefer soft-bottom habitat, although California skate prefers much deeper water (60 to 2,200 feet) than big skates (10 to 360 feet) (Miller and Lea 1972).

The remaining ten species in Table 2 are collected so infrequently and in such low numbers that they are considered rare in the Port Complex; details of their habitat preferences and occurrence in the Harbor are presented in MBC (2014).

6.0 ASSESSMENT OF POTENTIAL IMPACTS

Potential effects on the marine environment from construction and operation of the Proposed Project could result from:

- Dredging of sediments;
- Installation of piles and construction of wharves;
- Rock dike demolition and reconstruction;
- Spills from shore or from vessels at the terminal; and
- Introduction of invasive species.

The assessment of impacts is based on the assumption that the Proposed Project would adhere to the following measures and controls, which are described in more detail in MBC (2014) and Section 3.12 (Water Quality, Sediments, and Oceanography) of this Draft EIS/EIR:

- Coverage under the General Construction Activities Stormwater Permit (GCASP) for the onshore portions of the Proposed Project, which would impose construction controls to limit spills and runoff to the marine environment.
- Coverage under the General Industrial Activities Stormwater Permit (GIASP), which would require adherence to a SWPPP and implementation of BMPs during operation of the Proposed Project.
- Implementation of City of Los Angeles MS4/LID construction and operational control measures into the project design.
- Characterization and remediation of contaminated upland soils in accordance with LAHD, Los Angeles Regional Water Quality Control Board (RWQCB), Department of Toxic Substances Control, and Los Angeles County Fire Department protocol and cleanup standards.
- Management of construction activities and sediment dredging and disposal consistent with an approved Dredged Material Management Plan, USACE Section 10/Section 404 permit requirements, and RWQCB WDRs and CWA Section 401 Water Quality Certification, including dredge site monitoring and adaptive management.
- Preparation and implementation of a Debris Management Plan and Oil Spill Contingency Plan (OSCP) that identifies containment and spill management in the event of an accidental spill.

6.1 Construction Impacts

In-water and over-water construction activities would extend over approximately 18 months. Impacts on water quality could occur from dredging, dredge material disposal, installation of piles, upland soil disturbance, and spills of potential contaminants. Impacts would be the result of the re-suspension of sediments and/or the introduction of contaminants to the water column (these processes are described in detail in MBC [2014]). The effects of these processes could include:

- Increased turbidity causing reduced water clarity and light transmittance,
- Increased dissolved or particulate contaminants,
- Reduced dissolved oxygen from suspension of sediments with low oxygen,
- Reduced pH, and
- Plankton blooms from suspension of nutrient-laden sediments.

Salinity and temperature would not be affected by construction of the Proposed Project.

Construction would also produce underwater noise, principally from the installation of piles to support the new wharf, that could adversely affect managed fish species, and would involve over-water night lighting that could affect managed species.

6.1.1 Water Quality Effects

In-Water Construction: Dredging and, to a lesser extent, pile installation and rock dike removal, would re-suspend bottom sediments to create localized and temporary turbidity plumes over a relatively small area. Suspension of sediments during clamshell dredging occurs during bucket impact, penetration, and removal of the bucket from the sediment, as well as during bucket retrieval through the water column. The dredge plume could cause elevated turbidity and reduced light transmittance, DO, and pH, and elevated contaminant concentrations, in the immediate vicinity of the dredge. With continuous dredging these effects could last for periods of days to several weeks.

During dredging, a water quality monitoring program would be implemented by LAHD's Construction Division in compliance with both USACE and RWQCB permit requirements, to achieve adaptive management of the dredging operation and control measures. As documented in Anchor Environmental (2003) and Jones & Stokes (2007a, 2007b), the dredge plume and its effects would be localized, would dissipate rapidly with distance from the dredge site, and would redistribute a negligible proportion (two percent or less) of the resuspended sediment. The majority of suspended sediments would settle within one hour of dredging (Palermo et al. 2008). Turbidity would not be expected to extend outside of the West Basin because of the slow circulation within the basin and the constricted entrance to the basin. Water quality monitoring, BMPs, and adaptive management of dredging operations in compliance with the construction management plan, 404 permit, and WDRs would ensure that turbidity did not extend outside the permitted impact area and that conditions at the edge of the dredge site (300 feet downcurrent of the dredge) would be similar to background (control) conditions.

Within the dredge plume, DO and pH could be slightly reduced. Reductions in DO concentrations, however, would be localized and brief, and would not be expected to persist or to cause detrimental effects to biological resources. For example, during dredging at Berths 212–215 in 2001, there was little difference in DO and pH between Station C (300 feet downcurrent of dredging) and the control station approximately 1000 feet away (MBC 2001).

