SPECIAL PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**
LOS ANGELES DISTRICT

Corps Case No.: SPL-2008-00876-AOA
Project Manager: Aaron O. Allen, Ph.D. (805) 585-2148 Aaron.O.Allen@usace.army.mil

The U.S. Army Corps of Engineers, Los Angeles District, Regulatory Division (Corps) has executed the Record of Decision (ROD) for the Federal action associated with the following project near San Pedro, Los Angeles County, California:

Sanitation Districts of Los Angeles County's Clearwater Program

The Clearwater Program is a comprehensive planning effort undertaken by the Sanitation Districts to develop a long-range Master Facilities Plan for the Joint Outfall System, a regional wastewater management system serving approximately 4.8 million people in 73 cities and unincorporated areas in Los Angeles County. A major component of the Clearwater Program is the evaluation of alternatives for new ocean outfalls and rehabilitation of the existing ocean outfalls. Both activities require the issuance of a Department of the Army Permit.

The Corps identified Alternative 4, as described in the final environmental impact statement (FEIS) and final Clean Water Act 404(b)(1) analysis, as the least environmentally damaging practicable alternative (LEDPA) pursuant to Section 404 of the Clean Water Act. This alternative entails rehabilitation of the existing ocean outfalls without the construction of new ocean outfalls, permanently impacting 3.7 acres of waters of United States associated with the discharge of ballast rock on top of existing ocean outfalls.

The decision was based on matters discussed in the FEIS, 404(b)(1) analysis, input from the public and resource agencies, and other relevant factors. The FEIS was made available to the public on November 9, 2012 with a comment period that ended on December 10, 2012. The ROD documents only the decision of the Corps with respect to the proposed Federal action analyzed in the FEIS.

With this Special Public Notice, the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Division (Corps) announces the availability of a Record of Decision (ROD) to issue a Department of the Army permit to the Sanitation Districts of Los Angeles County (Sanitation Districts) pursuant to Clean Water Act Section 404 and Rivers and Harbors Act Section 10 for Alternative 4 associated with the Clearwater Program. The District Commander approved the ROD on July 31, 2013 and issued a provisional permit.

Document Requests/Additional Information:

Requests for a copy of the above document should be directed to:

U.S. Army Corps of Engineers, Los Angeles District
Regulatory Division, Ventura Field Office (ATTN: CESPL-RG-N-2008-00876-AOA)
2151 Alessandro Drive, Suite 110
Ventura, California 93001

For additional information please call Aaron O. Allen of my staff at 805-585-2148 or via e-mail at Aaron.O.Allen@usace.army.mil . This public notice is issued by the Chief, Regulatory Division.

Regulatory Program Goals:

- To provide strong protection of the nation's aquatic environment, including wetlands.
- To ensure the Corps provides the regulated public with fair and reasonable decisions.
- To enhance the efficiency of the Corps' administration of its regulatory program.

U.S. ARMY CORPS OF ENGINEERS – LOS ANGELES DISTRICT

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RECORD OF DECISION

As the District Engineer for the Los Angeles District, I have reviewed the Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) for the Clearwater Program (Corps File No. SPL-2008-00876-AOA). The FEIS/EIR, prepared in compliance with the Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* and U.S. Army Corps of Engineers (USACE or Corps) regulations at 33 C.F.R. Parts 320-332, assesses the direct, indirect and cumulative impacts of implementing the proposed Project on the biological, physical, and socioeconomic environment. The FEIS/EIR is hereby incorporated by reference. The Corps will proceed as indicated herein.

I. Background

a. Sanitation Districts of Los Angeles County

The Sanitation Districts of Los Angeles County (Sanitation Districts) comprise 23 independent districts responsible for the wastewater and solid waste management needs of 78 cities and unincorporated territory in Los Angeles County. The Sanitation Districts serve approximately 5 million customers within their approximately 820 square mile service area. Infrastructure maintained and operated by the Sanitation Districts include approximately 1,400 miles of main trunk sewers, 50 pumping plants, and 11 wastewater treatment plants which collectively convey and treat about half the wastewater in Los Angeles County.

Seventeen of the districts in the metropolitan Los Angeles area are served by a regional, interconnected system of facilities known as the Joint Outfall System (JOS). The JOS employs two main types of treatment plants. Upstream water reclamation plants (WRPs) located throughout the Sanitation Districts' service area capture higher quality wastewater and convert it into recycled water. Downstream, in the city of Carson, the Joint Water Pollution Control Plant (JWPCP) treats wastewater with a higher industrial contribution and solids. The JWPCP discharges its treated water to the ocean through its 72-, 90-, and the 120-inch existing ocean outfalls located seaward of Royal Palms Beach, on the Palos Verdes Peninsula in San Pedro, Los Angeles County, California.

b. Clearwater Program and Project

The Clearwater Program encompasses both programmatic and project elements. It is a comprehensive planning effort to develop a long-range Master Facilities Plan (MFP) for the JOS. The MFP includes an evaluation of infrastructure needs and will serve to guide the management and development of the JOS through the year 2050. The programmatic elements of the MFP include expansion, process optimization, and management of existing Sanitation Districts facilities. The programmatic elements affect existing facilities located outside of waters of the United States. Therefore, the programmatic elements of the MFP are not subject to

the Corps permitting authority under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Likewise, these elements are not within the Corps' National Environmental Policy Act (NEPA) scope of analysis. See Section 3.5 of the Final EIS/Environmental Impact Report (EIR).

The project elements of the MFP entail activities within the Pacific Ocean on the San Pedro shelf and the Palos Verdes shelf. These elements are within the Corps' NEPA scope of analysis. See Section 3.5 of the Final EIS/EIR. In general, the project elements entail:

i. **New Ocean Discharge System:** Construction of a new tunnel and ocean outfall between the JWPCP in the city of Carson and a new discharge location on either the San Pedro or Palos Verdes shelves.
ii. **Modified Ocean Discharge System:** Rehabilitation of the existing ocean outfalls and construction of a new tunnel between the JWPCP in the city of Carson and the existing ocean outfalls on the Palos Verdes shelf, off Whites Point.

c. Proposed Project

A complete application for a DA permit for the proposed action was received on 10 January 2012 to rehabilitate the existing ocean outfalls. Rehabilitation activities, such as joint repairs, re-ballasting and cathodic protection, would occur on the existing 72-, 90- and 120-inch outfalls in water depths of approximately 20 to 50 feet. Joint repairs would require a localized and temporary removal of small amounts of sediment and ballast rock. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. Joint repairs (an estimated 10 to 40 total) would involve temporarily removing some of the existing ballast rock from around the outfall to fully expose the joint being repaired. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment. A coupling would be installed and the annular space filled with concrete. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. Cathodic protection would be also restored or added to the existing outfalls where necessary.

d. Public Involvement

The Corps and the Sanitation Districts prepared a joint EIS/EIR pursuant to the NEPA and California Environmental Quality Act (CEQA). The EIS/EIR evaluated and disclosed the direct, indirect, and cumulative environmental impacts anticipated from the proposed Project and alternatives. A Notice of Intent to prepare an EIS/EIR was published in the Federal Register on 6 October 2008, and a joint Corps-Sanitation Districts scoping meeting was held on 6 November 2008 in San Pedro, California. A Notice of Availability for the Draft EIS/EIR was published on 13 February 2012. A special public notice soliciting comments on the permit

application, and the Draft EIS/EIR was broadcasted on the same day. The draft document was made available for a 57-day review period ending on 10 April 2012. A joint public hearing to receive public comments on the Draft EIS/EIR was held on 8 March 2012, in San Pedro, California. The Corps and the Sanitation Districts reviewed and provided responses to 19 agency comments and 33 public comments in preparing the Final EIS/EIR. The Notice of Availability for the Final EIS/EIR was published by the Corps and the U.S. Environmental Protection Agency (USEPA) on 9 November 2012. Comments were received until 10 December 2012. The USEPA submitted a formal comment on the Final EIS/EIR on 10 December 2012. A copy of the USEPA letter and the Corps' response is provided in Appendix B to this Record of Decision (ROD) The Sanitation Districts certified the Final EIR on 28 November 2012.

II. Project Purpose and Need

a. Purpose: The purpose is to either rehabilitate the existing ocean discharge system and/or construct a new ocean discharge system to provide sufficient capacity in the JOS to accommodate the estimated 2050 peak wastewater flows, and to comply with all applicable water quality standards, including regulations prohibiting sewer overflows.

b. Need: The Sanitation Districts are public utilities that currently serve 5 million people in 78 cities and unincorporated territory in Los Angeles County. The Southern California Association of Governments population forecasts indicate the JOS service area population will increase to approximately 6.3 million by 2050. The population increase would result in an average wastewater flow of about 612 million gallons per day (MGD) in the Sanitation District's service area. Based on these projections, the JOS system would experience a treatment capacity shortfall of approximately 20 MGD by 2050. Furthermore, in January 1995, the JOS service area was inundated by two major back-to-back storm events. The resulting peak wastewater flows in the sewerage system from this storm event nearly exceeded the capacity of the JWPCP ocean discharge system. If the existing tunnels were to be damaged or the capacity of the ocean discharge system exceeded, treated JWPCP effluent would need to be bypassed into the Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses, such as the Dominguez Channel and the Los Angeles River.

Currently, the Sanitation Districts rely on two onshore tunnels and three offshore ocean outfall structures to convey effluent from the JWPCP in the city of Carson to the Pacific Ocean. The two onshore tunnels were constructed in 1937 and 1958 and have not been inspected for over 50 years. Inspection of the tunnels is not possible due to their overall

length, limited access, intermediate connections between the tunnels, and continuous flow through the tunnels.

Thus, there is a need to inspect and upgrade the aging ocean discharge system, to provide sufficient capacity in the JOS to accommodate the estimated 2050 peak wastewater flows, and to comply with all applicable water quality standards, including regulations prohibiting sewer overflows.

III. Decision

It is my decision to issue a Department of the Army permit authorizing work and structures in navigable waters of the United States under section 10 of the Rivers and Harbors Act and discharges of dredged material in waters of the United States under section 404 of the Clean Water Act associated with the proposed Project.

IV. Alternatives Considered

A number of options were evaluated for different elements of the project:

- 22 options for the onshore tunnel alignments
- 2 options viable options were identified for the JWPCP shaft site
- 3 options for intermediate shaft sites
- 3 options for the diffuser area.
- 12 options for the offshore alignment, including tunnels and seafloor pipelines

The matrix of options were evaluated according to screening process detailed in Appendix A of the EIS/EIR. The options deemed to be viable were further developed into four project alternatives for the construction of onshore effluent tunnels and ocean outfalls as well as rehabilitation of the existing ocean outfalls (see Section 3.3.2 of the Final EIS/EIR). Alternatives 1 through 3 are composed of two basic elements with respect to work in the marine environment: construction of new ocean outfalls and rehabilitation of the existing ocean outfalls. Alternative 4 is limited to the rehabilitation of the existing outfalls. The EIS/EIR also evaluated a No Project Alternative (Alternative 5) and a No Federal Action Alternative (Alternative 6) in accordance with CEQA and NEPA requirements, respectively.

a. Elements of Alternatives 1 through 3 located within the marine environment.

i. **Construction of New Ocean Outfalls:** Alternatives 1 through 3 include construction of an offshore tunnel and the placement of a riser/diffuser outfall structure constructed of either steel, reinforced concrete pipe (RCP) or high density polyethylene (HDPE) on the ocean floor. Both the riser and diffuser assembly would be pre-fabricated onshore prior to ocean construction.

If the diffuser were constructed of steel or RCP, it would consist of two 4,000-foot-long legs oriented out of the riser head. The diameter (internal) of the

steel or RCP diffuser would incrementally decrease in size ranging from approximately 132 inches to 48 inches. Diffuser installation would require seafloor grading and possibly trenching for site preparation. It may be necessary to construct a ballast rock base up to 54 feet wide and 5 feet deep. The diffuser would be placed on this base with additional ballast rock added around the pipe for stability. The riser and diffuser would cover a seafloor area of approximately 5 to 10 acres, depending on depth. Estimated quantities of required ballast rock are 30,000 to 95,000 cubic yards.

If the diffuser were constructed of HDPE, no trenching would be required. The HDPE would be placed directly on the seafloor, which may require some minor grading and would require a limited amount of ballast rock to protect the piping and riser. The HDPE design would consist of a manifold with eight diffuser legs configured in a sequentially staggered array from shortest to longest. The pipe diameter (external) would range in size from approximately 63 inches to 42 inches. The riser, manifold, and diffuser would cover a seafloor area of approximately 8 acres. Approximately 1,500 pre-installed concrete anchor blocks would be attached to HDPE piping to provide ballast during the sinking and installation process as well as to provide stability against ocean currents and wave-induced hydrodynamic loading. Estimated quantities of required ballast rock are 7,000 to 20,000 cubic yards.

To prepare the site for riser installation, unconsolidated seafloor material would either be sidecast or removed and disposed. Hydro-jetting or pile-driving would be used to install the riser casing. The majority of the riser and diffuser construction work would be based on one 10-hour shift per day, 5-day-per-week schedule. However, when the pre fabricated riser assembly is transported to the installation site, construction work would take place on a continuous 24-hour-per-day basis for approximately 1 week. All work, including mobilization, pre-assembly, site preparation, construction, and demobilization, would take approximately 24 months for the riser and approximately 6 to 12 months for the diffuser.

There are two proposed riser and diffuser locations. The San Pedro (SP) Shelf riser and diffuser assembly site (associated with Alternative 1) would be located approximately 7.5 miles from the Port of Los Angeles (POLA) breakwater. The riser assembly would be located at a depth of approximately 200 feet of water and would extend approximately 110 feet below the seafloor to meet the tunnel. The SP Shelf riser and diffuser area is located on a relatively flat area of the upper slope along the southwest edge of the SP Shelf.

Construction activities for diffuser placement on the SP Shelf would include grading the seafloor and placing ballast rocks. Sediment would be sidecast or brought to the surface for disposal.

The Palos Verdes (PV) Shelf riser and diffuser assembly site (associated with Alternatives 2 and 3) would be located approximately 2 miles from Point Fermin. The riser assembly would be located at a depth of approximately 175 feet of water and would extend approximately 145 feet below the seafloor to meet the tunnel. The PV Shelf riser and diffuser area is within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area.

