Appendix B.

Draft Section 404(b)(1) Evaluation

~~PRELIMINARY~~DRAFT CLEAN WATER ACT SECTION 404(b)(1) EVALUATION

APPLICANT:

PORT OF LOS ANGELES

CHANNEL DEEPENING PROJECT

I. Introduction

The following evaluation is ~~provided~~ prepared in accordance with Section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (Public Law 95-217) and pursuant to USEPA's Ocean Dumping Criteria at 40 C.F.R Parts 227 and 228. The intent of this document is to state and evaluate information regarding the effects of the discharge of dredged or fill material into waters of the United States and ocean waters. As a result, this analysis is not meant to stand-alone and relies heavily upon information provided in the ~~Draft~~ Supplemental Environmental Impact Statement/Environmental Impact Report for the Port of Los Angeles Channel Deepening Project. The Proposed Action is to complete the Channel Deepening Project to the depth of -53 feet MLLW.

II. Project Description

A. Location

The project site is located at the southern end of the City of Los Angeles and includes portions of the Los Angeles Inner and Outer Harbors, San Pedro Bay (Figure 1-1). The City of Los Angeles Harbor Department (LAHD) administers the Port of Los Angeles (Port or POLA). The Port comprises 45 kilometers of waterfront and 3,035 hectares (7,500) acres of land and water.

B. General Description

As a result of the continuing trend toward deep draft ships, the Channel Deepening Project was implemented at the Port of Los Angeles in 2002 to accommodate existing and future commercial container vessels (USACE and LAHD, 2000). The project consisted of dredging the Main Channel, East Basin and West Basin Channels, and turning basins to a depth of -53 ft MLLW in order to improve navigation, and dispose of dredged materials in areas designated by the POLA. Completion of the Channel Deepening Project would allow for increased efficiencies in moving containerized cargo through the POLA. The total volume of bottom material determined necessary to be dredged to complete the project was 6.6 million cubic yards (mcy) (USACE and LAHD, 2000).

Over the next five years, several changes to the project were required as a result of revised bathymetric data, the occurrence of shoaling and settlement of material, design changes, the need to dispose of surcharge, the opportunity to remove and confine contaminated dredge material, and other design and construction modifications to provide efficiencies within the Port. These project changes were analyzed and documented in three separate Supplemental Environmental Assessments (EAs) prepared by USACE in 2002, 2003, and 2004. As a result of these developments, the total volume to be disposed after the 2004 Supplemental EA (USACE, 2004) was 12.658 mcy.

The total volume of material dredged to date under the Channel Deepening Project is approximately 13.5 mcy. Approximately 12.7 mcy of that material has been placed in disposal sites as approved by the previous SEIS/SEIR and Supplemental EAs. Approximately 0.815 mcy of material remains as surcharge on the Southwest Slip (at Berth 100). To date, a total of approximately 1.025 mcy of material remains to be dredged from the East Basin Channel. Approximately 0.675 mcy of berth dredging also remains. In addition to the surcharge at the Southwest Slip and the material that remains to be dredged, volume adjustments have been made to account for two feet of over-depth allowance and bulking of the dredged material. The over-depth allowance is required because the channel must be dredged deeper than the desired final depth to account for side slope sloughing and other sources of sediment transport. The bulking factor is required to account for water in the dredged sediment. Therefore, the total amount of disposal capacity required for the remaining dredge material and surcharge is approximately 3.0 mcy.

C. Overall and Basic Project Purpose

The overall project purpose of the Proposed Action is to complete the Channel Deepening project by providing 3.0 mcy of additional disposal capacity for dredged material, including the beneficial use of the dredged material within the POLA. The basic project purpose is navigation, which is water dependent. For the rebuttable presumptions to apply, the Proposed Action must impact special aquatic sites and be non-water-dependent. Because the Proposed Action is water-dependent, the rebuttable presumptions do not apply.

D. General Description of Dredged or Fill Material

Surcharge on the Southwest Slip and sediments in the Main Channel and East Basin are composed of fine and coarse grained silts, clays and sands.

E. Description of Proposed Discharge Site

The locations proposed to be used as disposal sites under the Proposed Action are Berths 243-245, Northwest Slip (at Berths 136-139), the Cabrillo Shallow Water Habitat (CSWH) Expansion Area, the ~~Eelgrass Habitat Area, the~~upland Anchorage Road Soil Storage Site (ARSSS), and ocean disposal sites LA-2 and LA-3, as shown in SEIS/SEIR Figure 2-2. Alternative 1, Port Development and Environmental Enhancement, would utilize a combination of all of these disposal sites except for the ARSSS and LA-3. Alternative 2, Environmental Enhancement and Ocean Disposal, would utilize a combination of the above listed disposal sites except for Berths 243-245 and the Northwest Slip. Alternative 3, the No Action alternative, would not result in dredging or disposal of any sediment and would not utilize any disposal sites. A comparison of these alternatives ~~will be~~is provided herein and a preliminary LEDPA determination is provided in the Final SEIS/SEIR. ~~and t~~The ~~findings~~final determination of compliance with the 404(b)(1) guidelines per 40 CFR §230.12 and the LEDPA determination will be provided in the ROD.

Under 40 C.F.R §230.10(a), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other

significant adverse environmental consequences. These practicable alternatives include, but are not limited to, activities which do not involve discharge of dredged or fill materials into the waters of the United States or ocean waters, and discharges of dredged or fill material at other locations in waters of the United States or ocean waters. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Under 40 C.F.R §230.10(a)(4), for actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. For this Channel Deepening Project, information on analysis of alternatives beyond those presented in this 404(b)(1) evaluation can be found in sections 2.4.1 and 2.4.3 of this SEIS/SEIR.

The Berths 243-245 site is comprised of two open water slip areas that contain contaminated (unsuitable for open water disposal but not regulated hazardous materials) benthic sediments from past shipyard operations. Alternative 1 of the Proposed Action would create a Confined Disposal Facility (CDF) at this site for disposal and capping of contaminated sediments. The total capacity of the Berths 243-245 disposal site is 0.458 mcy to be placed over an area of about 8 acres. Approximately 0.15 mcy of clean surcharge from the Southwest Slip will be deposited on the completed CDF to an approximate elevation of +30 feet MLLW to promote densification of deposited dredge material. Over time, the material would densify, however, the timeframe for densification is unknown. Therefore, the surcharge material would remain in place until post project geotechnical investigation/monitoring determines the fill has been consolidated. In the future, if the Port decides to remove the surcharge material, the Port would prepare an appropriate CEQA document to remove the remaining surcharge. This disposal site is shown on Figures 2-3~~, 2-4~~ and 2-~~14~~13 of the SEIS/SEIR.

The Northwest Slip site is located at Berths 136-139. Under Alternative 1, a five-acre area of open water would be filled to create land area that would be used to allow realignment of the wharf roadway as part of the Berth 136-147 Container Terminal Project. Roadway realignment would facilitate safer and more efficient truck and equipment movement at this location. The current configuration of this terminal requires trucks and other shipping container movement equipment to make a 180-degree turn to access the wharf area, which increases risks to worker and vehicle safety as well as traffic and truck maneuvering delays. The additional area would also allow additional wheeled operations to occur for container movement instead of the less efficient Rubber Tired Gantry (RTG) operation. The total capacity at the Northwest Slip disposal site is 0.178 mcy, which would be filled with approximately 0.050 mcy required for foundation trenching for dike construction and 0.128 mcy of dredge material from the Channel Deepening Project. This site does not require surcharge for densification because fill material for the Northwest Slip is coarse grained sand which densifies on its own, as opposed to the finer materials that would be placed in Berths 243-245. This disposal site is depicted in Figures 2-5 and 2-~~15~~14 of the SEIS/SEIR.

The CSWH Expansion Area would increase the size of the existing CSWH by 50 acres.

Under both Alternative 1 and Alternative 2, the expansion would consist of disposing approximately 1.7 mcy of material from the Proposed Action (and approximately 0.040 mcy of material from dike dredging) adjacent to the existing CSWH, located in the outer harbor just south of Berth 47. The material would be supported by a new submerged dike along the north side of the existing CSWH. Material would be placed to a final depth of -15 feet MLLW. Construction of this site would raise the existing sea bottom which ranges between -40 feet and -50 feet MLLW up to a new elevation of -15 feet MLLW, creating shallow water habitat. This disposal site is depicted in Figures 2-6 and 2-~~16~~15 of the SEIS/SEIR.

~~Under both Alternative 1 and Alternative 2, approximately 0.8 mcy of dredge material would be used to construct approximately 40 acres of shallow habitat for establishment of an Eelgrass Habitat Area at the existing CSWH and the proposed CSWH Expansion area. The existing water depths at the CSWH range between -15 to -20 ft MLLW. The water depths at the Eelgrass Habitat Area would range from approximately -2 to -6 ft MLLW to allow for adequate establishment of eelgrass habitat. It is anticipated that adding the Eelgrass Habitat Area to the CSWH would provide enhanced biological value and encourage bird foraging. The proposed 40-acre Eelgrass habitat would overlap approximately 16 acres of the proposed 50-acre CSWH Expansion, as shown on Figure 2-7. Approximately 24 acres of the Eelgrass Habitat Area would be constructed on the existing CSWH Area, which is at an elevation of -15 feet MLLW. The proposed Eelgrass Habitat Area disposal site is depicted in Figures 2-7 and 2-17 of the SEIS/SEIR.~~

Under Alternative 1, the remaining 0.804 mcy of clean sediment would be disposed at ocean disposal site LA-2 over a two year period. This site is located approximately 5.7 miles south-southwest of the entrance to Los Angeles Harbor on the outer continental shelf margin. The depth of this site ranges from approximately -360 feet MLLW to -1,115 feet MLLW. An annual dredge material disposal volume of 1.0 mcy is allowed at this site.

