Appendix N
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 and the Section 404(b)(1) Guidelines (40 CFR 230). The impact evaluation is summarized from the Recirculated Draft EIS/EIR for the Berth 97-109 Project and is not intended to be a stand-alone document. References to sections of the Recirculated Draft EIS/EIR where more information may be obtained are given throughout this analysis (Berth 97-109 Container Terminal Project, 2008).

2.0 Project Description

The Port of Los Angeles (Port) Berth 97-109 Container Terminal Project involves three phases of terminal construction and development, Phase I, Phase II, and Phase III (Phase I was completed and began operations in 2004, and the estimated completion dates of Phases II and III are 2011 and 2012, respectively).

The proposed Project is designed to optimize container terminal operations in the Berth 97-109 area along with a 40-year lease (2005 to 2045) to China Shipping Container Lines (China Shipping) to operate the terminal. Los Angeles Harbor Department (LAHD) will develop the terminal for the proposed tenant.

Phase I construction, which included 1.3 acres of submerged fill at Berth 100, wharf improvements at Berth 100, constructing a bridge over the Southwest Slip, installing four A-frame cranes, new backlands construction, and entry gate modifications, has been completed; terminal operations officially began on June 21, 2004. Phase I was completed in accordance with the USACE Settlement Agreement and Environmental Assessment. The USACE Settlement Agreement requires USACE to prepare a project-specific EIS for China Shipping Phases I through III and to revisit the conditions of the permit originally issued for construction of Berth 100. The Recirculated Draft EIS/EIR reanalyzes Phase I construction and all operations between 2004 and 2007, in addition to all future construction (Phases II and III) and operations (2008 to 2045) (Berth 97-109 Container Terminal Project, 2008).

The proposed federal action is for the United States (U.S.) Army Corps of Engineers (USACE) to issue permits for work and structures in waters of the U.S. for the proposed Project. Eighteen alternatives (including the proposed Project, the No Project alternative, and No Federal Action alternative) were considered during preparation of this Recirculated Draft EIS/EIR, which included alternative terminal configurations and alternative terminal locations. Of these, eight alternatives (including the proposed Project) that meet most of the proposed Project objectives or as required by the Amended

Stipulated Judgment (ASJ) (see Section 1.4.3 of the Recirculated Draft EIS/EIR), have been carried forward for detailed analysis in Chapter 3 of the Recirculated Draft EIS/EIR. That section also presents the alternatives considered but eliminated from further discussion (including the rationale for the decision to eliminate the alternatives from detailed analysis), followed by a description of the alternatives analyzed in this environmental document.

The remaining eight alternatives were analyzed in detail in the Recirculated Draft EIS/EIR, including the No Project alternative and the No Federal Action alternative. Section 2.4 below contains a summary of each alternative in the EIS/EIR.

2.1 Location

The proposed Project is located in the West Basin of the Port of Los Angeles, Los Angeles County, California. The Berth 97-109 Container Terminal (proposed Project) is located adjacent to the San Pedro District of the Port. It is bordered by the Southwest Slip on the north; John S. Gibson Boulevard and Pacific Avenue on the west; Knoll Hill, Front Street, and the Vincent Thomas Bridge on the south; and the West Basin Channel on the east. Adjacent and north of the Southwest Slip is the Yang Ming Terminal (Berths 121-131). Located immediately to the south are the Los Angeles World Cruise Center, Lane Victory, and the Catalina Express ferry terminal.

2.2 General Description

The Berth 97-109 project would be constructed and operated in three phases, as described in detail in Section 2.4.2 of the EIS/EIR. The proposed Project would include the following primary construction elements:

- Construction of 2,500 feet of wharf at Berths 100 and 102 (Phase I – 1,200 feet at Berth 100, Phase II – 925 feet at Berth 102, Phase III – 325 feet at Berth 100 south).
- Dredging of 41,000 cubic yards at Berth 100 (completed as part of Phase I).
- Placement of 88,000 cubic yards of rock dike (completed as part of Phase I).
- Addition of 10 shoreside A-frame cranes and gate facilities (Phases I-III).
- Minor dredging to match the West Basin channel depth of -53 feet, mean lower-low water (MLLW) (Phase II).
- Expansion and development of 142 acres of terminal backlands (Phases I through III).
- Construction of container terminal buildings and accessory structures.
- Construction of new access gates.
- Construction of two bridges over the Southwest Slip to connect Berth 97-109 Container Terminal to Berth 121-131 Marine Terminal (Phases I and II).
- Construction of road improvements in the vicinity.
- Construction of a 116,000-cubic-yard rock dike and 24,000 cubic yards of fill behind the rock dike (Phase III).
- Relocation of the Catalina Express Terminal from Berth 96 to 95.

The federal action is for the USACE to issue permits authorizing work and structures in navigable waters of the U.S. and discharges of fill in waters of the U.S. Components of the proposed Project that would need such permits include wharf construction at Berths 100 and 102, submerged fill placement (approximately 2.54 acres), dredging, construction of a rocky dike to contain that fill, and placement of rock riprap as part of the berth construction.

2.3 Authority and Purpose

Discharge of fill material into waters of the U.S. requires compliance with Section 404 of the Clean Water Act. This Section 404(b)(1) analysis is one step in evaluating and ensuring that compliance.

Anticipating the importance of containerized shipping, the Ports of Los Angeles and Long Beach along with 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 of new terminal lands, and construction and operation of 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.

LAHD operates the Port under legal mandates of the Port of Los Angeles Tidelands Trust (Los Angeles City Charter, Article VI, Sec. 601) and the Coastal Act (PRC Div 20 Section 30700 *et seq.*), which identify the Port and its facilities as a primary economic/ coastal resource of the state and an essential element of the national maritime industry for promotion of commerce, navigation, fisheries, and harbor operations. According to the Tidelands Trust, Port-related activities should be water dependent and should give highest priority to navigation and shipping, as well as provide necessary support and access facilities for accommodating the demands of foreign and domestic waterborne commerce.

The overall purpose of the proposed Project is to establish and maximize maritime trade by establishing a new container-handling facility to optimize cargo-handling efficiency and capacity at Berths 97-109 to meet current and future cargo-handling needs that would maximize the use of existing waterways, and that would integrate into the overall use of the Port.

The maximum annual throughput estimated for the Berth 97-109 Container Terminal is 1.5 million TEUs in 2030, while the 2001 annual throughput (supplemental storage only) for the Project site was only 45,135. This maximum 1.5 million-TEU capacity (annual) would be exceeded by the cargo demand by 2030 (Recirculated Draft EIS/EIR, Section 2.1). As a consequence, the proposed Project is needed to add maximum terminal capacity and meet cargo demand to the maximum extent feasible, given the projected terminal capacity shortfall in the Port. 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. Other proposed Project purposes include establishing needed container-handling facilities that would maximize the use of existing waterways and that would integrate into the overall use of the Port.

2.4 Alternatives Considered

During the National Environmental Policy Act (NEPA) process, 18 alternatives were considered, and the following 7 alternatives to the proposed Project were equally evaluated and reviewed in the Recirculated Draft EIS/EIR for the Berth 97-109 Container Terminal Project.

- Alternative 1 – No Project Alternative
- Alternative 2 – No Federal Action Alternative
- Alternative 3 – Reduced Fill: No New Wharf Construction at Berth 102
- Alternative 4 – Reduced Fill: No South Wharf Extension at Berth 100
- Alternative 5 – Reduced Construction and Operation: Phase I Construction Only
- Alternative 6 – Omni Cargo Terminal
- Alternative 7 – Nonshipping Use

The other alternatives would not maximize cargo-handling efficiency or capacity, or would not maximize the use of existing waterways. A complete description of the proposed Project and seven alternatives evaluated in detail in this document is included in Chapter 2 of the Berth 97-109 Container Terminal EIS/EIR.

As provided for in the ASJ and the USACE Settlement Agreement (described in Section 1.4.3 of the Recirculated Draft EIS/EIR), Phase I of the proposed Project was developed in 2002/2003 and became operational in 2004. USACE previously issued a permit for in-water work, and, as part of Phase I, dredging of 41,000 cubic yards of sediment in the vicinity of Berth 100 occurred, 1.3 acres of dike and submerged fill were placed, 1,200 feet of wharf was constructed, and a new bridge over the Southwest Slip was constructed. The 1.3 acres of fill was fully mitigated by the application of mitigation bank credits. All of the Project alternatives would utilize the terminal site, which includes the constructed Phase I terminal. As a result of this after-the-fact situation, all of the Project alternatives, including the No Project alternative and the No Federal Action Alternative include Phase I construction and the already mitigated in-water elements. As a result, there is no viable alternative that does not have at least 1.3 acres of mitigated fill in navigable waters. The amounts of fill associated with each alternative are provided in Table 1, as are the annual TEU throughput capacities and site sizes.

Table 1. Summary of Alternatives

Alternative	Acres Of Fill	Annual TEUs	Site Size
Proposed Project	2.54	1,551,000	142 acres
Alternative 1 - No Project	1.3	457,100*	72 acres
Alternative 2 - No Federal Action	1.3	632,500*	117 acres
Alternative 3 - No Wharf at Berth 102	2.54	936,000	142 acres
Alternative 4 - No Berth 100 South	1.34	1,392,000	130 acres
Alternative 5 - Phase I Terminal Only	1.3	630,000	72 acres
Alternative 6 - Omni Cargo Terminal	2.54	506,467	142 acres
Alternative 7 – Nonshipping Use	1.3	None	117 acres

*These TEUs represent supplemental container storage on the terminal site from the adjacent berth-limited Berth 121-131 Container Terminal and do not represent new TEU capacity for meeting future demand.

Considering the current cargo forecast and that there would still be a container terminal capacity shortfall by 2030 (see Section 1.1.3 of the Recirculated Draft EIS/EIR) with full development of the Port, only the proposed Project would best fulfill the overall goals of the Project and the Port, as discussed in Chapter 2 of the Recirculated Draft EIS/EIR.

The reduced fill alternatives (Alternatives 3, 4, and 5) and the Omni Cargo Terminal (Alternative 6) would meet some of the project goals and objectives (to accommodate some cargo-handling demand, as shown in Table 1) but not to the extent of the proposed Project. The alternatives would also not make full use of waterways in the Port, nor would they serve as practicable alternatives that can meet future container throughput demand. Alternatives 3 and 6 would have the same sized site as the proposed Project but would have substantially less throughput than the proposed Project (615,000 and 1.04 million annual TEUs less, respectively). Alternative 4 would have a slightly smaller sized site than the proposed Project and would manage 159,000 annual TEUs less. At 72 acres and an annual throughput of 630,000 TEUs, Alternative 5 would have a substantially smaller sized site and TEU throughput than the proposed Project. The Nonshipping Alternative (Alternative 7) would not achieve any of the Project goals and objectives because it would not accommodate any cargo-handling demand or establish a facility that maximizes Port usage of existing waterways. The No Project Alternative (Alternative 1) and the No Federal Action Alternative (Alternative 2) would not accommodate new cargo-handling demand, although they would provide some supplemental container storage in the West Basin that would allow another berth-limited container terminal to move to a more spread-out operation to increase efficiency of that terminal.

The No Project alternative, the No Federal Action alternative, and the Nonshipping Use alternative would not meet the Project goals and objectives under NEPA to maximize cargo-handling efficiency, optimize and increase container ship berthing accommodations, or provide optimized truck-to-rail container movements.

The proposed Project would maximize cargo-handling efficiency and capacity at Berths 97-109 in the West Basin, which would help address the need to optimize Port lands and terminals for current and future containerized cargo handling and would establish a needed container-handling facility that would maximize the use of existing waterways.

Based on the above rationale, including the projected Portwide container throughput capacity shortfall, Alternatives 1 through 7 are not considered "practicable" alternatives under the 404(b)(1) Guidelines because they would not optimize cargo-handling efficiency or capacity, would not maximize the use of existing waterways in the Port, and would not accommodate foreseeable future containerized cargo volumes through the Port.

