APPENDIX H

Draft Section 404 (b) (1) Alternatives Analysis

APPENDIX H

DRAFT SECTION 404(b)(1) ALTERNATIVES ANALYSIS

1.0 Introduction

The following evaluation is provided in accordance with Section 404(b)(1) of the Clean Water Act. The impact evaluation is summarized from the EIS/EIR for the Berths 136-147 Project and is not intended to be a stand alone document. Reference to sections of the EIS/EIR where more information may be obtained are given throughout this analysis.

2.0 Project Description

The Port of Los Angeles (Port) Berths 136-147 Project involves wharf upgrades at Berths 136-147, filling the Northwest Slip, improvement of adjacent backlands, and modifications to transportation systems on land. The proposed Federal action is for the U.S. Army Corps of Engineers (USACE) to issue permits for work and structures in waters of the U.S. for the proposed Project. Alternatives to the proposed Project include No Action (Alternative 1), the Project with no fill in Northwest Slip (Alternative 2), reduced wharf at Berths 145-147 (and no fill in Northwest Slip) (Alternative 3), an Omni Terminal (Alternative 4), and Landside Terminal Improvements (Alternative 5). The Omni Terminal, Landside Terminal improvements, and No Action would have no in-water construction and would require no Federal permits from the USACE.

2.1 Location

The Project is located in the West Basin of the Port of Los Angeles, Los Angeles County, California. Within West Basin, the Federal portion of the proposed Project includes Berths 145-147, Berths 136-139, and the Northwest Slip. The Berths 136-147 Terminal is located in the Wilmington and San Pedro Districts of the Port. It is

roughly bordered by Harry Bridges Boulevard on the north; by Slip 1, Neptune Avenue, Water Street, and Fries Avenue on the east; and by the Turning Basin to the south. Berths 118-131 are located to the west of the Terminal. Modifications to the backlands associated with the berths do not require any Federal permits.

2.2 General Description

The Berths 136-147 Project includes the following components:

- Demolition and reconstruction of the existing concrete wharves at Berths 146-147. Approximately 179,500 cy of rock riprap would be installed and 24,000 cy of fill would be placed behind the bulkhead (above the water line).
- Dredging about 265,000 cy for construction of and deepening the water adjacent to Berths 145-147.
- Seismic upgrades at Berths 136-139 and Berths 145-146 that included 30,000 cy of dredging.
- Development of 65 ac (26 ha) of additional backlands, with all but 5 ac (2 ha) on existing lands.
- Construction of new access gates.
- Installation of new gantry cranes.
- Construction of a new on-dock rail yard.
- Construction of a new administration building and a new employee parking lot.
- Widening Harry Bridges Boulevard.
- Development of a 30-ac (12.1-ha) landscaped buffer between Harry Bridges Boulevard and 'C' Street.
- Creation of a 10-ac (4-ha) landfill in Northwest Slip. This would involve 800,000 cy of fill, 50,000 cy of rock riprap, 12,000 cy of fill behind the dike, and 3,000 cy of dredging.

The Federal action is for the USACE to issue permits authorizing work and structures in navigable waters of the U.S. and the discharge of fill in waters of the U.S. Components of the proposed Project that would need such permits include wharf demolition and reconstruction at Berths 145-147, wharf upgrades at Berths 136-139, dredging, construction of a 10-acre (4-ha) landfill in the Northwest Slip, construction of a rocky dike to contain that fill, and placement of rock riprap and sheet piles as part of the berth upgrades.

2.3 Authority and Purpose

Discharge of fill material into "waters of the United States" requires compliance with Section 404 of the Clean Water Act. This Section 404(b)(1) analysis is one step in that compliance.

Anticipating the importance of containerized shipping, the Ports of Los Angeles and Long Beach and the USACE conducted a major study between 1981 and 1985 to evaluate the capacity of the combined port complex in San Pedro Bay to accommodate cargo forecasts through the year 2020 (LAHD, Long Beach Harbor Department, and USACE 1985). This 2020 Plan determined that accommodating the projected increase in cargo throughput would require optimization of all existing lands and terminals, construction and operation of approximately 2,400 acres (971 ha) of new terminal lands, and approximately 38 new terminal modules.

Increased throughput was forecast in a study prepared by Wharton Economic Forecasting Associates (WEFA 1987, 1989, 1991). Since that time, actual increases in containerized cargo transshipment through the Port of Los Angeles have greatly exceeded earlier forecasts. More recent cargo forecasts indicate that the volume of containerized shipping through the Port will more than triple by 2020 (LAHD 2004). Optimizing its ability to efficiently service this anticipated growth while managing the impacts related to that growth has become one of the highest planning priorities for the Port.

The overall proposed Project purpose is to construct a marine terminal of approximately 243 acres (98 ha) that would accommodate future cargo volumes estimated for the Port of Los Angeles. The proposed Project would meet a public need for economic growth in trade and import/export of goods, as well as a need for efficiency in cargo handling at the Port. The overall goal of the proposed Project is to expand and maximize the cargo handling efficiency and capacity at Berths 136-147 to accommodate the needs of TraPac or a comparably sized shipping entity. Related improvements to associated transportation infrastructure are also needed to handle forecasted and planned increases in volume of containerized goods shipped through the Port.

2.4 Alternatives Considered

During the NEPA process, the following alternatives were thoroughly reviewed: proposed Project, Project without 10-acre Fill, Reduced Wharf, Omni Terminal, Landside Terminal Improvements, and No Project. Based on the current cargo forecast, only the proposed Project and the Project without 10-Acre Fill fulfill the overall project purposes and goals of the Port. Therefore, the Reduced Wharf, Omni Terminal, Landside Terminal Improvements, and No Action alternatives are not considered "practicable" alternatives under the 404(b)(1) guidelines. A preliminary determination was made that the proposed Project and the Project without 10-Acre Fill were both practicable alternatives. The Project without 10-Acre Fill appears to be the least environmentally damaging practicable alternative, pending further analysis.

Alternative sources of fill material for the 10-acre (4-ha) fill in Northwest Slip were considered. The particular source would depend on timing of dredging activities in the Port. Dredge materials that are suitable for landfill formation could be used in the Northwest Slip area. The 10-acre (4-ha) fill site would be constructed as a Confined Disposal Facility (CDF) site if the material available for fill were unsuitable for

unconfined aquatic disposal. This includes material from the Berth 136-147 dredging. If the latter material is not used in the Northwest Slip fill, it would be disposed of in an approved CDF or upland disposal site.

A complete description of the alternatives considered is included in Chapter 2 of the Berths 136-147 EIS/EIR.

2.5 Description of Dredged/Fill Material

Sediments in the areas to be dredged have been described in Section 3.13, Water Quality, Sediments, and Oceanography, of the EIS/EIR and are summarized here. Sediments within the proposed Project area are primarily composed of nearshore marine or estuarine sediments that were either deposited in place along the margin of the early San Pedro embayment or subsequently dredged and placed at their current locations as fill material. Spills and runoff of petroleum products and hazardous substances due to long-term industrial land use have resulted in contamination of some sediments. The Los Angeles RWQCB has listed the Inner Harbor, which includes the West Basin, as an impaired waterbody under Section 303(d) of the Clean Water Act.

The sediments in the northern portion of the West Basin have a higher proportion of sand (63 percent) than silt and clay (37 percent) (MEC and Associates 2002). Testing has shown that contaminant concentrations in the sediments vary (Kinnetic Laboratories/ToxScan 2002) with relatively higher levels near Berths 136-142. The coarse-grained top (mudline to -52 feet [-16 m] MLLW) sediments in the northern part of the West Basin (near Berths 136 to 142) contained copper, mercury, and nickel concentrations that exceeded the respective Effects Range Low (ERL) values and concentrations of DDE pesticides and PCBs that exceeded the Effects Range Medium (ERM) values. Sediments from other sampling locations contained DDE and PCBs, as well as total DDTs and PAHs, that exceeded the ERL values. Elutriate tests showed concentrations of metals released from the sediments into the water to be below detection limits or, when detected, well below Water Quality Standards (WQS) levels (Kinnetic Laboratories/ToxScan 2002).

Results from testing sediments collected near Berth 145 (Site 1) by AMEC (2003) generally were consistent with those obtained by Kinnetic Laboratories/ToxScan (2002) for sediments near Berths 136-142. Sediments near Berth 145 contained mercury, total DDT, and occasionally copper, nickel, and lead concentrations that exceeded the ERL values. Concentrations of other metals and PAHs were below the ERL values, and PCBs were not detected in any of the sediment samples. Contaminant concentrations in the elutriate sample were all below detection limits. Solid phase bioassay test results indicated no significant toxicity, whereas the suspended particulate phase tests indicated no significant toxicity but slight reductions in development. Bioaccumulation tests indicated statistically significant accumulation of PAHs in tissues of test organisms. While these differences were not considered to be ecologically significant (AMEC 2003), the material was not approved by USACE for in-water disposal.

Testing of fine-grained sediments in the southern part of the West Basin area generally indicated concentrations of DDTs and PCBs were above ERL values but below ERM values. Concentrations of a subset of metals (mercury and nickel) also were above ERL values. Solid phase bioassays of the sediments in the southwest portion of the basin (outside the proposed Project area) produced significant toxicity to a benthic amphipod, and bioaccumulation tests showed lead, mercury, DDD, and PCBs were accumulated in tissues of test organisms. No toxicity or bioaccumulation occurred for the remainder of the area (Kinnetic Laboratories/ToxScan 2002).

Sediment samples collected along Berths 127-131 in 1997 contained mercury and cadmium concentrations above ERL levels (Ogden 1997). Solid phase bioassays found significant toxicity to a worm, while suspended phase tests found toxicity to a shrimp and bivalve larvae. Bioaccumulation tests showed accumulation of cadmium, lead, and PAH in tissues of a clam; selenium in a worm; and DDE in a clam and worm.

Results from testing sediments collected near Berths 146-147 (Site 2) by AMEC (2003) generally were consistent with the previous testing results. Sediments contained arsenic, copper, lead, nickel, and total DDT concentrations that exceeded the ERL values, and mercury concentrations that exceeded the ERM value. Concentrations of other metals and PAHs were below the ERL values, and PCBs were not detected in any of the sediment samples. Contaminant concentrations in the elutriate sample were all below detection limits, with the exception of arsenic and zinc concentrations (0.003 mg/l and 0.009 mg/l, respectively) that were at or below the respective CTR criteria. Solid phase bioassay test results indicated no significant toxicity, whereas the suspended particulate phase tests indicated significant reductions in bivalve larvae development at the 50 percent and 100 percent elutriate concentrations that appeared to be an artifact of high unionized ammonia concentrations in the test sediments. Bioaccumulation tests indicated statistically significant accumulation of PAHs in tissues of test organisms. While these differences were not considered to be ecologically significant (AMEC 2003), the material was considered by USACE unsuitable for in-water disposal.