Under Alternative 2, 0.804 mcy of material would be disposed at LA-2 over a two year period and 0.416 mcy would be disposed at LA-3. The LA-3 site is located approximately five miles southwest of the entrance to Newport Harbor. This site has a water depth of approximately -1,600 feet MLLW and an annual disposal maximum of 2.5 mcy.

Under Alternative 2, 0.080 mcy of sediment would be placed in barges and shipped to an offloading site at Shore Road. The material would be transferred from the barge to a temporary bermed holding area and subsequently transferred to trucks for transport to the ARSSS, approximately 0.15 miles away, across Shore Road. This disposal site is an upland area that would not involve discharge of material to waters of the United States, and therefore is not analyzed herein.

F. Description of Disposal Methods

Sediments from hydraulic dredging would be pumped through a slurry pipeline to disposal sites. Pumping through long reaches of pipeline may be aided with the use of a remote booster pump. Sediments from clamshell dredging would be placed in a barge, and then transported with the assistance of a tugboat to the designated disposal area.

For Berths 243-2~~54~~5, construction would begin with demolition of the abandoned wharf structures within the slips. The dike trench dredging would take place and the dredged material would be placed in the CDF disposal site. The rock dike would be constructed to an interim elevation, which would provide containment of the fill while still allowing hull clearance for bottom dump scows to place the contaminated material in the deepest area of the disposal site. Sediments would be placed into the fill area hydraulically as the fill area became too shallow to allow access via barge. Contaminated sediments would not be dispersed in the open water. After disposal of contaminated material, the rock dike would be constructed to a final elevation of +11 feet MLLW. Clean surcharge will be deposited on the completed CDF to an approximate elevation of +30 feet MLLW to promote densification of deposited dredge material. Bulldozers would be used for final grading of the surcharge. A surface cover layer of sand would be placed on the site. A contaminated sediment management plan would be developed in cooperation with the CSTF and other State and Federal agencies prior to moving and disposing of the contaminated sediments.

For the Northwest Slip, construction would begin by dredging to create a foundation trench at an approximate elevation of -52 to -55 feet MLLW, for structural stability of the dike. This material would be placed within the fill footprint prior to the construction of the dike. Upon completion of the containment dike, dredge material from the Southwest Slip surcharge would be hydraulically deposited to an elevation of +11 feet MLLW.

Construction of the CSWH Expansion would begin with the construction of a dike to elevation -15 feet MLLW. Initially, sediment would be dredged to an approximate elevation of -55 feet MLLW to create a foundation to stabilize the containment dike. This material would be disposed within the CSWH fill. Approximately 550,000 tons of quarry run would be used for the construction of the dike to elevation -15 feet MLLW. Fine grained fill would then be pumped into the site by pipeline to elevation -17 feet MLLW. Once completed, a coarse grain cover would be placed to the final -15 feet MLLW elevation.

For disposal at the LA-2 and LA-3 ocean disposal sites ~~LA-2 and LA-3~~, sediment would be loaded onto split-hull barges, transported to the disposal site, and dumped in open water above the disposal site.~~The Eelgrass Habitat Area would be constructed by placing a quarry run rock foundation within the existing and proposed CSWH areas and placement of dredge material within the rock structure. This foundation would not require a dike foundation trench. The dike along the eastern and southeastern sides would be constructed with quarry run to elevation +10 feet MLLW. The remaining dike sections would be constructed with quarry run to elevation +9 feet MLLW. The dike would be constructed this high to protect the eelgrass area from short period storm waves. A quarry run dike will be constructed across the northern opening of the Eelgrass Habitat Area to elevation -6 feet MLLW. Armor stone would be placed over the quarry run at an elevation of +14 to +12 feet MLLW. Approximately 1,200,000 tons of quarry run and approximately 170,000 tons of armor stone would be used for dike construction. Fine-grained fill would then be placed between elevation -8 feet MLLW and -4 feet MLLW. Once completed, a two-foot surface cover would be placed between -6 feet MLLW to -2 feet MLLW.~~

~~For disposal at the ARSSS site, sediments would be placed in barges and shipped to an offloading site at Shore Road. The material would be transferred from the barge to a temporary bermed holding area and subsequently transferred to trucks for transport to the ARSSS, approximately 0.15 miles away, across Shore Road. Because dredged material has a high water content when first disposed, the Port implements various best management practices to prevent the material from spilling onto the road during transport, including only partially filling the trucks, sealing the backs of trucks to prevent leakage, washing truck tires before they leave the offloading site, and sweeping the roads on a regular basis.~~

III. Physical/chemical characteristics and anticipated changes

This analysis is based on the analysis presented in Section 3.13 of this SEIS/SEIR.

(X) **substrate:** Thirteen acres of substrate would be permanently affected by the two fill areas (Northwest Slip and Berths 243-245). Except for LA-2 and LA-3, the proposed disposal sites, including the ocean disposal sites and the upland ARSSS site, are located throughout the Port area and generally overlie recent sediments or artificial fill placed over Holocene alluvium and beach deposits. Underlying the Holocene sediments is the Miocene Monterey Formation. The POLA consists of a network of upland/artificial fill areas, and deep channels and basins that have been created by dredge operations in the gradually sloping sediments that underlie the harbor. Upland areas within the harbor are generally one to five feet above mean sea level. Outside of the harbor, the gently sloping ocean floor does not reach depths of 70 to 75 feet until more than two miles from Queens Gate (USACE, 2000). The LA-2 site is at the top edge of the continental slope in approximately 110 to 340 m (360 to 1,115 ft) of water. Centered at 33°37'06" N and 118°17'24" W, the LA-2 site is located just south of the San Pedro Valley submarine canyon approximately 11 km (5.9 nmi) from the entrance to Los Angeles Harbor. Situated at the foot of a submarine canyon, the LA-3 site is located on the slope of Newport Canyon centered at a depth of approximately 490 m (1,600 ft), approximately 8.5 km (4.5 nmi) southwest of the entrance to Newport Harbor (33°31'00" N and 117°53'30" W). The bottom topography is gently sloping from approximately 460 to 510 m (1,500 to 1,675 ft).

In addition to geotechnical studies conducted for the Deep Draft Navigation Improvements Project (Kinnetics 1991), sediment sampling was conducted to identify appropriate disposal site options for the Channel Deepening project (Fugro West, Inc. 1997). Thirty-seven locations were sampled within areas of predominantly coarse-grained sediments (locations denoted by CG in Figure 3.5-1 of the SEIS/SEIR), and 45 locations were sampled within areas of predominantly fine-grained and formation sediments (locations denoted by FG and FM in Figure 3.5-1 of the SEIS/SEIR). The coarse-grained sediments consisted primarily of sand, with minor proportions of silt and clay, whereas the fine-grained and formation sediments consisted primarily of silt and clay, with lesser proportions of sand. Sediments in the LA-2 site and surrounding areas are composed primarily of silt and sand, lesser amounts of clay, and relatively small gravel fractions. Sediments within the LA-3 site generally show a larger percentage of

sand and gravel and a lower percentage of silt compared with sediments at stations surrounding the site. As indicated in Section 3.5.2 of the SEIS/SEIR, there are no substantial topographic features on the Proposed Action sites, and water bodies within the Port consist primarily of dredged channels. Therefore, neither Alternative 1 nor Alternative 2 under the Proposed Action would have the potential to result in significant landform alteration impacts. Alternative 3, the No Action alternative, would have no landform alteration impacts because no sediment would be deposited.

(X) **currents, circulation or drainage patterns**: Circulation patterns in the harbor are determined by a combination of tide, wind, thermal structure and local topography. A large clockwise gyre is found in the surface waters of the outer Los Angeles and Long Beach Harbors during both rising and falling tides. The net tidal exchange is inward through Angel's Gate, and outward through Queen's Gate and the gap between the eastern end of Long Beach Breakwater and Alamitos Bay. Therefore, there is a net eastward flow within the harbor. Mixing is less in the Inner Harbor than in the Outer Harbor. Tidal-induced water exchange in the Inner Harbor is 22 percent of the total harbor water volume per day. Neglecting discharges, flushing efficiency of the harbor has been determined using the tidal prism method. Overall tidal exchange rates fluctuate between eight 8 and 25 percent, with the flushing rate estimated at 90 tidal cycles. Potential long-term effects on water circulation within the Port that have the potential to result from land configuration changes at the proposed and alternative sediment disposal sites were evaluated in a report prepared by the Army Corps of Engineers (~~2007~~2008). The report provides the results of hydrodynamic (water current characteristics) computer modeling of existing conditions within the Port, and hydrodynamic conditions that would exist after the implementation of the Proposed Action. The evaluation of water circulation impacts resulting from the development of sediment disposal sites under the Proposed Action determined that the Berths 243-245 disposal site and Northwest Slip projects would have effects that are very small and localized. With regard to the CSWH Expansion Area ~~and Eelgrass Habitat Area~~, the report concluded that ~~water velocities would be lowered inside the Eelgrass Habitat Area, and increased velocities and the formation of an eddy would occur immediately to the west of the Eelgrass Habitat Area. Increases in bottom residual velocity to the west of the Eelgrass Habitat Area would be on the order of approximately 10 cm/sec, which may have the potential to result in increased erosion depending on the character of the bottom material and the values of instantaneous currents. However,~~ none of the predicted changes in water movement were considered to be significant. Therefore, these project components would not result in significant water circulation impacts. The Anchorage Road Soil Storage Site (included in Alternative 2 of the Proposed Action) is an upland facility and does not have the potential to result in adverse impacts to water circulation in the Port. Ocean Disposal Sites LA-2 ~~is a~~ and LA-3 are deep water disposal sites located in the open ocean more than 5 miles offshore. Disposal of dredge material at LA-2 and LA-3 would not affect water circulation at ~~this~~these offshore sites. Under Alternative 3, the No Action Alternative, no sediment would be deposited, and

none of the disposal sites included in Alternatives 1 and 2 would be constructed. Because no changes in the topography of the Port would occur under Alternative 3, no impacts to water circulation would occur.