Because the impact determinations of a Significant Impact to aquatic resources without mitigation and the impact determinations of Less than Significant to aquatic resources with compensation mitigation (related to the loss of soft-bottom marine habitat) were the same among all alternatives despite differences in the area of impact, no Least Environmentally Damaging Project Alternative becomes obvious. In addition, loss from any project alternative would be mitigated through the application of mitigation bank credits (see Section 3.3 of Recirculated Draft EIS/EIR and Section 4.4 below) with 1.3 acres of Phase I project fill already mitigated through the application of these mitigation credits.

Although, a finding that the project will need mitigation can be a discriminator for project alternatives, all viable alternatives will result in mitigation requirements. Despite having 1.24 more acres of submerged fill compared to the Alternatives with the least amount of fill (1.3 acres for Alternatives 1, 2, 5, and 5), the proposed Project, which would prepare the Port to accommodate the most TEU throughput of any alternative, would maximize the water-dependent uses of the project site and would best meet the legal mandates of the Port of Los Angeles, deemed the least environmentally damaging most practicable of the Project alternatives. In addition, the proposed Project would be the least likely alternative to require future project expansion and disruption of the marine environment as the Port grows to accommodate projected trade increases.

Although preliminary determination was made that the proposed Project and Alternatives 3, 4, and 5 were practicable alternatives, only the proposed Project is considered the most practicable given the future throughput capacity shortfall projected for the entire Port complex. Only the proposed Project would meet the objectives to establish and expand a new container facility in the West Basin to the extent required to optimize the use of existing land and waterways and be consistent with the overall use of allowable uses under the Port Master Plan and that would best accommodate foreseeable containerized cargo volumes through the Port

From an aquatic standpoint, 1.3 acres have already been filled. This area has been mitigated through the application of mitigation bank credits (see Section 3.3 of Recirculated Draft EIS/EIR and Section 4.4 below) already as would any additional fill such as proposed in the proposed Project. The proposed Project then appears to be the least environmentally damaging (prior to mitigation) most practicable alternative that would satisfy the present and future needs of the Port.

2.5 Description of Dredged/Fill Material

The construction of sections of new wharves at Berth 100 during Phase I required clamshell dredging to remove approximately 41,000 cubic yards of sediments. The dredging that occurred along the wharf at Berth 100 as a part of Phase I construction of the proposed Project matched the main channel depth of -53 feet, including an additional -2-foot overage to allow for normal construction tolerances. Major dredging is not necessary for Berth 102 because dredging was conducted previously in this area as

part of the approved Channel Deepening Project as addressed in the Supplemental EIS/EIR (USACE and LAHD, 2000), which addressed the impacts of modifying the project in the 1998 Channel Deepening Project EIR, and Port Master Plan Amendment No. 21 (LAHD, 2002a). However, some maintenance dredging might take place in the vicinity of Berth 102 to remove sediments that have settled there since the Channel Deepening Project, and this material would go to the Anchorage Road disposal site. The area of Berth 102, dredged to the -53-foot channel depth as part of the Channel Deepening Project, would be developed as a container ship wharf (Berth 102) in Phase II of the proposed Project construction.

On the basis of previous sampling and analyses, the USACE and USEPA have determined that a portion of the dredge material in Phase I was unsuitable for unconfined ocean disposal. All dredge material was placed in an approved upland disposal site at Anchorage Road, and any dredged material generated by the future phases would be disposed of at this location.

Sediments in the area where minor dredging may occur have been described in Section 3.14 (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 State Water Resources Control Board (SWRCB) has listed various areas in the Los Angeles/Long Beach Harbor complex, which includes West Basin, as an impaired body of water under Section 303(d) of the Clean Water Act for specific sediment contaminants (SWRCB, 2006) (see Table 3.14-1 of the Recirculated Draft EIS/EIR).

For the Channel Deepening Project, bulk sediment chemical analyses were conducted on sediment samples from numerous locations in the West Basin (Kinnetic Laboratories/ToxScan, 2002). The samples were analyzed for heavy metals, butyltins, chlorinated pesticides and polychlorinated biphenyls (PCBs), petroleum hydrocarbons, oil and grease, polycyclic aromatic hydrocarbons (PAHs), total phthalates, percent solids, and total soluble sulfides. Elutriate samples were also analyzed for most of the same constituents. No biological (toxicity or bioaccumulation) testing was performed for these sediments. Sediments adjacent to the nearby Berths 145 to 147 were tested in 2002 for suitability for ocean or in-water disposal (AMEC, 2003b). Testing was performed in accordance with standard USEPA/USACE 1991 and 1998 protocols, which included bulk sediment chemical analyses, elutriate testing, solid and suspended phase bioassays, and contaminant bioaccumulation testing. Results from testing are summarized in Sections 3.14.2.3.1 and 3.14.2.3.2 of the Recirculated Draft EIS/EIR. Some sediment quality data from 2003 are available for these areas (MBC, 2003). The sediment quality conditions represented by sampling in 2000 and 2002 (MEC and Associates, 2002; AMEC, 2003, respectively) are considered representative of baseline conditions in 2001 because the magnitude and composition of source input to the West Basin were comparable, and no substantial disturbances of bottom sediments, such as due to dredging, occurred in the West Basin between 2000 and 2003. NPDES monitoring conducted in the West Basin in 2003, which included grain size and metals (MBC, 2003; Appendix L), is also consistent with the MEC and AMEC studies. Metals were below ERL levels except copper, which was slightly higher than the Effect Range Low (ERL).

Previous studies of the area of Berths 100-102 included sediment testing to depths of 12 to 22 feet below mean sea level (msl) or about 9 to 19 feet below MLLW. This

sampling showed essentially clean sediments at those depths (ToxScan, 1995) during construction of the West Basin Widening Project where a 9-acre area of the former Chevron Marine Terminal was removed to improve navigation (Berth 100 area); however, dredged material was found to be contaminated with petroleum hydrocarbons. This material was removed and managed as part of the West Basin Widening Project.

Although the Inner Harbor is significantly cleaner than it was 25 years ago, some segments exhibit the effects of historical deposits of pollution in the sediments and from the existing point and nonpoint discharges (LARWQCB, 2002). Marine biological communities in part of the Inner Harbor show contamination from PCBs and the chlorinated pesticide DDT and toxicity of the surface water microlayer in a test species (larval kelp bass) (Southern California Coastal Water Research Project [SCCWRP], 1998 and 2002). Localized areas of contaminated sediments still remain. The CalEPA Office of Environmental Health Hazard Assessment has issued health advisories on the consumption of certain fish species (white croaker, black croaker, queenfish, and surf perches) from Los Angeles and Long Beach Harbors.

The State Mussel Watch (SMW) Program has documented instances of high levels of metals, PCBs, tributyltin (TBT), and PAHs in mussel tissue at several locations in the Inner Harbor. Additionally, the Bay Protection and Toxic Cleanup Program (BPTCP) has identified some areas of the Inner Harbor with elevated pollutant levels, some of which exhibit sediment toxicity (SWRCB et al., 1998).

The sediments in the Southwest Slip are predominantly silt and clay (over 90 percent), while the northern portion of the West Basin near Berth 137 has a higher proportion of sand (51-63 percent) than silt and clay (37 to 48 percent) (MEC Analytical Systems, 2002). Sediment quality has been investigated as part of the numerous Port improvement and dredging projects. Enforcement and elimination of contaminant sources have resulted in reduction of pollutant loading to the Harbor, but the contaminant levels remaining have resulted in many areas being listed as waters with impaired water quality from sediment contamination.

The MEC Analytical Systems biological baseline study (2002) suggested that the removal of contaminated sediments during the Channel Deepening Project has led to a significant improvement in the environmental quality of the Harbor.

At present, no numerical sediment quality objectives exist to compare to the sediment testing results; however, sediment quality objectives are being developed by the SWRCB. Therefore, recent sediment testing results are used to characterize sediment quality by comparisons to published guidelines and exceedance criteria (Long et al. 1995; USEPA/USACE, 1991; USEPA, 2000a) as follows:

- Effect Range Low (ERL) = concentrations in bulk sediment below which adverse biological effects are not expected
- Effect Range Medium (ERM) = concentrations in bulk sediment above which adverse biological effects are expected
- Water Quality Standards (WQSs): 1-hour and 4-day averages (elutriate test)
- Limiting Permissible Concentration (LPC)

Previous studies have demonstrated that sediments in the Southwest Slip were contaminated with metals, PAHs, PCBs, and DDT derivatives, some at moderate to high levels (SWRCB et al., 1998; Kinnetic Laboratories/ToxScan, 2002). In the 1998 study, mercury, PAHs, and PCBs were elevated, above ERM values and were associated with

amphipod toxicity. In the 2002 study of the 10 metals tested, all but one (arsenic) were above ERM values at one or more locations. DDT, PCBs, and PAHs were also above ERM values at several locations. Lead, copper, nickel, zinc, PCBs, DDT, and PAHs were well above ERM values at a few locations. Water sampling tests found copper and mercury above water quality standards (4-day average and 6-month median, respectively). Bioaccumulation tests showed that eight metals, PAHs, DDE, and PCB were taken up by organisms that are similar to those routinely inhabiting these sediments (e.g., worms and clams). Forty-three acres in the Southwest Slip were filled as part of the Channel Deepening Project, which has covered a large portion of these sediments. A portion of this fill was a confined disposal facility (CDF) where contaminated sediments from other areas in the Harbor were disposed of.

In addition to the sediments dredged and reused as fill, under the proposed Project, approximately 204,000 cubic yards of rock and 38,000 cubic yards of clean fill would be used in the construction of the filled containment dikes under the wharves at Berths 100-102, including the minor fill required for the relocation of the Catalina Express Terminal docks. New concrete piles would be installed along the wharf area to anchor the dike rock and provide support for the 2,500 feet of new wharves. New piles will be installed in-water at Berth 95 to anchor the relocated docks required for the relocation of the Catalina Express Terminal.

2.6 Proposed Discharge Sites

2.6.1 Southwest Slip and West Basin

Forty-three acres in the Southwest Slip were filled as part of the Channel Deepening Project, which has covered a large portion of the sediment in the slip. A portion of this fill was a CDF where contaminated sediments from other areas in the Harbor were disposed of.

The proposed discharge site is within the West Basin. Approximately 1.3 acres of fill was added to the marine bottom along Berth 100 under Phase I and an additional 1.2 acres (approximate) would be added to the marine bottom along the southern extension area of Berth 100 under Phase III. A minor amount of fill will be added to the soft marine bottom in the vicinity of Berth 95 to anchor the relocated Catalina Express terminal docks in Phase II. The fill will have the effect of converting a portion of the soft bottom to a hard substrate habitat. Material dredged as part of the proposed Project could be used for fill at this site if the timing of dredge/fill activities allows. Otherwise, the dredged material would be placed in an approved CDF or upland disposal site such as the Anchorage Road Storage Site. Approximately 204,000 cubic yards of rock would be used for the containment dike. Piles required for wharf construction would occupy minimal area and result in a loss of water surface area of approximately 0.1 acre.

2.6.2 Berths 97-109

Construction of Berths 100-102 would include placement of 38,000 cubic yards of fill material (14,000 cubic yards in Phase I and 24,000 cubic yards in Phase III) behind the bulkhead above the water line. Approximately 204,000 cubic yards of rock (88,000 cubic yards in Phase I and 116,000 cubic yards in Phase II) would be used during construction of the dikes at Berth 100 and for the subsequent 375-foot south extension of Berth 100.

2.6.3 Backlands

Backland construction would not involve placement of fill material into upland areas.

2.6.4 Anchorage Road Disposal Site

The Anchorage Road Soil Storage Site is on a 40-acre parcel adjacent to Wilmington's 11 marinas and Pier A West, the Long Beach Harbor Department 130-acre oil field. The site borders Anchorage Road and Shore Road, and has been used as an upland soil storage site for contaminated dredged materials since 1995. The dredge material removed during Phase I construction was placed at the approved upland disposal site at Anchorage Road, and subsequent dredge materials (from maintenance dredging) would also be placed at the Anchorage Road Soil Storage Site.

2.7 Discharge Methods

Dike and fill placement along the in-water vicinity of Berth 100 (including the southern extension area of the Berth 100 wharf) would be by bottom-dump barge or from the side of the transport barge. In some cases, large rocks could be placed individually. The 38,000 cubic yards of fill behind the dike would also be placed by bottom-dump barge. The piles would be driven from barge-mounted cranes.