The material dredged as part of the proposed Project could be used as fill in the Northwest Slip if dredging were to occur when the landfill is to be constructed. If not, and if the material is found to be unsuitable for unconfined aquatic disposal, it would be placed within a CDF in either the Port of Los Angeles or the Port of Long Beach, or at an upland disposal site. If the material is found to be suitable for unconfined aquatic disposal, it could be used for any landfill being constructed at that time. Because the volume of material to be dredged for the proposed Project (298,000 cy) is less than the amount of fill material needed for the Northwest Slip landfill (800,000 cy), part to all of the fill material would come from other dredging within the Port. That material would be tested as part of the approved dredging project, and the Northwest Slip fill site would be designed to accommodate the type of material to be used.

In addition to the sediments dredged and filled, approximately 179,500 cy of rock would be used in construction or reconstruction of fill containment dikes under the wharves at Berths 145-147 and another 50,000 cy would be used for construction of the containment dike for the Northwest Slip fill. Rock removed from the Berths 145-

147 area would be reused, and additional new quarry rock would be brought in to make up the additional material needed.

2.6 Proposed Discharge Sites

2.6.1 Northwest Slip

The proposed discharge site is within the Northwest Slip of West Basin. Placement of fill would create 10 acres (4 ha) of additional backlands in the Port. Material dredged as part of the proposed Project could be used for fill at this site if the timing of dredge/fill activities allowed. Otherwise, the dredged material would be placed in an approved CDF or upland disposal site, if found to be unsuitable for unconfined aquatic disposal, or it would be used in other approved landfill projects if found to be suitable for unconfined aquatic disposal. Approximately 50,000 cy of rock would be used for the containment dike.

2.6.2 Berths 136-147

Reconstruction of Berths 145-147 would include placement of 24,000 cy of fill material behind the bulkhead above the water line, and construction of the Berth 136 extension along the new Northwest Slip fill would result in placement of 12,000 cy of fill behind the dike, also above the water line. Approximately 179,500 cy of rock would be used during reconstruction of the slope under Berths 145-147. Sheetpiles would be installed at the toe of the existing dike slopes at Berths 136-139 and Berths 145-147.

2.6.3 Backlands

Backland construction would include placement of 65,000 cy of fill material in upland areas.

2.7 Discharge Methods

Fill placement in the Northwest Slip would be by bottom-dump barge until the water becomes too shallow for the barges to enter the fill area. Then, fill would continue by use of a derrick barge or Toyo pump to offload the material from the barges into the fill site. After the fill is above the water level, fill material could also be brought in by truck. Rock riprap would be placed along the berths by derrick barge and a skip box. In some cases, large rocks could be placed individually. For the Northwest Slip fill containment dike, the rock could be pushed over the side of the transport barge or placed as described for the riprap. The 36,000 cy of fill behind the bulkhead/dike would be above the water level and would be placed by truck and a dozer.

3.0 Factual Determinations

3.1 Physical Substrate Determinations

The substrate to be dredged along Berths 145-147 and Berths 136-139 between the pierhead line and the adjacent channel is fine sediments. These sediments are at a depth of about -45 feet MLLW. Dredging for slope reconstruction at Berths 146-147 would remove rock riprap and previous fill sediments. Contaminants in the sediments to be dredged are discussed above in Section 2.5. In the Northwest Slip, the fill would cover fine, soft sediments on the bottom at a depth of -35 feet MLLW and rock riprap on the slopes of the adjacent landfills. A rock riprap containment dike would be constructed to keep the fill within the Northwest Slip. Wharf pilings would be removed and replaced for improvements at Berths 145-147 and new pilings would be installed for the Berth 136 extension. Rock riprap would also be used to stabilize the dredged slopes along Berths 145-147. Sheet piles would be installed to provide slope stability at the toe of the existing riprap slopes under the wharves where dredging would occur to match the adjacent -53-foot deep channel.

Dredging would remove benthic invertebrates living in and on the soft sediments and on the riprap while landfill construction would bury soft bottom and rocky dike biota. These losses are described in Section 3.3, Biological Resources, of the EIS/EIR, and the areas affected are summarized in Table H-1. After dredging, the soft sediments remaining would be about 8 feet deeper and would be recolonized by invertebrates. The new rock riprap and pilings would also be colonized by invertebrates. Communities similar to those removed would be expected to be present within a few years.

Table H-1. Berths 136-147 Habitat Impact Summary (in acres)

Construction Phase	*Location*	*Permanent Impacts*			*Temporary Impacts*	
		SOFT BOTTOM	ROCKY DIKE/ SHEET PILE	WATER SURFACE	SOFT BOTTOM	HARD BOTTOM
I	Berths 145-147 (wharf improvements)	-1.1	+1.8	+0.3	3.6	0.6
I	Berths 136-139 (wharf improvements)	--	+0.6	--	2.3	--
II	The Northwest Slip (10-ac fill)	-7.6	-2.5	-9.5	0.3	1.7
II	Berth 136 (400' extension)	--	--	--	--	--
	Total Berths 136-147	-8.7	-0.1	-9.2	6.2	2.3

Note: Acreages are approximate and are based on a water surface elevation of +4.8 feet MLLW. For impacts, - = loss and + = gain in acres of habitat.

Actions Taken to Minimize Impacts. Dredging would be limited to areas needed for wharf improvements, keying in the new landfill containment dike, and deepening areas immediately adjacent to berths to allow vessel access. Fill placement in the Northwest Slip would be within a rock dike that would limit movement of the

sediments during and after placement. Contaminated sediments would be placed in an approved CDF or upland disposal area.

3.2 Water Circulation, Fluctuation, and Salinity Determinations

3.2.1 Current Patterns and Circulation

Current Patterns and Flow. Circulation patterns in the Inner Harbor would change very little as a result of the dredging and filling activities for the Berths 136-147 Project. The Northwest Slip has no through flow, and placement of fill in that slip would not substantially affect current patterns and water flow in the adjacent West Basin. Dredging to increase water depth next to the berths to equal that of the West Basin would not affect current or flow.

Velocity. Tidal current velocities along the berths could be slightly lower due to the increased water depth resulting from dredging. Water velocities in other parts of the West Basin would not be altered.

Stratification. The Project would not alter stratification in Harbor waters.

Hydrologic Regime. No changes are anticipated.

3.2.2 Water Level Fluctuations

Tides would remain unchanged in the Harbor as a result of the proposed Berths 136-147 dredging and the Northwest Slip fill because no restrictions to tidal flow would be created. The tidal prism would be slightly reduced by the fill and slightly increased by the dredging.

3.2.3 Salinity Gradients

Not applicable.

3.2.4 Actions Taken to Minimize Impacts

No actions are necessary to offset the less than significant impacts.

3.3 Suspended Particulate/Turbidity Determinations

3.3.1 Turbidity

Dredging would resuspend some bottom sediments and create localized turbidity plumes. For continuous dredging operations, elevated turbidity conditions would occur within the immediate vicinity of the dredge for periods of days to several weeks. Following completion or interruption of dredging, the time it takes for the suspended materials to settle-out, combined with the current velocity, would determine the size and persistence of the turbidity plume. Settling rates are largely determined by the grain size of the suspended material but are also affected by the chemistry of the particle and the receiving water (USACE and LAHD 1992). Dredging sediments adjacent to Berths 136-139 and 145-147 would generate a relatively small turbidity plume (i.e., within the mixing zone defined in the WDR) because the material is mostly coarse-grained and will settle rapidly. Previous studies have shown that concentrations of suspended solids return to background levels within 1 to 24 hours after dredging stops (Parish and Wiener 1987). Water quality parameters in West Basin were monitored in the vicinity of clamshell and suction dredges during the Los Angeles Channel Deepening Project in June 2003. The suspended solids concentrations within the clamshell and suction dredge areas ranged from 11-46 mg/l and from 5-77 mg/l, respectively, but the corresponding reduction in light transmittance did not exceed the 40 percent reduction criterion listed in the monitoring work plan for uncontaminated sediments. Consequently, turbidity plumes generated during dredging operations are expected to affect a small proportion of the West Basin and dissipate before reaching the Turning Basin.

Pile removal, pile installation, and sheet pile installation activities at Berths 136-139 and 145-147 would suspend bottom sediments into the water column, causing localized and temporary turbidity. Each of these construction operations would occur over periods up to about 137 days. Resuspended sediments would settle rapidly (within hours) and turbidity levels would decrease once activities were completed.

3.3.2 Effects on Chemical and Physical Properties of the Water Column

Dredging and filling are expected to have minor and temporary effects on water quality in the immediate vicinity of those activities. These effects are described in Section 3.13 of the EIS/EIR and summarized below.

Salinity. No change is expected.

Clarity/Light Penetration. Turbidity in the immediate vicinity of dredging, pile removal, and fill placement would reduce water clarity in a small area for the duration of the activity. The effects of turbidity are discussed in more detail in Section 3.3.1 above. Project activities are not expected to alter other factors that

affect water clarity, such as phytoplankton abundance. Light penetration in the dredged areas would not be reduced in the long term. For the Northwest Slip fill area, no water would remain and water clarity would not be applicable.

Color. Color of harbor waters would be changed little if any due to proposed Project construction activities, and operations would have no effects on color. Turbidity during placement of fill in the Northwest Slip could have minor effects on water color in that area.

Odor. No odors are expected to result from construction activities.

Taste. Not applicable.

Dissolved Gases. Dissolved oxygen (DO) levels in harbor waters could be reduced in the immediate vicinity of dredging and pile removal activities by the introduction of suspended sediments and associated oxygen demand on the surrounding waters. Reductions in DO concentrations, however, would be brief. A study in New York Harbor measured a small reduction in DO concentrations near a dredge, but no reductions in DO levels 200 to 300 feet (61 to 91 m) away from the dredging operations (Lawler, Matusky, and Skelly 1983). These results are consistent with the findings and conclusions from studies of the potential environmental impacts of open water disposal of dredged material conducted as part of the USACE Dredged Material Research Program (Lee et al. 1978; Jones and Lee 1978). As mentioned in Section 3.13.2.2.1 of the EIS/EIR, measurements conducted 90 feet (27 m) and 300 feet (92 m) from dredging operations at Southwest Slip (POLA unpublished monitoring data) did not exhibit any reductions in DO concentrations. Therefore, reductions in DO levels below 5 mg/l associated with project construction and dredging activities are not expected to persist or cause detrimental effects to biological resources.