Consistent with the requirements of Section 103 of the Marine Protection, Research , and Sanctuaries Act, dredged material determined to be suitable for ocean disposal could be potentially disposed at an Ocean Dredged Material Disposal Site (ODMDS). LA-2 and LA-3 are the two ODMDSs in the vicinity of the project. LA-2 is located approximately 4 miles from the PV Shelf site, 3 miles from the SP Shelf site, and 9 miles from the Port of Los Angeles. LA-3 is located approximately 26 miles from the PV Shelf site, 21 miles from the SP Shelf site, and 26 miles from the Port of Los Angeles. Dredged material deemed unsuitable for ocean disposal would be disposed at inland facilities in accordance with all applicable regulations. Estimated quantities of dredged material are 5,000,000 to 30,000,000 cubic yards for the offshore tunnel, 40,000 to 45,000 cubic yards for the riser, and 10,000 to 50,000 cubic yards for the diffuser.

ii. **Rehabilitation of Existing Ocean Outfalls:** Alternatives 1 through 4 include rehabilitation of the existing ocean outfalls. The rehabilitation activities, such as joint repairs, re-ballasting and cathodic protection, would occur on the existing 72-, 90- and 120-inch outfalls in water depths of approximately 20 to 50 feet. Mechanical dredging or removal/disposal of large quantities of sediment would not be required. Joint repairs would require a localized and temporary removal of small amounts of sediment and ballast rock. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. A tube extending from the barge deck to the ocean floor would ensure that placement of ballast rock would not extend beyond the existing footprint. Joint repairs (an estimated 10 to 40 total) would involve temporarily removing some of the existing ballast rock from around the outfall to fully expose the joint being repaired. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment. A coupling would be installed and the annular space filled with concrete. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. Cathodic protection would be also restored or added to the existing outfalls where necessary. The majority of the construction work would be based on one 10-hour shift per day, 5 days per week. Approximately eight to ten construction workers would be needed for the rehabilitation work. Joint repairs and transport of construction workers would require a work vessel and crew deploying from POLA and operating one daily round-trip for approximately 1 month. All

work (including mobilization, construction, and demobilization) would take approximately 9 months.

b. Summary Descriptions of Alternatives 1 through 4. See Section 3.3.2 of the Final EIS/EIR for additional details.

i. Alternative 1: Alternative 1 would include a 4.2-mile-long onshore Carson-to-Wilmington tunnel and a 12.4-mile-long offshore Wilmington-to-SP Shelf tunnel. The 18-foot diameter (internal) underground tunnel would begin at the JWPCP in the city of Carson and run beneath Wilmington Boulevard to POLA. From POLA, the tunnel would be extended offshore beneath the ocean floor at a depth of 200 feet, terminating at a new riser structure with 8,000-foot-long ocean outfall on the SP shelf. The alignment would include one working shaft at the JWPCP as well as one working shaft and two access shafts at POLA. Alternative 1 would include dredging in the vicinity of the new ocean outfall structure, transportation of dredged material for disposal, and rehabilitation of the existing ocean outfalls.

ii. Alternative 2: Alternative 2 would include a 2-mile-long onshore Carson-to-Wilmington effluent tunnel (which is identical to Alternative 1) and a 7.2-mile-long offshore Wilmington-to-PV Shelf tunnel. The 18-foot-diameter (internal) underground tunnel would begin at the JWPCP and run beneath Wilmington Boulevard to POLA, from which the tunnel would be extended offshore beneath the ocean floor at a depth of 175 feet, terminating at a new riser structure and 8,000-foot-long ocean outfall on the PV shelf. The alignment would include one working shaft at the JWPCP as well as one working shaft and two access shafts at POLA. Alternative 2 would include dredging in the vicinity of the new ocean outfall structure, transportation of dredged material for disposal, and rehabilitation of the existing ocean outfalls.

iii. Alternative 3: Alternative 3 would include a 6.4-mile-long onshore Carson-to-San Pedro effluent tunnel and a 2-mile-long offshore San Pedro to PV Shelf tunnel. The 18-foot diameter (internal) underground tunnel would begin at the JWPCP and run beneath Figueroa Street and South Gaffey Street to Angels Gate Park. From Angels Gate Park, the tunnel would be extended offshore beneath the ocean floor at a depth of 175 feet, terminating at a new riser structure and 8,000-foot-long ocean outfall on the PV Shelf. The alignment would include one working shaft at the JWPCP and one access shaft at Angels Gate Park. Alternative 3 would include dredging in the vicinity of the new ocean outfall structure, transportation of dredged material for disposal, and rehabilitation of the existing ocean outfalls.

iv. Alternative 4 (proposed Project): Alternative 4 is the proposed project. Alternative 4 would include a 6.9-mile-long onshore Carson-to-Royal Palms tunnel; however, no new offshore tunnel, riser structure, or ocean outfall would be required. The underground tunnel would begin at the JWPCP and

run beneath Figueroa Street, Harbor Regional Park, North Gaffey Street, Capitol Drive, and Western Avenue (through Dodson Avenue) to Royal Palms Beach where the tunnel would connect to the existing ocean outfalls at the existing manifold structure. The alignment would include one working shaft at the JWPCP and one exit shaft at Royal Palms Beach. Alternative 4 would include rehabilitation of the existing ocean outfalls.

v. **Alternative 5 (No Project Alternative):** Under the No-Project Alternative, the Sanitation Districts would not construct new onshore and offshore tunnels and ocean outfalls or inspect rehabilitate the existing onshore and offshore tunnel and outfalls. Furthermore, the Sanitation Districts would not construct project elements outside the NEPA scope of analysis such as expansion and modification of inland facilities that are required to accommodate the peak wet weather flow of 927 MGD projected for year 2050. The Sanitation Districts would continue to use the existing ocean discharge system, which could result in emergency discharges and/or sewer overflows to various water courses such as the Wilmington Drain, Dominguez Channel, and the Los Angeles River.

vi. **Alternative 6 (No Federal Action Alternative)**: Pursuant to NEPA, an EIS must evaluate a No Federal Action Alternative. The No Federal Action Alternative for the Clearwater Program consists of activities that the Sanitation Districts would perform without issuance of a DA permit, which is required for construction of both the offshore tunnel and the riser/diffuser, rehabilitation of the existing ocean outfalls, and ocean disposal of dredged material. Without a DA permit to work on the aforementioned facilities, the Sanitation Districts would not construct the onshore tunnel and shaft sites and would not rehabilitate the existing ocean outfalls. None of the project elements described would be constructed under the No Federal Action Alternative. The Sanitation Districts would continue to use the existing ocean discharge system.

V. Evaluation of Alternatives

The direct and indirect impacts associated with the proposed Project and the other alternatives are included in the Final EIS/EIR. The evaluation of alternatives assessed under NEPA and the Section 404(b)(1) Guidelines is summarized below.

a. **Alternatives 1 through 3:** Alternatives 1 through 3 would entail construction of new ocean outfalls and rehabilitation of the existing ocean outfalls. Accordingly, all three alternatives would meet the project purpose and need. Specifically, all three alternatives would ensure that the ocean discharge system would reliably accommodate the peak wet weather flow of 927 MGD projected for year 2050.

   Alternatives 1 through 3 would entail significant impacts to aesthetics, air quality, and paleontological resources. Alternatives 1 through 3 would entail permanent discharge

of fill into 5 to 10 acres of waters of the United States. Approximately 30,000 to 95,000 cubic yards of rock ballast would be required for a steel or RCP diffuser structure. Approximately 7,000 to 20,000 cubic yards of rock ballast would be required for a HDPE diffuser structure, which would also require the discharge of approximately 1,500 concrete anchor blocks. Estimated quantities of dredged material are 5,000,000 to 30,000,000 cubic yards for the offshore tunnel, 40,000 to 45,000 cubic yards for the riser, and 10,000 to 50,000 cubic yards for the diffuser. Approximately 15,000 to 18,000 cubic yards of rock ballast would be discharged for the rehabilitation of the existing ocean outfalls. Alternatives 1 through 3 would entail greater impact to substrate, water quality, contaminant, and benthic organisms when compared to Alternative 4.

b. Alternative 4 (proposed Project): Alternative 4 would entail rehabilitation of the existing ocean outfalls as well as construction of a new onshore tunnel. Accordingly, it would meet the project purpose and need. Specifically, it would ensure that the ocean discharge system would reliably accommodate the peak wet weather flow of 927 MGD projected for year 2050.

Alternative 4 would entail less environmental impacts to marine and onshore environmental resources when compared to Alternatives 1 through 3. Onshore tunneling activities would still entail significant impacts to aesthetics, air quality, and paleontological resources. However, the impacts would be relatively less since Alternative 4 does not require tunneling offshore. Alternative 4 would restrict the discharge of fill to the footprint of the existing ocean outfalls. Approximately 15,000 to 18,000 cubic yards of rock ballast would be discharged. Alternative 4 would not entail large-scale, mechanized sediment disturbing activities such as dredging, hydro-jetting, grading, and pile driving.

c. Alternative 5 (No Project Alternative): Under the No-Project Alternative, the Sanitation Districts would not construct new onshore and offshore tunnels and ocean outfalls or inspect rehabilitate the existing onshore and offshore tunnel and outfalls. Furthermore, the Sanitation Districts would not construct project and programmatic elements outside the NEPA scope of analysis such as expansion and modification of inland facilities that are required to accommodate the peak wet weather flow of 927 MGD projected for year 2050 associated with the increase in population from 5 to 6.3 million by 2050.

Based on the above, the No Project Alternative would not meet the project purpose since the existing ocean discharge system would be insufficient to convey future projected storm flows. Additionally, if the tunnels were to become inoperable or partially obstructed (e.g., due to earthquake damage), flows would need to be discharged into Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses, such as the Dominguez Channel and the Los Angeles River. Thus, there would be periodic impacts to surface water quality.

d. Alternative 6 (No Federal Action): Alternative 6 would not entail construction of new ocean outfalls or rehabilitation of the existing ocean outfalls. None of the project elements described would be constructed under the No Federal Action Alternative. There would be no construction-related impacts. The Sanitation Districts would continue to use the existing ocean discharge system. However, the service population is expected to increase from 5,000,000 to 6.3 million by 2050 resulting in the need to accommodate a peak wet weather flow of 927 MGD projected for year 2050.

Based on the above, the No Federal Action Alternative would not meet the project purpose since the existing ocean discharge system would be insufficient to convey future projected storm flows. Additionally, if the tunnels were to become inoperable or partially obstructed (e.g., due to earthquake damage), flows would need to be discharged into Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses, such as the Dominguez Channel and the Los Angeles River. Thus, there would be periodic impacts to surface water quality.

VI. Identification of the Environmentally Preferable Alternative

The Environmentally Preferable Alternative is that alternative that would most closely fulfill the national environmental policy found in Section 101 of NEPA. Essentially, it is the alternative that would cause the least damage to the biological and physical environment; it also means the alternative that would best protect, preserve, and enhance historic, cultural, and natural resources.

Under the No Project Alternative, the Sanitation Districts would not construct new onshore and offshore tunnels and ocean outfalls or inspect rehabilitate the existing onshore and offshore tunnel and outfalls. Furthermore, the Sanitation Districts would not construct project and programmatic elements outside the NEPA scope of analysis such as expansion and modification of inland facilities that are required to accommodate the peak wet weather flow of 927 MGD projected for year 2050 associated with the increase in population from 5 to 6.3 million by 2050. Therefore, the No Project Alternative would eliminate all construction related impacts.

Under the No Federal Action Alternative, project and programmatic elements outside the NEPA scope of analysis such as expansion and modification of inland facilities would be constructed. The No Federal Action Alternative would not result in the construction of new ocean outfalls or rehabilitation of the existing ocean outfalls. Therefore, there would a minor increase in construction impacts when compared to the No Project Alternative.

Under the No Project and No Federal Action Alternatives, the Sanitation Districts would continue to use the existing ocean discharge system. There would be periodic impacts to surface water quality when large storm flows that exceed conveyance and treatment capacity of the JOS require the Sanitation Districts to discharge untreated wastewater into local waterways. Such discharges would adversely impact surface water quality on a periodic

basis. The discharges would increase in frequency as the increasing effluent load projected through 2050 decreases the capacity of the JOS to sufficiently accommodate storm flows.

Under the proposed project, the Sanitation Districts would rehabilitate the existing ocean outfalls and construct a new onshore tunnel. There would be significant impacts to air quality and paleontological resources associated with construction of the onshore tunnel. There would be temporary but significant impacts to aesthetics associated with the tunnel access shafts. The new onshore tunnel and the rehabilitated ocean outfalls would result in sufficient capacity to accommodate peak wet weather flow of 927 MGD projected for year 2050. The need to discharge untreated effluent into local waterways would not be wholly eliminated but would be substantially minimized when compared to the No Project and No Federal Action alternatives.

Absent any consideration of the ability of alternatives to achieve the purpose of the proposed project, I find the No Project Alternative (Alternative 5) to be the Environmentally Preferable Alternative since there would be no construction-related impacts.

Selection of the proposed project over the No Project Alternative (Alternative 5) is based on the ability to achieve the project purpose of ensuring that the ocean discharge system would reliably accommodate the peak wet weather flow of 927 MGD projected for year 2050. While the No Project Alternative would be less environmentally damaging to both aquatic and upland resources since no construction activities would occur, the project purpose would not be met. In contrast, the proposed project would be able to meet the peak wet weather flow of 927 MGD projected for year 2050. For a more detailed analysis of the project-specific and cumulative impacts associated with the above alternatives, refer to Chapters 3, 21 and 22, of the EIS/EIR.

VII. Measures to Avoid and Minimize Harm

Mitigation measures to avoid and minimize impacts to the environment are summarized in the Executive Summary (pages 34-48) of the Final EIS/EIR. It is recognized that the Sanitation Districts, as the local agency with continuing responsibility over the entire project throughout its useful life, will implement, maintain, and monitor the full suite of mitigation measures identified in the Final EIS/EIR. Mitigation measures the Corps has determined enforceable and subject to our continuing program responsibility are included in this ROD as part of Section VIII(b).

VIII. Determinations and Findings

a. Status of Other Authorizations and Legal Requirements:

(1) Section 401 of the Clean Water Act (CWA): Before proffering a DA permit for the proposed Project, the Sanitation Districts will need to obtain and submit to the Corps a Section 401 Water Quality Certification (WQC) from the Los Angeles Regional Water Quality Control Board. Pursuant to 33 U.S.C. 1341(d), special conditions of the Section 401 WQC will become special conditions of the DA permit.

(2) Endangered Species Act of 1973: Upland areas within the Corps' federal control and responsibility consist of relatively dense urban sections of San Pedro that do not support any threatened or endangered species or any designated critical habitat. The rehabilitation portion of the proposed project is located on the Palos Verdes Peninsula, which is one of only two areas within Santa Monica Bay that contain intertidal and subtidal rocky substrate suitable for supporting the Federally-endangered black abalone (*Haliotis cracherodii*). Currently, the number of adult black abalone that may persist along the Palos Verdes Peninsula is extremely low. There is no evidence that this area supports recruitment, and it is suspected that if a few animals do persist in the Peninsula, they do not constitute a viable, self-sustaining population.

In general, rehabilitation of the existing ocean outfalls would be located adjacent to the designated critical habitat which extends from the shoreline demarcated by the mean higher high water mark to -9.8 feet mean lower low water (MLLW). The proposed rehabilitation work would be located between -20 feet MLLW to -50 feet MLLW, outside of the seaward boundary of the designated critical habitat. See Chapter 13, Section 13.2.1.5 of the Final EIS/EIR for additional information on the black abalone.