(X) **suspended particulates; turbidity:** As a result of proposed dredge and disposal activities, short-term increases in turbidity would occur in the vicinity of the project sites. The length of time it takes for the suspended material to settle, combined with current velocity, determines the size and duration 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. The plume durations are expected to be generally short with the concentration of solids returning to background levels within one to 24 hours after dredging stops (USACE, 2000).

Dredging to construct the Berths 243-245 sediment containment dike foundation trench, the construction of the sediment containment berm, and proposed sediment disposal operations would result in the resuspension of sediments and other associated water quality impacts, similar to the water quality effects described above. These effects would be short in duration, would only affect the area adjacent to the project site, and would terminate after the completion of proposed dredge and sediment disposal operations. The majority of the contaminated sediment discharged into the Berths 243-245 disposal site would settle to the bottom rapidly, therefore, it is not anticipated that the sediment would have a significant short-term effect on water quality. The design and construction of the disposal site as a Confined Disposal Facility in accordance with U.S. EPA standards would reduce the potential for long-term water quality impacts resulting from the disposal of contaminated sediments to a less than significant level.

Dredging to construct the Northwest Slip sediment containment dike foundation trench and proposed sediment disposal operations would result in the resuspension of sediments and other associated water quality impacts. Potential impacts would be similar to the water quality effects described above. These effects would be short in duration, would only affect the area adjacent to the project site, and would terminate after the completion of proposed dredge and sediment disposal operations. Therefore, proposed dredge and sediment disposal operations would not result in significant short-term pollution- or nuisance-related water quality impacts. The Northwest Slip would not be used for the disposal of contaminated sediments.

Proposed dredging and sediment disposal operations would result in the resuspension of sediments and other associated water quality impacts at the CSWH Expansion Area. Potential impacts would be similar to the water quality effects described above. These effects would be short in duration, would only affect the area adjacent to the project site, and would terminate after the completion of proposed dredge and sediment disposal operations. Therefore, proposed sediment disposal operations would not result in significant short-term pollution- or nuisance-related water quality impacts. The CSWH Expansion Area would not be used for disposal of contaminated sediments.

~~Proposed dredging and sediment disposal operations would result in the resuspension of sediments and other associated water quality impacts at the Eelgrass Habitat Area. Potential impacts would be similar to the water quality effects described above for the Berths 243-245 disposal site and the Northwest Slip. These effects would be relatively short in duration, would only affect the area adjacent to the project site, and would terminate after the completion of proposed dredge and sediment disposal operations. Therefore, proposed sediment disposal operations would not result in significant short-term pollution- or nuisance-related water quality impacts.~~ Sediment disposal at LA-2 and LA-3 would result in a temporary increase in turbidity as the sediment settles to the ocean floor. This temporary increase in turbidity is expected and the rate and pathway of sedimentation at LA-2 and LA-3 has been monitored and calculated to ensure that sediment disposed at LA-2 and LA-3 does not migrate outside of the site boundaries (USACE, 2004b).

The ~~Eelgrass Habitat Area would not be used for disposal of contaminated sediments. Sediment disposal at LA-2 would result in a temporary increase in turbidity as the sediment settles to the ocean floor. This temporary increase in turbidity is expected and the rate and pathway of sedimentation at LA-2 has been monitored and calculated to ensure that sediment disposed at LA-2 does not migrate outside of the site boundaries (USACE, 2004b). The Eelgrass Habitat Area and~~ CSWH Expansion Area would not place soil or sediment above water level and would not become a source of erosion. ~~The containment dike of the Eelgrass Habitat Area would extend above the surface of the water but would be constructed of quarry run and armor stone and would not become a source of erosion.~~ After the proposed CDF at the Berths 243-245 disposal site and the five-acre landfill at the Northwest Slip areas achieve elevations above water level, the exposed sediments could be affected by erosion and sedimentation processes, which would have the potential to result in increased turbidity and other related water quality impacts. Similarly, the soil stockpile located at the ARSSS could be subject to erosion and would have the potential to result in increased turbidity if the sediment was re-introduced into the harbor. Potential short-term construction-related erosion and sedimentation impacts from sediment disposal at the Berths 243-245 disposal site, the Northwest Slip landfill, and the ARSSS would be minimized by adhering to existing regulatory requirements, including preparation and implementation of a SWPPP (storm water pollution prevention plan) and implementation of applicable erosion/sedimentation control BMPs (best management practices). Implementation of these requirements at the proposed disposal locations would reduce potential water quality impacts to a less than significant level.

Under Alternative 3, the No Action alternative, no sediment would be deposited, and therefore no increase in turbidity or suspended particulates would result. Although the surcharge that currently exists on the Southwest Slip would remain and would continue to be subject to erosion, which could lead to increased turbidity in the harbor, the potential for turbidity would not be increased over baseline conditions.

(X) water quality (temperature, salinity patterns and other parameters): Seasonal and spatial variation in water temperature in the harbor reflects the influence of the ocean, local climate, the physical configuration of the harbor, and circulation patterns. General trends in water temperature consist of uniform, cooler temperatures throughout the water column in the winter and spring and of stratified warmer temperatures with cooler waters at the bottom in the summer and fall. The stratified summer and fall conditions may be attributed to warmer ocean currents, local warming of surface waters through insolation, and reduced runoff into near shore waters.

Variations in the salinity of the water in the Los Angeles Harbor occur due to the effect of storm water runoff, waste discharges, rainfall and evaporation. Typical seawater has a salinity of 33 parts per thousand (ppt). Harbor waters usually range from 30.0 to 34.2 ppt, but salinities ranging from less than 10.0 ppt to greater than 39.0 ppt have been reported. Salinity in the Outer Harbor is generally higher in the summer than winter, and deeper Outer Harbor sampling stations are typically more saline than shallower stations

The water quality of the Los Angeles Harbor would be temporarily impacted during dredging and disposal operations, including short-term increases in turbidity, decreases in dissolved oxygen and pH, increases in nutrients, and increases in contaminants in areas where contaminated sediments occur. Placement of sediment at the ARSSS would not affect the water quality of the harbor unless that sediment was allowed to leave the ARSSS through erosion and re-enter the harbor. The dredging and movement of sediment destined for the ARSSS would produce the same water quality impacts as described above for the dredging and transportation of sediment destined for disposal at other sites. Extensive water quality monitoring was conducted during dredging and placement of dredge materials at the POLA Pier 400 project area. This monitoring was required by the LARWQCB and included weekly, monthly and quarterly activities. Monitoring stations were located 100 feet upcurrent, and 100 and 300 feet downcurrent of each dredge and disposal operation, as well as at fixed stations in the outer harbor. Dissolved oxygen, light transmittance, temperature, pH and contaminants were monitored. This monitoring failed to detect any impacts to water quality in the outer harbor as a result of dredging or disposal activities (USACE, 2000). Similarly, the Proposed Action is not expected to result in any significant water quality impacts at disposal sites within the Port.

Sediment disposal at LA-2 and LA-3 would result in localized and temporary impacts to water quality, such as a temporary increase in turbidity as the sediment settles to the ocean floor. Use of the LA-2 ~~site~~and LA-3 sites for sediment disposal would not result in a change in temperature or salinity at the sites.

Under Alternative 3, the No Action Alternative, no sediment would be deposited, and therefore no changes to temperature, salinity, or other water quality parameters (such as turbidity or dissolved oxygen) would result. Although the surcharge that currently exists on the Southwest Slip would remain and would continue to be subject to erosion, which could lead to changes in water quality in

the harbor, the potential for turbidity would not be increased over baseline conditions.

( ) **flood control functions**: Not Applicable

(X) **storm, wave and erosion buffers:** Due to the presence of the Long Beach and San Pedro breakwaters, the POLA does not experience significant wave action. Implementation of Alternative 1 of the Proposed Action would result in two new upland areas and new shallow habitat areas within the port. Two disposal sites, the Berths 243-245 disposal site and the Northwest Slip, would involve the creation of new land areas (five acres and eight acres, respectively). However, both sites are located in relatively isolated areas of the Port and would not lead to increased erosion at the Port (Section 3.5 of the SEIS/SEIR). Alternative 2 of the Proposed Action would not involve creation of new land at the Berths 243-245 and Northwest Slip disposal sites, and therefore would not lead to increased erosion at those sites. Both Alternative 1 and Alternative 2 would increase the amount of shallow water habitat at the existing CSWH ~~and the proposed Eelgrass Habitat Area. The new Eelgrass Habitat Area~~, but this expansion would ~~serve to dissipate storm and wave energy, and would be an increased buffer against~~have a less than significant impact on erosion. Under Alternative 3, the No Action alternative, no sediment would be deposited, and therefore no changes to storm, wave and erosion buffers would result.

(X) **erosion and accretion patterns**: No change in the current erosion or accretion patterns near the Proposed Action would result from the proposed dredging, demolition, landfilling and construction of the project (Section 3.5 of the SEIS/SEIR).

Under Alternative 3, the No Action alternative, no sediment would be deposited, and therefore no changes to erosion and accretion patterns would result. Although the surcharge that currently exists on the Southwest Slip would remain and would continue to be subject to erosion, the potential for erosion would not be increased over baseline conditions.

( ) **aquifer recharge:** Not Applicable

( ) **baseflow**: Not Applicable

For projects involving the discharge of dredged material;

(X) **mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharge; dredged material characteristics; number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing:**

The mixing zone at the disposal sites within the Port is very small due to the shallow depths in these areas. Mixing will also be confined to the smallest practicable zone through the use of rock diking. Further containment of discharged materials will be accomplished by assuring that the return water flow of dredge water conforms to LARWQCB waste discharge requirements.