Nutrients and Eutrophication. Nutrients could be released into the water column during dredging and filling operations. Release of nutrients may promote nuisance growths of phytoplankton if operations occur during warm water conditions. Phytoplankton blooms have occurred during previous dredge projects, including the Deep Draft Navigation Improvement Project. However, there is no evidence that the plankton blooms observed were not a natural occurrence or that they were exacerbated by dredging activities. The Basin Plan (RWQCB 1994) limits on biostimulatory substances are defined as "…concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses." Given the limited spatial and temporal extent of project activities with potentials for releasing nutrients from bottom sediments, effects on beneficial uses of the West Basin are not anticipated to occur in response to the proposed Project.

Toxic Metals and Organics. See Section 3.4 below.

Pathogens. No pathogens are expected to be released to harbor waters as a result of the proposed Project dredging and filling activities.

Temperature. Proposed Project activities would not affect water temperatures.

Other. Changes in pH may occur in the immediate vicinity of dredging operations due to reducing conditions in sediments resuspended into the water column. Seawater, however, is a buffer solution (Sverdrup et al. 1942) that acts to repress any change in pH. Therefore, any measurable change in pH would likely be highly localized and temporary, and would not result in persistent changes to ambient pH levels of more than 0.2 units. Thus, the water quality objective for pH would not be exceeded outside the mixing zone.

3.3.3 Actions Taken to Minimize Impacts

A Section 401 (of the Clean Water Act) Certification would be obtained from the RWQCB for construction dredging and filling activities that contains standard Waste Discharge Requirements (WDRs) and would specify receiving water monitoring requirements. Monitoring requirements typically include measurements of water quality parameters such as DO, light transmittance (turbidity), pH, and suspended solids at varying distances from the dredging and filling operations. Analyses of contaminant concentrations (metals, DDT, PCBs, and PAHs) in waters near the dredging or filling operations may also be required if the contaminant levels in the dredged or discharged sediments are known to be elevated and represent a potential risk to beneficial uses. Monitoring data are used by the Port's dredger to demonstrate that water quality limits specified in the permit are not exceeded. The dredging and filling permit could identify corrective actions, such as use of silt curtains, which would be implemented if the monitoring data indicate that water quality conditions outside of the mixing zone exceed the permit-specified limits.

Monitoring would be conducted to ensure that return water flow from discharge of fill material (i.e., material dredged from the Harbor and used to create new landfills) behind the fill dikes meets the RWQCB WDRs for settleable solids and toxic pollutants.

Sediments from the proposed dredging units would be re-tested using standard USEPA/USACE protocols prior to dredging to determine the suitability of the material for unconfined, aquatic disposal.

Dredged contaminated sediments would be placed in an approved confined disposal site(s) at either the Port of Los Angeles or the Port of Long Beach, or at an appropriate upland site such as the Anchorage Road Disposal Site that is engineered and constructed in such a manner that the contaminants cannot enter harbor waters after the fill is complete. The specific confined disposal facility would be determined at the time of dredging and would depend on the capacity of available sites.

A Debris Management Plan and Spill Prevention, Containment, and Cleanup Plan would be prepared and implemented prior to the start of demolition, dredging, and construction activities associated with the proposed Project.

During dredge and fill operations, an integrated multi-parameter monitoring program shall be implemented by the Port's Environmental Management Division in conjunction with both USACE and RWQCB permit requirements, wherein dredging performance is measured *in situ*. The objective of the monitoring program shall be

adaptive management of the dredging operation, whereby potential exceedances of water quality objectives can be measured or predicted and dredging operations subsequently modified. If exceedances are observed, the Port's Environmental Management Division shall immediately meet with the construction manager to discuss modifications of dredging operations to reduce turbidity to acceptable levels. This could include alteration of dredging methods, and/or implementation of additional BMPs such as a silt curtain.

3.4 Contaminant Determinations

Contaminants, including metals and organics, could be released into the water column during the dredging and pile removal/driving operations. However, like turbidity, any increase in contaminant levels in the water is expected to be localized within the mixing zone and of short duration. The magnitude of contaminant releases would be related to the bulk contaminant concentrations of the disturbed sediments, as well as the organic content and grain size which affect the binding capacity of sediments for contaminants. Because the sediment characteristics vary across the project site, the magnitude of contaminant releases, and water quality effects, would also vary. Nevertheless, elutriate test results for the coarse-grained sediments to be dredged near Berths 136-139 and 145-147 in Phase I showed metal concentrations in the elutriate (water) phase that were well below water quality standards (Kinnetic Laboratory/Toxscan 2002; AMEC 2003). Similarly, elutriate tests of sediments from Berths 145 through 147 (AMEC 2003) indicated only minor possible releases of selected metals from dredged sediments. These results demonstrated that contaminant releases from sediments disturbed by dredging and other demolition and construction activities would not substantially affect the concentrations or bioavailability of contaminants in West Basin waters.

As discussed in Section 3.13.3 of the EIS/EIR, the Basin Plan (RWQCB 1994) defines limits for chemical contaminants in terms of bioaccumulation, chemical constituents, pesticides, PCBs, and toxicity. Results from sediment testing to determine suitability for aquatic disposal (discussed in Sections 3.13.2.3 of the EIS/EIR) demonstrated that sediments within the project area would not cause significant toxicity, contaminant bioaccumulation, or degrade water quality and affect beneficial uses. These results are also applicable to assessments of impacts from contaminant releases from demolition, dredging, and construction-related activities associated with the proposed Project, and indicate that water quality objectives would not be exceeded.

Sediments containing contaminants which are suspended by the dredging and pile removal would settle back to the bottom within a period of several hours. Transport of suspended particles by tidal currents would result in some redistribution of sediment contaminants. The amount of contaminants redistributed in this manner would be small, and the distribution localized (within the West Basin adjacent to the work area). Monitoring efforts associated with previous dredging projects in the harbor have shown that resuspension followed by settling of sediments is low (generally 2 percent or less). Consequently, concentrations of contaminants in sediments of the West Basin adjacent to the dredged area would not be measurably increased by dredging activities.

Placement of fill in the Northwest Slip would cover the existing sediments that are contaminated with DDT and PCBs. The fill layer would act as an isolation cap for the contaminated sediments and eliminate potentials for exchanges between existing bottom sediments with overlying harbor water.

Accidents resulting in spills of fuel, lubricants, or hydraulic fluid from equipment used during dredging, fill placement, and wharf demolition and construction could occur during the proposed Project. Accidents or spills from in-water construction equipment could result in direct releases of petroleum materials or other contaminants to harbor waters. The magnitude of impacts to water quality would depend on the spill volume, characteristics of the spilled materials, and effectiveness of containment and cleanup measures.

Operation of the proposed Project facilities would not involve any direct point source discharges of wastes or wastewaters to the harbor. The amount of vessel traffic in the West Basin would increase by 84 annual ship calls (for Year 2025) compared to the NEPA baselines as a result of the proposed Project. Discharges of polluted water or refuse directly to the harbor are prohibited. Thus, the increased vessel traffic and terminal operations associated with proposed Project would not result in increased waste discharges from vessels. Project-related increases in vessel traffic could result in higher mass loadings of contaminants such as copper that are released from vessel hull anti-fouling paints. Portions of the Los Angeles Harbor are impaired with respect to copper; thus increased loadings associated with increases in vessel traffic relative to baseline conditions could exacerbate water and sediment quality conditions for copper.

The other potential operational source of pollutants that could affect water quality in the West Basin is accidental spills or illegal discharges from vessels while in the West Basin. Impacts to water and sediment quality would depend on the characteristics of the material spilled, such as volatility, solubility in water, and sedimentation rate, and the speed and effectiveness of the spill response and cleanup efforts. However, there is no evidence that illegal discharges from ships presently are causing widespread problems in the Harbor. Over the last several decades, there has been an improvement in water quality despite an overall increase in ship traffic. In addition, the Port Police are authorized to cite any vessel that is in violation of Port tariffs, including illegal discharges.

Actions Taken to Minimize Impacts. Dredged contaminated sediments would be placed and confined in the in-harbor disposal sites that are engineered and constructed in such a manner that the contaminants cannot enter harbor waters after the fill is complete, or they would be placed in an approved upland disposal site. For accidental spills, spill prevention and cleanup procedures for the proposed Project would be addressed in a plan that would be prepared and implemented by the construction contractor. The plan would define actions to minimize potentials for spills and provide efficient responses to spill events to minimize the magnitude of the spill and extent of impacts.

3.5 Aquatic Ecosystem and Organism Determinations

Placement of fill in the Northwest Slip would cause a permanent loss of aquatic habitat, including water surface, water column, soft bottom, and hard substrate. Approximately 9.5 acres (3.9 ha) of water surface would be lost. Under this water, 7.6 acres (3.1 ha) of soft bottom would be permanently lost (Table H-1) due to fill placement and installation of a new containment dike across the southern opening of the Northwest Slip. A net loss of 2.5 acres (1.0 ha) of rocky dike habitat would also occur.

Construction activities at Berths 136-147 would result in temporary disturbances to soft bottom and hard substrate habitats through dredging, pile removal and replacement, and reconstruction of the rocky dike.

3.5.1 Effects on Threatened/Endangered Species

The only Federally-listed species likely to be present in the West Basin area are the California least tern and California brown pelican. The state-listed peregrine falcon could also be present. The Inner Harbor is not considered an important area for California least tern or California brown pelican foraging based on survey information (Sections 3.3.2.5.1 and 3.3.2.5.2 in the EIS/EIR). The proposed Project area also does not provide any other habitat values for the least tern and provides only limited perching/resting sites for the brown pelican. Few if any individuals would be affected by construction activities because few could be present, and other foraging areas are available nearby in West Basin and in other areas of the Harbor. Therefore, neither dredging/filling activities nor the resultant turbidity would adversely affect these species. The peregrine falcon feeds on other birds (e.g., rock dove, starlings, etc.) and would not be affected by proposed Project activities because no prey would be lost and only a small amount of potential foraging area would be temporarily affected. The peregrine falcon foraging area extends for miles (Grinnell and Miller 1986) and, thus, covers much of the Harbor as well as land areas to the west and north. No known peregrine falcon nesting areas (Vincent Thomas and Schuyler F. Heim bridges) would be affected due to distance from the proposed Project activities. The Vincent Thomas Bridge is over 0.5 mile (0.8 km) from Berth 147 and over 1.2 miles (1.9 km) from Northwest Slip, and the Schuyler R. Heim Bridge is over 2 miles (3.2 km) from the West Basin. The backland areas and area of the Harry Bridges Boulevard widening and buffer area project, a component of the proposed Project, are not used by sensitive species for resting, foraging (except potentially by the peregrine falcon), or breeding, and thus none of these species would be present to be affected by proposed Project construction activities.