The rehabilitation activities could result in localized turbidity within the immediate vicinity of construction activities. Suspended sediment could clog gills. Placement of ballast and other forms of sediment disturbance could also bury individuals. The Corps has determined that the proposed work may affect but is not likely to adversely affect black abalone potentially located within the project footprint. Therefore, pursuant to Section 7 of the Endangered Species Act the Corps requested the National Marine Fisheries Service's (NMFS) written concurrence with the determination in a letter dated 5 May 25, 2012. Although NMFS agreed that there was relatively low likelihood for any black abalone to be present in the project area, to ensure no adverse affect they agreed that a pre-project survey and transplant plan for black abalone should be required. On 6 July 6, 2012, the NMFS provided written concurrence with the "may affect but is not likely to adversely affect" determination. Therefore, formal consultation with the NMFS is not required. In the event that black abalone are present during the pre-project survey, no black abalone would be transplanted until the Corps has completed consultation pursuant to section 7 of the Endangered Species Act and has issued a notice to proceed to the Permittee authorizing initiation of transplant activities. Measures required by the National Marine Fisheries Service as a result of consultation will be incorporated by reference in the Notice to Proceed and will become conditions of this permit.

(3) Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA): The proposed project is located in waters designated as essential fish habitat (EFH) for two Fishery Management Plans (FMPs): the Coastal Pelagics FMP (6 species), and the Pacific Ground fish FMP (89 species). Specific habitat

areas of particular concern for groundfishes include estuaries, canopy kelp, seagrass, rocky reefs, and other specific areas (such as seamounts). Rocky intertidal substrate and kelp are present within or adjacent to the project area. No eelgrass are present in the project area. See Chapter 13, Appendix 13-C, and Section 13.2.2 of the Final EIS/EIR for additional information on EFH.

In general, the placement of ballast would benefit EFH elements by increasing the surface area of rocky substrate. However, during construction, there would be temporary impacts to marine invertebrates from the temporary suspension of sediments and the placement of ballast. The impact would be temporary given the relative abundance, rapid colonization rates, and movement of at least some individuals of these species. Based on temporary construction impacts to EFH, the Corps concluded that the proposed Project would adversely affect EFH. The Corps' 13 February 2012 public notice announcing the availability of the Draft EIS/EIR initiated EFH consultation with the NMFS. In a 25 May 2012 letter to the NMFS, the Corps provided an EFH Assessment (Appendix 13-C of the EIS/EIR) and excerpts from the EIS/EIR concerning general information on EFH. In an email sent on 21 June 2012 from Mr. Adam Obaza of NMFS to Dr. Aaron Allen of the Corps, NMFS indicated that the implementation of mitigation measures identified in the Draft EIS was sufficient. NMFS did not offer additional EFH Conservation Recommendations. Accordingly, the Corps is in compliance with the MSFCMA.

(4) Section 106 of the National Historic Preservation Act (NHPA): Based on the cultural resources information in Chapter 7 and Appendix 7-A, the Corps determined the proposed Project would not affect historic properties within the Area of Potential Effects. In a letter dated 26 April 2012, the Corps requested a written concurrence from the State Historic Preservation Officer (SHPO) with the above determination within 30 days. No written concurrence was received and the Corps assumed SHPO concurrence. Furthermore, the cultural information was coordinated with the Native American Heritage Commission (NAHC) and the relevant Native American tribal representatives indicated by the NAHC. As required at 36 CFR 800.4, if the agency official finds that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in § 800.16(i), the agency official shall provide documentation of this finding, as set forth in § 800.11(d), to the SHPO/THPO. The agency official shall notify all consulting parties, including Indian tribes and Native Hawaiian organizations, and make the documentation available for public inspection prior to approving the undertaking. Information regarding our determination was forwarded to native American representatives as well as SHPO and we did not receive any comments within the 30 day review period. As stated at 36 CFR 800.4, if the SHPO/THPO, or the Council if it has entered the section 106 process, does not object within 30 days of receipt of an adequately documented finding, the agency official's responsibilities under section 106 are fulfilled. As such, the Corps is in compliance with section 106 of the NHPA.

(5) Section 176(C) of the Clean Air Act (CAA) General Conformity Rule Review: The proposed Project entails construction of a 6.9-mile-long onshore tunnel from the JWPCP in the city of Carson to Royal Palms Beach in Palos Verdes and rehabilitation of the existing ocean outfalls. In general, Section 176(c) requires evaluation of direct and indirect emissions defined at 40 CFR 93.152. Furthermore, the Corps' Memorandum for the Implementation of the General Conformity Rule for Corps Civil Works Projects and Regulatory Permits, dated April 20, 1994, instructs the Corps to evaluate emissions resulting from the part, portion, or phase of the non-Federal undertaking that is permitted. Furthermore, the Memorandum indicates that the Corps will always use a narrow "scope of analysis" in applying requirements of Section 176(c), even if a broader scope of analysis is used for NEPA.

Based on the guidance, the Corps determined that although construction of the 6.9-mile-long onshore tunnel is within the Corps' NEPA scope of analysis, this element is not subject to the Corps' permitting authorities. Thus, the Corps evaluated direct and indirect emissions associated with rehabilitation of the existing ocean outfalls. Direct emissions associated with the proposed Project include emissions from marine vessels associated with the ballast rock operation. There would be no indirect emissions associated with the operation of outfall structures. The Final EIS/EIR included an analysis indicating that general conformity determination (Appendix 5-A), pursuant to Section 176(c) of the CAA was not required because direct and indirect emissions associated with project elements subject to the Corps permit were below the *de minimis* threshold. Accordingly, the Corps is in compliance with 176(c) of the CAA.

(6) Executive Order 11998, Floodplain Management: Executive Order 11988 requires federal agencies to prepare floodplain assessments for proposed actions located in or affecting floodplains. If an agency proposes to conduct an action in a floodplain, it must consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the only practicable alternative involves siting in a floodplain, the agency must minimize potential harm to or in the floodplain and explain why the action is proposed there.

The upland elements of the proposed Project entail tunneling from the city of Carson to the Palos Verdes Peninsula approximately 200 feet underneath urbanized areas. As a result, there would be no changes to surface elevations in coastal areas and no impact to any designated floodplain areas. Related activities to rehabilitate existing structures in jurisdictional waters of the United States are located underwater (at depths ranging from 20 to 50 feet) and would have no measureable impact to any designated floodplains in coastal areas.

(7) Executive Order 11990, Protection of Wetlands: Executive Order 11990 requires federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new

construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands.

The upland elements of the proposed Project entail tunneling from the city of Carson to the Palos Verdes Peninsula approximately 200 feet underneath urbanized areas. Related activities to rehabilitate existing structures in jurisdictional waters of the United States are located underwater (at depths ranging from 20 to 50 feet). As a result, the proposed Project would not result in any impacts to wetlands.

(8) Environmental Justice (Title VI of the Civil Rights Act and Executive Order 12898): The proposed action is not expected to negatively impact any community, and therefore is not expected to cause disproportionately high and adverse impacts to minority or low-income communities.

Communities adjacent to the tunnel alignment and the rehabilitation work have limited presence of minority populations. Furthermore, the per capita incomes of these communities are higher than the median per capita income for Los Angeles County, while the percentage of low-income population is lower than the percentage for Los Angeles County. Air quality impacts would be significant and unavoidable (even with mitigation). However, air quality impacts in any single location would be transitory and short-term. Emission sources would migrate as tunnel construction progresses. See Section 15.4.6 of the Final EIS/EIR. As a result, environmental impacts associated with the proposed project would not disproportionately impact minority and/or low-income populations. See Section 15.4.6 of the Final EIS/EIR.

b. **Compliance with 404(b)(1) Guidelines:** A draft 404(b)(1) evaluation was provided in Appendix 24-A of the Final EIS/EIR. The final 404(b)(1) evaluation is provided as Appendix A to this ROD. In summary, the proposed Project, as identified and evaluated in the Final EIS/EIR is the least environmentally damaging practicable alternative (LEDPA). All of the appropriate and practicable conditions set forth in the EIS/EIR to minimize pollution or adverse effects to the affected aquatic ecosystem will be required by special conditions of the SIP (see below).

In general, Alternatives 1 through 3 are composed of two basic elements with respect to work in the marine environment: construction of new ocean outfalls and rehabilitation of the existing ocean outfalls. Alternative 4 is limited to the rehabilitation of the existing outfalls. Alternatives 1 through 4 meet the overall project purpose, and are practicable with respect to cost, technology, and logistics. Furthermore, due to the onshore and offshore tunneling activities associated with all alternatives, Alternatives 1 through 4 would entail significant impacts to aesthetics, air quality, and paleontological resources.

Alternatives 1 through 3 would entail permanent discharge of fill into 5 to 10 acres of waters of the United States for the construction of a new ocean outfall. Approximately 30,000 to 95,000 cubic yards of rock ballast would be required for a

steel or RCP diffuser structure. Alternative 4 would restrict the discharge of fill to the 3.7-acre footprint of the existing ocean outfalls. Approximately 15,000 to 18,000 cubic yards of rock ballast would be discharged. Alternative 4 would not entail large-scale, mechanized sediment disturbing activities such as dredging, hydro-jetting, grading, and pile driving. Alternatives 1 through 3 would entail greater impact to substrate, water quality, contaminant, and benthic organisms when compared to Alternative 4. Based on the above information, with impacts to only 3.7 acres of waters of the United States, Alternative 4 would avoid and minimize impacts to the aquatic environment to the maximum extent practicable and, as a result, is the LEDPA. Our determination of compliance was based on the following findings:

(1) The project applicant has demonstrated that there are no available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharge into waters of the U.S.
(2) The discharge will not violate state water quality standards.
(3) The discharge will not violate toxic effluent standards.
(4) The discharge will not jeopardize endangered or threatened species or their critical habitat.
(5) The discharge will not violate standards set by the Department of Commerce to protect marine sanctuaries.
(6) The proposed discharge material will meet testing exclusion criteria because the material is not a carrier of contaminants.
(7) The discharge will not contribute to significant degradation of waters of the U.S. through adverse impacts to human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites.
(8) The discharge will not contribute to significant degradation of waters of the U.S. through adverse impacts to 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.
(9) The discharge will not contribute to significant degradation of waters of the U.S. through adverse impacts to recreational, aesthetic, and economic values.
(10) All appropriate and practicable steps (40 C.F.R. §§ 230.70-77) will be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem. Toward this end, the following special conditions are being included in the SIP being proffered for this project: See Special Conditions listed below.
(11) The discharge complies with the 404(b)(1) guidelines pursuant to 40 C.F.R. Part 230.12.

Special Conditions

The special conditions below incorporate mitigation measures from the Final EIS/EIR deemed to be applicable and enforceable for work and discharges of fill within waters of the United States. Mitigation Measure MAR 3-j is incorporated into Special Conditions 12 and 13. Mitigation Measure CUL-2 is incorporated into Special Condition 15.

1. Within 45 calendar days of completion of authorized work in jurisdictional waters, the Permittee shall submit to the Corps Regulatory Division a post-project implementation memorandum including the following information:

    A. Date(s) work within jurisdictional waters was initiated and completed;
    B. Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
    C. Color photographs (including map of photopoints) taken at the project site before and after construction for those aspects directly associated with permanent impacts to jurisdictional waters such that the extent of authorized fills can be verified;
    D. One copy of "as built" drawings for the entire project. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
    E. Signed Certification of Compliance (attached as part of this permit package).
    F. A post-project survey indicating changes to structures and other features in navigable waters. The Permittee shall forward a copy of the survey to the Corps Regulatory Division and to the National Oceanic and Atmospheric Service for chart updating: Gerald E Wheaton, NOAA, Regional Manager, West Coast and Pacific Ocean, DOD Center Monterey Bay, Room 5082, Seaside, CA 93955-6711.

2. The permitted activity shall not interfere with the right of the public to free navigation on all navigable waters of the United States as defined by 33 CFR Part 329.

3. No other modifications or work other than that permitted by this permit shall occur.

4. The Permittee shall discharge only clean construction materials suitable for use in the ocean environment. The Permittee shall ensure no debris, soil, silt, sand, sawdust, rubbish, cement or concrete washings thereof, oil or petroleum products, from construction shall be allowed to enter into or placed where it may be washed by rainfall or runoff into jurisdictional waters. Upon completion of the project authorized herein, any and all excess material or debris shall be completely removed from the work area and disposed of in an appropriate upland site.

5. The Permittee shall notify the Corps Regulatory Division of the date of commencement of operations not less than 14 calendar days prior to commencing work, and shall notify the

Corps of the date of completion of operations at least five calendar days prior to such completion.

6. To ensure navigational safety, the Permittee shall provide appropriate notifications to the U.S. Coast Guard as described below:

    Commander, 11th Coast Guard District (dpw)
    TEL: (510) 437-2980
    E-mail: d11LNM@uscg.mil
    Website: http://www.uscg.mil/dp/lnmrequest.asp

    U.S. Coast Guard, Sector LA-LB (COTP)
    TEL: (310) 521-3860
    E-mail: john.p.hennigan@uscg.mil

7. The Permittee shall notify the U.S. Coast Guard, Commander, 11th Coast Guard District (dpw) and the U.S. Coast Guard, Sector LA-LB (COTP) (contact information shown above), not less than 14 calendar days prior to commencing work and as project information changes. The notification shall be provided by e-mail with at least the following information, transmitted as an attached Word or PDF file:

    A. Project description including the type of operation (i.e. dredging, diving, construction, etc).
    B. Location of operation, including Latitude / Longitude (NAD 83).
    C. Work start and completion dates and the expected duration of operations. The Coast Guard needs to be notified if these dates change.
    D. Vessels involved in the operation (name, size and type).
    E. VHF-FM radio frequencies monitored by vessels on scene.
    F. Point of contact and 24 -hour phone number.
    G. Potential hazards to navigation.
    H. Chart number for the area of operation.
    I. Recommend the following language be used in the LNM: "Mariners are urged to transit at their slowest safe speed to minimize wake, and proceed with caution after passing arrangements have been made."

8. The Permittee and its contractor(s) shall not remove, relocate, obstruct, willfully damage, make fast to, or interfere with any aids to navigation defined at 33 CFR chapter I, subchapter C, part 66. The Permittee shall ensure its contractor notifies the Eleventh Coast Guard District in writing, with a copy to the Corps Regulatory Division, not less than 30 calendar days in advance of operating any equipment adjacent to any aids to navigation that requires relocation or removal. Should any federal aids to navigation be affected by this project, the Permittee shall submit a request, in writing, to the Corps Regulatory Division as well as the U.S. Coast Guard, Aids to Navigation office (contact information provided above). The Permittee and its contractor are prohibited from relocating or removing any aids to navigation until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard.

9. Should the Permittee determine the work requires the temporary placement and use of private aids to navigation in navigable waters of the United States, the Permittee shall submit a request in writing to the Corps Regulatory Division as well as the U.S. Coast Guard, Aids to Navigation office (contact information provided above). The Permittee is prohibited from establishing private aids to navigation in navigable waters of the United States until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard.