3.0 Factual Determinations

3.1 Physical Substrate Determinations

The substrate to be dredged along Berths 100-102 between the pier head line and the adjacent channel under the Proposed project and project alternatives (the proposed Project and all alternatives include dredging at Berth 100; the proposed Project and Alternatives 4 and 6 would require minor maintenance dredging at Berth 102) is predominantly sand and finer sediments. These sediments are at a depth of about -45 feet MLLW. Contaminants in the sediments to be dredged are discussed previously in Section 2.5 of this appendix.

Table 3-1. (EIR/EIS) Berth 97-109 Habitat Impact Summary

Construction Phase	Location	Permanent Impacts (acres)			Temporary Impacts (acres)	
		Soft Bottom	Rocky Dike/ Pile	Water Surface	Soft Bottom	Hard Bottom
I	Berth 100 (dredge, dike, and fill)	-1.3	+1.3	0	1.3	0.0
I	Berth 100 (pile installation)	0*	0*	0	0*	0*
II	Berth 102 (pile installation)	-0.04	+0.04	0	--	--
III	Berth 100 South Extension (dike and fill)	-1.2	+1.2	0	1.2	--
III	Berth 100 South Extension (pile installation)	--	--	0	--	--
Total Berths 97-102		-2.54	+2.54	0	2.5	--

Note: Acreages are approximate and are based on a water surface elevation of +4.8 feet MLLW.

*Contained in the fill area.

**Approximately area in acres of soft-bottom habitat or water surface that would be lost due to placement of piles.

In the West Basin, the fill would cover fine, soft sediments on the bottom at a depth of -45-feet MLLW and rock riprap on the slopes of the adjacent fills. A rock riprap dike would be constructed to contain the fill. Concrete wharf pilings would be installed for Berth 100 (constructed in Phase I), the Berth 100 extension (Phase III), and the Berth 102 wharf (Phase II). Rock riprap would be used to stabilize the dredged slopes along Berth 100. Sheet piles or pin 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 the addition of dike and fill would bury soft-bottom biota while providing new hard surface substrate (see Table 3-1). These losses are described in Section 3.3.2.2 of the Recirculated Draft EIS/EIR. After dredging, the soft sediments remaining would be approximately 8 feet deeper and would be recolonized by invertebrates. Dredge material would be disposed of at the Anchorage Road Soil Storage Site. 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.

Actions Taken to Minimize Impacts. Dredging would occur for the proposed Project and all alternatives, but the amount of dredging for Alternatives 1, 2, 3, 5, and 7 would be less than the proposed Project. Dredging would be limited to areas needed for wharf improvements, maintenance, and deepening areas immediately adjacent to berths to allow vessel access. Fill placement in the West Basin would be within a rock dike that would limit movement of the sediments during and after placement. Contaminated sediments removed during Phase I were taken to the Anchorage Road Storage Site (applies to all alternatives), and additional material from maintenance dredging for the proposed Project, Alternative 4, or Alternative 6 would be placed in an approved CDF or upland disposal area such as the Anchorage Road Storage Site. Aside from applying Phase I

dredging to the No Project and the No Federal Action alternatives, no additional dredging would occur under these alternatives.

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

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 proposed Berth 97-109 Project and the alternatives. The West Basin and Southwest Slip have no through flow, and placement of submerged dike and fill on the marine bottom at the entrance to the West Basin (along Berth 100) under any of the alternatives would not result in surface water or water column displacement that could 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 detectably affect current or flow under the proposed Project or any Alternative.

Velocity. Tidal current velocities along the berths could be slightly lower due to the increased water depth resulting from dredging under the proposed Project and all alternatives. For the proposed Project and all alternatives, water velocities in other parts of the West Basin would not be altered by the dredging adjacent to berths or placement of fill along the marine bottom in the West Basin.

Stratification. Neither the proposed Project nor the alternatives would alter stratification in Harbor waters.

Hydrologic Regime. No changes are anticipated for the proposed Project or any of the project alternatives.

3.2.2 Water Level Fluctuations

Tides would remain unchanged in the Harbor as a result of the proposed dredging at Berths 97-109 and the fill at the Southwest Slip 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.

Tides would remain unchanged in the Harbor as a result of the dredging required of the proposed Project and all alternatives because no restrictions to tidal flow would be created. For the proposed Project and alternatives, only submerged fill would be created (soft bottom would be covered with hard substrate), and no new landfill would be created; therefore, there would be no new land masses to restrict tidal flows. In addition, the wharf created under Phase I and that is included in the proposed Project and all alternatives would not cause restrictions in tidal ebbs and flows. Similarly, the larger amounts of new wharf (beyond the Phase I wharf) under the proposed Project and Alternatives, 3, 4, and 6 would not cause restrictions in tidal ebbs and flows.

3.2.3 Salinity Gradients

The proposed Project or alternative is not anticipated to have a detectable effect on salinity gradients in the Harbor because no new landfill would be created. Although the

proposed Project and Alternatives 3, 4, and 6 would result in some minor increases in runoff and/or runoff rates to the Harbor from a higher amount of impervious surface area (relative to the NEPA baseline), the increased runoff or runoff rates would be negligible compared to the volume of water in the Harbor, and no substantive changes in the salinity levels of the Harbor would occur. Alternatives 1, 2, 5, and 7 have either the same or less impervious surface area compared to the NEPA baseline. Because of this, runoff from these alternatives would not affect the salinity levels in the Harbor.

3.2.4 Actions Taken to Minimize Impacts

No actions are necessary to offset the less than significant impacts expected on water circulation, water level fluctuation, and salinity gradients.

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, 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 100-102 would generate a relatively small turbidity plume (i.e., within the mixing zone defined in the Waste Discharge Requirements) because the material includes coarse-grained particles that will settle rapidly, as well as finer-grained material and silts that have resulted in limited turbidity plumes during Phase I dredging.

Monitoring conducted during Phase I dredging showed that total suspended solid (TSS) limits were met (MBC, 2002). 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). Furthermore, modeling conducted for the proposed Project and alternatives (see the DREDGE model results in the Recirculated Draft EIS/EIR) indicated that TSS levels would approach background levels within several hundred meters of the dredging activity.

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 to 46 milligrams per liter (mg/L) and from 5 to 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 for the proposed Project and Alternatives 3 through 6, and during Phase I as applied to Alternatives 1, 2 and 7, are expected to affect a small proportion of the West Basin and dissipate within several hundred meters of dredging.

Water quality regulatory standards would not be violated, and effects on marine organisms would be minor. The amount of dredging would be greatest for the proposed Project and Alternatives 4 and 6; slightly less for Alternative 3 (no Berth 102; therefore,

no minor maintenance dredging), and slightly less for Alternatives 1, 2, 5, and 7 (from Phase I dredging only).

Placement of rock dike and submerged fill in the West Basin under the proposed Project and all alternatives would result in some increases in turbidity, which would dissipate quickly, consistent with the plume dissipation associated with dredging. In addition, the placement of minor fill or minor in-water work to anchor the public docks under Alternative 7 would result in minor increases in turbidity that would dissipate quickly. Effects on water quality and marine organisms would be minor.

Disposal of dredged material from the proposed Project or any of its alternatives would occur at the Anchorage Road Storage Site or other upland disposal site, which would not result in turbidity increases.

Pile installation activities at Berth 100 and/or 102 under the proposed Project or any of its alternatives would suspend bottom sediments into the water column, causing localized and temporary turbidity. Each of these construction operations would occur over periods up to several months. Resuspended sediments would settle rapidly (within hours) and turbidity levels would decrease once activities were completed. Effects on water quality and marine organisms would be minor.

Secondary effects of backland improvements construction would be minor as described in Section 3.8.

3.3.2 Effects on Chemical and Physical Properties of the Water Column

Dredging and filling within the Harbor are expected to have minor and temporary effects on water quality in the immediate vicinity of those activities. Terminal operation would also have minor effects on the water column. These effects are described in Section 3.14 of the Recirculated Draft EIS/EIR and summarized below.

Salinity. No change in salinity is expected under the proposed Project or any project alternative. As described above in Section 3.2.3, salinity gradients would not be affected by construction. Operation of the terminal under the proposed Project or Alternatives 1 through 6, or the Regional Center under Alternative 7 would not result in significant changes to salinity in the water column because the amount of runoff would be minimal or would be the same or less than would occur under the NEPA baseline.

Clarity/Light Penetration. Turbidity in the immediate vicinity of dredging, pile placement, and fill placement along the marine bottom under the proposed project and the project alternatives would temporarily reduce water clarity in a small area for the duration of the in-water activities. The effects of turbidity are discussed in more detail in Section 3.14.4.3 in the Recirculated Draft EIR/EIS and in 3.3.1 above. Construction 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. Operation of the terminal under the proposed Project or Alternatives 1 through 6, or operation of the Regional Center under Alternative 7 would have minor if any effect on water clarity because runoff would be minor and would be subject to Best Management Practice (BMP) devices (such as Stormceptors) and because turbidity would settle to background levels relatively quickly.

Color. Color of Harbor waters would be changed little, if any, due to construction of the proposed Project or its alternatives, and operations would have no effects on color.

Turbidity during dredging and placement of fill in the West Basin from the proposed Project and its alternatives could have minor effects on water color in that area.

Odor. Any odors resulting from construction activities would be expected to be localized, temporary, and of minimal magnitude.

Taste. Not applicable.

Dissolved Gases. Under the proposed Project and its alternatives, dissolved oxygen (DO) levels in Harbor waters could be reduced in the immediate vicinity of dredging, dike and fill placement, and pile installation by the resuspension of sediments in the water column and the 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 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 3.14 of the Recirculated Draft EIS/EIR, measurements conducted 90 feet and 300 feet 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, dike placement and filling operations, and pile driving under the proposed Project and the project alternatives. 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 (USACE and LAHD, 1992). 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 potential 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 or its alternatives.

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 dredging and filling activities from the proposed Project or its alternatives.

Temperature. Activities for the proposed Project or its alternatives would not affect water temperatures.

Other. Changes in pH may occur in the immediate vicinity of dredging operations under the proposed Project or its alternatives 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 under the proposed Project or any alternative.

3.3.3 Actions Taken to Minimize Impacts

Because a similar determination of less than significant impact was found for the proposed Project and alternatives from in-water construction (dredging, and dike and fill placement), the difference in levels of in-water work between the alternatives should not be the determining factor in project selection, particularly with mitigation in place for both alternative sizes. Therefore the project or alternative that presents the most practicable solution to optimize the use of existing land and waterways and to accommodate foreseeable containerized cargo volumes through the Port while minimizing the project impact is the least environmentally damaging project alternative when viewed in the long term. In addition, the proposed Project and project alternatives will be conducted in a manner that employs best management practices as detailed herein.

Under the proposed Project and Alternatives 3 through 6, and for Phase I in-water work applied to Alternatives 1, 2, and 7, a Section 401 (of the Clean Water Act) Water Quality Certification would be obtained from the LARWQCB for construction dredging and filling activities that contains standard Waste Discharge Requirements 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. These requirements would be incorporated into the adaptive management of the in-water work, as described in Section 3.2 of the Recirculated Draft EIS/EIR. 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 same data would be used by the Port as part of its adaptive management program. The dredging and filling permit could also identify corrective actions, such as use of silt curtains, which would be implemented if the monitoring data indicate that water quality conditions outside the mixing zone approaches 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 behind the fill dikes) meets the RWQCB WDRs for settleable solids and toxic pollutants. As described above, construction of Phase I occurred under the terms of the ASJ and USACE permit. During Phase I in-water construction, monitoring was conducted as required by regulatory agencies, and the results of the monitoring show that no water quality permit violations occurred (MBC, 2002). A turbidity plume from dredging was detected at the station located 300 feet from the point of dredging, but it was confined to the lower half of the water column. Light transmittance was reduced by about 37 percent, but the effect was limited in duration as the dredge plume dissipated. During water chemistry sampling, no PAHs, PCBs, or DDTs were detected in the area of dredging. Of the 10 metals analyzed, only copper was detected at a low concentration during dredging.