The mixing zone at LA-2 and LA-3 is much larger because sediment is disposed of at the surface, above the LA-2 ~~site~~and LA-3 sites, and then settles to the ocean floor, up to ~~1,115~~1,600 feet below. Both the LA-2 ~~site is~~and LA-3 sites are permanently designated as ~~a~~ sediment disposal sites. Disposal of material at LA-2 and LA-3 would be consistent with the USEPA regulations for managing ocean dumping in accordance with the Marine Protection, Research, and Sanctuaries Act.

IV. Biological Characteristics

This analysis is based on the analysis presented in Section 3.3 of this SEIS/SEIR.

(X) special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The Proposed Action would not impact ~~wetlands,~~ mudflats, coral reefs, pool and riffle areas; however, a small area of salt marsh and vegetated shallows, including eelgrass and kelp beds do occur within the project area.

Wetlands. Wetlands are regulated under the Clean Water Act (CWA). The definition of wetlands varies among state and federal agencies, but the USACE uses a three-parameter method that includes assessing vegetation, hydrology, and soils. Wetlands commonly present in estuarine to marine habitats are salt marshes dominated by pickleweed (*Salicornia virginica*) and other salt tolerant plant species. Pickleweed has colonized soil within the area between an abandoned wharf and the concrete lined shore along the east side of Northwest Slip, forming a small, isolated salt marsh. The area covered by pickleweed is approximately 0.042 acre (0.017 ha). Plant cover appears to be sparse to moderate with trash carried in on high tides. No freshwater wetlands under the USACE jurisdiction are present at or near the Proposed Action sites based on aerial photographs of the Proposed Action area (Google Earth) and baseline survey reports for the Harbor (MEC and Associates, 2002). Placement of fill and demolition of the wharf at the Northwest Slip would remove this salt marsh wetland and convert it to new land. Existing pickleweed would be transplanted to suitable habitat nearby, which would be completed in compliance with the requirements at 33 C.F.R. Part 332.

Eelgrass Beds. Eelgrass has become established in shallow waters off Cabrillo Beach and north to the Cabrillo Marina as well as in the Pier 300 Shallow Water Habitat and Seaplane Lagoon. A survey in 1996 (Southern California Marine Institute, 1996) found the Cabrillo Beach bed to be approximately 25 acres (10 ha). Over half (16 acres [6.5 ha]) of the bed had sparse (less than 10 percent) cover while the remaining area had greater than 90 percent cover. A 1999 survey (Southern California Marine Institute, 1999) indicates that this eelgrass bed had expanded to approximately 54.4 acres (22 ha). The dense cover (greater than 90 percent) area had increased to 39.4 acres (16 ha) and extended to a depth of –8 feet mean lower low water (MLLW).

Surveys in March and August 2000 (MEC 2002) found the eelgrass beds at Cabrillo Beach to cover 21.7 acres (8.8 ha) in March and 42.3 acres (17.1 ha) in August (Figure 3.3-1). The beds extended to depths of -10 feet MLLW. Eelgrass is also present in the Pier 300 Shallow Water Habitat and in the Sea Plane Lagoon. No

other eelgrass beds were found in the harbor, although individual plants or very small beds may be present.

Demolition and dredging for the containment dikes at the Northwest Slip and Berths 243-245 disposal sites would cause no loss of eelgrass and have no impacts on this plant community. Disposal of dredged material at the ARSSS and ocean disposal sites LA-2 and LA-3 would result in no loss of eelgrass and have no impacts. Construction of the CSWH Expansion ~~and Eelgrass Habitat Area~~ would temporarily affect existing eelgrass beds but would not result in any reduction or loss of eelgrass, and would therefore result in a less than significant impact.

Eelgrass beds could be affected by turbidity due to construction related activities at the CSWH Expansion ~~and the Eelgrass Habitat Area sites.~~ site. Suspended sediments on the plant surfaces could result in consequential changes in photo-synthesis rates due to a reduction in light penetration. The extent and duration of such effects would depend on water currents at the time of work. While effects of turbidity on eelgrass beds could potentially occur, it is unlikely due to their distance from the CSWH Expansion ~~and Eelgrass Habitat Area sites~~site (over 800 feet ~~and 2800 feet, respectively~~). It is likely that most of the suspended sediment would settle out before reaching the eelgrass beds. These effects would only occur during construction activities with rapid recovery (a few months) of any plants damaged by sediment.

Kelp Beds. Small amounts of kelp were present along the northwestern edge of the CSWH in 2000 (MEC, 2002). Some of this kelp could be removed during construction of the CSWH Expansion Area. Turbidity during fill placement in this area also could affect the remaining kelp plants by reducing light penetration in the water column and settling of fine particulates on the kelp blades. However such turbidity and settling effects would be of short duration as the filling activity moved away from the remaining existing kelp. The new containment dike for the fill would provide habitat for colonization by the kelp. The amount of kelp affected would be small, and these plants do not form dense beds that provide important habitat for other marine organisms. Colonization of the new dike would replace the plants lost. ~~Construction of the Eelgrass Habitat Area in the existing CSWH would not remove any kelp, but would temporarily increase turbidity in this area. Although kelp beds in the harbor would be temporarily affected by construction of the Eelgrass Habitat Area, the impacts would be short term, indirect, and minor and these small beds would recover.~~

(X) habitat for fish and other aquatic organisms:

Essential Fish Habitat. In accordance with the 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act, an assessment of Essential Fish Habitat (EFH) has been prepared. The Proposed Action dredging and filling would be located within areas designated as EFH for two Fishery Management Plans (FMPs): Coastal Pelagics Plan and Pacific Coast Groundfish Management Plan. Of the 94 species federally managed under these plans, 19 are known to occur in the Los Angeles-Long Beach Harbor.

Construction activities would result in the permanent loss of 7.6~~, 4.8,~~ and ~~1.7~~4.8 acres of EFH at the Berths 243-245 disposal site and the Northwest Slip~~, and Eelgrass Habitat~~ areas, respectively, which would be considered a significant impact. The implementation of MM BIO-5~~4~~ (Apply Mitigation Credits), as discussed in the SEIS/SEIR, would offset the loss of marine habitat and EFH through the use of mitigation credits from the existing Bolsa Chica mitigation bank~~s or those associated with the CSWH Expansion Area~~. Disposal of sediments at Ocean Disposal Sites LA-2 and LA-3 would have minimal effects on EFH due to the deep water depth and the temporary and periodic disturbance in a small amount of water column as the material is dropped from barges at this site.

Marine Habitat. Marine habitats in the areas to be dredged or filled in the Proposed Action area are primarily deep soft bottom~~, although some shallow soft bottom would be altered for construction of the eelgrass habitat~~. Rock riprap, pilings, and concrete or sheetpile walls seen along the landfills for Harbor facilities provide hard substrate habitats.

Construction activities at the Berths 243-245 disposal site to create an 8 acre (3.2 ha) CDF would result in a permanent loss of approximately 7.6 acres (3.1 ha) of water surface over 6.6 acres (2.7 ha) of soft bottom and 1.6 acres (0.6 ha) of rocky dike habitat. Another 1.0 acre (0.4 ha) of rocky dike habitat would be covered by the fill but replaced by the new containment dike along the Main Channel. The permanent habitat loss would remove 2.3 metric tons of infaunal invertebrates and 21 metric tons of riprap invertebrates. (Data from the Main Channel infauna and East Basin riprap 2000 samples were used for these calculations since no data are available from the Berths 243-245 site.) The piling habitat in the water at Berths 243-245 would also be removed. Constructing 5 acres (2 ha) of landfill at the Northwest Slip would permanently remove 4.8 acres (1.9 ha) of water surface, water column, and soft bottom habitat. Approximately 1.8 acres (0.7 ha) of rocky dike habitat would be removed and replaced during the construction activities. The amount of infaunal invertebrates lost would be approximately 0.4 metric ton, while about 19 metric tons of hard substrate organisms would be temporarily lost.

Construction of the CSWH Expansion Area would result in a modification of the shallow water habitat area, but no permanent loss of marine habitat.

~~The containment dike around the Eelgrass Habitat Area would extend above the water, thereby eliminating approximately 1.7 acres (0.7 ha) of water surface. Water column habitat would also be reduced due to the eelgrass habitat construction.~~

Loss of marine habitat due to construction of the CDF at Berths 243-245 and the new land area at the Northwest Slip~~, and the containment dike for the Eelgrass Habitat Area~~ would be a significant impact. The implementation of MM BIO-5~~4~~ (Apply Mitigation Credits), as discussed in the SEIS/SEIR, would offset the loss of marine habitat through the use of mitigation credits in existing mitigation banks or those associated with the CSWH Expansion Area. Expansion of the CSWH by up to 50 acres (20.2 ha) ~~and placement of fill in the CSWH to create the 40 acre Eelgrass Habitat Area~~ would result in disturbances and turbidity for

approximately 250 ~~and 90~~ work days~~, respectively~~ over an approximate one year period. EFH in the Outer Harbor would be changed from deep water to shallow water less than -20 feet MLLW. Although some water column habitat would be lost, long-term impacts would be less than significant because the new shallow water would support more FMP species than the existing deep water. Alteration of marine habitat as a result of ~~constructing the Eelgrass Habitat Area and~~ CSWH Expansion would be less than significant because no habitat would be lost.

Effects of turbidity, noise and vibration, and equipment presence during landfill construction at the Berths 243-245 disposal site and Northwest Slip would temporarily affect plankton, fish, and marine birds that use adjacent areas but not to a level that would adversely affect their populations.