10. The COTP may modify the deployment of marine construction equipment or mooring systems to safeguard navigation during project construction. The Permittee shall direct questions concerning lighting, equipment placement, and mooring to the appropriate COTP.

11. The Permittee understands and agrees that if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers Regulatory Division, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

12. No later than 120 days prior to initiation of work in jurisdictional waters, the Permittee shall submit to the Corps Regulatory Division a black abalone survey and transplant plan for review and approval. At a minimum the plan will include:

    - Survey of the existing ocean outfall pipeline at depths between the -15 MLLW and -55 MLLW, in areas potentially affected by rehabilitation work.
    - Identification of a nearby transplant location with similar habitat, preferably within the geographic boundary of the designated critical habitat.
    - Temporary holding and transportation methods.
    - A requirement that the survey and relocation team include divers/biologists experienced in both locating and relocating abalone.
    - A requirement that the survey and transplant will occur no more than 30 days preceding the in-water rehabilitation activities.
    - Survey and transplant reporting requirements.

13. No later than 90 days prior to initiation of in-water construction, the Permittee shall conduct a pre-construction survey for the black abalone. If surveys indicate presence of black abalone within the construction footprint, the Permittee shall immediately notify the Corps Regulatory Division. No black abalone shall be transplanted until the Corps has issued a notice to proceed to the Permittee authorizing initiation of transplant activities. Measures required by the U.S. Fish and Wildlife Service will be incorporated by reference in the Notice to Proceed and will become conditions of this permit. In water construction activities shall not commence until transplant activities are complete.

14. This permit does not authorize you to take any threatened or endangered species, in particular black abalone, or adversely modify designated critical habitat for any species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions) with which you must comply. The NMFS is the appropriate authority to determine compliance with the ESA.

15. Pursuant to 36 CFR § 800.13, in the event of any discoveries within the Area of Potential Effects during construction of either human remains, archaeological deposits, or any other type of historic property, the Permittee shall notify the Corps Archeology staff within 24 hours (Mr. Steve Dibble at 213-452-3849 or Mr. John Killeen at 213-452-3861). The Permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The Permittee shall not resume construction in the area surrounding, i.e., immediately adjacent to, the potential cultural resources, until the Corps re-authorizes project construction, per 36 CFR § 800.13.

16. No later than 90 days prior to initiation of in-water construction, the Permittee shall conduct a pre-construction survey for hard-bottom/biogenic substrate such as reefs within the construction footprint. If hard-bottom/biogenic substrate is deemed to be within the anchorage area for the derrick barge, the Permittee shall prepare an anchor management plan no later than 30 days prior to initiation of construction. In-water construction activities shall not commence until the Corps' Regulatory Division has reviewed and approved the anchor management plan.

c. Public Interest Review

i. **The relative extent of the public and private need for the proposed work has been considered:** The Sanitation Districts provide public utilities that currently serve 5 million people in 78 cities and unincorporated territory in Los Angeles County. The Southern California Association of Governments population forecasts indicate the JOS service area population will increase to approximately 6.3 million by 2050. The population increase would result in an average wastewater flow of about 612 MGD in the JOS, resulting in a treatment capacity shortfall of approximately 20 MGD by 2050. Furthermore, in January 1995, the JOS service area was inundated by two major back-to-back storm events. The resulting peak wastewater flows in the sewerage system from these storm events nearly exceeded the capacity of the JWPCP ocean discharge system. If the tunnels were to be damaged or the capacity of the ocean discharge system exceeded, treated JWPCP effluent would need to be bypassed into the Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses, such as the Dominguez Channel and the Los Angeles River. Sewage overflows could affect public health in communities adjacent to the impacted waterways. Therefore, there is a clear regional public interest to ensure that the existing ocean discharge system has sufficient capacity to convey wastewater flows through the year 2050.

The proposed Project is expected to generate approximately 300 construction-related jobs during the construction period from 2014 through 2021. These include direct employment of approximately 100 workers and an additional 200 jobs indirectly related to proposed Project construction. See Sections 15.4.6 and 18.4.6 of the Final EIS/EIR.

ii. The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work has been evaluated:

The EIS/EIR evaluated construction of new onshore tunnels, offshore tunnels, new ocean outfalls as well as rehabilitation of existing ocean outfalls. See Section 3.3.1 of the EIS/EIR.

Construction of New Ocean Tunnels and Outfalls

Alternatives 1 through 3 include construction of new onshore and offshore tunnels and the placement of a riser/diffuser outfall structure constructed of either steel, reinforced concrete pipe or high density polyethylene on the ocean floor within a 90-square-mile study area on the Palos Verdes and San Pedro shelves.

New ocean tunnel alignments and outfall locations were sited to:

- Minimize interferences with discharges from other nearby ocean outfalls, namely the city of Los Angeles' Hyperion outfalls to the north and Orange County Sanitation District's outfalls to the south.
- Stay within the edge of the continental shelf – either the San Pedro Shelf (SP Shelf) or Palos Verdes Shelf (PV Shelf).
- Use a direct route as practicable between the JWPCP and the end of the ocean outfalls (diffuser areas).
- Avoid state Marine Protected Areas.

Application of the four evaluation criteria resulted in three offshore tunnel alignments and two riser and diffuser locations. The San Pedro Shelf (SP Shelf) riser and diffuser assembly site would be located approximately 7.5 miles from the Port of Los Angeles (POLA) breakwater. The Palos Verdes Shelf (PV Shelf) riser and diffuser assembly site would be located approximately 2 miles from Point Fermin.

Rehabilitation of Existing Ocean Outfalls

Alternatives 1 through 4 include construction of a new onshore tunnel to and rehabilitation of the existing ocean outfalls located off White's Point on the Palos Verdes Peninsula. Rehabilitation activities would include joint repairs and discharge of ballast rock on top of the existing outfalls.

As detailed in the final 404(b)(1) analysis, all four alternatives are practicable with respect to cost, technology and logistics. However, Alternative 4 (proposed Project) which is limited to construction of a new onshore tunnel and rehabilitation of the existing ocean outfalls was deemed to be the least environmentally damaging practicable alternative.

The proposed Project would use a method that would restrict the discharge of fill to the footprint of the existing outfalls, thereby minimizing impacts to waters of the United States. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. A tube extending from the barge deck to the ocean floor would ensure that placement of ballast rock would not extend beyond the existing footprint. The removal of approximately 20 to 80 cubic yards of sediment associated with joint repairs would be done by hand. In particular, a team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint.

iii. The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses for which the area is suited has been reviewed:

The proposed Project would be located in the marine environment within the vicinity of Royal Palms Beach on the Palos Verdes Peninsula. The area is publicly owned and supports recreational uses. Lands at Royal Palms Beach and the surrounding area are owned by the Sanitation Districts and Los Angeles County. Facilities and activities include tide pools, swimming, surfing, diving, picnicking and sight seeing. (see Section 17.2 of the Final EIS/EIR).

Impacts within the marine environment

Within the marine environment, rehabilitation of the existing outfalls would entail temporary impacts to water quality during construction. Approximately 15,000 to 18,000 cubic yards of ballast rock would be discharged within the footprint of the existing ocean outfalls. There would be no loss of waters of the United States. Joint repairs (an estimated 10 to 40 total) would involve temporarily removing some of the existing ballast rock from around the outfall to fully expose the joint being repaired. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment. Based on the above, there would be temporary turbidity impacts to water quality during construction. Though access to recreational areas at Royal Palm Beach would be limited during construction, regulated activities within waters of the United States would not affect public recreational uses of the marine environment during construction because the construction activities would be located approximately 600 feet offshore, well away from nearshore recreational activities.

Turbidity impacts would also be minimal and localized to the construction footprint. Therefore, the proposed Project would entail temporary impacts to public recreational uses of the area.

Water quality impacts would be limited to the immediate area of construction and would not affect public recreational uses of the marine environment.

Impacts within the upland environment

Overall, onshore activities deemed to be within the Corps' NEPA scope of analysis would result in significant and unavoidable impacts to:

Aesthetics: Significant and unavoidable impacts on aesthetic resources would occur during construction of the proposed Project because work would occur adjacent to the coast, a highly valued scenic area protected by local plans to preserve the scenic integrity of coastal views. Rehabilitation of the existing ocean outfalls would involve significant aesthetic impacts on land-based views of the ocean during construction. Specifically, construction at the Angels Gate and Royal Palms shaft sites would temporarily impact views from adjacent residential and recreational areas.

Air Quality: Significant and unavoidable peak day air quality impacts would occur at a regional level during construction of the proposed Project (Alternative 4). Air emissions would exceed the Southern California Air Quality Management District daily significance thresholds for construction-related emissions before mitigation. Specifically, air emissions would exceed thresholds for volatile organic compounds (VOCs) and nitrogen oxides (NO_X). Although mitigation would reduce emissions, impacts would remain significant for NO_X.

Paleontological Resources: Significant and unavoidable impacts on paleontological resources would occur during construction of the proposed project. The rock face being removed during tunnel construction could not be observed for the presence of paleontological resources; thus, if present, paleontological resources would be destroyed by the tunnel boring machine. Likewise, at a certain depth, paleontological resources may be encountered during construction at the shaft sites; these resources could not be observed and, if present, would also be destroyed.

As detailed in Chapters 4 through 20 of the Final EIS/EIR and summarized on page 34 of the Executive Summary, numerous mitigation measures have been identified to avoid and minimize a broad array of direct and indirect/secondary impacts that are of interest to the public. While a few of the impacts would remain significant and unavoidable even with mitigation, there is a clear public interest regionally to provide sufficient effluent conveyance capacity in the JOS to accommodate the estimated 2050 peak wastewater flows, and to comply with all

applicable water quality standards including regulations prohibiting sewer overflows. Therefore, there is a clear public interest in moving forward with the proposed discharges of fill material and construction activities in waters of the United States associated with rehabilitation of the existing outfalls. As discussed in Section 1.1.1.1 of the Final EIS/EIR, the Sanitation Districts currently serve 5 million people in 78 cities and unincorporated territory in Los Angeles County. The Southern California Association of Governments population forecasts indicate the JOS service area population will increase to approximately 6.3 million by 2050. The population increase would result in an average wastewater flow of about 612 MGD in the Sanitation Districts' JOS service area, resulting in a treatment capacity shortfall of approximately 20 MGD by 2050. Furthermore, in January 1995, the JOS service area was inundated by two major back-to-back storm events. The resulting peak wastewater flows in the sewerage system from these storm events nearly exceeded the capacity of the JWPCP ocean discharge system. If the existing tunnels were to be damaged or the capacity of the ocean discharge system exceeded, treated JWPCP effluent would need to be bypassed into the Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses, such as the Dominguez Channel and the Los Angeles River. Rehabilitation of the existing ocean outfalls is a critical component in meeting the projected effluent conveyance needs for the 78-city area within the JOS.

Based on the above information, the proposed project would meet an important public need for reliable public infrastructure to sustain the projected regional population growth. Furthermore, the proposed project is expected to generate approximately 300 construction-related jobs during the construction period from 2014 through 2021. These include direct employment of approximately 100 workers and an additional 200 jobs indirectly related to proposed project construction (see Sections 15.4.6 and 18.4.6 of the Final EIS/EIR). Based on the extent and permanence of the expected benefits and detrimental effects of the proposed work and structures would have on the public and private uses to which the area is suited are considered, the Corps has determined that issuance of a DA Permit with the above special conditions, as prescribed by regulations published in 33 CFR Parts 320 to 332, and 40 CFR Part 230, is not contrary to the public interest.

IX. Conclusion

For the reasons outlined above, the proposed Project is the alternative that best meets the purpose and need of the project and will have the least impact on the human and natural environment, including jurisdictional waters. The Corps will ensure that the commitments outlined above will be implemented as part of the project construction.

Based upon a careful consideration of all the social, economic, and environmental evaluations contained in the EIS/EIR; the input received from other agencies, organizations, and the public, it is my decision to issue a Department of the Army permit associated with the proposed Project pursuant to section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act.

DATED: 31 July 2013

Kimberly M. Colloton, PMP
Colonel, US Army
Commander and District Engineer

APPENDIX A
CLEAN WATER ACT SECTION 404(b)(1) COMPLIANCE EVALUATION

1.0 Clean Water Act Section 404(b)(1) Regulatory Background

Section 404 of the Clean Water Act (CWA) authorizes the U.S Army Corps of Engineers (Corps) to issue permits for the discharge of dredged or fill materials into waters of the United States (waters of the U.S.), including wetlands (33 United States Code [U.S.C.] 1344). Waters of the U.S., defined at 33 Code of Federal Regulations (C.F.R.) Part 328, include coastal and inland waters, lakes, rivers, and streams, including adjacent wetlands and tributaries. The U.S. Environmental Protection Agency (USEPA) Section 404(b)(1) Guidelines (40 C.F.R. Part 230 et seq.) are the substantive environmental criteria used by the Corps to evaluate permit applications. Under these guidelines, an analysis of practicable alternatives is the primary tool used to determine whether a proposed discharge can be authorized. The Section 404(b)(1) Guidelines prohibit discharges of dredged or fill material into waters of the U.S. if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts (40 C.F.R. 230[a]). An alternative is considered practicable if it is available and capable of being implemented after considering cost, existing technology, and logistics in light of overall project purpose (40 C.F.R. 230[a][2]). The Section 404(b)(1) Guidelines suggest a sequential approach to project planning that considers mitigation measures only after the project proponent shows no practicable alternatives are available to achieve the overall project purpose with less environmental impacts. Once it is determined that no practicable alternatives are available, the guidelines then require that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem (40 C.F.R. 230.10[d]). Such steps may include actions controlling discharge location, material to be discharged, the fate of material after discharge or method of dispersion, and actions related to technology, plant and animal populations, or human use (40 C.F.R. 230.70-230.77).

Beyond the requirement for demonstrating that no practicable alternatives to the proposed discharge exist, the Section 404(b)(1) Guidelines also require the Corps to compile findings related to the environmental impacts of discharge of dredged or fill material. The Corps must make findings concerning the anticipated changes caused by the discharge to the physical and chemical substrate and to the biological and human use characteristics of the discharge site.

These guidelines also indicate that the level of effort associated with the preparation of the alternatives analysis be commensurate with the significance of the impact and/or discharge activity (40 C.F.R. 230.6(b)). The following section 404(b)(1) alternatives analysis shows that discharges into waters of the U.S. associated with all of the alternatives, including the proposed Project, are relatively minor and, with the exception of the No Federal Action Alternative, all of the alternatives would result in similar and insignificant discharges of fill material in waters of the U.S. Based on the detailed analysis in the Final EIS/EIR, neither the proposed Project nor any of the alternatives that involve in-water discharges would result in significant adverse effects to the aquatic ecosystem.

2.0 Basic and Overall Project Purpose

2.1 Basic Project Purpose

The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed project, and is used by the Corps to determine whether the applicant's project is water-dependent. The Section 404(b)(1) Guidelines state that if an activity associated with the discharge proposed for a water body does not require access or proximity to, or siting within, water to fulfill its basic purpose, the activity is not water-dependent.