Sediments from the proposed dredging units would be retested 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 at the Anchorage Road Storage Site, which is engineered and constructed such that the contaminants cannot enter Harbor waters after the fill is complete. Dredge material from Phase I was taken to this site, as

would subsequent dredge materials from maintenance dredging near Berth 102 for the proposed Project and Alternatives 4 and 6.

A Debris Management Plan and a 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 under the proposed Project and the project alternatives, an integrated multi-parameter adaptive management program would be implemented by the Port Environmental Management Division in conjunction with permit requirements of USACE and LARWQCB, wherein dredging performance is measured *in situ*. The objective of the monitoring program would 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 permit levels are approached, the Port Environmental Management Division would immediately meet with the construction manager to discuss modifications of dredging operations to keep turbidity to acceptable levels (below levels specified in the permit). 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, dike and fill placement, and pile-driving operations under the proposed Project or its alternatives. The proposed Project and Alternatives 3, 4, 6, and 7 would require in-water work beyond Phase I activities (in-water work under Alternative 7 would consist of minor dike/fill placement and minor pile driving to anchor the public docks). 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.

Previous studies of the area of Berths 100-102 included sediment testing to depths of 12 to 22 feet below msl or about 9 to 19 feet below MLLW. This sampling showed essentially clean sediments at those depths (ToxScan, 1995). During construction of the West Basin Widening Project where a 9-acre area of the former Chevron Marine Terminal was removed to improve navigation (Berth 100 area); however, dredged material was found to be contaminated with petroleum hydrocarbons. This material was removed and managed as part of the West Basin Widening Project. Results from previous elutriate tests using West Basin sediments (AMEC, 2003; Kinnetic Laboratories/Toxscan, 2002) detected only minor releases of selected metals from sediments that did not exceed water quality criteria. 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 3.14.3.3 of the Recirculated Draft EIS/EIR, the Basin Plan (RWQCB, 1994) defines limits for chemical contaminants in terms of bioaccumulation, chemical constituents, pesticides, PCBs, and toxicity. Disposal of dredged sediments

under the proposed Project and its alternatives would not result in contaminants in the water column because all dredged material would be disposed of at the Anchorage Road Storage Site. Sediments containing contaminants that are suspended by the dredging and pile installation 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.

Under the proposed Project and its alternatives, placement of fill on the marine bottom in the West Basin near Berth 100 would cover the existing finer sediments that are more associated with contaminants, such as metals and hydrocarbons; however, the fill layer would act as an isolation cap for the finer 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 construction could occur during the proposed Project and its alternatives. All alternatives involve Phase I in-water work, and the proposed Project and Alternatives 3, 4, 6, and 7 would require additional in-water work. 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 or those of its alternatives 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 234 annual ship calls (for 2030) compared to the NEPA baseline as a result of the proposed Project, 130 annual ship calls for Alternative 3, 208 annual ship calls for Alternative 4, 104 annual ship calls for Alternative 5, and 364 annual ship calls for Alternative 6. Alternatives 1, 2, and 7 would not have any annual ship calls, although Alternative 7 would accommodate recreational watercraft. Discharges of polluted water or refuse directly to Los Angeles Harbor are prohibited. Thus, the increased vessel traffic and terminal operations associated with proposed Project would not result in increased waste discharges from vessels. Terminal-related increases in vessel traffic under the proposed Project and Alternatives 3 through 6 could result in higher mass loadings of contaminants such as copper that are released from antifouling paints on vessel hulls. Although Alternative 7 would accommodate small watercraft, minimal releases of TBT are anticipated, as discussed in Section 3.14 of the Recirculated Draft EIS/EIR. 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.

Other potential operational sources of pollutants that could affect water quality in the West Basin include accidental spills, illegal discharges from vessels, and leaching from coatings on vessel hulls while in the West Basin. Oceangoing vessels carry substantial amounts of fuel, and an accidental spill could conceivably be large in the event of a catastrophic accident, which, although remote, could result in significant contamination to Harbor waters. 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. Regarding illegal discharges, there is no evidence that illegal discharges from ships currently 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 at the Anchorage Road Soil Storage Site, which is engineered and constructed in such a manner that the contaminants cannot enter Harbor waters. For accidental spills during construction, spill prevention, and cleanup procedures for the proposed Project or Alternatives 3 through 6 would be addressed in a plan that would be prepared and implemented by the construction contractor, as required by existing regulations. The plan would define actions to minimize the potential for spills and provide efficient responses to spill events to minimize the magnitude of the spill and extent of impacts.

For potential water quality impacts from the proposed Project or Alternatives 3 through 6, there are not feasible mitigation measures that could eliminate the potential for accidental spills, leaching from vessel hull coatings, or illegal discharges.

3.5 Aquatic Ecosystem and Organism Determinations

Placement of fill along the marine bottom in the West Basin for the proposed Project and all alternatives (Alternatives 1, 2, and 7 include Phase I fill) would cause a permanent loss of aquatic habitat, including a loss of water column from the piles, and loss of approximately 2.54 acres of soft bottom, while gaining hard substrate from placement of rock dike material. Under the proposed Project and Alternative 6, approximately 2.54 acres of soft bottom would be permanently lost (Table H-1) by being covered with submerged hard substrate (dike and fill). A net gain, however, of about 2.54 acres of submerged rocky dike habitat would occur or would replace the loss of 2.54 acres of soft-bottom habitat. Therefore, the proposed Project and Alternative 6 would essentially result in conversion of 2.54 acres of submerged soft-bottom habitat to submerged rocky dike habitat. This would result in a loss of marine organisms in the soft bottom and subsequent establishment of marine organisms that inhabit hard substrates. Alternative 3 would have slightly less covering of soft bottom (2.5 acres) with hard substrate. Alternative 4 would result in the conversion of approximately 1.34 acres of soft bottom to hard substrate. Similarly, Alternatives 1, 2, 5, and 7 would result in the conversion of approximately 1.3 acres of soft-bottom habitat to hard substrate from the placement of dike and fill.

Construction activities at Berths 97-109 under the proposed Project and its alternatives would result in temporary disturbances to soft bottom and hard substrate habitats through in-water work, including dredging and dike placement.

During operation of the terminal under the proposed Project and Alternatives 3, 4, and 6, stormwater runoff would be greater than under the NEPA baseline, but the runoff is not expected to adversely affect marine organisms because the runoff would be subject to Standard Urban Stormwater Mitigation Plan (SUSMP) treatment devices prior to discharge to the Harbor. For Alternatives 1, 2, and 5, terminal operations would occur on a site that is the same size or smaller than the NEPA baseline, so no incremental runoff-related impacts to marine organisms would occur. Similarly, runoff from the Regional Center site would occur from a site the same size, and the NEPA baseline and would not

affect marine organisms. The proposed Project and Alternative 6 would result in the greatest vessel traffic (234 and 364 annual ship calls, respectively) associated with terminal operations, with Alternatives 3, 4, and 5 having fewer annual ship calls. Alternatives 1, 2, and 7 would not have container vessel ship calls, but Alternative 7 would accommodate small watercraft.

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. Both of these species have been observed in the Southwest Slip in the past, but they do not regularly use the Southwest Slip for foraging. 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 (Section 3.3.2.5 in the Recirculated Draft EIS/EIR). The proposed Project area does not provide any other habitat values for the California least tern and provides only limited perching/resting sites for the California brown pelican. Few, if any, individuals would be affected by construction activities related to the proposed Project or alternatives because few would be present, and other foraging areas are available nearby in West Basin and in other areas of the Harbor. Therefore, neither dredging and filling activities nor the resultant turbidity during construction of the proposed Project or an alternative would be expected to adversely affect these species.

The peregrine falcon feeds on other birds (such as rock doves and starlings) and would not be affected by proposed Project or alternative 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 or alternative activities. The Vincent Thomas Bridge is adjacent to the southern end of Berth 100, and the Schuyler R. Heim Bridge is more than 2 miles from the West Basin. The backland areas under the proposed Project and its alternatives are not used by sensitive species for resting, foraging, or breeding. Thus, none of these species would be present to be affected by proposed Project or alternative construction activities.

California brown pelicans, listed whale species, and sea turtles are unlikely to be present in the West Basin in the vicinity of Berths 100 and 102 during in-water construction. Any individuals that are present during in-water construction under the proposed Project or its alternatives would avoid the activities and would not be adversely affected (USEPA; 1987; 2005).

Underwater noise levels during dredging may range between 111 and 175 dB at 33 feet depending on dredge type (Dickerson et al., 2001; Bassett Acoustics, 2005). Pile driving produces noise levels of 177 to 220 dB at 33 feet 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} 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 that sea lions swam rapidly out of the area when the piles were being driven (Caltrans, 2001).

Thus, the sea lions that 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 because 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 likely would 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 dike face at Berths 100-102 and for containing the Southwest Slip fill would be transported from a Catalina Island quarry by barge. This Berth 100-102 work would require one barge (pulled by two tugboats) per day for up to approximately 4 months. One barge and two tugboats 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. Few, if any, individuals would be present in those vessel traffic routes due to the sparse distribution of marine mammals (whales, porpoises/ dolphins, seals, and sea lions) in this area of open ocean or in the Harbor (sea lions and harbor seals only). No adverse affects are expected to occur to marine mammals due to their relatively sparse populations, as well as their agility and ability to avoid damage by vessels. Alternatives 3 and 6 would have the same number of barge trip as the proposed Project (approximately 160). Alternatives 1, 2, 4, 5, and 7 would have the same number of barge trips (approximately 69), which is les than the proposed Project.

Operation of new terminal facilities in the West Basin for the proposed Project or Alternatives 1 through 6, or the Regional Center under Alternative 7, would not adversely affect any state- or federally listed, or special-concern species of bird. Those species that currently use the West Basin area could continue to do so because the proposed Project or alternative 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, stacked and wheeled container storage, and/or 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 1 to 2 days for the proposed Project and Alternative 4, one every 2 to 3 days for Alternative 3, one every 3 to 4 days for Alternative 5, or one vessel every day under Alternative 6 days would cause a short interval of disturbance throughout the route from Angels Gate to Berths 97-109 in the West Basin; however, the increase would not result in a loss of habitat or individuals for sensitive birds that use the water surface for resting or foraging. Alternatives 1, 2, and 7 would not have container vessel calls, but Alternative 7 would support small watercraft that would not result in a water loss that could support sensitive birds.

An estimated 234 additional vessel calls per year (above NEPA baseline) to the Port would result from implementation of the proposed Project. Alternatives 3 through 6 would result in 130, 208, 104, and 364 annual vessel calls, respectively. Underwater sound from these vessels and the tugboats used to maneuver them to and from the berths 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 1 to 4 days (depending on the alternative) 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 kilometers [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 levels near heavily used ferry terminals, generally range between 130 and 136 dB (WSDOT, 2006), which are below the injury threshold of 180 dB_{rms}.

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 or any of its alternatives.

Although the project-level impacts related to whale strikes are not significant for the proposed Project and Alternatives 3 through 6, operational vessel traffic to and from the Harbor from these alternatives could result in significant cumulative impacts related to whale strikes. However, these alternatives are not expected to interfere with marine mammal migrations along the coast because these vessels would represent a relatively small proportion of the total Port-related commercial traffic in the area (8 percent for the proposed Project, 4.5 percent for Alternative 3, 7 percent for Alternative 4, 3.5 percent for Alternative 5, and 12.5 percent for Alternative 6). 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. Alternative 7 would support only small watercraft, which also would have a low probability of encountering migrating mammals in coastal waters.

3.5.2 Effects on Benthos

Benthic invertebrates living in and on the sediments to be dredged adjacent to the berths would be lost. During Phase I construction, approximately 1.3 acres of soft-bottom habitat were covered with dike and fill, and during Phases II and III, an additional 1.24 acres of soft-bottom habitat would be covered or displaced. At a biomass of 21 grams per square meter (g/m^2), approximately 0.2 metric ton of invertebrates living in the sediments would be removed under the proposed Project and Alternatives 3 and 6. Under the other alternatives, approximately 1.3 acres of fill associated with Phase I would occur, which would result in a loss of 0.1 metric tons of invertebrates. 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 would not be disrupted. The replacement of the soft bottom with rocky dike and pile substrate in the water column (for the wharves) for the proposed Project or the alternatives would permanently remove up to 0.2 metric tons 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 past observations of the biomass of organisms in or on submerged rocky habitats.