Turbidity, noise and vibration, and equipment disturbances would affect the CSWH Expansion fill area as well as adjacent areas during construction activities. This would affect plankton, fish, and birds that use the area. Deep water column habitat (below -20 feet MLLW) would be permanently lost and deep soft bottom would be replaced with shallow soft bottom as a result of this fill, but surface water area would remain the same. These changes would reduce habitat for fish species that prefer deep water while increasing habitat for those that prefer shallow water. Fill placed to create shallow water from deep water would reduce the depth of the water column habitat and result in a temporary loss of soft bottom invertebrates (11.7 metric tons) over an area of 50 acres (20.2 ha). The subtidal rocky dike along the northern edge of the existing shallow water habitat would be covered with fill as the shallow water habitat is extended, and the rocky habitat lost would be replaced by the new containment dike for the habitat expansion. Approximately 7 acres (2.8 ha) of hard substrate habitat would be affected with a temporary loss of approximately 104 metric tons of invertebrates (using subtidal invertebrate biomass from Berth 48). No permanent loss of habitat would occur. A benthic community similar to that currently present in adjacent areas of the existing CSWH would be expected to develop within 5 years based on surveys in 1987 of areas dredged in 1982 (MEC, 1988). Kelp and invertebrates would also colonize the containment dike for this habitat expansion.

~~Placement of fill would result in turbidity, noise and vibration, and equipment disturbances that would affect the Eelgrass Habitat Area fill area as well as adjacent areas during construction activities. This would affect plankton, fish, and birds that use the area. Effects of these disturbances would be of short duration. Placing fill to create eelgrass habitat over 24 acres (9.7 ha) of existing CSWH and 16 acres (6.5 ha) of the CSWH Expansion Area would reduce the depth of the water column habitat over the 40-acre (16 ha) site. In addition, approximately 6 acres (2.4 ha) of soft bottom would be converted to 5 acres (2.0 ha) of hard substrate habitat along the containment dike face. Invertebrate infauna would be temporarily lost as a result of the fill, but organisms would colonize the new soft and rocky bottom. At a biomass of 127.7 g/m^2 in the existing CSWH, the temporary invertebrate loss in the 24 acres (9.7 ha) of that habitat covered by fill would be 12.4 metric tons. The remaining 16 acres (6.5 ha) of the new eelgrass habitat would be constructed over the new shallow water habitat that is part of~~

~~the Proposed Action. No habitat would be permanently lost and the long-term change would be beneficial. A benthic invertebrate community similar to that currently present in the eelgrass beds at Cabrillo Beach would be expected to develop as eelgrass is planted and expands in this area. Areas that are not planted in eelgrass immediately following construction of the area would be colonized by benthic invertebrates typical of such shallow areas in the Harbor. The development of an eelgrass bed over the fill would enhance the habitat value of this area for a number of fish species.~~

~~Disposal of sediments in Ocean Disposal Site LA-2 would alter the bottom by changing sediment characteristics; however this is an approved dredge material disposal site with an allowed annual disposal volume of 1.4 mcy of material.~~ Disposal of sediments in Ocean Disposal Sites LA-2 and LA-3 would alter the bottom by changing sediment characteristics; however, these are approved dredge material disposal sites with a combined allowed annual disposal volume of 3.5 mcy of material. Impacts would be less than significant.

Disposal of sediments at the ARSSS site would occur on an existing ~~dry land~~upland area adjacent to the Port and therefore no change to marine habitat would occur.

Although construction of the CSWH Expansion ~~and Eelgrass Habitat Area sites~~site would result in temporary disturbances and short-term as well as permanent habitat changes, impacts of these activities would be less than significant because they would not interfere with habitat such that species behaviors would be disturbed to a degree that may diminish the long-term survival of a sensitive species or ecological function. In the long term, the habitat change at the CSWH ~~and Eelgrass Habitat Area~~ Expansion site would be beneficial because it would provide foraging habitat for special status birds and other species.

Under Alternative 3, the No Action alternative, no sediment would be removed and no placement of dredged material would occur, and therefore no impacts to marine habitat or EFH would result.

(X) wildlife habitat (breeding, cover, food, travel, general): A narrow strip of degraded salt marsh wetland along the eastern edge of the Northwest Slip would be covered with fill material and converted to new land. This 0.042-acre strip of salt marsh wetland supports a small population of pickleweed, as well as a mix of other native and exotic plants. It is likely that birds in the area use this site for periodic foraging. However, the value of this site as a foraging area is limited due to the small size of the site, the degraded nature of the habitat, and the location of the site directly adjacent to a large container storage facility. For these reasons, removal of this salt marsh wetland would not substantially reduce foraging habitat for birds. Additionally, a large amount of alternate foraging area exists nearby, including at the CSWH and existing eelgrass beds.

Upland areas where surcharge material would be removed are recently filled areas that provide limited terrestrial habitat for wildlife. Terrestrial habitats in the Los Angeles Harbor are primarily developed terminal areas and associated

backlands. Most of these areas are paved. Unpaved areas are either barren or have a low density of predominantly non-native weedy species. Some small areas adjacent to buildings are landscaped with a variety of horticultural species that range from grasses to palm trees. Wildlife associated with these industrial areas is limited to species that are adapted to human disturbance. Common birds include gulls (*Larus* spp.), Brewer's blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrhynchos*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), northern mockingbird (*Mimus polyglottos*), and rock dove (*Columba livia*). Mammals are generally limited to mice, rats, and feral cats.

Under Alternative 3, the No Action alternative, no sediment would be removed and no placement of dredged material would occur, and therefore no impacts to wildlife habitat would result.

(X) **endangered or threatened species:** Several state and federally listed threatened or endangered species are known to be present, at least seasonally, in the Harbor. State designated Species of Special Concern are also present, and several marine mammals have been observed in the Harbor. Individuals of some of these species could be present near Project dredge and fill activity sites.

Constructing an 8-acre (3.2 ha) CDF at the Berths 243-245 disposal site would not remove any important foraging areas for special status species, and none breed in this area. Constructing 5 acres (2 ha) of new landfill in the Northwest Slip site would also not affect special status species. The Northwest Slip is not an important foraging area for any of the species, no breeding occurs there, and few if any individuals of these species would be present. Any species present during construction would avoid the disturbance area.

Expanding the existing CSWH by up to 50 acres (20.2 ha) would cause temporary disturbances along the north side of the existing CSWH due to equipment and turbidity for nearly one year. The existing 326-acre CSWH provides foraging habitat for the California least tern (Keane Biological Consulting and Aspen Environmental Group 2004), and construction activities would overlap with their entire nesting season (April through August) in one year or parts of the nesting season in two years. These disturbances have the potential to adversely affect least tern foraging by causing a decline in availability of forage fish in and adjacent to the active work area or ability of the least terns to find forage fish during the nesting season. However, some of the fish in and adjacent to the active work area would move away from the disturbance area and into nearby areas, thus, remaining available for consumption by the California least tern. Furthermore, the equipment disturbance and change in fish distribution would affect a small proportion of the total foraging area available in the harbor. For example, based on past disposal operations, the extent of the turbidity plume to be expected during construction of the shallow disposal sites would be no greater than several hundred feet. Assuming a circular area of disturbance with a diameter of 600 feet, the turbidity plume would be expected to affect a maximum of 6.5 acres of the existing 326-acre CSWH. Therefore approximately 319 acres of

the existing adjacent 326-acre CSWH would provide foraging areas away from construction activities. Additionally, the approximately 193-acre Pier 300 Shallow Water Habitat that is used by the least tern would not be adversely affected by construction of the Proposed Action. Therefore, approximately 512 acres of the existing 519 acres of shallow water foraging habitat, or 99.2 percent, of existing shallow water least tern foraging area within the harbor would remain available for least tern foraging during construction. Deep water areas inside and outside the harbor that are used by the least terns for foraging would also remain available during construction.

California brown pelicans are present all year and forage over both shallow and deep water, and could use other areas inside or outside the Harbor for the duration of the work. The other special status birds and marine mammals in the Harbor would not be affected by this activity because few if any would be present in this area and those individuals present could avoid the disturbance area.

The expanded shallow water area would provide habitat for fish and invertebrates typical of shallow waters. Shallow waters tend to support a higher biomass of benthic invertebrates than deeper waters and provide more food for fish. The fish, in turn, would help support special status fish-eating birds as well as marine mammals.

Disposal of material at the offshore Ocean Disposal Site LA-2 and LA-3 would not adversely affect special status species because few if any individuals would be present at this location.

Placement of fill at all disposal sites but the CSWH Expansion area ~~and Eelgrass Habitat Area~~ also would have less than significant impacts for the same reason. Placement of fill for construction of the CSWH Expansion ~~and Eelgrass Habitat~~ Area would have less than significant impacts on the California least tern because ~~even during concurrent construction activities at both sites,~~ only a very small proportion of available least tern foraging habitat within the harbor (less than 3%) would be disturbed. Furthermore, Mitigation Measures BIO-1 through BIO-3, as discussed in the SEIS/SEIR, (monitoring and limiting turbidity and monitoring least tern presence) would further reduce the likelihood of impacts to California least tern. Additionally, MM BIO-5~~4~~ (Apply Mitigation Credits~~offset marine habitat loss with mitigation credits~~) would be implemented to offset the loss of marine habitat from construction of the Berths 243-245 disposal site and the Northwest Slip~~, and the Eelgrass Habitat Area dike~~. ~~The 50-acre expansion of the CSWH would provide 25 shallow Outer Harbor credits, which is more than the credits needed for the CDF at Berths 243-245 the new land area at the Northwest Slip, and the dike for the Eelgrass Habitat.~~

Disposal of sediments at the ARSSS would occur on an existing ~~dry land~~upland area adjacent to the Port that is currently being used as a sediment disposal site. Placement of additional sediment at the site would not change the habitat characteristics of the site, and would not impact endangered or threatened species.