Underwater noise levels during dredging may range between 111 and 175 dB (re 1 μPa) at 33 ft (10 m) depending on dredge type (Dickerson et al. 2001, Bassett Acoustics 2005). Pile driving produces noise levels of 177 to 220 dB (re 1 μPa) at 33 ft (10 m) depending on material and size of piles (Hastings and Popper 2005). With the exception of pile driving, underwater noise levels associated with construction activities would be below the Level A harassment (potential to injure) level of 180 dB_{rms} (re 1 μPa) for marine mammals (Federal Register 2005). Sound pressure waves

in the water caused by pile driving could affect the hearing of marine mammals (e.g., sea lions) swimming in the West Basin. Observations during pile driving for the San Francisco-Oakland Bay Bridge East Span seismic safety project showed sea lions swam rapidly out of the area when the piles were being driven (Caltrans 2001). Thus, sea lions, which are sometimes present in the West Basin, would be expected to avoid areas where sound pressure waves could affect them. Harbor seals are unlikely to be present as few have been observed in the West Basin (MEC and Associates 2002). Any seals or California sea lions present in the West Basin during construction would likely avoid the disturbance areas and thus would not be injured. No other protected or sensitive marine species normally occur in the West Basin area.

Rock for construction of the new or rebuilt dike face at Berths 145-147 and for containing the Northwest Slip fill would be transported from a Catalina Island quarry by barge. The Berths 145-147 work would require two barges per day for 40.5 days, and the Northwest Slip fill dike would require 2 barges per day for 23.5 days. These two activities would not occur concurrently. Two barges per day from Catalina Island to the West Basin would not adversely affect marine mammals in the ocean or in the Outer Harbor and Main Channel because few if any individuals would be present in these vessel traffic routes due to their sparse distribution in the open ocean (whales, porpoises/dolphins, seals, and sea lions) and in the harbor (sea lions and harbor seals only) as well as their agility and ability to avoid damage by vessels.

Operation of new and upgraded terminal facilities in the West Basin would not adversely affect any state- or federally-listed, or special concern bird species. Those species that currently use the West Basin area could continue to do so because the proposed Project would not appreciably change the industrial activities in the West Basin or cause a loss of habitat for those species. Operation of the backland facilities (e.g., cranes, railyard, and container transfers) would not measurably change the numbers or species of common birds in that area and, thus, would not affect peregrine falcon foraging. Perching locations for birds such as the California brown pelican would still be present. The increase in vessel traffic of one vessel every 4 to 5 days would cause a short interval of disturbance throughout the route from Angels Gate to Berths 136-147 in the West Basin but would not result in a loss of habitat or individuals for sensitive birds that use the water surface for resting or foraging.

An estimated 84 additional vessel calls per year (above NEPA baseline) to the Port would result from the proposed Project. Underwater sound from these vessels or tug boats used to maneuver them to the berth would add to the existing vessel traffic noise in the Harbor. Because a doubling in the number of vessels (noise sources) in the Harbor would be necessary to increase the overall underwater sound level by 3 dBA (FHWA 1978), the small increase in vessels relative to the total using the Harbor (2,800 per year in Los Angeles Harbor) would not result in a measurable change in overall noise. Adding one vessel transit every 4 to 5 days is not expected to adversely affect marine mammals in the Outer Harbor, Main Channel, and the West Basin because the transit distance would be short and infrequent, few individuals would be affected (large numbers are not present in the Harbor), sea lions would be expected to avoid sound levels that could cause damage to their hearing and overall underwater noise levels would not be measurably increased. Vessels approaching Angels Gate would pass through nearshore waters, and sound from their engines and drive systems could disturb marine mammals that happen to be nearby.

Few individuals would be affected because the animals are generally sparsely distributed (i.e., have densities of less than 5 individuals per 100 square km [Forney et al. 1995]), the animals would likely move away from the sound as it increases in intensity from the approaching vessel, and exposure would be of short duration. Noise levels associated with vessel traffic, including near heavily used ferry terminals, generally range between 130 and 136 dB (re 1 μPa) (WSDOT 2006), which are below the injury threshold of 180 dB_{rms} (re 1 μPa).

No critical habitat for any of the federally-listed species is present in the Harbor, so none would be affected by operation of the proposed Project.

Project-related vessel traffic to and from the Harbor would not interfere with marine mammal migrations along the coast because these vessels would represent a small proportion (3 percent) of the total Port-related commercial traffic in the area, and each vessel would have a low probability of encountering migrating marine mammals during transit through coastal waters because these animals are generally sparsely distributed as noted above.

3.5.2 Effects on Benthos

Benthic invertebrates living in and on the sediments to be dredged adjacent to the berths would be lost. At a biomass of 21 grams/square meter (g/m^2), approximately 0.5 metric ton of invertebrates living in the sediments would be removed. The habitat would be altered by making it permanently deeper through dredging, but the sediments would be colonized by invertebrates, especially polychaetes, beginning immediately after the dredging stops in each location. A community similar to that currently present would be expected to develop within 5 years based on surveys in 1987 of areas dredged in 1982 (MEC 1988). Because a small proportion of the soft bottom in the West Basin would be affected by the dredging, the benthic community in the West Basin not be disrupted. The replacement of soft bottom with rocky dike would permanently remove 0.1 metric ton of invertebrates, but the rocky dike would be expected to be colonized by a diverse assemblage of marine organisms at a higher biomass (41 to over 3,000 g/m^2; LAHD 1981, MEC and Associates 2002) than that found in the soft bottom sediments (21 g/m^2; MEC and Associates 2002) based on observed biomass of organisms in/on those habitats.

Construction of a new 705-foot (215-m) wharf at Berth 147 would add approximately 1.5 acres (0.6 ha) of new rocky dike hard substrate habitat, while upgrades at Berths 145-146 would add about 0.3 acre (0.1 ha) of vertical sheet pile habitat. Approximately 0.6 acre (0.2 ha) of rocky dike would be removed and replaced for a temporary impact to invertebrates. Approximately 275 new concrete piles would be installed in the water, and another 319 piles (not all in water) would be installed as part of the existing wharf upgrades. At Berths 136-139, the upgrades would add about 0.6 acre (0.2 ha) of vertical sheet pile habitat prior to dredging between the pierhead line and the Federal channel. Construction of the new 400-foot (123-m) wharf extension at Berth 136 would add about 215 new piles in the water. The new pilings, installed to support these wharves and the sheet pile at Berths 136-139 and 145-146, would add hard substrate habitat in the West Basin. Removal of 770 timber pilings at Berth 147 and 360 concrete pilings from partial demolition of the wharf at

Berth 146 would reduce the amount and type of piling habitat in the water column. The installation of about 490 concrete piles (Berths 146-147 plus Berth 136 extension) would partially offset this loss.

Benthic organisms in a narrow strip of soft bottom areas adjacent to the dredging and on the riprap, piles, and bulkheads along the berths would be subjected to temporary disturbances from turbidity and sediment resuspension and deposition generated by dredging. Lethal and sublethal effects that could occur include direct mortality, arrested development, reduction in growth, reduced ingestion, depressed filtration rate, and increased mucous secretion. Some benthic organisms could be buried by sediments settling on them while others would be able to move upward as the sediments accumulate. Effects of turbidity and sediment deposition on the benthic habitat would be temporary with rapid recovery of the benthic communities that reside in the sediments, and benthic communities would not be disrupted.

Placement of fill in the Northwest Slip would result in a permanent loss of benthic invertebrates. At a biomass of 21 g/m^2 in soft bottom, an infaunal loss of about 0.7 metric ton would result. The 625 feet (191 m) of rocky dike constructed to contain the fill would provide 1.7 acres (0.7 ha) of new hard substrate in the water that would partially replace the 4.1-acre (1.7-ha) loss of hard substrate in the water from the fill placement for a net loss of approximately 2.5 acres (1.1 ha). The rocky dike lost due to the fill would result in a loss of approximately 9 metric tons of intertidal invertebrates and 35 metric tons of subtidal invertebrates, although 2.5 metric tons of the intertidal and 15 metric tons of the subtidal loss would be short term due to colonization of the new dike face.

3.5.3 Effects on Water Column Species

Placement of fill in the Northwest Slip would permanently remove 9.5 acres (3.9 ha) of water column habitat for marine organisms.

Planktonic organisms would be temporarily affected by turbidity within the water column. Turbidity can impact plankton populations by lowering the light available for phytoplankton photosynthesis and by clogging the filter feeding mechanisms of zooplankton. Effects on plankton are expected to be short term and limited to the immediate vicinity of the dredging because these organisms move with the currents through the study area, making the duration of their exposure to turbidity plumes short. Planktonic organisms have a naturally-occurring high mortality rate, and their reproductive rates are correspondingly high (Dawson and Pieper 1993) which allows for rapid recovery from localized impacts. Thus, local biological communities would not be disrupted. Elutriate tests on the sediments to be dredged indicate that significant biological impacts are not expected from resuspension of sediments containing contaminants or mobilization of the contaminants into the water column (AMEC 2003). In addition, dilution by tidal waters moving into and out of the Harbor, wind-induced mixing, and diffusion would further reduce the low concentrations of contaminants potentially present.

Fish in the water column and in or near the bottom would be temporarily disturbed by the dredging and filling activities as a result of turbidity, noise, displacement, and

vibration. Most fish would leave the immediate area of the dredging, although some may stay to feed on invertebrates released from the sediments. No mortality of fish has been observed in the Outer Harbor as a result of dredging activities associated with the Deep Draft Navigation Improvements Project (Pier 400) (USACE and LAHD 1992), and none would be expected for the proposed Project.

Adding one vessel transit every 4 to 5 days is not expected to adversely affect fish in the Outer Harbor or Inner Harbor because vessel transit would be of short duration and infrequent, and few individuals would be affected.