Construction of a new 2,500-foot wharf at Berths 100 and 102 under the proposed Project and under Alternative 6 would add approximately 2.54 acres of new rocky dike hard substrate habitat. Approximately 652 new concrete octagonal piles (24 inches in diameter) were installed in Phase I, and an additional 552 would be installed in the water at Berth 102 adding 1,725 square feet. At Berth 100 wharf extension, 224 piles of 24-inch-diameter piles would add about 700 square feet of hard substrate. Near the Catalina Express Terminal relocation site at Berth 95, approximately three floating docks with five piles each (15 piles total equals 47 square feet) would be installed or relocated to anchor the docks under the proposed Project and Alternatives 3 and 6 (the other alternatives would not relocate the Catalina Express Terminal). Together these piles would add 0.0417 acres of vertical pile habitat to the Inner Harbor. The new pilings, installed to support the wharf, would add hard substrate habitat in the West Basin and would partially offset the loss of soft bottom. The piles would be placed in existing or new riprap areas. In new riprap areas, few benthic organisms would be lost because little colonization of the rock would have occurred. In existing riprap areas, the organisms within the footprint of each pile would be lost or disturbed. The new hard substrate benthic habitat in the water column would replace soft-bottom habitat lost within the pile footprints.

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/deposition generated by dredging. The affected in-water area would be the same for the proposed Project and Alternative 6, slightly less for Alternative 3, and the affected area for the other alternatives would be approximately half (either 1.3 acres or 1.34 acres) that of the proposed Project. 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 a relatively rapid recovery of the benthic communities that reside in the sediments, and benthic communities would not be disrupted over the long term.

Placement of fill in the West Basin would kill or displace benthic invertebrates. At a biomass of 21 g/m^2 in soft bottom, an infaunal loss of about 0.2 metric tons would result under the proposed Project and Alternatives 3 and 6, and a loss of about 0.1 metric ton would occur under the other alternatives. For the proposed Project and Alternative 6, the 2,500 feet of rocky dike constructed along the berths and the wharf piles would provide 2.54 acres of new hard substrate in the water that would replace the 2.54-acre loss of soft-bottom substrate in the water. Alternative 3 would provide 2.5 acres of new hard substrate in the water that would replace the 2.5-acre loss of soft-bottom substrate in the water. For the other alternatives, the replacement of a soft bottom with rocky substrate would be approximately 1.3 acres. The soft bottom covered by the rock would be permanently lost.

3.5.3 Effects on Water Column Species

Placement of dike and fill in the West Basin would permanently remove approximately 0.1 acre of water column habitat for marine organisms. Installation of new piles for the

1,200-foot wharf at Berth 100 that occurred in Phase I (proposed Project and all alternatives), the 925-foot wharf at Berth 102 (proposed Project and Alternatives 4 and 6), and the 375-foot extension at Berth 100 (proposed Project and Alternatives 3 and 6) would convert a small amount of water column habitat into hard substrate habitat. Dredging in the proposed Project and all alternatives would increase the amount of water column habitat, although the proposed Project and Alternatives 4 and 6 would provide a slightly higher amount of water column habitat associated with the wharf piles at Berth 102.

Planktonic organisms would be affected temporarily by turbidity within the water column. Turbidity can affect 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). As mentioned previously, only one metal (copper) was detected during dredge monitoring, and no PAHs, PCBs, or DDT were detected (MBC, 2002). 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 could 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 or its alternatives.

Adding one vessel transit every 1 to 2 days for the proposed Project and Alternative 4, 2 to 3 days for Alternative 3, 3 to 4 days for Alternative 5, or every day under Alternative 6 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 input such as stormwater runoff and aerial deposition, would decrease the potential for bioaccumulation of contaminants in aquatic organisms if the lower layers that are exposed by the dredging are not also contaminated. Thus, placing the contaminated sediments in a landfill or CDF could provide a benefit to water quality in the Harbor by removing a pollutant source in a small area. The placement of rock for the dike under the proposed Project and the alternatives would also serve to cap portions of the existing sediment and minimize bioaccumulation from that possible contaminant source.

Disturbances due to the proposed Project or alternative 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 (due to low density in the West Basin). The area affected would be a small proportion of available foraging area in the West Basin, and other adequate foraging areas are nearby. The conversion of marine habitat in the West Basin from soft bottom to submerged hard substrate from the dike placements under the proposed Project or alternatives would not adversely affect the food web because no important foraging, breeding, or rearing areas for marine species would be lost. In addition, the minor loss of water column habitat (from displacement by wharf piles) would not adversely affect the food web in the Inner Harbor but instead would provide additional hard substrate in the water that can be colonized and serve as a food source for marine species.

The potential for introduction of invasive exotic species could increase because more and larger container ships would use the Port as a result of the proposed Project and Alternatives 3 through 6. These vessels would come primarily from outside the exclusive economic zone (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; 2006). The Commission recommended that the state legislature broaden the state program and adopt regulations to prevent introductions of nonindigenous species 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 Harbor (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 or Alternatives 3 through 6 to introduce the species. *Undaria pinnatifida*, which was discovered in the Los Angeles/Long Beach Harbors in 2000 (MEC and Associates, 2002), and *Sargassum filicinum*, discovered in October 2003 (MBC, 2003), may be introduced and/or spread as a result of hull fouling or ballast water and, therefore, have the potential to increase in the Harbor via vessels traveling between ports in the EEZ. Invertebrates that attach to vessel hulls could also be introduced in a similar manner.

No such impacts are expected for Alternatives 1 or 2 because they would not have vessel operations, nor for Alternative 7, which would only accommodate recreational watercraft likely to have minimal contact with non-native species. The new facilities in the West Basin would result in a small increase in vessel traffic (234 ship calls per year above the NEPA baseline, or approximately 8 percent) under the proposed Project compared to the total number of vessels entering the Port (approximately 2,900). There would be 130 annual ship calls for Alternative 3, 208 annual ship calls for Alternative 4, 104 annual ship calls for Alternative 5, and 364 annual ship calls for Alternative 6. Alternatives 1, 2,

and 7 would not have any annual ship calls, although Alternative 7 would accommodate recreational watercraft. 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 and its alternatives have a low potential to increase the introduction to the Harbor of non-native species that could substantially disrupt local biological communities, but such effects could still 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, and vegetated shallows) are present in or near the proposed Project site. Eelgrass beds, mud flats, and salt marsh wetlands are the only special aquatic sites within the Harbor, and these are located far enough from the terminal site under the proposed Project or Alternatives 1 through 7 so that no direct or indirect effects would result from terminal operations, or in the case of Alternative 7, Regional Center operations. The eelgrass beds and salt marsh are located more than 3 miles from the proposed Project site and more than a mile from the shipping lanes used by vessels traveling through the Harbor to the West Basin. Mud flats are located nearly 2 miles from the proposed Project site along the Main Channel, and the small increase in vessel traffic for the proposed Project and Alternatives 3 through 6 or the small watercraft under Alternative 7 would not affect this site.

3.5.6 Effects on Essential Fish Habitat

The essential fish habitat (EFH) analysis in the Recirculated Draft EIS/EIR has shown that the proposed Project and Alternatives 1 through 7 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 piles (approximately 0.1 acre) under the proposed Project and alternatives, however, would result in a loss of habitat and food sources for the FMP species that use the West Basin. 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), and because the piles would serve as additional hard substrate that can be colonized by marine organisms. Loss of habitat for pelagic fish species that might use the West Basin, particularly northern anchovy, would be considered a substantial effect that would be replaced in accordance with established mitigation requirements as described in the Recirculated Draft EIS/EIR. The most common FMP species present are northern anchovy, Pacific sardine, and jack mackerel (MEC and Associates, 2002). Dredging, pile installation, and wharf construction at Berths 97-109 also could affect FMP species through habitat disturbance (e.g., pile installation and rock riprap placement), turbidity, and suspension of contaminants from the sediments associated with dredging along the berths and vibration (sound pressure waves) from pile and sheet or pin pile driving. These effects would be temporary, occurring at intervals

lasting approximately 1 to several days during the entire construction period, with a return to baseline conditions following construction. No permanent loss of habitat would occur from the wharf work, although soft-bottom habitat would be converted to rocky habitat at Berth 100 in the proposed Project and Alternatives 3 through 6. 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 under the proposed Project or alternatives 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 3.14 of the Recirculated Draft 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 234 visits per year is greater than the NEPA baseline (no ship calls per year), but the ship calls under, the proposed Project would not substantially increase overall noise levels because the percentage increase in Harbor vessel trips is not substantial as described in the Recirculated Draft EIS/EIR (**Impact BIO-1b**). Similarly, ship calls from Alternative 3 (130), Alternative 4 (208), Alternative 5 (104), and Alternative 6 (364) would not result in substantial noise impacts to the marine environment. The added noise occurs only during vessel transit to and from the berth, so it is an event of short duration. Thus, the proposed Project or project alternative vessels would add to the number of noise events, but would not substantially increase the overall underwater noise level. The addition of one vessel trip every 1 to 4 days, depending on the alternative (one ship call every 1 or 2 days for the proposed Project and Alternative 4, one ship call every 2 to 3 days for Alternative 3, one ship call every 3 to 4 days for Alternative 5, or one vessel every day under Alternative 6), would not be expected to adversely affect FMP species present in the Outer Harbor, Main Channel, or the West Basin, because the proposed Project or Alternatives 3 through 6 would add approximately up to 12.5 percent to the existing vessel traffic in the Port. Fish species already present in the Harbor complex are adapted to the existing noise in the Harbor, and increasing the number of noise events like those already occurring would not adversely affect them under the proposed Project or Alternatives 3 through 6. Operation of the proposed Project or its alternative facilities on land, including the on-dock rail yard at Berths 121-131(a portion of the containers from the proposed Project or Alternatives 3, 4, and 5 would use the on-dock facility at the adjacent container terminal), would not affect EFH because none is present on land. Runoff from the new facilities under the proposed Project and the alternatives 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 3.14 in the Recirculated Draft EIS/EIR) and because runoff would be subject to SUSMP devices prior to discharge.

3.5.7 Effects on Other Wildlife

Terrestrial wildlife in the vicinity of the project area under the proposed Project and Alternatives 1 through 7 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 under the proposed Project or any of the project alternatives.

Individuals of water-associated bird species that are resident or transient visitors to the Harbor forage over or in the water, or may rest on the water surface. However, few individuals of these species would occur in the project area, and those present in the area

during construction could use other areas of the West Basin or Harbor for the duration of the disturbance. The minor amount of water surface lost due to displacement of piles under the proposed Project and all alternatives (approximately 0.1 acre) would be a small proportion of the habitat available for birds in the Harbor and does not represent important habitat for foraging.

3.5.8 Actions Taken to Minimize Impacts

Although the various project alternatives are different in size, they have a similar impact determination under NEPA of a Significant Impact related to the loss of soft-bottom habitat. Therefore, the difference in sizes between the options should not be the determining factor in project selection, particularly with compensation mitigation in place for the different area sizes of the affected habitat. Again the project that best serves the present and future needs of the Port will be the least environmentally damaging project alternative in the long term by not requiring future expansion and disruption of the marine environment as the Port grows with a growing demand for products. Mitigation measures with each alternative will ensure that project impacts are minimally disruptive to the marine environment.

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 155 credits in the Bolsa Chica and Outer Harbor Mitigation Banks. The latter banks would supply 310 Inner Harbor credits. Alternative and 6 and the proposed Project would require approximately 2.54 acres of Inner Harbor credits or 1.27 acres of the Outer Harbor credits to mitigate the 2.54 acres of soft-bottom marine habitat loss. Alternative 3 would require approximately 2.5 acres of Inner Harbor credits or 1.25 acres of the Outer Harbor credits to mitigate the 2.5 acres of soft-bottom marine habitat loss. Alternative 4 would require approximately 1.34 acres of Inner Harbor credits or .67 acres of the Outer Harbor credits to mitigate the 1.34 acres of soft-bottom marine habitat loss. Alternatives 1, 2, 5, and 7 would require approximately 1.3 acres of Inner Harbor credits or 0.65 Outer Harbor credits to mitigate the 1.3 acres of soft-bottom marine habitat loss. Alternatives 1, 2, and 7 require mitigation offset credits due to the application of Phase I soft-bottom impacts.