Under Alternative 3, the No Action alternative, no sediment would be removed and no placement of dredged material would occur, and therefore no impacts to endangered or threatened species would result.

(X) biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities or other sources: Dredge material would come from the Channel Deepening Project and from on-site trenching required for dike foundation construction. ~~Ocean disposal would take place at five sites.~~ Under both Alternative 1 and Alternative 2, ~~ocean~~ disposal of dredged material would occur at the CSWH Expansion Area~~, the Eelgrass Habitat Area,~~ and the LA-2 ocean disposal site. ~~Ocean~~ Under only Alternative 1 disposal of dredged material would occur at Berths 243-245 and the Northwest Slip ~~only under Alternative 1~~. Additionally, under Alternative 2, ocean disposal would occur at LA-3 and ~~dry land~~ upland disposal would take place at the ARSSS site. No ocean disposal or ~~dry land~~upland disposal of sediments would occur under Alternative 3, the No Action Alternative. The Port would test dredged sediments in accordance with state and federal regulations.

Sampling and testing of the sediments described above were performed in July 2006 and followed the USEPA/USACE tiered approach to environmental characterization of dredged materials as defined in the Inland Testing Manual (1998), the Ocean Testing Manual (1991), and Upland Testing Manual (2003) protocols (Kinnetic Labs & Fugro, 2007). Testing was performed at various locations including, but not limited to Berths 118-121, 127-131, 136-140, 206-209, 212-236 (Kinnetic Labs & Fugro, 2007).

Chemical analyses of sediment samples taken from locations throughout the harbor have indicated that course-grained sediments showed some heavy metals to be present in the top samples, with most concentrations being below the Effect Range Low (ERL) criteria values, meaning that the contaminant concentrations would result in minimal toxic effects. Concentrations of DDT pesticides and/or PCBs generally exceeded the ERL values in all of the top samples and half of the bottom samples. Metal concentrations in elutriate tests were below detection limits or, when detected, were well below Instantaneous Maximum Water Quality Objectives.

Fine-grained sediments generally had concentrations of DDT pesticides and Aroclor 1254 (a PCB) above ERL values but below Effect Range Medium (ERM), meaning that the contaminant concentrations would have a toxic effect 10 to 50 percent of the time. A few heavy metal concentrations were above ERL values. The metal concentrations were highest within the formation mudstone located in the southern portion of the Main Channel.

A contaminated sediment management plan would be developed in cooperation with State and Federal agencies prior to moving and disposing of contaminated sediments. Material unsuitable for ocean disposal would be disposed of at a new 8-acre CDF at Berths 243-245. Development of this site would include sealing all the sides of the disposal facility with clean sediment and providing a five foot cap and sand berm to contain the contaminated sediment. The majority of the contaminated sediment disposed of at this site is expected to settle to the bottom rapidly, therefore, it is not anticipated that the sediment would have a significant short-term effect on water quality. The design and construction of the disposal site as a CDF in accordance with USEPA standards would reduce the potential for long-term water quality impacts resulting from the disposal of contaminated sediments to a less than significant level. Further material may be disposed of at the Anchorage Road Soil Storage Site (approximately 0.080 mcy).

Under all three Alternatives, the existing contaminants within Berths 243-245 would remain in place. However, under Alternative 1, with construction of the CDF, the existing contaminants would be isolated within the berths and capped with clean sediment. As discussed in Section 2.3.3, the following compounds have been detected in surface and subsurface sediments within Berths 243-245 at concentrations frequently associated with adverse biological affects: mercury, lead, zinc, polychlorinated biphenyls (PCBs), tributyltin (TBT) and polynuclear aromatic hydrocarbons (PAHs) (Weston, 2005). These materials would not be capped under Alternatives 2 or 3, and therefore, the potential for their exposure to surrounding benthic infaunal organisms would persist.

Contaminated sediments can have both direct and indirect effects on marine organisms, including mortality from ingestion or external exposure as well as bio-accumulation and bio-magnification of toxins in benthic organisms or their predators, which could result in reproductive failure or mortality of individuals. For example, contaminants in sediments from southern California have been correlated with toxicity observed in sediment-dwelling invertebrates (Swartz et al., 1985; Bay, 1995) and bioaccumulation in flatfish (Schiff and Allen, 1997; Young et al., 1991). Sediment-associated containments have also been linked to impacts on upper trophic levels by way of food web transfers, often in the form of bio-magnification (Burton and Landrum, 2003). This has been shown to occur with mercury and some organochlorines, such as PCBs and DDT (Gamble, 1996).

The existing concentrations of contaminants within sediments at Berths 243-245 are not high enough to be considered hazardous waste but are high enough to result in adverse biological effects for some species. Therefore, it is reasonable to assume that leaving these contaminated sediments in place (i.e., not removing or capping them, as under Alternatives 2 and 3) would likely continue to result in adverse effects to benthic infaunal organisms and their predators. However, local biological communities would not be substantially disrupted because the surface area of soft bottom habitat in Berths 243-245 is small (less than 8 acres [3.2 ha]) relative to the amount of soft bottom throughout the Harbor, or even within the Main Channel, and because the contaminants present apparently have not resulted in adverse effects based on the 2000 Baseline Surveys (MEC and

Associates, 2002).

Construction activities would be conducted using BMPs in accordance with City guidelines, as detailed in the Development Best Management Practices Handbook (City of Los Angeles, 2004). Applicable BMPs include, but are not limited to: vehicle and equipment fueling procedures and maintenance; material delivery, storage, and use; spill prevention and control; solid and hazardous waste management; and contaminated soil management. Implementation of these BMPs would decrease the likelihood of a release of hazardous materials.

Construction-related impacts from development activities would be minimized through compliance with the Construction General Permit and the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Implementation and enforcement of existing regulations would be adequate to reduce potential construction-related impacts to a less than significant level. No mitigation measures are required.

The City of Los Angeles and the POLA have developed programs to implement requirements of the General Construction Activities Storm Water Permit, including the development and implementation of a SWPPP that describes applicable BMPs to be implemented at the project sites. Existing implementation and enforcement programs adopted by the City of Los Angeles and the POLA would be adequate to reduce potential water quality impacts of the Proposed Action to a less than significant level. No additional mitigation measures are required.

V. **Summary of indirect and cumulative effects**

This analysis is based on the analysis presented in Chapter 6 of this SEIS/SEIR.

The region of influence for cumulative impacts to biological resources is the Los Angeles/ Long Beach Harbor (inner and outer harbor areas) for both marine biota and terrestrial biota. The latter, however, are limited to the land portions of the Harbor. Cumulative projects that involve dredging, filling, wharf construction/reconstruction, new marinas, artificial reefs, or channel modifications (as described in Table 6-1) would directly affect marine biological resources through construction and operation activities. All of these projects would have the potential to indirectly affect biological resources through runoff of sediments and pollutants during construction activities on land. Wharf construction/reconstruction would also result in underwater sound pressure waves from pile driving that could affect marine mammals and fish. The cumulative loss of marine habitat and EFH for all these projects, including the Proposed Action, is over 540 acres (219 ha) due to landfill, and nearly 90 percent of that fill has been or is in the process of being completed, including the approved Channel Deepening Project.

The Proposed Action would involve dredge, fill, wharf demolition, and dike construction activities that could contribute to cumulative impacts with other projects. For fill projects, the Proposed Action would contribute approximately 14 acres (5.7 ha), or less than three percent of the total fill proposed or completed for the Harbor. The permanent marine habitat loss from the Proposed Action would also include EFH. Loss of marine habitat through landfilling is a significant cumulative impact, and the significant Proposed Action impact would contribute to that impact. However, previous landfilling impacts have been miti-

gated, and proposed landfilling impacts are being offset by mitigation bank credits from marine habitat restoration on and off site through agreements with regulatory agencies. Thus, due to implementation of MM BIO-5~~4~~, the Proposed Action would not make a cumulatively considerable contribution to the significant impacts of habitat loss. Furthermore, the Proposed Action would result in a net gain in shallow water habitat ~~credits~~ due to construction of the CSWH Expansion. ~~Other related projects that could also result in loss of marine habitats would also likely use available mitigation bank credits to compensate for loss of fish and wildlife habitats.~~ As a result, cumulative impacts would be less than significant.

Other Proposed Action construction activities in harbor waters include dredging, shallow habitat construction, and wharf demolition. Dredging would remove surface layers of soft bottom habitats while wharf demolition would remove hard substrate habitat (e.g., piles). Shallow water habitat construction would result in a temporary loss of soft bottom and rocky dike invertebrate communities. Similar construction activities would occur in several of the cumulative projects. The effects of such activities are generally of short duration, affect small localized areas, and do not occur simultaneously for all projects. Because recolonization of dredged areas, new riprap, new piles, and new shallow soft bottom begins immediately and provides a food source for other species such as fish within a short time, multiple projects spread over time would not be expected to result in a reduction in forage base that could affect predatory species. Temporary construction disturbances in the water resulting from the cumulative projects, which can cause fish and marine mammals to avoid the work area, are also not expected to substantially alter the distribution and abundance of these organisms or to adversely affect species behaviors or degrade ecological function. Consequently, cumulative impacts of such disturbances would be less than significant because the effects are dispersed in time and space and are not permanent. The less than significant impacts of the Proposed Action would not result in a cumulatively substantial contribution.

Runoff from temporary disturbances on land during construction activities for the cumulative projects would not occur simultaneously, but rather would be spread over time so that total runoff to harbor waters would be dispersed, both in frequency and location. In addition, runoff controls that are required by Port regulations and permit conditions, such as Storm Water Pollution Prevention Plans (SWPPPs), would prevent significant impacts to water quality that could adversely affect marine biota. Thus, cumulative impacts of development activities on landfills would be less than significant. Creation of the 9-acre CDF at Berths 243-245 area and the 5-acre landfill at the Northwest Slip would not add a cumulatively substantial contribution to cumulative impacts.