3.5.4 Effects on Food Web

Removal of the top layer of sediment which, in some areas, contains accumulated contaminants and sediments deposited over time from numerous sources, including terrestrial inputs such as stormwater runoff and aerial deposition, would decrease the potential for bioaccumulation of contaminants in aquatic organisms. Thus, placing the contaminated sediments in a landfill or confined disposal facility (CDF) would provide an overall benefit to organisms in the Harbor by removing a pollutant source.

Disturbances due to proposed Project construction activities would not adversely affect the food web in the Harbor. After dredging is complete, reduced numbers of invertebrates (until recolonization is complete) would reduce the food supply for some species of fish. Impacts on fish populations in the Inner Harbor are expected to be short term and localized because few individuals that feed on benthic invertebrates would be affected (low density in the West Basin), the area affected would be a small proportion of available foraging area in the West Basin, and adequate foraging areas are nearby. The loss of marine habitat resulting from fill of the Northwest Slip would not affect the food web because no important foraging, breeding, or rearing areas for marine species would be lost.

The potential for introduction of invasive exotic species could increase since more and larger container ships would use the Port as a result of the proposed Project. These vessels would come primarily from outside the EEZ and would be subject to regulations to minimize the introduction of non-native species in ballast water. Thus, ballast water discharges during cargo transfers in the Port would be unlikely to contain non-native species.

Non-native algal species can also be introduced via vessel hulls. The California State Lands Commission has issued a report on commercial vessel fouling in California (Takat, Falkner and Gilmore, April 2006). The Commission recommended that the state legislature broaden the state's program and adopt regulations to prevent non-indigenous species introductions by ship fouling. Of particular concern is the introduction of an alga, *Caulerpa taxifolia*. This species is most likely introduced from disposal of aquarium plants and water and is spread by fragmentation rather than from ship hulls or ballast water; therefore, risk of introduction is associated with movement of plant fragments from infected to uninfected areas by activities such as dredging and/or anchoring. The Port conducts surveys, consistent with the Caulerpa Control Protocol (NMFS and CDFG 2006) prior to every water related construction project to verify that Caulerpa is not present. This species has not been detected in

the Harbors (MEC and Associates 2002) and has been eradicated from known localized areas of occurrence in southern California (http://swr.nmfs.noaa.gov/hcd/caulerpa/factsheet203.htm); therefore, there is little potential for additional vessel operations from the proposed Project to introduce the species. *Undaria pinnatifida* was discovered in the Los Angeles/Long Beach Harbor in 2000 (MEC Analytical Systems, Inc. 2002), may be introduced and/or spread as a result of hull fouling or ballast water, and therefore has the potential to increase in the Harbor via vessels traveling between ports within the EEZ. Invertebrates that attach to vessel hulls could also be introduced in a similar manner.

The new facilities in the West Basin would result in a small increase (84 per year above the NEPA baseline, or approximately 3 percent) in vessel traffic compared to the total number of vessels entering the Port (approximately 2,800). Considering this and the ballast water regulations currently in effect, the potential for introduction of additional exotic species via ballast water would be low from vessels entering from or going outside the EEZ. 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 (Global Security 2007), 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 non-native species into the Harbor that could substantially disrupt local biological communities, but such effects could occur.

3.5.5 Effects on Special Aquatic Sites

No special aquatic sites (marine sanctuaries or refuges, wetlands, mudflats, coral reefs, riffle and pool complexes, vegetated shallows) are present in or near the proposed Project site. Eelgrass beds and salt marsh wetlands are the only special aquatic sites within the Harbor, and these are located far enough from the proposed Project so that no direct or indirect effects would result from proposed Project activities. These two habitats are located over 3 miles (4.8 km) from the proposed Project site and over a mile (1.6 km) from the shipping lanes used by vessels travelling through the Harbor to the West Basin.

3.5.6 Effects on Essential Fish Habitat

The EFH analysis in the EIS/EIR has shown that the proposed Project would have no significant effects on the Fisheries Management Plan (FMP) species that either do not occur or are rare or uncommon in the West Basin, such as Pacific mackerel and English sole (MEC and Associates 2002), because few if any individuals would be in the disturbance area. The loss of water column habitat due to placement of fill (9.5 acres; 3.9 ha), however, would result in a loss of habitat and food sources for the FMP species that use the Northwest Slip. However, this loss of habitat would not likely have a measurable effect on sustainable fisheries because it would not measurably reduce the stocks of these species in the areas where they are harvested (primarily off shore in the open ocean). Loss of habitat for pelagic fish species that might use the Northwest Slip, particularly northern anchovy, would be considered a substantial effect that would be replaced in accordance with established mitigation

requirements as described in the EIS/EIR. The most common FMP species present are northern anchovy, Pacific sardine, and jack mackerel (MEC and Associates 2002). Dredging, pile removal, and wharf construction/upgrades at Berths 136-147 also could affect FMP species through habitat disturbance (e.g., pile removal and rock riprap placement), turbidity and suspension of contaminants from the sediments associated with dredging along the berths and disposal of the material, and vibration (sound pressure waves) from pile and sheetpile driving. These effects would be temporary, occurring at intervals lasting approximately 1 to 88 days during the 24-month construction period, with a return to baseline conditions following construction. No permanent loss of habitat would occur from the wharf work, and loss of individual fish would be few to none because most individuals would avoid the work area, resulting in no loss of sustainable fisheries.

Construction activities on land (including the Harry Bridges Boulevard widening, buffer area, and railyard relocation) would have no direct effects on EFH, which is located in the water. Runoff of sediments from such construction, however, could enter the Harbor. As discussed in Section 3.13 of the EIS/EIR, implementation of sediment control measures (e.g., sediment barriers and sedimentation basins) would minimize such runoff.

Operation of proposed Project facilities would have minimal effects on EFH. An increase in vessel traffic of 84 visits per year over the No Federal Action/NEPA Baseline (250 per year) due to the proposed Project would not increase overall noise as described in the EIS/EIR (**Impact BIO-1b)**. The added noise only occurs during vessel transit to and from the berth, so it is a short duration event. Thus, the proposed Project vessels would add to the number of noise events, but not to the overall underwater noise level. The addition of one vessel trip every 4 to 5 days would not be expected to adversely affect FMP species present in the Outer Harbor, Main Channel, or the West Basin because the proposed Project would add approximately 3 percent to the existing vessel traffic in the Port. These fish species are adapted to the existing noise in the harbor, and adding a few more noise events like those already occurring would not adversely affect them. Operation of proposed Project facilities on land, including the railyard and s buffer area, would not affect EFH because none is present on land. Runoff from the new facilities would not substantially reduce or alter EFH in harbor waters because water quality standards for protection of marine life would not be exceeded (see Section 3.13 in the EIS/EIR).

3.5.7 Effects on Other Wildlife

Terrestrial wildlife in the proposed Project area is limited to those species adapted to industrial areas, and no wildlife migration or movement corridors are present. No substantial impacts to those species would occur.

3.5.8 Actions Taken to Minimize Impacts

LAHD develops mitigation measures for impacts to marine biological resources in coordination with NOAA Fisheries, USFWS, and CDFG through agreed-upon mitigation policy (USACE and LAHD 1992). The Port has approximately 6 Inner Harbor credits in its mitigation banks and 155 credits in the Bolsa Chica and Outer

Harbor banks. The latter banks would supply 310 Inner Harbor credits. The proposed Project would require approximately 10 Inner Harbor credits or 5 Outer Harbor credits to mitigate the 9.5 acres (3.9 ha) of marine habitat loss.

3.6 Proposed Disposal Site Determinations

3.6.1 Mixing Zone Determinations

Mixing zones will need to be established through the Regional Water Quality Control Board Section 401 certification for turbidity from the dredging and filling activities. Effects of the proposed Project on water quality and biological resources outside the mixing zones is expected to be less than significant.

3.6.2 Compliance with Applicable Water Quality Standards

The proposed Project would be implemented in accordance with all applicable Federal and California water quality standards.

3.6.3 Potential Effect on Human Use Characteristics

Recreational and Commercial Fisheries. No recreational or commercial fisheries are present in the proposed Project area.

Water-Related Recreation. Not applicable. No recreation sites are present in or adjacent to the proposed Project area.

Municipal and Private Water Supply. Not applicable.

Aesthetics. Filling the Northwest Slip would not adversely affect aesthetics of the West Basin area. The slip is located within an industrial area of the Port, and loss of about 9.5 acres (3.9 ha) of water surface would not represent a substantial reduction in the amount of water visible to the public.

3.6.4 Actions Taken to Minimize Impacts

No actions are necessary to offset the less than significant impacts.

3.7 Determination of Cumulative Effects on the Aquatic Ecosystem

Special Status Species. Construction of past landfill projects in the Harbor has reduced the amount of marine surface water present and thus foraging and resting areas for special status bird species, but these projects have also added more land and structures that can be used for perching near the water. Construction of Terminal Island, Pier 300, and then Pier 400 provided new nesting sites for the California least tern, and the Pier 400 site is still being used. Shallow water areas to provide foraging habitat for the California least tern and other bird species have been constructed on the east side of Pier 300 and inside the San Pedro breakwater as mitigation for loss of such habitat from past projects, and more such habitat is to be constructed as part of the Channel Deepening project. The least tern and other special status bird species continue use the Harbor, and the combined impacts on these species of cumulative landfill projects are not cumulatively significant. The proposed Project landfill would not contribute considerably to cumulative effects on these species.

Construction of the Pacific Energy project on Pier 400 and the Cabrillo Shallow Water Habitat Expansion and Eelgrass Habitat Area as part of the Channel Deepening Project has the potential to adversely affect California least tern foraging during construction activities. These impacts could be cumulatively significant but mitigable through timing of construction activities in areas used for foraging to avoid work when the least terns are present. The proposed Project would not contribute considerably to cumulative effects on this species.

Impacts of backland developments to special status species, other than the least tern, would be cumulatively less than significant because no nesting, foraging habitat, or individuals would be lost, and the proposed Project would not contribute considerably to cumulative effects on these species.

In-water construction activities could disturb or cause special status birds, other than the California least tern addressed above, to avoid the construction areas for the duration of the activities. Because these projects would occur at different locations throughout the Harbor and only some are likely to overlap in time, the birds could use other undisturbed areas in the Harbor, and few individuals would be affected at any one time. Construction of the Schuyler F. Heim Bridge, however, would have the potential to adversely affect the peregrine falcon if any are nesting at the time of construction. If nesting were to be affected, impacts would be significant but mitigable by scheduling the work to begin after the nesting season is complete. Impacts would be cumulatively less than significant, and the proposed Project would not contribute considerably to cumulative effects on these species.