Assuming that the majority of sediments in the dredge footprint are found to be unsuitable for unconfined aquatic disposal, contaminants released from resuspended sediments could result in elevated contaminant concentrations in the water column. However, long-term adverse effects on water quality would not be expected because the localized nature of the dredging and the BMPs employed during dredging would limit the amount of contaminants released and the extent of their spread.

Nutrients released into the water column during dredging and pile installation could promote nuisance growths of phytoplankton. As described in MBC (2014), however, the limited spatial and temporal extent of proposed project activities with the potential for releasing nutrients from bottom sediments mean that substantial adverse effects on EFH in Harbor waters are not anticipated to occur in response to the Proposed Project.

Spills and leaks of hydrocarbons (fuels and lubricants) from water-based construction equipment could adversely affect water quality in the West Basin. However, the history of construction activities in the Harbor indicates that the possibility of such an occurrence is remote, and the employment of standard spill prevention and countermeasures would limit the likelihood of substantial amounts of such materials from entering the water if a spill or leak did occur. Accordingly, spills and leaks from in-water construction of the Proposed Project would be unlikely to have a substantial adverse effect on EFH.

Backlands Construction: The Proposed Project would involve only limited backlands construction (expansion of the WBICTF railyard and minor work along the landward side of the new wharf); railyard construction would occur no closer than 600 feet (~180 meters) from the water's edge. Backlands construction would be controlled by various construction permits and practices that would limit the likelihood and magnitude of runoff and spills. BMPs to reduce runoff would include measures such as berming around areas of disturbance, minimization of the area of excavation, temporary swales to pond water on site, and wheel washing for construction equipment. Accordingly, non-stormwater discharges and stormwater runoff from soil disturbance, asphalt leachate, concrete washwater, and other construction materials, as well as accidental spills from equipment and materials storage and handling, could be very unlikely to result in impacts on West Basin water quality and EFH.

6.1.2 Underwater Sound

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 (NOAA Fisheries 2004b). Scientific investigations on the effect of noise on fish indicate that sound levels below 183 to 187 dB do not appear to result in any acute physical damage or mortality to fish (ICF and Illingworth & Rodkin 2012), and a consortium of federal and state wildlife agencies and highway authorities has established an "interim injury criterion" for fish of 206 dB_{peak} (Caltrans 2020). Types of effects on fish can include mortality from swim bladder rupture or internal hemorrhaging, changes in behavior, and temporary hearing loss (BOEM 2012, Caltrans 2020). The most common behavioral changes include temporary dispersal of fish schools.

Impact driving of 24-inch-diameter concrete piles would create sound levels of up to 192 dB in the immediate vicinity of the pile being driven (LAHD 2017), which would fall well below the interim injury criterion for fish of 206 dB_{peak}. Accordingly, sound pressure waves from pile driving would likely result in behavioral alteration (i.e., temporary avoidance of the construction area) and possible temporary threshold shifting (e.g., hearing impairment) for fish in the Coastal Pelagics FMP, but would likely not cause mortality. The species most likely to experience adverse effects would be northern anchovy, Pacific sardine, jacksmelt, and topsmelt, as they are the most abundant of the Coastal Pelagics in the Port and play important roles in the cycling of energy and nutrients in the Port. However, because those species are abundant in the Port and the construction area would be small relative to the Port as whole, the numbers of fish exposed to harmful pressure waves would represent a very small proportion of the number of fish in the Port at any given time.

Mitigation Measure BIO-1 (see below), which would be imposed on the Proposed Project to reduce sound impacts on marine mammals, would minimize potential impacts to fish as well. Mitigation Measure BIO-1 would require that pile driving be initiated with a "soft start" (a period during which the pile driver operates at reduced power, thereby reducing the noise produced by each impact). This would cause fish to leave the area as pile driving commenced. Avoidance of the area would be temporary; construction would take place for approximately four months 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.

> **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 occurring as part of the pile installation 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.

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[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 (NOAA 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

6.1.3 Habitat Loss

No permanent loss of marine habitat, including EFH, would occur because the Proposed Project would not involve discharges of dredged or fill material into the marine environment that could eliminate marine habitat functions or area. Any dredged material discharged at the LA-2 ODMDS would have temporary adverse effects, as previously assessed by EPA and USACE (2005), but would not cause a permanent loss of benthic habitat or EFH. Dredging to deepen Berths 126-129 would have temporary adverse effects on benthic habitat within the project area, but because recolonization would happen rapidly (e.g., MEC 1988), there would not be a permanent loss of EFH or aquatic functions at the project site. Reconstruction of the rock dike would take place within the footprint of the existing dike, so that no loss of marine habitat would occur. The loss of marine biota on the rocks and existing piles would be temporary, as recolonization would replace the biological community. The area of rock that would be affected (less than one acre) is not substantial relative to the amount of rock dike in the West Basin and the Harbor as a whole.