Other in-water work, such as dredging and wharf construction/reconstruction, would result in temporary impacts to marine organisms under the proposed Project and Alternatives 1 through 7 (Alternatives 1, 2, and 7 would have in-water work associated with Phase I). The amount and duration of construction disturbances would be least for Alternatives 1, 2, 4, 5, and 7 (Alternative 7 would include additional minor in-water work to anchor the public docks), and most for the proposed Project and Alternatives 3 and 6. These impacts would be minimized by limiting the work area and duration of the work to the minimum necessary to complete the dredging and wharf construction activities. Measures taken to minimize impacts are described in Sections 3.3 and 3.14 of the Recirculated Draft EIS/EIR.

Although the project-level impacts related to whale strikes are not significant for the proposed Project and Alternatives 3 through 6, vessel speed reduction measures would reduce oceangoing vessel speeds to 12 knots between 40 nm from Point Fermin and the Precautionary Area starting in 2009. The reduction in vessel speeds is consistent with NOAA recommendations to minimize the potential for whale strikes.

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 Water Quality Certification for turbidity from the filling activities. Effects of the proposed Project and its alternatives on water quality and biological resources outside the mixing zones are expected to be less than significant because contaminated sediments would be handled and disposed of in accordance with applicable regulations (at the upland Anchorage Road Storage Site), monitoring and adaptive management would be used to ensure compliance with permit conditions (described in Section 3.14 of the Recirculated Draft EIS/EIR), and applicable BMPs would be used to control turbidity. Phase I construction, in compliance with the ASJ, as described in Section 1.4.3 of the Recirculated Draft EIS/EIR and in compliance with a USACE permit, was completed in 2003 and included BMP measures, such as silt curtains, in the event turbidity approached the specified limits. In-water work such as dredging was monitored, and there are no reported violations of TSS levels specified in the permit (MBC, 2003). For in-water construction under subsequent phases of the proposed Project or Alternatives 3 through 6, similar monitoring would occur in support of the adaptive management of the dredging. Because of this, water quality impacts during in-water construction for the proposed Project and Alternatives 3 through 6 would not be substantial.

3.6.2 Compliance with Applicable Water Quality Standards

The proposed Project or its alternative would be implemented in accordance with all applicable federal and California water quality standards. Some of the measures that were implemented for Phase I and would be for future in-Harbor work associated with the proposed Project or its alternative to ensure compliance with these standards are:

- All dredged material will be placed in an upland disposal site, such as Anchorage Road Storage Site.
- A Debris Management Plan and a Spill Prevention, Containment, and Cleanup Plan will be prepared and implemented.
- Monitoring will be conducted to ensure compliance with permit conditions, with adaptive management to address any in-water conditions that approach permit conditions.
- Silt curtains or different methods of filling/dike placement may be used as needed to minimize turbidity from in-Harbor filling and dike placement operations.

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. The addition of dike and fill to the West Basin along Berth 100 under the proposed Project and the alternatives would not adversely affect aesthetics of the West Basin area because the dike and fill would be submerged. The West Basin is located in an industrial area of the Port, and the proposed Project or alternatives would not result in a substantial reduction in the amount of water visible to the public. Neither the proposed Project nor the alternatives would create new landfills at the Project site.

3.6.4 Actions Taken to Minimize Impacts

Actions described in Section 3.14 of the Recirculated Draft EIS/EIR to minimize turbidity from dike and fill placement under the proposed Project and its alternatives would minimize such impacts to aesthetics and other human-use characteristics. These measures include monitoring and adaptive management to control turbidity and compliance with permit conditions. The adaptive management and turbidity controls were implemented for Phase I in-water construction (applies to the proposed Project and all alternatives), and similar control measures would be included for subsequent in-water work under the proposed Project and Alternatives 3, 4, 6, and 7. Alternative 7 would have minor in-water work related to the public docks.

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 also have 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 or its alternatives would not contribute considerably to cumulative effects on these species.

The Pacific Energy (Plains) project on Pier 400 and the Cabrillo Shallow Water Habitat Expansion and Eelgrass Habitat Area as part of the Channel Deepening Project have the potential to adversely affect California least tern nesting and foraging, respectively, during construction activities. These impacts could be cumulatively significant but mitigable through timing of construction activities adjacent to the nesting area and in areas used for foraging to avoid work when the least terns are present. In-water construction activities for the proposed Project or its alternative would not occur in valuable California least tern nesting or foraging areas and, thus, would not contribute considerably to cumulative effects on this species.

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

In-water construction activities under the proposed Project and project alternatives could disturb or cause other special-status birds 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 or by preventing the bridge from being used as a nesting site. 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, particularly pile driving, under the proposed Project and its alternatives would result in underwater sound pressure waves that could affect marine mammals. The locations of these activities (e.g., pile and sheet or pin-pile driving) are in areas where few marine mammals frequent, projects in proximity are not expected to occur concurrently, and the marine mammals would avoid the disturbance area by moving to other areas in the Harbor, resulting in less than significant cumulative impacts.

Past projects that have increased vessel traffic have also increased underwater sound in the Harbor and in the ocean from the vessel traffic lanes to Angels Gate and Queens Gate. Increased vessel traffic associated with cumulative future projects would increase the frequency of vessel sound events and could cause some individual marine mammals to avoid the vessels as they move into, through, and out of the Harbor. A doubling of the number of vessels would result in a 3-dBA increase in underwater sound levels from the vessels. However, these future projects are not expected to double the number of vessel trips in or near the Harbor because the number of new or renovated berths and increased cargo handling efficiency in the Harbor would not support that many vessel trips. Thus, the increase in underwater sound above existing conditions would be less than 3 dbA for the proposed Project and Alternatives 3 through 6. Cumulative impacts to marine mammals, therefore, are expected to be less than significant in the open ocean and within the Harbor. The proposed Project or any of the alternatives would not contribute considerably 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 Los Angeles Harbor since the it was first developed, and these projects have resulted in an unquantified loss marine habitat. Since the agreement between the Ports and regulatory agencies, the projects involving landfill construction are: Pier 400, Channel Deepening, Berths 97-109, Berths 302-305 APL, Middle Harbor Terminal redevelopment, Piers G and J, and Pier T. 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. Water column and soft-bottom habitats are lost while riprap habitats are gained. 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. Since implementation of the agreement with the regulatory agencies (see **Cumulative Impact BIO-5** in the Recirculated Draft EIR/EIS), all marine habitat loss impacts from landfill construction have been mitigated to insignificance through onsite (shallow water habitat construction) and offsite (Batiquitos and Bolsa Chica restorations) mitigation.

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 California Environmental Quality Act (CEQA), impacts would be considered significant even though neither act applied at the time of impact. The proposed Project and Alternatives 3 and 6 would not create new landfills, but would place 2.54 acres of submerged dike and fill in the West Basin, which is less than 0.4 percent of the more than 700 acres of fill completed or proposed for the Harbor prior to mitigation. Similarly, Alternatives 1, 2, 3, 5, and 7 would result in the placement of about 1.3 acres of submerged dike and fill in the West Basin. Although the proposed Project and its alternatives would not create new landfill, they would result in the loss of either 1.3 or 2.54 acres of soft-bottom marine habitat, which represents a cumulatively considerable contribution of habitat loss prior to mitigation.

Loss of marine habitat through dike and fill placement in Phase I and subsequent phases as applicable is a significant cumulative impact that is being offset by mitigation bank credits from marine habitat restoration offsite through agreements with regulatory agencies and through creation of shallow water habitat within the Outer Harbor (see Section 3.3 of the Recirculated Draft EIS/EIR for a detailed discussion of the mitigation bank credits). Thus, contribution to soft-bottom habitat loss under the proposed Project and its alternatives 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, apply only 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. 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 and its alternatives would contribute considerably to cumulative effects on EFH prior to mitigation (Alternatives 1, 2, and 7 would result in habitat losses from Phase I, as applied to those alternatives), but these impacts would be mitigated to less than significant through use of mitigation bank credits.

Natural Habitats, Special Aquatic Sites, and Wetlands. Natural habitats, special aquatic sites (for example, eelgrass beds and mudflats), and plant communities (wetlands) currently have a limited distribution and abundance in the Harbor. The 40-acre Pier 300 expansion project caused a loss of eelgrass beds that was mitigated. The Southwest Slip fill in West Basin, which was completed as part of the Channel Deepening Project, resulted in a small loss of saltmarsh that was also mitigated. Losses of eelgrass, mud flats, and saltmarsh from early landfill and Harbor development projects are unknown but were likely significant. Future projects could affect these habitats, such as the San Pedro Waterfront project that would affect the mudflat at Berth 78. Thus, impacts to these habitats are considered cumulatively significant. The proposed Project or any of its alternatives, however, would not contribute considerably to cumulative effects on any of 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 in this area (for example, the California least tern). 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. Therefore, the proposed Project or any of its alternatives would not affect any migration or movement corridors in the Harbor or along the coast. Consequently, the proposed Project or any alternative 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, and 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, new riprap, and piles begins immediately, and the recolonization 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 and for a short time thereafter. Effects on marine biota are local and of limited duration for each project. Those projects that are not in proximity and occurring at the same time would not have additive effects. Furthermore, based on biological baseline studies described in Section 3.3 of the Recirculated Draft EIS/EIR, 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. Thus, the proposed Project or any of its alternatives would not contribute considerably to cumulative effects on biological communities of the Harbor.

Landfilling as part of other related projects 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 onsite (shallow water habitat construction) and offsite (Batiquitos and Bolsa Chica restorations) mitigation since implementation of the agreement with the regulatory agencies. Cumulative impacts would be less than significant. Although not landfill creation, the placement of dike and fill in the West basin for the proposed Project and Alternatives 3 and 6 would cover and replace approximately 2.54 acres of highly modified soft-bottom marine habitat in the Inner Harbor and cause short-term turbidity associated with the submerged dike and fill placement. The remaining alternatives would include 1.3 acres of submerged dike and fill placement in the West Basin. This would not substantially disrupt local biological communities, and the proposed Project or any of the project alternatives would not contribute considerably to cumulative effects on biological communities of the Harbor.

Runoff from construction activities on land has reached Los Angeles Harbor waters at some locations during past construction, particularly for projects implemented prior to the 1970s when environmental regulations were implemented. Examples of past projects include 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 occur only 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. Therefore, effects of runoff under the proposed Project and its alternatives 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 or any of its alternatives would not contribute considerably to effects on biological communities under CWA, 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 Storm Water Pollution Prevention Plans (SWPPPs), would be implemented as required in 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 reduced greatly. The potential for introduction of exotic species via vessel hulls has remained about the same, but 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. Therefore, the proposed Project and Alternatives 3 through 6 would have the potential to have significant impacts prior to mitigation, and could have a cumulatively considerable contribution to these effects. In addition, there have been past occurrences of whale strikes by oceangoing vessels. Although the proposed project and Alternatives 3 through 6 would not result in a significant whale strike impact, the proposed Project and Alternatives 3 through 6 would result in increases to vessel traffic, which could potentially contribute to whale mortalities resulting in a cumulatively considerable contribution to a significant cumulative impact.

Past landfills in the Harbor have altered water circulation but not to the extent that local biological communities were substantially disrupted. Existing 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. While not creating new landfill in the Harbor, the proposed Project and its alternatives would add a small amount of submerged fill to the West Basin from placement of dike and fill (The proposed project and Alternatives 3 and 6 would add 2.54 acres of dike/fill and Alternatives 1, 2, 4, 5, and 7 would add 1.3 acres of dike/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

Upland construction activities related to the terminals under the proposed Project or Alternatives 1 through 6, and Regional Center construction under Alternative 7 could result in temporary impacts on surface water quality through runoff of asphalt leachate, concrete washwater, sediments, and other construction materials, if the runoff is uncontrolled. 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 (for dust control, for example). Runoff from the project site would be treated according to a construction SWPPP prepared by the Project proponent and implemented prior to start of any construction activities. In Phase I, the contract specifications required the SWPPP and included BMPs to control runoff during construction. This construction SWPPP and

related BMPs would also be implemented for subsequent upland construction phases for the proposed Project and project alternatives, which is expected 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 would 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 would 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 site under the proposed Project and its alternatives would flow into the Harbor, along with runoff from other adjacent areas of the Harbor subwatershed. Runoff from the upland portion of the proposed Project and its alternatives would represent a negligible contribution to the total mass loading from stormwater runoff to the Harbor because up to 142 acres area of the project site represents less than 1 percent of the area of the Harbor subwatershed. Additionally, BMPs would minimize potentials for offsite transport of materials from the 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 project site would contribute to changes in receiving waters that could exceed water quality standards, the proposed Project or its alternative would not create conditions that increase the relative contribution or contaminant mass loadings relative to baseline conditions.