In-water construction activities, and particularly pile driving, would also result in underwater sound pressure waves that could affect marine mammals. The locations of these activities (e.g., pile and sheetpile driving) are in areas where few marine mammals occur, projects in close proximity are not expected to occur concurrently, and the marine mammals would avoid the disturbance area by moving to other areas within the Harbor, resulting in less than significant cumulative impacts.

Increased vessel traffic associated with cumulative projects would cause less than a 3 dbA increase in underwater sound. Cumulative impacts to marine mammals, therefore, are expected to be less than significant in the open ocean and within the Harbor. The proposed Project would not contribute considerable to the cumulative effects of underwater sound from vessels. No critical habitat for any federally-listed species is present, and thus, no cumulative impacts to this habitat would occur.

Loss of Marine Habitat. Numerous landfill projects have been implemented in the Harbor since the Harbor was first developed, and these projects have resulted in an unquantified loss marine habitat. For the cumulative projects listed in Table 4-1 of the EIS/EIR, approximately 570 acres (231 ha) of landfill have been completed in the Harbor, another 75 acres (30 ha) are in the process of being filled, and future planned landfills (without the proposed Project) total about 65 acres (26 ha). Losses of marine habitat prior to implementation of the agreements among the Ports and regulatory agencies, as described under **Impact BIO-5** in Section 3.3.4.3.1.1 of the EIS/EIR, were not mitigated. Losses since that time have been, and will be for future projects, mitigated by use of existing mitigation bank credits from marine habitat restoration off site and through creation of shallow water habitat within the Outer Harbor as established in the agreements with the regulatory agencies. The cumulative impacts of these past, present, and future projects prior to mitigation are significant. For those projects for which mitigation has been or will be implemented, cumulative impacts are less than significant. For past projects completed prior to implementation of NEPA and CEQA, impacts would be less than significant because neither act applies. The proposed Project would contribute 10 acres (4 ha), or less than 1.5 percent, of the more than 700 acres (283 ha) of fill completed or proposed for the harbor prior to mitigation. This represents a cumulatively considerable contribution of habitat loss prior to mitigation.

Loss of marine habitat through recent and future landfilling is a significant cumulative impact that is being offset by mitigation bank credits from marine habitat restoration off site through agreements with regulatory agencies and through creation of shallow water habitat within the Outer Harbor. Thus, the proposed Project's contribution would be mitigated to less than significant levels.

Essential Fish Habitat. EFH has been and will be lost due to past, present, and future landfill projects in the Harbor. EFH protection requirements began in 1996, and thus, only apply to projects since that time. The losses since that date are the same, significant but mitigable, as the marine habitat losses described above, and the use of mitigation bank credits for the latter impacts also offset the losses of EFH. Temporary disturbances within EFH also occur during in-water construction activities from cumulative projects. Temporary disturbances within EFH also occur during in-water construction activities. These disturbances in the Harbor occur at specific locations that are scattered in space and time within the Harbor and do not represent a cumulatively significant impact to EFH. Increased vessel traffic and runoff from on-land construction and operations resulting from the cumulative projects would not result in a loss of EFH nor would these activities substantially degrade this habitat. The proposed Project would contribute considerably to cumulative effects on EFH.

Natural Habitats, Special Aquatic Sites, and Wetlands. Natural habitats, special aquatic sites (e.g., eelgrass beds, mudflats), and plant communities (wetlands) have a limited distribution and abundance in the Harbor. The 40-acre (16-ha) Pier 300 expansion project caused a loss of eelgrass beds that was mitigated. The Southwest Slip fill in West Basin completed as part of the Channel Deepening Project resulted in a small loss of saltmarsh that was also mitigated. Losses of eelgrass and saltmarsh from early landfill projects are unknown. None of the other past, present, or future projects are expected to adversely affect any of these habitats, and effects would not be cumulatively significant. The proposed Project would not contribute considerably to cumulative effects on these habitats.

Wildlife Migration Corridors. No known terrestrial wildlife or aquatic species migration corridors are present in the Harbor. Migratory birds pass through the Harbor area, and some rest or breed, such as the California least tern, in this area. Past, present, and foreseeable future projects in the Harbor would not interfere with movement of these species because the birds are agile and would avoid obstructions caused by equipment and structures. Some species of fish move into and out of the Harbor during different parts of their life cycle or seasonally, but no identifiable corridors for this movement are known. Marine mammals migrate along the coast, and vessel traffic associated with the cumulative projects could interfere with their migration. However, because the area in which the marine mammals can migrate is large and the cargo vessels generally use designated travel lanes, the probability of interference with migrations is low and cumulative impacts would be less than significant. The proposed Project would not affect any migration or movement corridors in the Harbor or along the coast. Consequently, it would not contribute considerably to cumulative impacts on wildlife migration or movement corridors.

Biological Communities. Construction of past projects in the Harbor has involved in-water disturbances such as dredging and wharf construction that removed surface layers of soft bottom habitat as well as temporarily removed or permanently added hard substrate habitat (e.g., piles and rocky dikes). These disturbances altered the benthic habitats present at the location of the specific projects, but effects on benthic communities were localized and of short duration as invertebrates recolonized the habitats. Because these activities affected a small portion of the Harbor at a time and recovery has occurred or is in progress, biological communities in the Harbor have not been degraded. Similar construction activities (e.g., wharf construction/ reconstruction and dredging) would occur for these cumulative projects that are currently under way and for some of those that would be constructed in the future. Because recolonization of dredged areas and new riprap and piles begins immediately and provides a food source for other species, such as fish, within a short time, multiple projects spread over time and space within the Harbor would not substantially disrupt benthic communities. Construction disturbances at specific locations in the water and at different times that are caused by the cumulative projects, which can cause fish and marine mammals to avoid the work area, are not expected to substantially alter the distribution and abundance of these organisms in the Harbor and thus would not substantially disrupt biological communities. Turbidity that results from in-water construction activities occurs in the immediate vicinity of the work and lasts just during the activities that disturb bottom sediments. Effects on marine biota are thus local and of limited duration for each project. Those projects that are not in close proximity and occurring at the same time would not

have additive effects. Furthermore, based on biological baseline studies described in Section 3.3, the benthic marine resources of the Harbor have not declined during Port development activities occurring since the late 1970s. Consequently, impacts of such disturbances would be cumulatively less than significant because the effects are dispersed in time and space and are not permanent. The proposed Project would not contribute considerably to cumulative effects on biological communities of the Harbor.

Landfilling has and would continue to remove marine habitat and to disturb adjacent habitats in the Harbor. During the filling process, suspension of sediments would result in turbidity in the vicinity of the work with rapid dissipation upon completion of the fill to above the water level. Although the total amount of marine habitat in the Harbor has decreased, a large amount remains, and the biological communities present in the remaining Harbor habitats have not been substantially disrupted as a result of those habitat losses. All marine habitat loss impacts from landfill construction have been mitigated to insignificance through on-site (shallow water habitat construction) and off-site (Batiquitos and Bolsa Chica restorations) mitigation since implementation of the agreement with the regulatory agencies (see Loss of Marine Habitat above). Cumulative impacts would be less than significant. Filling the Northwest Slip would remove 9.5 acres (3.9 ha) of highly modified marine habitat in the Inner Harbor and cause short-term turbidity associated with fill placement.. This would not substantially disrupt local biological communities, and the proposed Project would not contribute considerably to cumulative effects on biological communities of the Harbor.

Runoff from construction activities on land has reached Harbor waters at some locations during past project construction, particularly for projects implemented prior to the 1970s when environmental regulations were passed. The past projects included Pier 300, Pier J, and the remaining terminal land areas within the Los Angeles-Long Beach Harbor. Runoff also has the potential to occur during all present and future projects. Construction runoff would only occur during construction activities so that projects that are not concurrent would not have cumulative effects. Construction runoff would add to ongoing runoff from operation of existing projects in the Harbor at specific project locations and just during construction activities. For past, present, and future projects, the duration and location of such runoff would vary over time. Measures such as berms, silt curtains, and sedimentation basins are used to prevent or minimize runoff from construction, and this keeps the concentration of pollutants below thresholds that could measurably affect marine biota. Runoff from past construction projects (e.g., turbidity and any pollutants) have either dissipated shortly after construction was completed or settled to the bottom sediments. For projects more than 20 years in the past, subsequent settling of suspended sediments has covered the pollutants, or the pollutants have been removed by dredging projects. In addition, biological baseline surveys in the Harbor (MEC 1988, MEC and Associates 2002) have not shown any disruption of biological communities. Effects of runoff would not substantially disrupt local biological communities in the Harbor, and cumulative projects would be cumulatively less than significant.

Much of the development in the Harbor has occurred and continues to occur on landfills that were constructed for that purpose. As a result, those developments did

not affect terrestrial biota. Redevelopment of existing landfills to upgrade or change backland operations temporarily affected the terrestrial biota (e.g., landscape plants, rodents, and common birds) that had come to inhabit or use these industrial areas. Future cumulative developments such as hotels and other commercial developments on lands adjacent to the Harbor would be in areas that do not support natural terrestrial communities or are outside the region of analysis. Effects of cumulative projects would not substantially disrupt local biological communities of terrestrial habitats and would be cumulatively less than significant. The proposed Project would not contribute considerably to effects on biological communities under CEQA or NEPA because current levels of development in the Harbor would affect minimal amounts of marine habitat, and because runoff control measures, such as SWPPPs, would be implemented as required in project permits.

Cumulative marine terminal projects that involve vessel transport of cargo into and out of the Harbor have increased vessel traffic in the past and would continue to do so in the future. These vessels have introduced invasive exotic species into the Harbor through ballast water discharges and via their hulls. Ballast water discharges are now regulated so that the potential for introduction of invasive exotic species by this route has been greatly reduced. The potential for introduction of exotic species via vessel hulls has remained about the same, and use of antifouling paints and periodic cleaning of hulls to minimize frictional drag from growth of organisms keeps this source low. While exotic species are present in the Harbor, there is no evidence that these species have had a significant cumulative impact that has disrupted the biological communities in the Harbor. Biological baseline studies conducted in the Harbor continue to show the existence of diverse and abundant biological communities. However, absent the ability to eliminate the introduction of new species through ballast water or on vessel hulls, it is possible that additional invasive exotic species could become established in the Harbor over time, even with these control measures, and could have individually or cumulatively significant impacts on biological communities. The proposed Project would have the potential to have significant impacts prior to mitigation, and could have a cumulatively considerable contribution to these effects.