The construction of the 40-acre (16-ha) landfill on the east side of Pier 400 as part of the approved Channel Deepening project resulted in a loss of foraging habitat for the California least tern, a federally listed endangered species, that was mitigated by expanding the CSWH. The Pacific Energy project on Pier 400 has the potential to adversely affect the least terns at their nesting site. These are the only cumulative impacts to this species. The Proposed Action would not adversely affect the California least tern at their nesting site on Pier 400. However, the Proposed Action would temporarily disturb foraging habitat for the least tern and other special status species in the CSWH while creating more shallow water habitat ~~and eelgrass habitat~~. These impacts would be less than significant but further mitigated by

Mitigation Measures BIO-1 through BIO-3. Consequently, the Proposed Action would not result in a cumulatively substantial contribution to cumulative impacts on this and other special status species.

None of the cumulative projects, including the Proposed Action, are expected to have any significant impacts on terrestrial biota because the projects would be in previously disturbed areas that provide little or no habitat for terrestrial biota.

The Proposed Action would not increase vessel traffic within the harbor area. Therefore, the Proposed Action would not contribute to cumulative biological impacts from vessel traffic.

VI. Criteria for the Evaluation of Permit Applications for Ocean Dumping of Materials

The need for ocean dumping of materials is determined by evaluation of the following factors (listed at 40 C.F.R 227.15), including:

- the degree of treatment useful and feasible for the waste to be dumped (not applicable),
- raw materials and manufacturing or other processes that resulted in the waste (not applicable),
- the relative environmental risks, impact and cost as opposed to other feasible alternatives including but not limited to landfill, well injection (not applicable),
- incineration (not applicable),
- spread of materials over open ground, recycling or reuse of material, additional biological, chemical or physical treatment (not applicable),
- storage and irreversible or irretrievable consequences of the use of alternatives to ocean dumping.

These criteria were used to evaluate the need for ocean disposal under each alternative and to identify practicable alternatives to ocean disposal of dredged materials under the Proposed Action. Based on the above criteria, several practicable alternatives to ocean disposal of a portion of the dredged material have been identified, including: land-based storage of dredged materials at the ARSSS, reuse of the dredged material at Berths 243-245 to cap and confine contaminated sediment, reuse of the dredged material to improve terminal efficiency at the Northwest Slip, and reuse of the dredged material at the Cabrillo Shallow Water Habitat to expand and enhance shallow water habitat. An evaluation of these alternatives to ocean disposal of dredged materials is presented below.

VII. Findings

A. 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 project does not comply with the guidelines.)

1) Alternatives Test

☐ ☒ **a)** Based on the Discussion IIB, above, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem

Yes No 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: Initially a wide range of disposal options and alternatives was examined. However, based on comments received during the scoping process, from resource agencies at various meetings during the planning process, and in response to the Draft SEIS/SEIR, the USACE and Port re-examined the disposal alternatives to avoid and minimize impacts to aquatic resources. As a result the Proposed Action and Alternatives presented and analyzed in this SEIS/SEIR have been revised. Alternatives previously considered for analysis included: the Pier 300 40-acre expansion, a 15-acre bird island nesting area, a 40-acre Eelgrass Habitat Area, as well as submerged disposal sites at POLA and POLB, all of which are described below.

Pier 300: Dredge material from the proposed action presented an opportunity to expand the existing 40-acre landfill at Pier 300 to allow more efficient operations at the existing terminal and future expansion. A new landfill at this location could also be used as a CDF for sediments that are unsuitable for open water disposal. This disposal option is not being pursued because at this time there does not appear to be sufficient demand for additional land at Pier 300, particularly given that the Pier 300 open water area has been designated as Essential Fish Habitat by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service and is currently a foraging site for the Federal and State endangered species, California least tern.

Bird Island: This disposal option would create a 15-acre island located at the CSWH and would include creation of an intertidal area with planted eelgrass to optimize the habitat area for foraging. The purpose of this option would be to relocate a population of California least tern that has inhabited a portion of the recently constructed Pier 400 for use as a nesting area. This population currently prevents use of the land as originally intended. If the island proved successful, the existing Pier 400 least tern nesting area could be relocated to allow development of the Pier 400 site as originally intended. This option is not being considered at this time because of no specific current demand for the 15 acres on Pier 400, the current site is successfully being used by least terns as nesting area, and uncertainties associated with the success of this area attracting desired nesting birds.

Eelgrass Habitat Area. Under this disposal option, approximately 0.800 mcy of dredge material would be used to construct approximately 40 acres of shallow habitat for establishment of an Eel-

grass Habitat Area at the existing CSWH and the proposed CSWH Expansion area. The existing water depths at the CSWH range between -15 and -20 ft MLLW. The water depths at the completed Eelgrass Habitat Area would range from approximately -2 to -6 ft MLLW to allow for adequate establishment of eelgrass habitat. It is anticipated that adding the Eelgrass Habitat Area to the CSWH would provide enhanced biological value and encourage bird foraging. In order to protect the Eelgrass Habitat Area from erosion from short period storm waves, a rock dike would be constructed around the perimeter of all south, east, and west facing sides of the Eelgrass Habitat Area. The rock dike crest elevation of the above-water sections will vary from +12 to +14 feet MLLW. The dike on the north side would be constructed to an elevation of approximately -6 feet MLLW to maintain water circulation within the area. This disposal option was included for analysis in the Draft SEIS/SEIR and has been eliminated from further consideration in response to public concern about how construction of this disposal site could potentially impact recreational boating activities and aesthetic resources in the outer harbor.

Pier 400 Submerged Material Storage Site. The existing Pier 400 SMSS includes about 120 acres in the POLA outer harbor area between Pier 400 and the breakwater. The area has been filled to -15 feet MLLW. Further disposal at this area will likely involve water circulation and water quality impacts related to operation of the existing Terminal Island Treatment Plant outfall. Accordingly, this option is not consistent with the time frame needed to complete the Channel Deepening Project.

POLB Western Anchorage Area Submerged Material Storage Site. The existing POLB Western Anchorage Area Submerged Material Disposal Site located in the outer Long Beach harbor offshore of the Navy mole has been previously used for temporary storage by the Port of Long Beach. This option would involve raising existing elevations of this area to elevation -45 feet MLLW to provide over 2.0 mcy of disposal capacity. Use of this temporary storage area would allow this material to be used for other POLA and/or POLB purposes as needed for future port development or environmental enhancement projects. The POLB has indicated they are not interested in authorizing temporary placement of POLA material at this site.

Evaluation of all potential disposal options resulted in formulation of Alternative 1 and Alternative 2, which were carried forward for analysis in the SEIS/SEIR. In addition to Alternative 1 (Port Development and Environmental Enhancement), two alternatives were carried forward for analysis, Alternative 2, Envi-

ronmental Enhancement and Ocean Disposal, and Alternative 3, the No Action Alternative. The Proposed Action alternatives are practicable in light of cost, logistics, and available technology.

Port Development and Environmental Enhancement – this alternative was developed to maximize the beneficial reuse of dredged material through the confinement of contaminated sediment and environmental enhancement within the Port. Alternative 1 would use approximately 0.496 mcy of dredged material to create new land at the Northwest Slip and to create a Confined Disposal Facility (CDF) at Berths 243-245 that would be used to isolate contaminated sediment. In addition, approximately 1.700 mcy of dredged material would be used to expand the Cabrillo Shallow Water Habitat (CSWH) by 50 acres, which would provide additional shallow water habitat for numerous species. The remaining dredged material, approximately 0.804 mcy, would be placed at the LA-2 ocean disposal site.

The creation of new land at the Northwest Slip would allow realignment of the wharf roadway as part of the Berths 136-147 Container Terminal Project. Roadway realignment would facilitate safer and more efficient truck and equipment movement at this location. Under Alternative 1, a narrow strip of degraded salt marsh would be removed to create new land at the Northwest Slip.. The existing salt marsh has limited physical and biological function due to its isolated location, its small size, and the degraded quality of the habitat and surrounding area. To compensate for unavoidable impacts, prior to construction the existing 0.042 acre pickleweed area would be transplanted to suitable habitat either within or near the Port in compliance with 33 C.F.R. Part 332. Creation of the CDF at Berths 243-245 would isolate existing contaminated sediment and prevent the reintroduction of contaminants into the aquatic ecosystem. Please see above, under biological availability of possible contaminants in dredged or fill material, for further discussion concerning the existing contaminants within Berths 243-245 and the potential for those contaminants to be reintroduced into the aquatic ecosystem. Expansion of the CSWH would provide approximately 50 acres of new shallow water habitat for numerous species. Under Alternative 1, to compensate for the permanent loss of 12.4 acres of open water at Berth 243-245 and the Northwest Slip, mitigation credits would be utilized from the Bolsa Chica Mitigation Bank.

Disposal of approximately 0.804 mcy of sediment at the ocean disposal site LA-2 would cause temporary impacts to water

quality and benthic organisms. Under Alternative 1, no ocean disposal would occur at ocean disposal site LA-3, and therefore, impacts to water quality and benthic organisms at that site would be avoided.

Contaminated sediment would not be disposed at the ARSSS under Alternative 1. By isolating the contaminated sediment in the CDF rather than storing it at the ARSSS, any potential for reintroduction of those contaminates into the aquatic ecosystem is negated.