Runoff from the construction site under the proposed Project or its alternative 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 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, would prevent persistent changes in the quality of receiving waters.

Contaminants from soil and groundwater remediation activities also have the potential to run off into Harbor waters during storm events if uncontrolled. The potential for encountering groundwater that requires extraction and disposal during onshore construction of the proposed Project or its alternative 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, which 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 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 Recirculated Draft EIS/EIR). Spills associated with construction equipment, such as oil/fluid drips or gasoline/diesel spills during fueling, typically involve small volumes that 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 to and from the on-dock rail yard at the adjacent container terminal (Berths 121-131) would also increase under the proposed Project and Alternatives 3, 4, and 5. 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 nonelectric 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 showed that pollutants such as metals and semivolatile organic compounds were present in runoff from the Port facilities (MBC, 2005). 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 apply to stormwater runoff from the proposed Project site and the sites under the project alternatives, 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 on-land spills 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 3.14 under the **Impact WQ-1d** section of the Recirculated Draft EIS/EIR and in Section 3.8, the probability of an accident for the proposed Project is classified as "frequent" (more than once a year) with an accident classification of "slight," both of which combine to an "acceptable" risk code. This classification takes into account the accident history of containers of hazardous materials at the Port. The increased number of ship calls associated with the proposed Project and Alternatives 1 through 6 could contribute to a higher number of spills compared to baseline conditions. Accidental spills of petroleum hydrocarbons, hazardous materials, and other pollutants from terminal-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 onsite Therefore, the risks to water and sediment quality from spills associated with the operation of the proposed Project and its alternatives are considered small.

Actions Taken to Minimize Impacts. The WDRs for stormwater 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 include monitoring and maintenance of control measures. Control measures, such as those identified in Section 3.14 of the Recirculated Draft EIS/EIR, would be installed at the construction sites prior to ground disturbance. Implementation of all conditions of proposed Project (or its alternative) 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 3.14 of the Recirculated Draft 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. The contract specifications for Phase I required an SWPPP and related BMPs, and these also would be required by contract documents for subsequent phases of the proposed Project or alternative. Concrete truck wash water and runoff of any water that has come in contact with wet cement would be contained onsite so that it does not run off 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 (for example; excavating, stockpiling, and disposing of chemically impacted soils [02111]; solid waste management [CA020]; and 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 or its alternative to ensure that soil or groundwater contaminants were not transported offsite by runoff.

Construction and industrial SWPPPs and standard Port BMPs listed in Section 3.14.4.3 of the Recirculated Draft EIS/EIR (e.g., use of drip pans, contained refueling areas, regular inspections of equipment and vehicles, and immediate repairs of leaks) were implemented during Phase I construction and would be implemented for subsequent phases, which would reduce potentials for materials from onshore construction activities under the proposed Project or alternative to be transported offsite and enter storm drains.

The facilities associated with the proposed Project or its alternative 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 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 or its alternative. Tenants will be required to obtain and satisfy all conditions of applicable stormwater discharge permits, as well as satisfy all Port pollution control requirements.

The tenant would be required to 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 and solid and hazardous waste disposal facilities) in accordance with the state NPS Pollution Control Program administered by the 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 would be required to 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 3.8 of the Recirculated Draft 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 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

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 seven alternative projects, including the No Project Alternative and the No Federal Action Alternative (see Section 2.4). A number of other alternatives (10 in all) were considered but not carried forward for analysis for a variety of reasons described in the Recirculated Draft EIS/EIR. The applicant's proposed or preferred project is the Berth 97-109 Container Terminal Project with the 2.54 acres of submerged fill in the West Basin (to place dike, fill, and piles). The proposed Project would construct a 142-acre

container terminal at Berths 97-109 in three phases. Phase I of the new terminal was completed in 2003 as allowed in the Amended Stipulated Judgment (see Section 1.4.3 of the Recirculated Draft EIS/EIR), and included 72 acres of backlands, 1.3 acres of rock dike and fill, and 1,200 feet of wharf at Berth 100. Phase II would include an additional 45 acres of backlands and 925 feet of additional wharf at Berth 102. Phase III would include 25 additional acres of backlands and would extend Berth 100 southward by 375 feet. The new wharves at Berths 100 and 102 (2,500 feet) would accommodate the projected 234 annual container vessel calls to the terminal, which would have a throughput of approximately 1,551,000 TEUs. The construction and operation of the proposed container terminal at Berths 97-109 would be consistent with the Coastal Zone Management Act and the California Coastal Act, which encourage use of the existing port boundaries in the Harbor area for Port-related projects.

Alternative 3, the reduced fill alternative with no wharf at Berth 102, would have a terminal site size of 142 acres, which is the same size as the proposed Project but larger than the NEPA baseline. Alternative 3 would have a lower throughput (936,000 TEUs) compared to the proposed Project, but greater throughput than the NEPA baseline. The NEPA baseline includes supplemental storage of 632,500 TEUs, but these TEUs would be existing or projected TEUs associated with the existing Berths 121-131 Container Terminal. Alternative 3 would include slightly less dike/fill placement (2.5 acres) than the proposed Project (2.54 acres) but would accommodate less throughput.

Alternative 4, the reduced fill alternative with no southern extension of the wharf at Berth 100, would have a terminal site size of 130 aces, which is smaller than the proposed Project but greater than the NEPA baseline. Alternative 4 would have a lower throughput (1,392,000 TEUs) compared to the proposed Project, but greater throughput than the NEPA baseline. The NEPA baseline includes supplemental storage of 632,500 TEUs, but these TEUs would be existing or projected TEUs associated with the existing Berth 121-131 Container Terminal. Alternative 4 would include 1.34 acres of dike and fill placement, which is less than the dike/fill placement under the proposed Project (2.54 acres). Alternative 4 would result in less dike and fill placement than the proposed Project, and would accommodate less throughput.

Alternative 5, the reduced fill alternative that would construct and operate the Phase I terminal only (Phase I was completed in 2003 under the terms of the Amended Stipulated Judgment), would have a terminal site size of 72 acres, which is much smaller than the proposed Project and the NEPA baseline. Alternative 5 would have a lower throughput (630,000 TEUs) compared to the proposed Project, but greater throughput than the NEPA baseline. The NEPA baseline includes supplemental storage of 632,500 TEUs, but these TEUs would be existing or projected TEUs associated with the existing Berth 121-131 Container Terminal. Alternative 5 would include 1.3 acres of dike/fill placement, which is less than the dike/fill placement under the proposed Project (2.54 acres). Although Alternative 5 would result in less dike and fill placement than the proposed Project, it would accommodate less throughput.

Alternative 6, the Omni Cargo Terminal alternative that would have a terminal site size of 142 acres, which is the same size as that of the proposed Project but greater than the NEPA baseline. Alternative 6 would have a lower container throughput volume (506,467 TEUs) compared to the proposed Project, but greater throughput

than the NEPA baseline. The NEPA baseline includes supplemental storage of 632,500 TEUs, but these TEUs would be existing or projected TEUs associated with the existing Berth 121-131 Container Terminal. Alternative 6 would have a low TEU throughput because it would also handle bulk cargo such as automobiles break bulk commodities. Alternative 6 would include 2.54 acres of dike and fill placement, which is the same as the dike and fill placement under the proposed Project (2.54 acres). Although Alternative 6 would result in the same amount of dike and fill placement as the proposed Project, it would accommodate less throughput.

Alternative 7, the Nonshipping Alternative, which would construct a Regional Center with retail, commercial, and industrial uses, would have a site size of 117 acres, which is smaller than the proposed Project but the same size as the NEPA baseline. Alternative 7 would not accommodate any future container handling demand because it would not be a container terminal. Alternative 7 would also not provide any supplemental container storage on its site, as is included in the NEPA baseline. Alternative 7 would include 1.3 acres of dike and fill placement, which is less than the dike and fill placement under the proposed Project (2.54 acres). Although Alternative 7 would result in less dike and fill placement than the proposed Project, it would not accommodate any throughput and would not meet the needs of future Port expansion, which would require the necessity of disruption of the marine environment at some point in the future. This alternative would not be considered a practicable alternative.

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 alternatives, including the No Project Alternative and the No Federal Action Alternative, which would include backland construction to serve as supplement container storage. Compliance with existing regulations and proposed Project permits would minimize such impacts.

Construction activities in Harbor waters under the proposed Project and its alternatives (Phase I in-water construction is applied to Alternatives 1, 2, and 7) would have short-term effects on water quality but would remain in compliance with state and federal water quality standards. The proposed Project and Alternatives 3 and 6 would have more in-water construction than Alternatives 1, 2, 3, 5, and 7. No contaminants would be discharged in concentrations that could be toxic to aquatic biota under the proposed Project or any project alternative.

Aquatic Biota. The proposed Project would permanently cover 2.54 acres of soft-bottom habitat with submerged dike and fill placement in the West Basin, and would displace approximately 0.1 acre of water surface and column with wharf support piles in the West Basin, as would Alternatives 3 and 6. This would affect aquatic biota and Essential Fish Habitat. These impacts would be mitigated by use of existing Port mitigation credits. Temporary impacts of in-water construction activities on aquatic biota would occur for the proposed Project and all its alternatives, although Alternatives 1, 2, 4, 5, and 7 would have a reduced amount of dike and fill placement (1.3 acres) related to shorter wharves (compared to the proposed Project). The impacts to marine and aquatic biota under the proposed Project and its alternatives would be fully mitigated through mitigation bank credits. No threatened or endangered species or special aquatic sites would be adversely affected by the proposed Project or any of its 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 (the NEPA baseline does not include any annual ship calls). The proposed Project and Alternatives 3 through 6 would result in an increase of ship calls, but Alternatives 1 and 2 would not result in any container vessel ship calls. Alternative 7 would not result in container ship calls, but would accommodate small recreational watercraft at the new public docks. Alternative 6, the Omni Cargo Terminal, would have the highest annual ship calls at 364, followed by the proposed Project (234 annual ship calls), Alternative 4 (208 annual ship calls), Alternative 3 (130 annual ship calls), and lastly, Alternative 5 (104 annual ship calls). For the proposed Project and Alternatives 3 through 6, the increase in annual vessel calls to the Harbor would range from 3.5 percent to 12.5 percent (8 percent for the proposed Project, 4.5 percent for Alternative 3, 7 percent for Alternative 4, 3.5 percent for Alternative 5, and 12.5 percent for Alternative 6). Alternatives 1 and 2 would not have any potential to introduce invasive species to the Harbor because they would not have ship calls. Alternative 7 would have a minimal potential to introduce invasive species to the Harbor because it would accommodate small recreational watercraft only.

Considering the ship calls for the proposed Project and Alternatives 3 through 6 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. In addition, small recreational watercraft also utilize antifouling hull coatings and/or are cleaned to reduce frictional drag. For these reasons, the proposed Project and Alternatives 3 through 7 have a low potential to increase the introduction of non-native species into the Harbor that could adversely affect local biological communities. Alternatives 1 and 2 would have no potential to introduce invasive species to the Harbor and would have no potential to affect local biological communities.

Human Health and Welfare. With the exception of potential health risks, none of the project alternatives would have significant impacts on human health and welfare, including recreational and commercial fishing, municipal and private water supplies, water-related recreation, and aesthetics.

For health risks related to project operations, Alternative 6 would result in the greatest cancer risk to a residential receptor after mitigation (146 in a million), followed by the proposed Project (90 in a million), Alternative 4 (83 in a million), Alternative 3 (63 in a million), and Alternative 5 (52 in a million). The proposed Project and Alternatives 3 through 6 would result in significant health risks greater than the NEPA baseline.