The basic project purpose is construction and rehabilitation of marine utility lines (i.e. ocean outfalls). Thus, the applicant's project is water dependent.

2.2 Overall Project Purpose

The overall project purpose serves as the basis for the Corps' section 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals and accounts for logistical considerations for the project, and which allows a reasonable range of alternatives to be analyzed. It is critical that the overall project purpose be defined to provide for a meaningful evaluation of alternatives. It should not be so narrowly defined as to give undue deference to the applicant's wishes, thereby unreasonably limiting the consideration of alternatives. Conversely, it should not be so broadly defined as to render the evaluation unreasonable and meaningless.

The overall project purpose is to construct a new ocean discharge system or to modify the existing ocean discharge system in a manner that will reliably accommodate the peak wet weather flow of 927 million gallons per day (MGD) projected for year 2050.

3.0 Alternatives Considered

The Clearwater Program is a comprehensive planning effort to develop a long-range Master Facilities Plan (MFP) and an associated joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Sanitation Districts' Joint Outfall System (JOS), a regional wastewater management system serving approximately 4.8 million people in 73 cities and unincorporated areas of Los Angeles County. The Clearwater Program encompasses both program-wide and project-specific elements. In order to ensure sufficient JWPCP effluent management capacity through the year 2050, the Clearwater Program MFP and EIR/EIS evaluated, at a project-specific level, four alternatives for the construction of underground effluent tunnels and ocean outfalls as well as the inspection and rehabilitation of the existing ocean outfalls. The EIR/EIS also evaluated a No-Project alternative and a No-Federal-Action alternative in accordance with state and federal law, respectively.

Alternatives 1 through 3 are composed of two basic activities:

- construction of new onshore and offshore tunnels and ocean outfalls; and
- inspection and rehabilitation of the existing onshore and offshore tunnel and outfalls.

Alternative 4 is limited to the inspection and rehabilitation of the existing onshore and offshore tunnel and outfalls. Alternative 5 is the No Project Alternative. Alternative 6 is the No Federal Action Alternative.

3.1 New and Existing Ocean Outfalls

3.1.1 Construction of New Ocean Outfalls

Alternatives 1 through 3 include construction of an offshore tunnel and the placement of a riser/diffuser outfall structure constructed of either steel, reinforced concrete pipe (RCP) or high density polyethylene (HDPE) on the ocean floor. Both the riser and diffuser assembly would be pre-fabricated onshore prior to ocean construction.

If the diffuser were constructed of steel or RCP, it would consist of two 4,000-foot-long legs oriented out of the riser head. The diameter (internal) of the steel or RCP diffuser would incrementally decrease in size ranging from approximately 132 inches to 48 inches. Diffuser installation would require seafloor grading and possibly trenching for site preparation. It may be necessary to construct a ballast rock base up to 54 feet wide and 5 feet deep. The diffuser would be placed on this base with additional ballast rock added around the pipe for stability. The riser and diffuser would cover a seafloor area of approximately 5 to 10 acres, depending on depth. Estimated quantities of ballast rock are 30,000 to 95,000 cubic yards.

If the diffuser were constructed of HDPE, no trenching would be required. The HDPE would be placed directly on the seafloor, which may require some minor grading and would require a limited amount of ballast rock to protect the piping and riser. The HDPE design would consist of a manifold with eight diffuser legs configured in a sequentially staggered array from shortest to longest. The pipe diameter (external) would range in size from approximately 63 inches to 42 inches. The riser, manifold, and diffuser would cover a seafloor area of approximately 8 acres. Approximately 1,500 pre-installed concrete anchor blocks would be attached to HDPE piping to provide ballast during the sinking and installation process as well as to provide stability against ocean currents and wave-induced hydrodynamic loading. Estimated quantities of ballast rock are 7,000 to 20,000 cubic yards.

To prepare the site for riser installation, unconsolidated seafloor material would either be sidecast or removed and disposed. Hydro-jetting or pile-driving would be used to install the riser casing. The majority of the riser and diffuser construction work would be based on one 10-hour shift per day, 5-day-per-week schedule. However, when the pre-fabricated riser assembly is transported to the installation site, construction work would take place on a continuous 24-hour-per-day basis for approximately 1 week. All work, including mobilization, pre-assembly, site preparation, construction, and demobilization, would take approximately 24 months for the riser and approximately 6 to 12 months for the diffuser.

There are two proposed riser and diffuser locations. The San Pedro Shelf (SP Shelf) riser and diffuser assembly site would be located approximately 7.5 miles from the Port of Los Angeles (POLA) breakwater. The riser assembly would be located at a depth of approximately 200 feet of water and would extend approximately 110 feet below the seafloor to meet the tunnel. The SP Shelf riser and diffuser area is located on a relatively flat area of the upper slope along the southwest edge of the SP Shelf. It is not located within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. Construction activities for diffuser placement on the SP Shelf would include grading the seafloor and placing ballast rocks. Sediment would not be sidecast or brought to the surface for disposal.

The Palos Verdes Shelf (PV Shelf) riser and diffuser assembly site would be located approximately 2 miles from Point Fermin. The riser assembly would be located at a depth of approximately 175 feet of water and would extend approximately 145 feet below the seafloor to meet the tunnel. The PV Shelf riser and diffuser area by contrast is within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. An estimated 1,800 metric tons of DDT was discharged onto the PV Shelf between 1953 and 1971. Much of the original DDT that was historically discharged has now dispersed throughout the greater PV Shelf, but a reservoir of approximately 100 metric tons remains buried in the seafloor

concentrated near the diffusers of the existing outfalls. Construction activities would avoid contaminated sediments and would not interfere with the EPA's proposed remedy, which is a cap of clean sand/silt to be placed over approximately 300 acres of the Palos Verdes Shelf where the highest surficial contaminant concentrations appear to be eroding. The Sanitation Districts will coordinate with the EPA during design and construction of the cap. In addition, the Sanitation Districts have proposed entering into a memorandum of understanding that preserves the EPA's need to implement the proposed remedy and the Sanitation Districts' need to operate, maintain, and repair the existing ocean outfalls.

For construction of the proposed shaft sites, offshore tunnel, and riser/diffuser, dredged material determined to be suitable for ocean disposal could be potentially disposed at an Ocean Dredged Material Disposal Site (ODMDS). LA-2 and LA-3 are the two ODMDSs in the vicinity of the project. LA-2 is located approximately 4 miles from the PV Shelf site, 3 miles from the SP Shelf site, and 9 miles from the POLA. LA-3 is located approximately 26 miles from the PV Shelf site, 21 miles from the SP Shelf site, and 26 miles from the POLA. Any contaminated sediments would be disposed at inland facilities in accordance with all applicable regulations. Estimated quantities of dredged material are 5,000,000 to 30,000,000 cubic yards for the offshore tunnel, 40,000 to 45,000 cubic yards for the riser, and 10,000 to 50,000 cubic yards for the diffuser.

3.1.2 Rehabilitation of Existing Ocean Outfalls

Alternatives 1 through 4 include rehabilitation of the existing ocean outfalls. The rehabilitation activities, such as joint repairs, re-ballasting and cathodic protection, would occur on the existing 72-, 90- and 120-inch outfalls in water depths of approximately 20 to 50 feet. Mechanical dredging or removal/disposal of large quantities of sediment would not be required. Joint repairs would only require a localized and temporary removal of small amounts of sediment and ballast rock. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. A tube extending from the barge deck to the ocean floor would ensure that placement of ballast rock would not extend beyond the existing footprint. Joint repairs (an estimated 10 to 40 total) would involve temporarily removing some of the existing ballast rock from around the outfall to fully expose the joint being repaired. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment. A coupling would be installed and the annular space filled with concrete. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. Cathodic protection would be also restored or added to the existing outfalls where necessary. The majority of the construction work would be based on one 10-hour shift per day, 5 days per week. Approximately eight to ten construction workers would be needed for the rehabilitation work. Joint repairs and transport of construction workers would require a work vessel and crew deploying from POLA and operating one daily round-trip for approximately 1 month. All work (including mobilization, construction, and demobilization) would take approximately 9 months.

3.2 Description of Alternatives

Alternative 1

Alternative 1 would include a 2-mile-long onshore Carson-to-Wilmington tunnel and a 12.4-mile-long offshore Wilmington-to-San Pedro (SP) Shelf tunnel. The 18-foot diameter (internal) underground tunnel would begin at the JWPCP in the city of Carson and run beneath Wilmington Boulevard to the POLA. From POLA, the tunnel would be extended offshore beneath the ocean floor at a depth of 200 feet, terminating at a new riser structure with 8,000-foot-long ocean outfall on the SP shelf. The alignment would include one working shaft at the JWPCP as well as one working shaft and two access shafts at POLA. Alternative 1 would include dredging in the vicinity of the new ocean outfall structure, transportation of dredged material for disposal, and rehabilitation of the existing ocean outfalls.

Alternative 2

Alternative 2 would include a 2-mile-long onshore Carson-to-Wilmington effluent tunnel (which is identical to Alternative 1) and a 7.2-mile-long offshore Wilmington-to-Palos Verdes (PV) Shelf tunnel. The 18-foot-diameter (internal) underground tunnel would begin at the JWPCP and run beneath Wilmington Boulevard to POLA, from which the tunnel would be extended offshore beneath the ocean floor at a depth of 175 feet, terminating at a new riser structure and 8,000-foot-long ocean outfall on the PV shelf. The alignment would include one working shaft at JWPCP as well as one working shaft and two access shafts at POLA. Alternative 2 would include dredging in the vicinity of the new ocean outfall structure, transportation of dredged material for disposal, and rehabilitation of the existing ocean outfalls.

Alternative 3

Alternative 3 would include a 6.4-mile-long onshore Carson-to-San Pedro effluent tunnel and a 2.2-mile-long offshore San Pedro to PV Shelf tunnel. The 18-foot diameter (internal) underground tunnel would begin at the JWPCP and run beneath Figueroa Street and South Gaffey Street to Angels Gate Park. From Angels Gate Park, the tunnel would be extended offshore beneath the ocean floor at a depth of 175 feet, terminating at a new riser structure and 8,000-foot-long ocean outfall on the PV Shelf. The alignment would include one working shaft at the JWPCP and one access shaft at Angels Gate Park. Alternative 3 would include dredging in the vicinity of the new ocean outfall structure, transportation of dredged material for disposal, and rehabilitation of the existing ocean outfalls.

Alternative 4

Alternative 4 is the proposed Project. Alternative 4 would include a 6.9-mile-long onshore Carson-to-Royal Palms tunnel; however, no new offshore tunnel, riser structure, or ocean outfall would be required. The underground tunnel would begin at the JWPCP and run beneath Figueroa Street, Harbor Regional Park, North Gaffey Street, Capitol Drive, and Western Avenue (through Dodson Avenue) to Royal Palms Beach where the tunnel would connect to the existing ocean outfalls at the existing manifold structure. The alignment would include one working shaft at the JWPCP and one exit shaft at Royal Palms Beach. Alternative 4 would include rehabilitation of the existing ocean outfalls.

Alternative 5

Under the No-Project Alternative, the Sanitation Districts would not construct new onshore and offshore tunnels and ocean outfalls or inspect and rehabilitate the existing tunnels and outfalls. Furthermore, the Sanitation Districts would not construct project elements outside the NEPA scope of analysis such as the expansion and modification of inland facilities required to accommodate peak wet weather flow of 927 MGD projected for year 2050. The Sanitation Districts would continue to use the existing ocean discharge system, which could result in emergency discharges and/or sewer overflows to various water courses such as the Wilmington Drain, Dominguez Channel, and the Los Angeles River.

Alternative 6

The No-Federal-Action Alternative consists of activities that the Sanitation Districts would perform without issuance of a Department of the Army (DA) permit, which is required for construction of both the offshore tunnel and the riser/diffuser, rehabilitation of the existing ocean outfalls, and ocean disposal of dredged material. Without a DA permit to work on the aforementioned facilities, none of the project elements previously described, including the onshore tunnel and shaft sites would be constructed. The Sanitation Districts would continue to use the existing ocean discharge system, which could result in emergency discharges and/or sewer overflows to various water courses as mentioned in the No-Project Alternative.

4.0 Alternatives Analysis

4.1 Restrictions on Discharge

The 404(b)(1) Guidelines prohibit the Corps from issuing a permit to discharge dredged or fill material into waters of the U.S. unless it constitutes the least environmentally damaging practicable alternative (LEDPA), which by law must:

- meet the overall project purpose[1]
- be practicable with respect to cost, technology, and logistics[2]
- avoid and minimize discharge of dredged or fill material into waters of the U.S.[3]
- not entail significant impacts to other non-aquatic environmental resources[4]

4.2 Overall Project Purpose

Alternatives 1 through 4 meet the overall project purpose. All four alternatives would reliably accommodate the peak wet weather flow of 927 MGD projected for year 2050. Alternative 5 and Alternative 6 would not meet the overall project purpose since accommodating peak wet weather flow would require construction of new outfalls and/or rehabilitation of existing outfalls. Both activities would be located within waters of the U.S. and be subject to Section 404 of the CWA.

4.3 Practicability (Technology)

Alternatives 1 through 4 can be constructed with existing technology, although Alternative 4 is more constructable than Alternatives 1 through 3 because it includes a technically less challenging onshore tunnel and no offshore tunnel. All four alternatives are considered practicable with respect to technology for the purposes of this evaluation.

4.4 Practicability (Logistics)

Final design for each of the four alternatives is estimated to take approximately 2.5 years, with anticipated construction durations of approximately 6.5 years for Alternatives 2, 3 and 4 and approximately 8 years for Alternative 1. Key construction tasks for all four alternatives include tunnel boring machine (TBM) fabrication and assembly, shaft construction, onshore tunneling and ocean outfall rehabilitation. Additional tasks for Alternatives 1 through 3 include offshore tunneling and construction of a riser/diffuser outfall structure. All four alternatives are considered practicable with respect to logistics for the purposes of this evaluation.

[1] 40 C.F.R. 230.10(a)(2)
[2] 40 C.F.R. 230.10(a)(2)
[3] 40 C.F.R. 230.10(a); The text states "…less adverse impacts on the aquatic ecosystem..." In practice this is often quantified as volume or acres of discharge into waters of the U.S.
[4] Ibid.

4.5 Practicability (Costs)

Alternative 1 (JWPCP-to-San Pedro Shelf tunnel with new ocean outfall) will cost approximately $1,360 million. Alternative 2 (JWPCP-to-Palos Verdes Shelf tunnel with new ocean outfall) will cost approximately $980 million. Alternative 3 (JWPCP-to-Palos Verdes Shelf tunnel with new ocean outfall) will cost approximately $910 million. Alternative 4 (JWPCP-to-Royal Palms Beach tunnel using existing ocean outfall) will cost approximately $550 million. All four alternatives are considered practicable with respect to cost.