6.1.4 Effects on Special Aquatic Sites

There are no special aquatic sites (as defined in 40 CFR 230.10, subpart E) (i.e., wetlands, giant kelp beds, mudflats, or eelgrass beds) or other sensitive natural communities or HAPC at the Proposed Project site that could be adversely affected by Proposed Project construction.

6.1.5 Nighttime Illumination

Lighting to support construction activities at night could have temporary effects on species in the Coastal Pelagics FMP. For example, zooplankton and small pelagic prey organisms are often attracted to night light, and those organisms may in turn attract managed species. Daytime shading from construction vessels or localized turbidity may reduce algal productivity. Certain fish species are attracted to shade and cover that construction vessels provide. However, because construction activities and locations would be constantly changing and because nighttime construction would take place only during dredging, no substantial disruption of biological communities, including EFH, would occur.

6.2 Operational Impacts

Operational impacts of the Proposed Project on EFH could include noise and physical disruption from the increased number of vessel arrivals and departures, shading by the new wharf, effects of runoff from the terminal and spills from vessels, and the increased potential for the introduction of invasive species to Harbor waters from vessel ballast and hulls; these effects would be similar to existing terminal operations. The increased number of vessel calls would be insignificant relative to total vessel traffic in the Port and would not adversely affect the FMP species or increase overall noise levels. Schooling fish (i.e., Coastal Pelagics) likely would ignore the ship movements and sound or temporarily move out of the way. Other federally managed species are rare in the Harbor, and vessel noise would result in only temporary effects, if any,

shall be submitted to LAHD Construction and Environmental Management Divisions prior to commencement of pile driving.

on their distribution. In recent history, the Port has witnessed an improvement in fish abundance for federally managed species (MEC and Associates 2002; SAIC 2010; MBC 2016; Wood E&IS 2021) even though there has been increased vessel traffic. Therefore, it is unlikely that larger vessels or additional ship calls would affect federally managed species, and there would be no adverse effects on EFH for any species in the Harbor.

The new wharf would not create additional shade because its footprint and dimensions would be similar to those of the existing wharf. Runoff from the Berths 121-131 Terminal would not substantially reduce or alter EFH in harbor waters because runoff from the re-developed areas of the terminal would be routed to existing onsite storm drains, treated via BMP devices, and discharged to the West Basin, and water quality standards for protection of marine life would not be exceeded. Leaks and spills of hazardous materials have a very low probability of occurring and would be controlled by existing countermeasures.

No HAPCs could be affected by operation of proposed project facilities because none are near the project site.

Vessels calling at the Berths 121-131 Terminal would come primarily from outside the U.S. EEZ, which raises the possibility of the introduction of non-native species via ballast water and hull fouling. All vessels would be subject to regulations, such as the Vessel General Permit, that minimize the introduction of non-native species in ballast water. Both the USCG and EPA regulate ballast water discharges, and both agencies currently require open-ocean 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 or Seattle-Tacoma). Given the decrease in vessel traffic resulting from the Proposed Project and the control measures currently in place, operation of the Proposed Project has a low probability of increasing the likelihood of introducing invasive non-native species into Port waters. Furthermore, non-native species introduced thus far have not caused serious disruptions of the Port habitat as a whole, including EFH. Accordingly, the impacts of the Proposed Project with respect to invasive species are considered insubstantial. Operation would have no effect on the potential spread of the invasive alga *Caulerpa taxifolia* because that species is not known to be present in the Harbor.

7.0 ASSESSMENT SUMMARY

The project site represents minimal habitat for species managed under the Coastal Pelagics and Pacific Coast Groundfish FMPs due to its small size relative to the Port of Los Angeles as a whole and its location in the Inner Harbor of the Port. There are no HAPCs at or near the project site.

Impacts of construction would be localized and temporary. Potential impacts from dredging, pile installation, rock dike reconstruction, construction runoff, and accidental spills would be minimized due to the limited construction area and duration and by the control measures and BMPs employed during construction. No habitat loss would occur. Acoustic impacts from pile driving could result in adverse effects to fish species in the immediate construction area, but the limited size of that area would prevent substantial disruption. Furthermore, implementation of Mitigation Measure BIO-1 (Protect Marine Mammals), would further minimize potential impacts to FMP species, as they would likely leave the area as pile driving commenced. Avoidance of the area would be temporary and localized. There would be no physical barriers to movement, and the baseline condition for fish and wildlife access would be essentially unchanged. With the exception of northern anchovy, managed species are not abundant in the area of the Proposed Project. Northern anchovy are extremely abundant throughout the Port, and the temporary loss of a portion of the project site would be a minimal adverse effect. Accordingly, impacts of construction on FMP species and EFH would not be substantial.

Potential impacts of operation of the Berths 121-131 Terminal related to runoff, leaks and spills, and disturbance from vessel movements would not be substantial. Impacts to EFH resulting from the introduction of invasive species are considered to be insubstantial given that the Proposed Project would result in decreased vessel calls.

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