~~Alternative 1 maximizes the beneficial reuse of dredged material, enhances the aquatic environment at the Port through creation of new shallow water habitat, isolates contaminated sediment thereby protecting the aquatic ecosystem, improves safety and efficiency through expansion of the Northwest Slip, and minimizes impacts associated with ocean disposal of dredged material.~~

Environmental Enhancement and Ocean Disposal – this alternative was developed with a focus on environmental enhancement related uses of the remaining material; it does not include any disposal sites associated with port development (new landfills). Alternative 2 includes the 50-acre CSWH expansion and ocean disposal of approximately 1.220 mcy at LA-2 and LA-3 (see above for details). Alternative 2 would also involve disposal of approximately 0.080 mcy of contaminated material at the upland ARSSS**.** Although placement of contaminated sediment at the ARSSS would be consistent with water quality regulations and currently approved operations, poor management practices or accidental releases could lead to the re-introduction of contaminants into the aquatic ecosystem. This alternative would create no new land and would result in a greater volume of sediments disposed at ocean disposal sites than Alternative 1. This additional volume of sediment (approximately 0.416 mcy) that would be disposed at ocean disposal site LA-3 would create temporary impacts to water quality and benthic organisms at that site that would not occur under Alternative 1.

Alternative 2 would not result in the creation of any new land at the POLA and therefore would result in the loss of 12.4 fewer acres of essential fish habitat when compared to Alternative 1 and would also have reduced temporary impacts to plankton, fish, and marine birds within the POLA as a result of temporary noise, turbidity and vibration from construction operations. Also, the narrow strip of degraded salt marsh area (0.042 acre) at the North-

west Slip would be avoided. The existing contaminated sediment located at Berths 243-245 would not be confined; therefore, the potential would remain for contaminants to re-enter the aquatic environment and degrade water quality and damage the aquatic ecosystem. Additionally, safety and efficiency at the Northwest Slip would not be improved under this alternative and a larger volume of dredge material would be sent to ocean disposal and not beneficially reused.

No Action Alternative – Under the No Action Alternative, since all approved disposal sites have been completed, no further dredging would take place and the Channel Deepening Project would not be completed. Approximately 1.025 mcy of material within the federally-authorized channel and 0.675 mcy of berth dredging would remain to be dredged and disposed. In addition the 0.815 mcy of surcharge on Southwest Slip Area would remain to be removed and disposed. The total volume requiring removal is estimated at 2.515 mcy (in-situ). Additionally, the 0.06 mcy of contaminated dredge material would remain within the Main Channel of the Port.

Implementation of this Alternative would result in no permanent losses of fish habitat and no temporary impacts as a result of construction. However, this alternative does not meet the overall project purpose of the Channel Deepening Project. Under this alternative, the primary goal of the approved Channel Deepening Project, to allow the latest generation of container vessels to access POLA terminals, would be limited to the terminal at Berths 100 and 144. Vessels would be restricted by the 45-foot depth available at all other berths and the un-dredged portion of the East Basin Channel and Cerritos Channel. The existing channel depth of -45 feet MLLW would result in continued restrictions on use of the new generation of container vessels.

A portion of the land created at the Southwest Slip would also not be able to be developed due to the remaining surcharge present there. This would preclude the potential use of this area for additional port capacity for container throughput as described in the December 2000 SEIS/SEIR and the July 2002 Supplemental Environmental Assessment.

The opportunities for beneficial use of dredged material identified would be deferred until such time that other sources of material could be made available. At this time there are no other known sources of material.

Conclusion: ~~The preliminary screening process described above has yielded one viable preliminary action alternative: Port Development and Environmental Enhancement. This alternative most effectively meets the project objectives while minimizing project impacts~~ Evaluation of the Proposed Action Alternatives in light of the overall project purpose (to complete the Channel Deepening project by providing 3.0 mcy of additional disposal capacity for dredged material, including the beneficial use of the dredged material within the POLA) and the need to avoid or minimize ocean disposal of dredged material under 40 C.F.R Parts 227 and 228 has resulted in a preliminary conclusion that Alternative 1, Port Development and Environmental Enhancement, meets the overall project purpose as well as the requirement to minimize or avoid ocean disposal of dredged material through beneficial reuse, and is therefore considered to be the least environmentally damaging practicable alternative of the Proposed Action.

Alternative 1 provides sufficient capacity to complete the Channel Deepening Project and minimizes ocean disposal of dredged material by optimizing the beneficial reuse of dredged material through Port development (creation of a CDF at Berths 243-245 to isolate contaminated sediment and prevent its reintroduction into the marine environment) and environmental enhancement (increased biological value at the CSWH). Although creation of the CDF would result in the permanent loss of 12.4 acres of essential fish habitat (EFH), this loss represents a very small percentage of available EFH within the POLA. Additionally, the habitat that would be lost as a result of creation of the CDF exhibits relatively low physical and biological functions compared to other marine habitat within the POLA, such as the CSWH. Alternative 1 would also require compensatory mitigation for unavoidable impacts to a degraded salt marsh area through transplantation of approximately 0.042 acre of pickleweed from the Northwest Slip Disposal site to another location within the Port in compliance with requirements of the 33 C.F.R. Part 332. With the creation of the CDF under Alternative 1, contaminated sediment at Berths 243-245 and the Northwest Slip would be sequestered from the marine environment, minimizing potential long-term impacts through beneficial reuse of dredged material. In addition, Alternative 1 would minimize the overall amount of ocean disposal of dredged material associated with the Channel Deepening Project.

Alternative 2, Environmental Enhancement and Ocean Disposal, would satisfy the overall project purpose of providing additional disposal capacity for dredged material, including the beneficial use of the dredged material within the POLA through expansion of the CSWH. However, Alternative 2 would not minimize ocean disposal of dredged material because not all practicable alternatives to ocean disposal would be implemented. Beneficial use of dredged materials to create a Confined Disposal Facility at Berths 243-245 would not occur under this Alternative, which would result in a greater volume of ocean disposal of dredged material (approximately 400,000 cubic yards) than under Alternative 1. In addition, without the creation of the CDF, contaminated sediment at Berths 243-453 would remain in place, resulting in potential direct and indirect adverse effects to marine organisms. Without the proposed placement of dredged material at Northwest Slip and Berths 243-245, beneficial reuse associated with Alternative 2 would be reduced by approximately 17% when compared to Alternative 1. In addition, this alternative would substantially increase the amount of ocean disposal of dredged material when there are available practicable alternatives as defined at 40 C.F.R §227.15. Based on the above information, Alternative 2 would result in a substantial reduction in the amount of beneficial reuse of dredged material and a substantial increase in the amount of ocean disposal when compared to Alternative 1. Furthermore, Alternative 2 would allow contaminated sediment to remain in place at Berths 243-245, resulting in potential adverse impacts to the marine environment. As a result of the above environmental factors, Alternative 2 would not avoid and minimize impacts to the aquatic environment and; therefore, would not represent the least environmentally damaging practicable alternative.

The No Action Alternative would not satisfy the overall project purpose because it would not provide any additional disposal capacity for dredged material and; therefore, would not represent the least environmentally damaging practicable alternative.

b) Based on II B, 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?

NA ☐ Yes ☐ No

Discussion: The proposed action is water dependent; therefore, this section does not apply.

2) Special restrictions. Will the project:

☐ Yes	☒ No	**a)** violate state water quality standards?
☐ Yes	☒ No	**b)** violate toxic effluent standards (under Section 307 of the Act)
☐ Yes	☒ No	**c)** jeopardize endangered or threatened species or their critical habitat?
☐ Yes	☒ No	**d)** violate standards set by the Department of Commerce to protect marine sanctuaries?
☒ Yes	☐ No	**e)** evaluation of the information in II C and D 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

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

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

3) Other restrictions. Will the discharge contribute to significant degradation of "waters of the U.S." through adverse impacts to:

☐ Yes	☒ No	**a)** human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?
☐ Yes	☒ No	**b)** life states of aquatic life and other wildlife?

☐ Yes ☒ No **c)** diversity, productivity and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy

☐ Yes ☒ No **d)** recreational, aesthetic and economic values?

4) Actions to minimize potential adverse impacts (mitigation). 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?

☒ Yes ☐ No

Discussion: In order to avoid and minimize the potential adverse impacts of the discharge on the aquatic ecosystem, several steps have been incorporated into the Proposed Action, including: a contaminated sediment management plan, biological mitigation measures, implementation of construction and water quality BMPs, and development of a SWPPP.

A contaminated sediment management plan would be developed in cooperation with State and Federal agencies prior to moving and disposing of contaminated sediments. Material unsuitable for ocean disposal may be disposed of at a new 8-acre CDF at Berths 243-245, where contaminated sediments currently exist. Development of this site would include sealing all the sides of the disposal facility with clean sediment and providing a five foot cap and sand berm to contain the contaminated sediment. The design and construction of the disposal site as a CDF in accordance with U.S. EPA standards would reduce the potential for long-term water quality impacts resulting from the disposal of contaminated sediments to a less than significant level.

Several mitigation measures that have been incorporated into the Proposed Action would minimize the potential adverse impacts to the aquatic ecosystem. MM BIO-1 and MM BIO-2 would limit turbidity impacts, MM BIO-4 would compensate for unavoidable impacts to a small degraded salt marsh area by salvaging and replanting pickleweed (in compliance with 33 C.F.R. Part 332) that would otherwise be removed or covered with dredged material, and MM BIO-5 would offset the loss of marine habitat through the use of existing mitigation credits from the Bolsa Chica mitigation bank.

Also, in order to comply with existing water quality regulations and to minimize impacts to the aquatic ecosystem, construction and stormwater BMPs will be implemented, compliance with the General Construction Permit will be executed, and a SWPPP will be developed

and applied. With the inclusion of the above avoidance, minimization, and compensatory mitigation measures, the Corps has made a preliminary determination that Alternative 1 would avoid and minimize impacts to the aquatic environment to the maximum extent practicable.

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