4.6 Impacts to Water of the U.S.

Alternatives 1 through 3 would entail discharge of fill material into 5 to 10 acres of waters of the U.S. for construction of the new ocean outfall and approximately 3.7 acres[5] for rehabilitation of the existing outfalls. With respect to new ocean outfalls, approximately 30,000 to 95,000 cubic yards of rock ballast would be required for a steel or RCP diffuser structure. Approximately 7,000 to 20,000 cubic yards of rock ballast would be required for a HDPE diffuser structure. The HDPE diffuser structure would also require the discharge of approximately 1,500 concrete anchor blocks. Estimated quantities of dredged material are 5,000,000 to 30,000,000 cubic yards for the offshore tunnel, 40,000 to 45,000 cubic yards for the riser, and 10,000 to 50,000 cubic yards for the diffuser. Alternative 4 would only entail rehabilitation of the existing outfalls and would restrict the discharge of fill to the footprint of the existing ocean outfalls, impacting approximately 3.7 acres of waters of the U.S. Approximately15,000 to 18,000 cubic yards of rock ballast would be discharged.

4.7 Significant Environmental Impacts to Non-Aquatic Resources

Alternatives 1 through 3 would require construction of onshore tunnels ranging from 2 to 6.4 miles, and offshore tunnel ranging from 2.2 to 12.4 miles. Alternative 4 would require construction of an approximately 6.9 mile onshore tunnel. Based on information in the Final EIS, tunneling activities associated with Alternatives 1 through 4 would entail significant impacts to air quality and paleontological resources. Construction of a temporary shaft for Alternatives 1 through 4 would entail significant impacts to aesthetics.

[5] The discharge of fill entails placement of ballast rocks over existing ocean outfalls. The width of the ballast footprint would vary due to two factors. First, the widths of the outfall pipes differ. Second, the width of the ballast footprint widens as the outfalls daylight onto the ocean floor. The 3.7 acres of waters of the U.S. assumed a 36 foot wide by 1,500 foot long ballast footprint for each of the three existing ocean outfalls.

The following table summarizes the evaluation criteria.

Table 1: Comparison of 404(b)(1) Evaluation Criteria

ALTERNATIVES	Practicability Test			Significant Environmental Impacts to Non-Aquatic Resources?	Impact to Waters of the U.S. (acres)	Meets Overall Project Purpose?
	Cost (Amount)	Logistics	Technology			
Alternative 1	Yes ($1,360M)	Yes	Yes	Yes	8.7-13.7†	Yes
Alternative 2	Yes ($910M)	Yes	Yes	Yes	8.7-13.7†	Yes
Alternative 3	Yes ($980M)	Yes	Yes	Yes	8.7-13.7†	Yes
Alternative 4	Yes ($550M)	Yes	Yes	Yes	3.7	Yes
Alternative 5	N/A	N/A	N/A	Yes	Zero	No
Alternative 6	N/A	N/A	N/A	Yes	Zero	No

† Impacts to Waters of the U.S. for Alternatives 1 through 3 include impacts for the construction of new ocean outfalls (5-10 acres) and rehabilitation of the existing outfalls (3.7 acres)

5.0 Environmental Effects of Alternatives on Aquatic Resources

The potential impacts of the construction and operation of Alternatives 1 through 6 on the overall environment have been analyzed in the EIS/EIR for the Clearwater Program.

The purpose of the Section 404(b)(1) Guidelines is to restore and maintain the chemical, physical, and biological integrity of the waters of the U.S. through the control of discharges of dredged or fill material. Except as provided under CWA Section 404(b)(2), no discharge of dredged or fill material will be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences. In accordance with the Section 404(b)(1) Guidelines, the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment must be determined.

Alternatives 1 through 4 would entail the discharge of fill in waters of the U.S. Alternative 5 (No-Project Alternative) and Alternative 6 (No Federal Action Alternative) would not entail the discharge of fill, and as indicated in Section 4.2, do not meet the overall project purpose. Therefore, the following discussion evaluates impacts of Alternatives 1 through 4 on the aquatic resources identified in Subpart C through Subpart H of the Section 404(b)(1) Guidelines.

5.1 Potential Direct and Indirect Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

Substrate

Alternatives 1 through 3 would entail discharges for a riser/diffuser outfall structure constructed of either steel, RCP, or HDPE on the ocean floor. Steel or RCP structures may require the discharge of a ballast rock base up to 54 feet wide and 5 feet deep. The diffuser would be placed

on this base with additional ballast rock added around the pipe for stability. The riser and diffuser would cover a seafloor area of approximately 5 to 10 acres, depending on depth. Estimated quantities of ballast rock are 30,000 to 95,000 cubic yards. HDPE structures would be placed directly on the seafloor, which may require some minor grading and would require a limited amount of ballast rock to protect the piping and riser. The riser, manifold, and diffuser would cover a seafloor area of approximately 8 acres. Approximately 1,500 pre-installed concrete anchor blocks would be attached to HDPE piping to provide ballast during the sinking and installation process as well as to provide stability against ocean currents and wave-induced hydrodynamic loading. Estimated quantities of ballast rock are 7,000 to 20,000 cubic yards.

To prepare the site for riser installation, unconsolidated seafloor material would either be sidecast or removed and disposed. Hydro-jetting or pile-driving would be used to install the riser casing. The majority of the riser and diffuser construction work would be based on one 10-hour shift per day, 5-day-per-week schedule. However, when the pre-fabricated riser assembly is transported to the installation site, construction work would take place on a continuous 24-hour-per-day basis for approximately 1 week. All work, including mobilization, pre-assembly, site preparation, construction, and demobilization, would take approximately 24 months for the riser and approximately 6 to 12 months for the diffuser.

Alternative 4 would entail rehabilitation of the existing ocean outfalls. The rehabilitation work would entail a like-for-like replacement of existing substrate. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed.

Under Alternative 4, the discharge of fill material would entail a like-for-like replacement of existing substrate. Furthermore, Alternative 4 would be limited to the footprint of the existing outfall structure. Thus, there would not be increased impacts to waters of the U.S. Based on the detailed analysis in Section 13.4.3.2 of the Final EIS/EIR, Alternative 4 would have substantially less direct and indirect impact to substrate when compared to Alternatives 1 through 3, and the direct and indirect impacts to substrate would be less than significant.

Suspended particulates and turbidity

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP or HDPE on the ocean floor. Steel or RCP structures may require the discharge of a ballast rock base up to 54 feet wide and 5 feet deep. Diffuser installation would require seafloor grading and possibly trenching for site preparation. If the diffuser were constructed of HDPE, no trenching would be required. The HDPE may require some minor grading and would require a limited amount of ballast rock to protect the piping and riser. To prepare the site for riser installation, unconsolidated seafloor material would either be sidecast or removed and disposed. Hydro-jetting or pile-driving would be used to install the riser casing. Construction of the offshore tunnel could generate approximately 5,000,000 to 30,000,000 cubic yards of material requiring ocean disposal at either LA-2 or LA-3. Beneficial reuse would be maximized to the extent practicable.

Alternative 4 would entail rehabilitation of the existing ocean outfalls. The rehabilitation work would entail a like-for-like replacement of existing substrate. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of

approximately 20 to 80 cubic yards of sediment. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed.

Alternatives 1 through 3 would entail sediment disturbing activities such as dredging, pile driving, and hydro-jetting. Construction activities could alter water quality by generating a turbid environment at the surface of the ocean and near the bottom by increasing suspended sediment levels. Surface turbidity could result as overflow or spill when sediments within the riser casings and riser structure are brought to the surface and transferred from the top of the casing to the transport barge. Near-bottom turbidity could occur during sidecasting, grading, and placement of ballast for construction of the diffuser structure. The size and persistence of a sediment plume would depend on several factors, including sediment characteristics, water depth, and current direction and velocity. Settling rates are largely determined by the grain size of the suspended material.

If dredged material is sidecasted, sediment generally would not be released more than 20 feet from the bottom thereby limiting the spread of sediment. Localized areas of elevated turbidity conditions would occur in the vicinity of the near-bottom construction activities for the duration of construction. However near-bottom turbidity generated by construction activities is expected to settle and rapidly mix with ambient water, with normal conditions likely to be found in the area within hours to days of cessation of construction activities.

Dredging would require sediment to be brought to the surface via a clamshell dredge and loaded onto a barge. As sediment is brought up through the water column some amount of sediment would wash out of the dredge, typical of all dredging operations. Therefore, water column turbidity would occur using this dredging and removal method. Although the process of raising these sediments from the seafloor to the dredge barge would create turbidity throughout the entire water column instead of just near bottom, overall, more sediments would be removed from the marine environment when compared to sidecasting. The rate of sediment settling would remain the same. However, sediments would take longer to mix and diffuse through the water column.

Alternative 4 would not entail dredging, pile driving, and hydro-jetting. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment, a substantially smaller amount compared to Alternatives 1 through 3. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. Therefore, Alternative 4 would substantially reduce turbidity and suspended particulates in the water column compared to Alternatives 1 through 3. Furthermore, based on the detailed analysis in Section 13.4.3.2 of the Final EIS/EIR, Alternative 4 would entail less than significant direct and indirect impacts to turbidity.

Contaminants

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP, or HDPE on the ocean floor. All three types of materials are chemically inert, and would not introduce contaminants into the water column via leaching. Alternatives 1 through 3 would entail sediment disturbing activities such as such as dredging, pile driving, and hydro-jetting. However, suspension of sediments is not expected to introduce contaminants into the water column because the SP Shelf riser and diffuser assembly site would be located approximately 7.5 miles from the POLA breakwater. As such, the sediment is expected to be clean relative to sediment within POLA, which receives contaminants from urban runoff and historical industrial practices within the port. Furthermore, it is not located within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. Likewise, the PV Shelf riser and diffuser assembly site would be located approximately 2 miles from Point Fermin. The

PV Shelf riser and diffuser area is within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. An estimated 1,800 metric tons of DDT was discharged onto the PV Shelf between 1953 and 1971. Much of the original DDT that was historically discharged has now dispersed throughout the greater PV Shelf, but a reservoir of approximately 100 metric tons remains buried in the seafloor concentrated near the diffusers of the existing outfalls. Construction activities would avoid contaminated sediments and would not interfere with the EPA's proposed remedy, which is a cap of clean sand/silt to be placed over approximately 300 acres of the Palos Verdes Shelf where the highest surficial contaminant concentrations appear to be eroding. The Sanitation Districts will coordinate with the EPA during design and construction of the cap. In addition, the Sanitation Districts have proposed entering into a memorandum of understanding that preserves the EPA's need to implement the proposed remedy and the Sanitation Districts' need to operate, maintain, and repair the existing ocean outfalls.

Alternative 4 would not entail sediment disturbing activities such as dredging, pile driving, and hydro-jetting. Therefore, Alternative 4 would substantially reduce turbidity and suspended particulates in the water column compared to Alternatives 1 through 3. Likewise, the potential for introducing contaminants into the water column from sediment disturbing activities would be substantially less. Furthermore, Alternative 4 would discharge ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. Ballast rock is chemically inert, and would not introduce contaminants into the water column via leaching. The existing outfalls are located within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. However, the highest contaminant concentrations are near the terminus of the existing ocean outfalls in depths of 150 to 200 feet, while the primary sediment-disturbing activity would be placement of additional ballast rock along the existing outfalls at ocean depths ranging from approximately 20 to 50 feet. Given the distance between the proposed re-ballasting work and the EPA's proposed cap, potential impacts would be avoided. Therefore, Alternative 4 would substantially reduce contaminants in the water column compared to Alternatives 1 through 3. Furthermore, based on the detailed analysis in Section 13.4.3.2 of the Final EIS/EIR, Alternative 4 would entail less than significant direct and indirect impacts to contaminants.

Water

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP or HDPE on the ocean floor. All three types of materials are chemically inert, and would not introduce contaminants into the water column via leaching. Construction would entail sediment disturbing activities such as dredging, pile driving, and hydro-jetting. These activities could alter water quality by generating a turbid environment at the surface of the ocean and near the bottom by increasing suspended sediment levels. Surface turbidity could result as overflow or spill when sediments within the riser casings and riser structure are brought to the surface and transferred from the top of the casing to the transport barge. Near-bottom turbidity could occur during sidecasting, grading, and placement of ballast for construction of the diffuser structure. The size and persistence of a sediment plume would depend on several factors, including sediment characteristics, water depth, and current direction and velocity. Settling rates are largely determined by the grain size of the suspended material. Because the construction activities are located within an open marine environment, and factors such as temperature, salinity, density, hydrogen ion concentration (pH); and levels of dissolved oxygen (DO), transparency, and nutrients in deeper offshore waters are generally influenced by large-scale oceanographic and meteorological conditions, there would be minimal and short term direct and indirect impacts to water quality parameters.

Alternative 4 would entail rehabilitation of the existing ocean outfalls. The rehabilitation work would entail a like-for-like replacement of existing substrate. Alternative 4 would not entail

dredging, pile driving, and hydro-jetting. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment, a substantially smaller amount compared to Alternatives 1 through 3. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. Therefore, Alternative 4 would substantially reduce turbidity and suspended particulates in the water column compared to Alternatives 1 through 3. Other water quality parameters such as DO, salinity, pH, and nutrients would remain unaffected. Based on the detailed analysis in Section 13.4.6.2 of the Final EIS/EIR, Alternative 4 would entail less than significant direct and indirect impacts to water quality.

Current patterns and water circulation

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP or HDPE on the ocean floor. The alternative would result in the permanent placement of large pipes on the ocean floor. If the diffuser were constructed of steel or RCP, it would consist of two 4,000-foot-long legs oriented out of the riser head. The diameter (internal) of the steel or RCP diffuser would incrementally decrease in size ranging from approximately 132 inches to 48 inches. It may be necessary to construct a ballast rock base up to 54 feet wide and 5 feet deep. The diffuser would be placed on this base with additional ballast rock added around the pipe for stability. The riser and diffuser would cover a seafloor area of approximately 5 to 10 acres, depending on depth. Estimated quantities of ballast rock are 30,000 to 95,000 cubic yards. If the diffuser were constructed of HDPE it would be placed directly on the seafloor. The HDPE design would consist of a manifold with eight diffuser legs configured in a sequentially staggered array from shortest to longest. The pipe diameter (external) would range in size from approximately 63 inches to 42 inches. The riser, manifold, and diffuser would cover a seafloor area of approximately 8 acres. Approximately 1,500 pre-installed concrete anchor blocks would be attached to HDPE piping to provide ballast during the sinking and installation process as well as to provide stability against ocean currents and wave-induced hydrodynamic loading. Estimated quantities of ballast rock are 7,000 to 20,000 cubic yards. Placement of such structures on the ocean floor would permanently alter the current patterns and water circulation in the immediate vicinity of the structures. However, because the structures would be placed within a deep and open marine environment, there would be no impacts to current patterns within the Southern California Bight (SCB).