Past landfills in the Harbor have altered water circulation, but not to the extent that local biological communities are substantially disrupted. Present and future landfill projects would have minor effects on water circulation because the fill areas are primarily in dead end slips with no through passage of water. Thus, cumulative impacts on water circulation are less than significant. The proposed Project would add a small amount of fill that would not substantially alter water circulation and would not contribute considerably to cumulative effects. .

3.8 Determination of Secondary Effects on the Aquatic Ecosystem

Ground disturbances and construction activities related to the new on-dock rail yard, Harry Bridges Boulevard Landscaped Buffer, widening of Harry Bridges Boulevard, and redevelopment of approximately 57 acres (23.1 ha) of backlands in Phase I could result in temporary impacts on surface water quality through runoff of asphalt

leachate, concrete washwater, sediments, and other construction materials. Runoff from onshore construction sites would enter the harbor primarily through storm drains. Most runoff would occur during storm events although some could occur during use of water as part of construction activities, such as dust control. Runoff from the project site would be regulated under a construction SWPPP issued by the RWQCB and implemented prior to start of any construction activities. This construction SWPPP is expected to specify BMPs to control releases of soils and contaminants and adverse impacts to receiving water quality.

Runoff from a construction site could contain a variety of contaminants, including metals and PAHs, associated with construction materials, stockpiled soils, and spills of oil or other petroleum products. Specific concentrations and mass loadings of contaminants in runoff will vary greatly depending on the amounts and composition of soils and debris carried by the runoff. Also, the phase of the storm event and period of time since the previous storm event will affect storm water quality because contaminant loadings typically are relatively higher during the initial phases (first flush) of a storm.

Runoff from the upland portions of the project site will flow into the harbor, along with runoff from other adjacent areas of the Harbors subwatershed. Runoff from the upland portion of the proposed Project area would represent a negligible contribution to the total mass loading from stormwater runoff to the harbor because the 57 acre area of Project site represents only 0.2 percent of the area of the Harbor subwatershed. Additionally, BMPs would minimize potentials for offsite transport of materials from the proposed Project site that could degrade water quality within the harbor. As mentioned, water quality within the harbor is affected episodically by stormwater runoff from the watershed. While runoff from the proposed Project site would contribute to changes in receiving waters that could cause water quality standards to be exceeded, the proposed Project would not create conditions that increase the relative contribution or contaminant mass loadings relative to baseline conditions.

Runoff from the construction site would form a plume of fresh or brackish water in the West Basin. Depending on the strength and duration of the storm event, the plume could be more turbid and have lower salinity and DO levels compared to the receiving waters. A plume associated with runoff from the proposed Project site could overlap with plumes from other drainage systems (e.g., Dominguez Channel) and storm drains discharging to the harbor. Nevertheless, subsequent mixing of runoff and receiving waters, and settling of particles carried by runoff into the West Basin, will prevent persistent changes in the quality of receiving waters.

Runoff from the railyard would be discharged to Consolidated Slip area of the harbor. Water quality characteristics of Consolidated Slip following storm events are strongly by inputs from Dominguez Channel. The volume of runoff from the railyard, and associated mass loadings, would be negligible in comparison to mass loadings from the Dominguez Watershed that flows into the Channel. Nevertheless, runoff from the railyard into Consolidated Slip would mix with harbor receiving waters over a period of one to several tidal cycles (less than one to several days), and runoff-derived contaminants would be diluted or settle with particles to the bottom of the harbor (POLA 2007).

Contaminants from soil and groundwater remediation activities also have the potential to run off into Harbor waters during storm events (Section 3.6.4.3 of the EIS/EIR). The potential for encountering groundwater requiring extraction and disposal during onshore construction of the proposed Project is uncertain. The Port generally does not allow dewatering. However, if dewatering is deemed necessary and is approved by the Port, the dewatering effluent would be tested to determine specific contaminant levels as this would affect the feasibility of various disposal options. Depending on the contaminant concentrations, dewatering effluent would be discharged into the sanitary sewer, under permit with the City of Los Angeles Sanitation Bureau.

Based on past history for this type of work in the harbor, accidental leaks and spills of large volumes of hazardous materials or wastes containing contaminants during onshore construction activities have a very low probability of occurring because large volumes of these materials typically are not used or stored at construction sites (see Section 3.7 of the EIS/EIR). Spills associated with construction equipment, such as oil/fluid drips or gasoline/diesel spills during fueling, typically involve small volumes which can be effectively contained within the work area and cleaned up immediately (POLA Spill Prevention and Control procedures [CA012]).

During operations, stormwater runoff from the Project site would be collected onsite by the storm drain system and discharged to the harbor, similar to existing conditions. The amount of truck traffic at the facilities would increase to handle the increased throughput beyond what the rail facilities can handle. Rail traffic would also increase at the Berths 136-147 terminal and at the new railyard. This would increase the amount of particulates and chemical pollutants from normal wear of tires/train wheels and other moving parts, as well as from leaks of lubricants and hydraulic fluids that can fall on backland surfaces and subsequently be transported by stormwater runoff to the storm drain system. Additionally, operations of non-electric equipment and vehicles for the proposed Project would generate air emissions containing particulate pollutants. A portion of these particulates would be deposited on the site and subject to subsequent transport by storm runoff into Harbor waters.

Stormwater sampling in the Port of Long Beach in 2005 (MBC 2005) showed that pollutants such as metals and semivolatile organic compounds were present in runoff from the Port facilities. Copper, lead, mercury, nickel, and zinc occurred in stormwater samples at concentrations that exceeded the standards for marine waters at a few locations. However, the study concluded that mixing with the harbor receiving waters would rapidly dilute the pollutants so that the receiving water standards would not be exceeded. It is reasonable to expect that these findings would also apply to stormwater runoff from the proposed Project site, and runoff would not cause exceedances of receiving water quality objectives, assuming that constituents in the stormwater were in compliance with the permit limits.

The other potential operational source of pollutants that could affect water quality in the West Basin is accidental spills on land that enter storm drains. Impacts to water and sediment quality would depend on the characteristics of the material spilled, such as volatility, solubility in water, and sedimentation rate, and the speed and effectiveness of the spill response and cleanup efforts.

As discussed in Section 3.7 of the EIS/EIR, the probability of an accident is classified as "periodical" (once every 10 years), based on the Port's accident history of containers containing hazardous materials. The increased number of ship calls associated with the proposed Project could contribute to a higher number of spills compared to baseline conditions. Accidental spills of petroleum hydrocarbons, hazardous materials, and other pollutants from proposed Project-related operations are expected to be limited to small volume releases because large quantities of those substances are unlikely to be used, transported, or stored on the site Therefore, the risks to water and sediment quality from spills associated with the proposed Project operations are considered small.

Actions Taken to Minimize Impacts. The WDRs for storm water runoff in the County of Los Angeles and incorporated cities covered under NPDES Permit No. CAS004001 (13 December 2001) require implementation of runoff control from all construction sites. Prior to the start of construction activities the tenant, or its contractors, would prepare a pollutant control plan using WDRs that includes monitoring and maintenance of control measures. Control measures, such as those identified in Section 3.13.4.3 of the EIS/EIR, would be installed at the construction sites prior to ground disturbance. Implementation of all conditions of proposed Project permits would minimize project-related runoff into the Harbor and impacts to water quality. Standard BMPs, such as soil barriers, sedimentation basins, site contouring, and others listed in Section 3.13.4.3 of the EIS/EIR, would be used during construction activities to minimize runoff of soils and associated contaminants in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and a construction SWPPP. Concrete truck wash water and runoff of any water that has come in contact with wet cement would be contained on site so that it does not runoff into the harbor, thereby preventing adverse effects on harbor water quality through elevation of pH above water quality standards for protection of aquatic life.

Standard Port BMPs (e.g., excavating, stockpiling, and disposing of chemically impacted soils [02111]; solid waste management [CA020]; contaminated soil management [CA022]) specify procedures for handling, storage, and disposal of contaminated materials encountered during excavation. These procedures would be followed for upland construction activities associated with the proposed Project to ensure that soil or groundwater contaminants were not transported off-site by runoff.

Construction and industrial SWPPPs and standard Port BMPs listed in Section 3.13.4.3 of the EIS/EIR (e.g., use of drip pans, contained refueling areas, regular inspections of equipment and vehicles, and immediate repairs of leaks) would reduce potentials for materials from onshore construction activities to be transported offsite and enter storm drains.

The facilities associated with the proposed Project would be operated in accordance with the industrial SWPPP that contains BMPs to control offsite transport of contaminants, as well as monitoring requirements to ensure that the quality of the stormwater runoff complies with the permit conditions. Regulatory controls for runoff and storm drain discharges are designed to reduce impacts to water quality and would be fully implemented for the proposed Project. Tenants will be required to

obtain and meet all conditions of applicable stormwater discharge permits as well as meet all Port pollution control requirements.

The tenant shall conform to applicable requirements of the Non-Point Source (NPS) Pollution Control Program. The tenant shall design all terminal facilities whose operations could result in the accidental release of toxic or hazardous substances (including sewage and liquid waste facilities, solid and hazardous waste disposal facilities) in accordance with the state Non-Point Source Pollution Control Program administered by the State Water Resources Control Board (SWRCB). As a performance standard, the measures shall be selected and implemented using the Best Available Technology that is economically achievable such that, at a minimum, relevant water quality criteria as outlined by the California Toxics Rule and the Basin Plan are maintained, or in cases where ambient water quality exceeds these criteria, maintained at or below ambient levels. The applicable measures include:

- Solid Waste Control - Properly dispose of solid wastes to limit entry of these wastes to surface waters.

- Liquid Material Control - Provide and maintain the appropriate storage, transfer, containment, and disposal facilities for liquid materials.

- Petroleum Control - Reduce the amount of fuel and oil that leaks from container and support vessels.

The tenant shall develop an approved Source Control Program with the intent of preventing and remediating accidental fuel releases. Prior to their construction, the tenant shall develop an approved Source Control Program (SCP) in accordance with Port guidelines established in the General Marine Oil Terminal Lease Renewal Program. The SCP shall address immediate leak detection, tank inspection, and tank repair.

As a condition of their lease, the tenant will be required to submit to the Port an annual compliance/performance audit in conformance with the Port's standard compliance plan audit procedures. This audit will identify compliance with regulations and BMPs recommended and implemented to ensure minimizing of spills that might affect water quality, or soil and groundwater.