Alternatives 1, 2, and 7 result in cancer risks that are less than significant and less than the proposed Project.

Waters of the U.S. The proposed Project and all alternatives would result in a permanent loss of waters of the U.S. related to the displacement of water surface and column with piles that support the wharf (all alternatives include losses of water surface and column due to pile installation in Phase I, which is applied to alternatives that do not have wharf operations). Similarly, the proposed Project and all

alternatives would result in temporary impacts within waters of the U.S. due to in-water construction required for the terminal or due to in-water construction that occurred under Phase I and that is being applied to the alternative. The extent and duration of these temporary impacts would be least for Alternatives 1, 2, 5 and 7 (Phase I in-water construction only), intermediate for Alternative 4 (Phase I and Phase II in-water construction), and most for the proposed Project and Alternatives 3 and 6 (in-water construction under Phases I, II, and III).

Terminal Function. 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 the Port of Los Angeles existing and planned container terminal expansions were used to develop realistic TEU and ship call projections for the West Basin Terminal. The volume of containerized shipping through the Port will more than triple by 2020 (LAHD, 2004). 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 Appendix I of the Recirculated Draft EIS/EIR for the proposed Project and each of the alternatives.

In addition, as discussed in Section 1.1.3 of the Recirculated Draft EIS/EIR, the Port of Los Angeles anticipates that approximately 17.6 million TEUs could come through the Port of Los Angeles in the year 2020, and up to 31.6 million TEUs by 2030. Capacity modeling of container terminals as the Port shows, even with the expansion and modernization of terminals that were assumed, throughput at the Port will be constrained at 22.4 million TEUs starting approximately in 2030. As a consequence, a shortfall in container terminal capacity in the Port of Los Angeles is expected; therefore, there is a need to maximize and optimize capacity at all terminal sites in the Port.

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Table 2-3 (from Recirculated Draft EIR/EIS). Comparison of Alternatives

	NEPA Baseline	Proposed Project	No Project	No Federal Action	Reduced Fill - No Berth 102 Wharf	Reduced Fill - No Berth 100 Southern Extension	Phase I Construction and Operation Only	Omni Cargo Terminal	Nonshipping
Terminal area (acres)	117	142	72	117	142	130	72	142	117
Vessel calls	0	234	0	0	130	208	104	364	0
Annual TEUs	632,500	1,551,000	457,100**	632,500**	936,000	1,392,000	630,000	506,467	0
Fill* (acres)	0	2.54	1.3***	1.3***	2.5	1.34	1.3	2.54	1.3***
New wharf (ft)	0	2,500	1,200***	1,200***	1,575	2,125	1,200	2,500	1,200***

Note: Numbers represent total in 2030.

*The fill is not new landfill, rather, it is the loss of soft-bottom habitat from the placement of submerged dike and fill in the West Basin.

**These TEUs represent supplemental storage of containers from the existing berth-limited container terminal at Berths 121-131 (Yang Ming), and do not represent new TEUs to the Port.

***The wharf construction and fill under Phase I in 2003 is applied to this alternative but will also be abandoned in place.

2

Conclusions. Based on the analyses in the Recirculated Draft EIS/EIR, the No Project Alternative (Alternative 1), No Federal Action Alternative (Alternative 2), and the Nonshipping Alternative (Alternative 7) would be the least environmentally damaging, but none of these would meet the overall project purpose to establish and maximize the cargo-handling efficiency and capacity at Berths 97-109 in the West Basin to address the need to optimize Port lands and terminals for current and future containerized cargo handling, as described in Chapter 2 of the Recirculated Draft EIS/EIR. Similarly, the NEPA baseline, which as discussed in Chapter 1 of the Recirculated Draft EIS/EIR, would be less environmentally damaging but would not meet the overall project purpose. The No Project and No Federal Action Alternatives would both use the site for supplemental backlands, as would the NEPA baseline. Although the Nonshipping Alternative would not use the site for supplemental backlands but would use it to develop a Regional Center that would not result in substantial in-water impacts compared to the NEPA baseline. It should be noted that these three alternatives would result in in-water impacts beyond those included in the NEPA baseline solely because in-water impacts under Phase I are being retroactively applied to these alternatives. Because Alternatives 1, 2, and 7 would not support the increased throughput demand, they are not considered to be more practicable than the proposed Project.

The Reduced Fill No Berth 102 Wharf alternative (Alternative 3) would result in the loss of 2.54 acres of soft-bottom habitat, which is greater than the NEPA baseline (no loss of soft-bottom habitat) but the same amount as the proposed Project (2.54-acre loss of soft-bottom habitat). Operationally, Alternative 3 would increase the number of vessel calls relative to the NEPA baseline by 130 annual ship calls but would decrease the number of ship calls compared to the 234 annual ship calls of the proposed Project. Similarly, Alternative 3 would handle 936,000 annual TEUS, which is greater than the supplemental TEUs stored under the NEPA baseline (632,500) but substantially less than the proposed Project throughput of 1,551,000 TEUs. Given the purpose of the project, Alternative 3 would not support the increased throughput demand and is not considered to be more practicable than the proposed Project.

The Reduced Fill No Berth 100 Southern Wharf Extension alternative (Alternative 4) would result in the loss of 1.3 acres of soft-bottom habitat, which is greater than the NEPA baseline (no loss of soft-bottom habitat) but less than the proposed Project (2.54-acre loss of soft-bottom habitat). Operationally, Alternative 4 would increase the number of vessel calls relative to the NEPA baseline by 208 annual ship calls but would decrease the number of ship calls compared to the 234 annual ship calls for the proposed Project. Similarly, Alternative 4 would handle 1,392,000 annual TEUs, which is greater than the supplemental TEUs stored under the NEPA baseline (632,500) but less than the proposed Project throughput of 1,551,000 TEUs. Alternative 4 would handle approximately 10 percent fewer TEUs than the proposed Project and reduce the loss of soft-bottom habitat by approximately 50 percent compared to the proposed Project. Although Alternative 4 provides almost as much throughput as the proposed Project with substantially less loss of soft-bottom habitat, there is a need to maximize terminal capacity to meet anticipated container demand in the Port, given the shortfall in container terminal capacity projected by 2030, as discussed under Terminal Function above and in Section 1.1.3 of the Recirculated Draft EIS/EIR. Alternative 4 would result in less impacts than the proposed Project. However, given the need to meet the project objective to establish and maximize the cargo-handling efficiency and capacity at Berths 97-109 in the West Basin to address

the need to optimize Port lands and terminals for current and future containerized cargo handling, Alternative 4 is not considered to be more practicable than the proposed Project, which would provide 10 percent more throughput than Alternative 4.

The Reduced Construction and Operation: Phase I Construction Only alternative (Alternative 5) would result in the loss of 1.3 acres of soft-bottom habitat, which is greater than the NEPA baseline (no loss of soft-bottom habitat) but less than the loss under the proposed Project (2.54-acre loss of soft-bottom habitat). Operationally, Alternative 5 would increase the number of vessel calls relative to the NEPA baseline by 104 annual ship calls but would decrease the number of ship calls compared to the 234 annual ship calls of the proposed Project. Similarly, Alternative 5 would handle 630,000 annual TEUs, which is slightly less than the amount of supplemental TEUs stored under the NEPA baseline (632,500 TEUs) but substantially less than the proposed Project throughput of 1,551,000 TEUs. Given the purpose of the project, Alternative 5 would not support the increased throughput demand and is not considered to be more practicable than the proposed Project.

The Omni-Cargo Alternative (Alternative 6) would result in the loss of 2.54 acres of soft-bottom habitat, which is greater than the NEPA baseline (no loss of soft-bottom habitat) but the same amount as the proposed Project. Operationally, Alternative 6 would increase the number of vessel calls relative to the NEPA baseline by 364 annual ship calls, and would increase the number of ship calls compared to the 234 annual ship calls of the proposed Project. Alternative 6 would result in substantially greater annual ship calls than the proposed Project; however, Alternative 6 would handle only 506,467 annual TEUs, which is less than the amount of supplemental TEUs stored under the NEPA baseline (632,500), and substantially less than the proposed Project throughput of 1,551,000 TEUs. Although Alternative 6 would handle other cargo such as automobiles and break-bulk commodities, the projected terminal capacity shortfall applies to container terminal capacity, not bulk commodities. Therefore, given the project purpose, Alternative 6 would not achieve the increased throughput demand and is not considered to be more practicable than the proposed Project.

The proposed Project would result in a loss of 2.54 acres of soft-bottom marine habitat and a minor loss of waters of the U.S. (water surface loss of approximately 0.1 acre from displacement by wharf support piles) that provide habitat for marine biota, while Alternative 4 would result in a loss of 1.3 acres of soft-bottom marine habitat and a minor loss of waters of the U.S. (water surface loss of approximately 0.1 acre from displacement by wharf support piles) that provide habitat for marine biota. Both of these alternatives would result in less than significant temporary in-water disturbances during wharf construction. Although Alternative 4 would provide 90 percent of the terminal capacity of the proposed Project, the maximum throughput (1.55 million TEUs) is required because cargo volumes through the year 2030 are forecast to exceed terminal capacity within the Port even with the anticipated and proposed improvements in operational efficiency, modernization, and expansions. Given the project objectives and the shortfall of projected terminal capacity in the Port, there is a need to maximize capacity of new container terminals. As such, the proposed Project is considered to be practicable, and the other alternatives are not. The remaining alternatives have either permanent loss of marine habitat with no increased throughput, or insufficient throughput to make them practicable considering Port-projected needs. Based on the preliminary analysis and discussion

above, the proposed Project is the least environmentally damaging practicable alternative in which throughput achieves the overall purpose of the project.

(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 upland Anchorage Road Storage Site.

4.3 Other Restrictions

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

___ X
Yes No 4.3.1 Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?

___ X
Yes No 4.3.2 Life states of aquatic life and other wildlife?

___ X
Yes 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?

___ X
Yes No 4.3.4 Recreational, aesthetic and economic values?

4.4 Actions to Minimize Potential Adverse Impacts (Mitigation)

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 waters of the U.S. (0.1 acre) due to pile placement and the conversion of aquatic habitat from soft-bottom to hard substrate habitat (2.54 acres) under the proposed Project and Alternatives 3 and 6 would be mitigated to less than significant through use of existing mitigation credits from either the Bolsa Chica Bank or the Outer Harbor Bank. Similarly, the permanent loss of waters of the U.S. (0.1 acre) due to pile placement and the conversion of aquatic habitat from soft bottom to hard substrate habitat (1.3 acres) under the Alternatives, 2, 4, 5, and 7 would be mitigated to less than significant through use of existing mitigation credits from either the Bolsa Chica Bank or the Outer Harbor Bank.

The temporary impacts of dredging and berth construction to marine sediments (41,000 cubic yards for all alternatives, and minor maintenance dredging for the proposed Project and Alternatives 4 and 6) would be minimized by limiting the area of disturbance to that needed for these activities. Dike and fill placement in the West Basin (submerged) would occur under all alternatives, with the proposed Project and Alternative 6 resulting in 2.54 acres of dike and fill on the soft bottom, Alternative 4 resulting in 2.5 acres of coverage, and Alternatives 1, 2, 4, 5, and 7 resulting in approximately 1.3 acres of dike and fill on the soft bottom. Any contaminated sediments dredged would be disposed of at the Anchorage Road Storage Site. Temporary impacts of construction activities on water quality and aquatic biota under the proposed Project and the alternatives would be minimized by compliance with conditions, such as standard WDRs, of the Project 401 Water Quality Certification, and Sections 404 and 10 permits. Plans and specifications for dike and fill placement in the Inner Harbor would include measures to prevent turbidity from leaving the site with monitoring and an adaptive management program to verify that WQS and permit conditions are being satisfied (such as occurred during Phase I). Runoff from pollutants during backland construction activities would be minimized through use of construction and industrial SWPPPs and standard Port BMPs listed in Section 3.14.4.3 of the Recirculated Draft 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 proposed Project avoids and minimizes impacts to waters of the U.S. to the maximum extent practicable while still providing the maximum throughput to meet as much of the forecasted demand as feasible, and, thus, represents the least

environmentally damaging practicable alternative that achieves the stated overall purposes of the project.

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