Alternative 4 would entail rehabilitation of the existing ocean outfalls. The rehabilitation work would entail a like-for-like replacement of existing substrate. Therefore, based on the detailed analysis in Section 13.4.6.2 of the Final EIS/EIR, there would be no permanent alteration of current patterns and water circulation within the immediate vicinity of the structure. There would also be no impacts to current patterns within the SCB.

Normal water fluctuations

Alternatives 1 through 4 include construction or rehabilitation of a relatively small outfall system within an open ocean environment. Furthermore, water fluctuation associated with the marine environment such as tides and waves are influenced by large-scale oceanographic processes as well as the combined gravitational influences of the moon, sun and rotation of the earth. Therefore, Alternatives 1 through 4 would not impact water fluctuations including the tidal regime and wave action within the SCB.

Cumulative impacts

Past and present projects constructed and operating within the open marine environment on the PV Shelf and SP Shelf include oil platforms, fiber optic cables, and wastewater outfalls. Future projects would include construction and maintenance of similar structures and infrastructure.

Construction activities that could affect water quality include dredging, pile driving, demolition, dredged material placement, and discharge of fill material. Impacts from construction to water quality would be short term and would return to baseline levels upon completion of construction. Furthermore, most construction activities in the SCB would occur in an open marine environment where water quality is influenced by large-scale oceanographic processes. Therefore, past, present, and reasonably foreseeable future projects would not result in cumulatively significant impacts to water quality. Additional analysis of cumulative impacts to the marine environment is provided in Section 21.2.10 of the Final EIS/EIR.

5.2 Potential Direct and Indirect Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D)

Threatened and endangered species

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP or HDPE on the ocean floor. Threatened and endangered species that occur throughout the SCB are listed in Table 13-4 of the Final EIS/EIR. In general, construction activities within an open marine environment could affect federally-listed marine mammals, sea turtles, or marine birds through vessel collisions, entanglements, and underwater sounds.

Construction of Alternatives 1 through 3 would entail approximately 1,930 to 2,240 vessel round trips during construction of the riser and diffusers for approximately 3 years. Furthermore, ocean disposal of dredged sediment would require 135 one-way barge trips per year would carry excavated material to LA-2 and/or LA-3. The potential for vessel interactions with marine mammals would be increased by these additional trips. Marine mammals in area may come in proximity to construction vessels, primarily tugboats and barges. Because construction at the riser and diffuser sites would increase the number of vessel trips in an area that is already susceptible to collisions with marine mammals, there is the potential for a significant direct and indirect impacts without mitigation.

Construction of Alternatives 1 through 3would also entail the use of anchors, buoy lines, and rope. Therefore, there is potential for protected species to become entangled in lines associated with project construction. Direct and indirect impacts could be significant without mitigation.

Construction of Alternatives 1 through 3 would also increase underwater sound during construction associated with pile driving activities. Furthermore, pile driving may also be utilized for the placement of riser casings which are large diameter steel casings. The pressure levels associated with construction activities could exceed the entry threshold for cetaceans, pinnipeds, and marine birds (during diving activities). Furthermore, construction is expected to last 10 hours per day on each of the five working days. Therefore, there is potential for significant direct and indirect impacts without mitigation.

Alternative 4 entails rehabilitation of the existing ocean outfalls. The rehabilitation work would entail a like-for-like replacement of existing substrate. A small derrick barge would be used to place the ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. There would be a substantial decrease in potential for vessel collisions, entanglements, and underwater sounds.

The rehabilitation work would be located adjacent to the designated critical habitat for black abalone (*Haliotis cracherodii*) which extends from the shoreline demarcated by the mean higher high water mark to -9.8 feet mean lower low water (MLLW). The proposed rehabilitation work would be located between -20 feet MLLW to -50 feet MLLW, outside of the seaward boundary of the designated critical habitat. Annual abalone surveys conducted by the Sanitation Districts since 1976 have not indicated presence of the black abalone within the proposed work area. Therefore, Alternative 4 would entail little or no direct or indirect impacts to threatened and endangered species compared to Alternatives 1 through 3.

Fish, crustaceans, mollusks, and other aquatic organisms in the food web

Alternatives 1 through 3 would entail sediment disturbing activities such as dredging, pile driving, and hydro-jetting. Construction activities could alter water quality by generating a turbid environment at the surface of the ocean and near the bottom by increasing suspended sediment levels. The size and persistence of a sediment plume would depend on several factors, including sediment characteristics, water depth, and current direction and velocity. Settling rates are largely determined by the grain size of the suspended material.

If dredged material is sidecasted, sediment generally would not be released more than 20 feet from the bottom, thereby limiting the spread of sediment. Localized areas of elevated turbidity conditions would occur in the vicinity of the near-bottom construction activities for the duration of construction. However near-bottom turbidity generated by construction activities is expected to settle and rapidly mix with ambient water, with normal conditions likely to be found in the area within hours to days of cessation of construction activities.

Dredging would require sediment to be brought to the surface via a clamshell dredge and loaded onto a barge. As sediment is brought up through the water column some amount of sediment would wash out of the dredge, typical of all dredging operations. Therefore, water column turbidity would occur using this dredging and removal method. Although the process of raising these sediments from the seafloor to the dredge barge would create turbidity throughout the entire water column instead of just near bottom, overall, more sediments would be removed from the marine environment when compared to sidecasting. Dredging, trenching, grading, and placement of ballast on the seafloor would directly impact aquatic organisms with limited mobility such as crustaceans and mollusks through removal and burial. These activities would have limited impact to mobile organisms such as fishes that can easily move away from the construction through startle response triggered by underwater sound. However, turbidity impacts would be temporary. Furthermore, because crustaceans and mollusks are relatively abundant, it is likely that such organisms would quickly recolonize affected areas. Therefore, direct and indirect impacts would be limited to the duration of construction and baseline conditions would return thereafter.

Alternative 4 would not entail dredging, pile driving, and hydro-jetting. A team of divers would remove the ballast rock and hand-shovel approximately 2 cubic yards of sediment from each joint, resulting in the removal of approximately 20 to 80 cubic yards of sediment, a substantially smaller amount compared to Alternatives 1 through 3. Sediment and existing ballast rock would be replaced around the pipe, and additional ballast rock would be placed as needed. Construction activities would be limited to the existing footprint of the existing outfall structures. Therefore, based on the detailed analysis in Section 13.4.6.2 of the Final EIS/EIR, Alternative 4 would entail little or no direct or indirect impacts to aquatic organisms compared to Alternatives 1 through 3.

Other wildlife

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP, or HDPE on the ocean floor. The riser, manifold, and diffuser would cover a seafloor area of approximately 8 acres. Construction would take approximately three years and

entail sediment disturbing activities such as dredging, pile driving, and hydro-jetting. During the three year construction period, elevated noise levels could disturb other wildlife in the vicinity of the project area. Furthermore, Alternatives 1 through 3 would result in permanent impacts to 8 acres of substrate and associated habitat on the ocean floor and indirect impacts to wildlife in the immediate vicinity of the structure.

Alternative 4 would entail rehabilitation of the existing ocean outfalls. The rehabilitation work would entail a like-for-like replacement of existing rock ballast. Construction activities would not entail dredging, pile driving, and hydro-jetting and would be limited to the footprint of the existing outfall structures. Due to the differences in the type, scope, and duration of work, Alternative 4 would entail substantially less direct and indirect impacts to other wildlife compared to Alternatives 1 through 3.

Cumulative impacts

Past and present projects constructed and operating within the open marine environment on the PV Shelf and SP Shelf include oil platforms, fiber optic cables, and wastewater outfalls. Reasonably foreseeable future projects would include construction and maintenance of similar structures and infrastructure. Construction activities that could affect marine organisms include dredging, pile driving, demolition, dredged material placement, and discharge of fill material. These activities could affect marine organisms through underwater sounds, entanglement, vessel strikes, direct removal, and burial. With the exception of crustaceans, benthic invertebrates and similar organisms, most marine organisms such as birds, fish, and marine mammals are mobile. The ability of mobile marine organisms to avoid or move away from construction areas would attenuate construction related impacts. Immobile benthic organisms in general can quickly recolonize previously occupied areas. Furthermore, impacts from construction to water quality would be short term and would return to baseline levels upon completion of construction. Therefore, construction associated with Alternative 4 would not result in cumulatively significant impacts to marine organisms. Additional analysis of cumulative impacts to the marine environment is provided in Section 21.2.10 of the Final EIS/EIR.

5.3 Potential Direct and Indirect Impacts on Special Aquatic Sites (Subpart E)

Sanctuaries and refuges

Alternatives 1 through 4 are not located within sanctuaries or refuges designated under state or federal laws. Therefore, all alternatives would not impact sanctuaries or refuges.

Wetlands

Alternatives 1 through 4 are not located within or adjacent to wetlands. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline within an open marine environment. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline within an open marine environment. Alternative 4 entails rehabilitation of the existing ocean outfalls located approximately 2 miles offshore the coastline within an open marine environment. Therefore, all alternatives would not impact wetlands.

Mudflats

Alternatives 1 through 4 are not located within or adjacent to mudflats. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline within an open marine environment. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline within an open marine environment. Alternative 4 entails

rehabilitation of the existing ocean outfalls located approximately 1.25 miles offshore from coastline within an open marine environment. Therefore, all alternatives would not impact mudflats.

Vegetated shallows

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP, or HDPE on the ocean floor. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline within an open marine environment, at a depth of approximately 200 feet. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline at approximately the same depth. Marine vegetation is not expected to be present due to the reduced availability of sunlight at this depth.

Alternative 4 entails rehabilitation of the existing ocean outfalls located near kelp beds. There are approximately 150 acres of kelp along an approximately 5-mile length of coastline that includes the White Point area in water depths of approximately 40 to 70 feet. Areas shoreward of 40-foot depths do not support kelp because of wave action, sea urchin grazing, and the absence of hard substrate. Because proposed re-ballasting work would occur at water depths of approximately 20 and 50 feet, there would be some overlap between the general work area and the kelp habitat between about 40 and 50 feet. As a result, re-ballasting activities could impact kelp growing on the outfall pipes and the adjacent rock ballast. However, the impact would be minimized because the proposed method of placing the new ballast rock ensures that the work would be limited to the existing footprint of the outfalls (i.e., pipeline and adjacent rock ballast). The impact would also be temporary because kelp would be able to recolonize the rock ballast upon completion of construction. Furthermore, replacement and addition of rock ballast would increase hard substrate surface area and thus benefit benthic habitat. Based on the detailed analysis in Section 13.4.6.2 of the Final EIS/EIR, Alternative 4 would entail direct and indirect impacts to marine vegetation comparable to Alternatives 1 through 3. However, direct and indirect impacts on kelp forests associated with the rehabilitation work for Alternative 4 would be minimal and temporary.

Coral reefs

Alternatives 1 through 3 would entail the discharge of a riser/diffuser outfall structure constructed of either steel, RCP or HDPE on the ocean floor. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline within an open marine environment, at a depth of approximately 200 feet. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline at approximately the same depth. Coral reefs are not expected to be present due to the reduced availability of sunlight at this depth.

Alternative 4 entails rehabilitation of the existing ocean outfalls located near a rocky intertidal shoreline. Furthermore, ballast on the existing outfall structures provide additional hard substrate support benthic habitat. It is possible that there are coral reefs within the vicinity of the existing ocean outfalls. However, the rehabilitation work would be limited to the existing footprint of the existing outfalls. Therefore, Alternative 4 would not result in impacts to coral reefs.

Riffle and pool complexes

Alternatives 1 through 4 are not located within or adjacent to a riverine environment where riffle and pool complexes are expected to be present. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline within an open marine environment. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline within an open marine environment. Alternative 4 entails rehabilitation of the existing ocean outfalls located approximately 1.25 miles offshore within an open marine environment. Therefore, all alternatives would not impact riffle and pool complexes.

Cumulative impacts

Past and present projects constructed and operating within the open marine environment on the PV Shelf and SP Shelf include oil platforms, fiber optic cables, and wastewater outfalls. Reasonably foreseeable future projects would include construction and maintenance of similar structures and infrastructure. Due to construction within an open marine environment, mudflats, wetlands, and riffle pools and complexes would be unaffected. Construction activities that could affect sanctuaries and refuges, vegetated shallows, and coral reefs include dredging, pile driving, demolition, dredged material placement, and discharge of fill material. In general, oil platforms, fiber optic cables, and wastewater outfalls occupy small footprints. In the context of the large expanse of the PV Shelf and SP Shelf and the low frequency of the construction and maintenance of these structures, construction associated with past, present and reasonably foreseeable future projects would not result in cumulatively significant impacts to special aquatic sites.

5.4 Potential Direct and Indirect Effects on Human Use Characteristics (Subpart F)

Municipal and private water supplies

Alternatives 1 through 3 would entail the discharge of a riser/diffuser structure constructed of either steel, RCP, or HDPE on the ocean floor. All three types of materials are chemically inert, and would not introduce contaminants into the water column via leaching.

Construction of the riser/diffuser structure would require discharge of ballast. Ballast rock is chemically inert, and would not introduce contaminants into the water column via leaching. If the diffuser were constructed of steel or RCP it may be necessary to construct a ballast rock base up to 54 feet wide and 5 feet deep. The diffuser would be placed on this base with additional ballast rock added around the pipe for stability. Estimated quantities of ballast rock are 30,000 to 95,000 cubic yards. If the diffuser were constructed of HDPE, no trenching would be required, and it would be placed directly on the seafloor. Approximately 1,500 pre-installed concrete anchor blocks would be attached to HDPE piping to provide ballast during the sinking and installation process as well as to provide stability against ocean currents and wave-induced hydrodynamic loading. Estimated quantities of ballast rock are 7,000 to 20,000 cubic yards.

Construction of the offshore reach of the tunnel and riser/diffuser structure would require ocean disposal suitable dredged material at an ODMDS. Any contaminated sediments would be disposed at inland facilities in accordance with all applicable regulations. Estimated quantities of dredged material are 5,000,000 to 30,000,000 cubic yards for the offshore tunnel, 40,000 to 45,000 cubic yards for the riser, and 10,000 to 50,000 cubic yards for the diffuser. Discharge of suitable dredged material within the marine environment may leach contaminants into the water column. However, most of the material is native substrate with little or no exposure to sources of contamination. Therefore, any leaching of contaminants would be minimal.

Alternative 4 would discharge ballast rock around the outfalls and support the joint repair work. Ballast rock is chemically inert, and would not introduce contaminants into the water column via leaching.

All alternatives would be located offshore within an open marine environment away from municipal and private water supplies, which are mostly located in the uplands. There are no intake infrastructure for desalination plants within the vicinity of the proposed location for the riser/diffuser structure or the existing ocean outfalls. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline at a depth of approximately 200 feet.

Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline at approximately the same depth. Alternative 4 entails rehabilitation of the existing ocean outfalls located approximately 1.25 miles offshore the coastline.