Potential releases of pollutants from a large spill on land to harbor waters and sediments would be minimized through existing regulatory controls and are unlikely to occur during the life of the proposed Project. As described in Section 3.7 of the EIS/EIR, activities that involve hazardous liquid bulk cargoes at the Port are governed by the Los Angeles Harbor District Risk Management Plan (RMP) (LAHD 1983). The RMP contains policies that minimize the impacts of accidents associated with the release of hazardous materials. The Release Response Plan prepared in accordance with the Hazardous Material Release Response Plans and Inventory Law (California Health and Safety Code, Chapter 6.95), which is administered by the City of Los Angeles Fire Department (LAFD), also regulates hazardous material activities within the Port. These activities are conducted under the review of a number of agencies and regulations including the RMP, U.S. Coast Guard (USCG), fire department, and state and federal departments of transportation (49 CFR Part 176).

These safety measures would minimize the likelihood of a large spill reaching the harbor waters and sediments.

4.0 Findings

Evaluation of Compliance with 404(b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the proposed project does not comply with the guidelines.)

No adaptations of the Section 404(b)(1) Guidelines were made relative to this evaluation.

4.1 Alternatives Test

___	X
Yes	No

4.1.1 Based on the discussion in Section 2.4, are there available, practicable alternatives having less adverse impacts on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters.

Discussion: The EIS/EIR evaluated the proposed and five alternative projects, including the no action alternative (see Section 2.4). A number of other alternatives were considered but not carried forward for analysis for a variety of reasons described in Section 2.6 of the DEIS/EIR. The applicant's preferred project is the Berths 136-147 Container Terminal Project with the 10-acre (4.0 ha) fill in the Northwest Slip. This project would reconfigure existing terminals into one larger, more efficient terminal with only a small amount of new landfill construction. The existing berths would be upgraded and new berths constructed to handle the container vessels. This approach is consistent with the Coastal Zone Management Act and the California Coastal Act, which encourage modernization of existing facilities within existing port boundaries.

Water Quality. Modifications to backlands and transportation systems within the proposed Project area are not water-dependent activities, although their use is related to operation of the marine terminal berths. Runoff from construction activities at these locations, however, could affect water quality in the Harbor similar to effects of the NEPA baseline for all but the No Action Alternative where no backland construction would occur. Compliance with existing regulations and proposed Project permits would minimize such impacts.

Construction activities in Harbor waters would have short-term effects on water quality, but the proposed Project would remain in compliance with state and Federal water quality standards. No contaminants would be discharged in concentrations that could be toxic to aquatic biota.

Aquatic Biota. The proposed Project would permanently remove 9.5 acres (3.9 ha) of aquatic habitat as a result of the Northwest Slip fill in the proposed Project

Alternative. This would affect aquatic biota and Essential Fish Habitat. These impacts would be mitigated by use of existing Port mitigation credits. Temporary impacts of construction activities on aquatic biota would occur for the proposed Project, Project without 10-Acre Fill, and Reduced Wharf alternatives, but impacts would be less than significant. The Omni Terminal, Landside Terminal improvements, and No Action alternatives would have no in-water construction. No threatened or endangered species or special aquatic sites would be adversely affected by any of the alternatives.

The potential for introduction of invasive species via ballast water and vessel hulls would increase in proportion to the number of vessel calls above baseline conditions under each alternative, except the Omni Terminal and Landside Terminal Improvements alternatives, where the number of vessel calls would decrease, thereby decreasing that potential. For all but the Omni Terminal and Landside Terminal Improvements alternatives, the increase in vessel calls per year would be less than 3 percent of the total vessel calls in the Port of Los Angeles. Considering this and the ballast water regulations currently in effect, the potential for introduction of additional exotic species via ballast water would be low from vessels entering from or going outside the EEZ. Vessel hulls are generally coated with antifouling paints and cleaned at intervals to reduce the frictional drag from growths of organisms on the hull (Global Security 2007), which would reduce the potential for transport of exotic species. For these reasons, all alternatives have a low potential to increase the introduction of non-native species into the Harbor that could adversely affect local biological communities.

Human Health and Welfare. The project alternatives would have no significant impacts on human health and welfare, including recreational and commercial fishing, municipal and private water supplies, water-related recreation, and aesthetics.

Waters of the U.S. Only the proposed Project would result in a permanent loss of waters of the U.S. The Project, Project without 10-Acre Fill, and Reduced Wharf alternatives each would have temporary impacts within waters of the U.S.

Terminal Function. As described in Section 2.3, the volume of containerized shipping through the Port will more than triple by 2020 (LAHD 2004). Studies of the potential container throughput demand for the Port of Los Angeles and the Port of Long Beach (Mercer 2001) and the JWD Capacity Analysis Report (JWD Group 2002) for the physical capacity of Port of Los Angeles's existing and planned container terminal expansions were use to develop realistic TEU and ship call projections for the West Basin Terminal. The 2002 JWD Capacity Analysis Report was updated in April 2005, and evaluated the physical capacity of existing and planned container terminal expansions in the Port for the years 2002, 2005, 2010, and 2025. This report examined the physical throughput capacity of each terminal based on a detailed analysis of berthing and backland operational criteria. Reasonably foreseeable changes to operational labor practices, increased hours of operation, ship sizes, container stacking heights, and other factors were built into a capacity analysis model. The model forecasts per-acre throughput capacities independently for each terminal. It also determined whether the backland or berthing was the limiting factor for each terminal and reported an overall terminal capacity for each of the analysis years. In all cases, the JWD model yielded a maximum practical per-acre capacity

for the terminal for the given year. In addition to total throughput in TEUs, the number of ship calls required to achieve this throughput also have been projected. The throughput reports discussed above provide an upper (capacity) and lower (demand) bound for projected terminal throughput for each of the analysis years. The results of these forecasts are shown in Table H-2.

Conclusions. Based on the analyses in the EIS/EIR, the No Action Alternative, the Landside Terminal Improvements Alternative, and the Omni Terminal Alternative would be the least environmentally damaging, but none of these would meet the overall project purpose. Compared to the NEPA baseline, terminal area would be 57 acres (23.1 ha) less for No Action but the same for the Omni Terminal and Landside Terminal Improvements; throughput would be the same for No Action but 67 percent less for the Omni Terminal and Landside Terminal Improvements; and the number of ship calls would be the same as the No Action Alternative and decreased by 67 percent for the Omni Terminal and Landside Terminal Improvements (see Table H-2). The berths would not be upgraded or increased in either of these alternatives. As a result, the terminal would not be adequate to support the increased throughput demand.

Table H-2. Comparison of Alternatives

	NEPA Baseline	Project	Project without 10-acre Fill	Reduced Wharf	Omni Terminal	Landside Terminal Improvements	No Action
Terminal area (acres)	233	243	233	233	233	233	176
Vessel calls	250	334	334	300	83	83	250
Annual throughput (TEU)	1,697,000	2,389,000	2,389,000	2,035,000	565,700	565,700	1,697,000
Dredging (cy)	0	298,000	295,000	0	0	0	0
New wharf (linear ft)	0	1,105	705	0	0	0	0
	Note: Numbers represent total in 2038.						

The Reduced Wharf Alternative would increase the number of vessel calls by 32 percent, but the increase in throughput would only be 20 percent. The existing Berths 136-139 would be seismically upgraded, but Berths 145-147 would not be changed or expanded. The terminal area would remain 233 acres (94.8 ha). This alternative would not support the increased throughput demand.

The proposed Project would result in a significant but mitigable loss of 9.5 acres (3.9 ha) of waters of the U.S. that provide habitat for marine biota, while the Project without 10-Acre Fill Alternative would not result in any permanent loss of marine habitat but would include the same temporary disturbances related to berth upgrades

and expansion (Berth 147 only) as for the proposed Project. Both of these alternatives would increase the number of vessel calls and throughput equally (Table H-2). Thus, the Project without 10-Acre Fill Alternative is the least environmentally damaging alternative that also provides the maximum throughput.

(NA)
Yes No 4.1.2 Based on Section 2.3, if the project is in a special aquatic site and is not water-dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

4.2 Special Restrictions

Will the discharge:

___ _X__
Yes No 4.2.1 Violate state water quality standards?

___ _X__
Yes No 4.2.2 Violate toxic effluent standards (under Section 307 of the Act)

___ _X__
Yes No 4.2.3 Jeopardize endangered or threatened species or their critical habitat?

___ _X__
Yes No 4.2.4 Violate standards set by the Department of Commerce to protect marine sanctuaries?

X ___ _ __
Yes No 4.2.5 Evaluation of the information in Sections 2.4 and 2.5 above indicates that the proposed discharge material meets testing exclusions criteria for the following reason(s):

( ) based on the above information, the material is not a carrier of contaminants

( ) the levels of contamination are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas

(X) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

4.3 Other Restrictions

Will the discharge contribute to significant "waters of the U.S." through adverse impacts to:

___ Yes	X No	4.3.1	Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?
___ Yes	X No	4.3.2	Life states of aquatic life and other wildlife?
___ Yes	X No	4.3.3	Diversity, productivity and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?
___ Yes	X No	4.3.4	Recreational, aesthetic and economic values?

4.4 Actions to Minimize Potential Adverse Impacts (Mitigation)

X___ Yes ____ No

Will all appropriate and practicable steps (40 CFR 23.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?

Discussion: Actions taken to minimize potential impacts have been described in Section 3. The permanent loss of aquatic habitat (9.5 acres, 3.9 ha) due to fill placement would be mitigated to less than significant through use of existing mitigation credits from either the Bosa Chica Bank or the Outer Harbor Bank. The temporary impacts of dredging and berth reconstruction to marine sediments would be minimized by limiting the area of disturbance to that needed for these activities. Fill placement in the Northwest Slip would be confined within a rock dike to limit sediment movement. Any contaminated sediments dredged would be placed in an approved CDF or upland disposal site. Temporary impacts of construction activities on water quality and aquatic biota would be minimized by compliance with conditions, such as standard WDRs, of the Project 401 Certification and Section 404 permit. Plans and specifications for fill placement in the Northwest Slip will include measures to prevent turbidity from leaving the site with monitoring to verify that WQS are being met. Runoff from pollutants during backland construction activities would be minimized through use of construction and industrial SWPPPs and standard Port BMPs listed in Section 3.13.4.3

of the EIS/EIR (e.g., use of drip pans, contained refueling areas, regular inspections of equipment and vehicles, and immediate repairs of leaks).

Based on the above information, the USACE has made a preliminary determination that the Project without 10-Acre Fill avoids and minimizes impacts to waters of the U.S. to the maximum extent practicable and, thus, represents the least environmentally damaging practicable alternative that meets the stated overall project purposes, pending further analysis.

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