Recreational and commercial fisheries

Alternatives 1 through 3 are located within areas where commercial and recreational fishing occur. Furthermore, the areas are located within two fishery management plans (FMP): the Coastal Pelagics FMP (6 species), and the Pacific Groundfish FMP (89 species). During construction, the footprint at the ocean surface and ocean floor where construction is occurring would be off-limits to recreational and commercial fishing boats. However, given the large areas of the ocean available for commercial and recreational fishing, the off-limits area at the construction site would entail inconsequential impacts. Upon completion of construction, construction areas would be available for recreational and commercial fishing. There would be no long-term impacts to recreational and commercial fisheries due to the discharges of fill. Alternatives 1 through 3 would entail the discharge of a riser/diffuser structure constructed of either steel, RCP or HDPE on the ocean floor. All three types of materials are chemically inert, and would not introduce contaminants into the water column via leaching.

Construction of the riser/diffuser structure would require discharge of ballast. Ballast rock is chemically inert, and would not introduce contaminants into the water column via leaching. Furthermore, the discharges of fill would not impede fish migration since the riser/diffuser structure would be located within an open marine environment. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline at a depth of approximately 200 feet. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline at approximately the same depth.

Alternative 4 is located within an area where recreational fishing occurs. This area is located within two fishery management plans (FMP): the Coastal Pelagics FMP (6 species), and the Pacific Groundfish FMP (89 species). During construction, the footprint at the ocean surface and ocean floor where construction is occurring would be off-limits to recreational and commercial fishing boats. However, given the large areas of the ocean available for recreational fishing, the off-limits area at the construction site would entail inconsequential impacts. Upon completion of construction, the project area would be available for recreational fishing. There would be no long-term impacts to recreational fisheries due to the discharges of fill since Alternative 4 entails like-for-like replacement of rock ballast on an existing ocean outfall. Ballast rock is chemically inert, and would not introduce contaminants into the water column via leaching.

Water-related recreation

Alternatives 1 through 3 are located in an open marine environment. Alternative 1 would locate the riser and diffuser site approximately 8 miles offshore the coastline. Alternatives 2 and 3 would locate the riser and diffuser site approximately 2 miles offshore the coastline. At this distance, the only form of water-related recreation would be recreational boating. During construction, the footprint at the ocean surface where construction is occurring would be off-limits to recreational boating. However, given the large areas of the ocean available for recreational boating, the impacts would be inconsequential. Upon completion of construction, off-limit areas would be available for recreational and commercial fishing.

Alternative 4 is located in an open marine environment in the nearshore, approximately 1.25 miles off Palos Verdes. Water-related recreation activities associated with the nearshore environment such as diving, motorized recreational boating, kayaking, surfing, and swimming are expected to be present within the general area. During construction, the footprint at the ocean surface and ocean floor where construction is occurring would be off-limits to recreational

boating. However, given the large areas of the ocean available for recreational activities, the impacts would be inconsequential. Upon completion of construction, off-limit areas would be available for recreational activities.

Aesthetics

Alternatives 1 through 3 are located in an open marine environment, and would entail the discharge of a riser/diffuser structure constructed of either steel, RCP, or HDPE on the ocean floor. Alternatives 1 through 3 would result in new structures on the ocean floor covering approximately 5 to 10 acres. However, the structures would not impact coral reefs. Furthermore, the structures would not be visible due to their depths. Therefore, impacts to aesthetics would be inconsequential.

Alternative 4 would entail rehabilitation of the existing ocean outfalls in an open marine environment in the nearshore, approximately 1.25 miles off Palos Verdes. The rehabilitation work would entail a like-for-like replacement of existing rock ballast. However, the structures would not impact coral reefs. Furthermore, the rehabilitated structures would not be visible due to their depths. Therefore, there would be no impacts to aesthetics.

Parks, national and historical monuments, national seashores, wilderness areas, and research sites

Alternatives 1 through 4 are not located within parks, national and historical monuments, national seashores, wilderness areas, research sites, or similar sites designated under state or federal laws. Therefore, all alternatives would not impact these resources.

Cumulative impacts

Past and present projects constructed and operating within the open marine environment on the PV Shelf and SP Shelf include oil platforms, fiber optic cables, and wastewater outfalls. Reasonably foreseeable future projects would include construction and maintenance of similar structures and infrastructure. It is unlikely that construction and maintenance would cumulatively impact municipal and private water supplies. The primary sources of water supplies for the southern California area are the State Water Project and ground water. Construction and maintenance could temporarily affect recreational and commercial fishing and other recreation during construction. However, any designated off-limit construction area would be available for fishing and recreational activities upon termination of construction. In general, oil platforms, fiber optic cables, and wastewater outfalls occupy small footprints. In the context of the large expanse of the PV Shelf and SP Shelf, and the low frequency of the construction and maintenance of these structures, construction associated with past, present and reasonably foreseeable future projects would not result in cumulatively significant impacts to fish spawning areas or other areas that support recreational and commercial fisheries. With the exception of oil platforms, the impacts to aesthetics would be limited since most structures and infrastructure within the open marine environment would be submerged. Based on the above, construction associated with past, present and reasonably foreseeable future projects would not result in cumulatively significant impacts to human use characteristics.

5.5 Evaluation and Testing (Subpart G)

Chemical, biological, and physical evaluation and testing

Alternatives 1 through 3 would entail the discharge of a riser/diffuser structure constructed of either steel, RCP, or HDPE on the ocean floor. All three types of materials are chemically inert, and would not introduce contaminants into the water column via leaching. Alternatives 1 through 3 would entail sediment disturbing activities such as such as dredging, pile driving, and hydro-

jetting. Sediment disturbing activities from Alternative 1 are not expected to introduce contaminants into the water column because the SP Shelf riser and diffuser assembly site would be located approximately 7.5 miles from the POLA breakwater. As such, the sediment is expected to be clean relative to sediment within POLA, which receives contaminants from urban runoff and historical industrial practices within the port. Furthermore, it is not located within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. Alternatives 2 and 3 would locate the riser/diffuser structure on the PV Shelf, approximately 2 miles from Point Fermin. The PV Shelf riser and diffuser area is within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. An estimated 1,800 metric tons of DDT was discharged onto the PV Shelf between 1953 and 1971. Much of the original DDT that was historically discharged has now dispersed throughout the greater PV Shelf, but a reservoir of approximately 100 metric tons remains buried in the seafloor concentrated near the diffusers of the existing outfalls. Sediment testing would be implemented to ensure that construction activities avoid contaminated sediments and would not interfere with the EPA's proposed remedy, which is a cap of clean sand/silt to be placed over approximately 300 acres of the Palos Verdes Shelf where the highest surficial contaminant concentrations appear to be eroding. Discharge of dredged or fill material would be subject to the SCDMMT's suitability determinations for discharge into the aquatic environment.

Alternative 4 would not entail sediment disturbing activities such as dredging, pile driving, and hydro-jetting. Therefore, Alternative 4 would substantially reduce turbidity and suspended particulates in the water column compared to Alternatives 1 through 3. Likewise, the potential for introducing contaminants into the water column from sediment disturbing activities would be substantially less. Furthermore, Alternative 4 would discharge ballast rock (estimated total of 15,000 to 18,000 cubic yards) around the outfalls and support the joint repair work. Ballast rock is chemically inert, and would not introduce contaminants into the water column via leaching. The existing outfalls are located within the boundaries of the EPA-designated DDT/PCB contaminated sediment study area. However, the highest contaminant concentrations are near the terminus of the existing ocean outfalls in depths of 150 to 200 feet, while the primary sediment-disturbing activity would be placement of additional ballast rock along the existing outfalls at ocean depths ranging from approximately 20 to 50 feet. Given the distance between the proposed re-ballasting work and the EPA's proposed cap, potential impacts would be avoided. Therefore, based on the detailed analysis in Section 13.4.6.2 of the Final EIS/EIR, Alternative 4 would substantially reduce contaminants in the water column compared to Alternatives 1 through 3. Furthermore, Alternative 4 would entail less than significant direct and indirect impacts to contaminants.

5.6 Actions Taken to Minimize Adverse Effects (Subpart H)

The special conditions below incorporate mitigation measures from the Final EIS/EIR deemed to be applicable and enforceable for authorized work and discharges of fill within waters of the United States. Mitigation Measure MAR 3-j is incorporated into Special Conditions 12 and 13. Mitigation Measure CUL-2 is incorporated into Special Condition 15.

1. Within 45 calendar days of completion of authorized work in jurisdictional waters, the Permittee shall submit to the Corps Regulatory Division a post-project implementation memorandum including the following information:

    A. Date(s) work within jurisdictional waters was initiated and completed;

B. Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
C. Color photographs (including map of photopoints) taken at the project site before and after construction for those aspects directly associated with permanent impacts to jurisdictional waters such that the extent of authorized fills can be verified;
D. One copy of "as built" drawings for the entire project. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
E. Signed Certification of Compliance (attached as part of this permit package);
F. A post-project survey indicating changes to structures and other features in navigable waters. The Permittee shall forward a copy of the survey to the Corps Regulatory Division and to the National Oceanic and Atmospheric Service for chart updating: Gerald E Wheaton, NOAA, Regional Manager, West Coast and Pacific Ocean, DOD Center Monterey Bay, Room 5082, Seaside, CA 93955-6711.

2. The permitted activity shall not interfere with the right of the public to free navigation on all navigable waters of the United States as defined by 33 CFR Part 329.

3. No other modifications or work shall occur to the structure permitted herein.

4. The Permittee shall discharge only clean construction materials suitable for use in the oceanic environment. The Permittee shall ensure no debris, soil, silt, sand, sawdust, rubbish, cement or concrete washings thereof, oil or petroleum products, from construction shall be allowed to enter into or placed where it may be washed by rainfall or runoff into waters of the United States. Upon completion of the project authorized herein, any and all excess material or debris shall be completely removed from the work area and disposed of in an appropriate upland site.

5. The Permittee shall notify the Corps Regulatory Division of the date of commencement of operations not less than 14 calendar days prior to commencing work, and shall notify the Corps of the date of completion of operations at least five calendar days prior to such completion.

6. To ensure navigational safety, the Permittee shall provide appropriate notifications to the U.S. Coast Guard as described below:

Commander, 11th Coast Guard District (dpw)
TEL: (510) 437-2980
E-mail: d11LNM@uscg.mil
Website: http://www.uscg.mil/dp/lnmrequest.asp
U.S. Coast Guard, Sector LA-LB (COTP)
TEL: (310) 521-3860
E-mail: john.p.hennigan@uscg.mil

7. The Permittee shall notify the U.S. Coast Guard, Commander, 11th Coast Guard District (dpw) and the U.S. Coast Guard, Sector LA-LB (COTP) (contact information shown above), not less than 14 calendar days prior to commencing work and as project information changes. The notification shall be provided by e-mail with at least the following information, transmitted as an attached Word or PDF file:

A. Project description including the type of operation (i.e. dredging, diving, construction, etc).
B. Location of operation, including Latitude / Longitude (NAD 83).

C. Work start and completion dates and the expected duration of operations. The Coast Guard needs to be notified if these dates change.
D. Vessels involved in the operation (name, size and type).
E. VHF-FM radio frequencies monitored by vessels on scene.
F. Point of contact and 24 -hour phone number.
G. Potential hazards to navigation.
H. Chart number for the area of operation.
I. Recommend the following language be used in the LNM: "Mariners are urged to transit at their slowest safe speed to minimize wake, and proceed with caution after passing arrangements have been made."

8. The Permittee and its contractor(s) shall not remove, relocate, obstruct, willfully damage, make fast to, or interfere with any aids to navigation defined at 33 CFR chapter I, subchapter C, part 66. The Permittee shall ensure its contractor notifies the Eleventh Coast Guard District in writing, with a copy to the Corps Regulatory Division, not less than 30 calendar days in advance of operating any equipment adjacent to any aids to navigation that requires relocation or removal. Should any federal aids to navigation be affected by this project, the Permittee shall submit a request, in writing, to the Corps Regulatory Division as well as the U.S. Coast Guard, Aids to Navigation office (contact information provided above). The Permittee and its contractor are prohibited from relocating or removing any aids to navigation until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard.

9. Should the Permittee determine the work requires the temporary placement and use of private aids to navigation in navigable waters of the United States, the Permittee shall submit a request in writing to the Corps Regulatory Division as well as the U.S. Coast Guard, Aids to Navigation office (contact information provided above). The Permittee is prohibited from establishing private aids to navigation in navigable waters of the United States until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard.

10. The COTP may modify the deployment of marine construction equipment or mooring systems to safeguard navigation during project construction. The Permittee shall direct questions concerning lighting, equipment placement, and mooring to the appropriate COTP.

11. The Permittee understands and agrees that if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers Regulatory Division, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

12. No later than 120 days prior to initiation of work in jurisdictional waters, the Sanitation Districts shall submit to the Corps a black abalone survey and transplant plan for review and approval. At a minimum the plan will include:

- Survey of the existing ocean outfall pipeline at depths between the -15 MLLW and -55 MLLW in areas potentially affected by rehabilitation work.
- Identification of a nearby transplant location with similar habitat, preferably within the geographic boundary of the designated critical habitat.
- Temporary holding and transportation methods.
- A requirement that the survey and relocation team include divers/biologists experienced

in both locating and relocating abalone.

- A requirement that the survey and transplant will occur no more than 30 days preceding the in-water rehabilitation activities.
- Survey and transplant reporting requirements.

13. No later than 90 days prior to initiation of in-water construction, the Permittee shall conduct a pre-construction survey for the black abalone. If surveys indicate presence of black abalone within the construction footprint, the Permittee shall immediately notify the Corps Regulatory Division. No black abalone shall be transplanted until the Corps has issued a notice to proceed to the Permittee authorizing initiation of transplant activities. Measures required by the U.S. Fish and Wildlife Service will be incorporated by reference in the Notice to Proceed and will become conditions of this permit. In water construction activities shall not commence until transplant activities are complete.

14. This permit does not authorize you to take any threatened or endangered species, in particular black abalone, or adversely modify designated critical habitat for any species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions) with which you must comply. The NMFS is the appropriate authority to determine compliance with the ESA.

15. Pursuant to 36 CFR § 800.13, in the event of any discoveries during construction of either human remains, archaeological deposits, or any other type of historic property, the Permittee shall notify the Corps Archeology staff within 24 hours (Mr. Steve Dibble at 213-452-3849 or Mr. John Killeen at 213-452-3861). The Sanitation Districts shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The Sanitation Districts shall not resume construction in the area surrounding, i.e., immediately adjacent to, the potential cultural resources, until the Corps re-authorizes project construction, per 36 CFR § 800.13.

16. No later than 90 days prior to initiation of in-water work in jurisdictional waters, the Sanitation Districts shall conduct a pre-construction survey for hard-bottom/biogenic substrate such as reefs within the construction footprint. If hard-bottom/biogenic substrate is deemed to be within the anchorage area for the derrick barge, the Sanitation Districts shall prepare an anchor management plan no later than 30 days prior to initiation of construction. In-water construction activities shall not commence until the Corps has reviewed and approved the anchor management plan.

5.7 Summary of Effects to the Aquatic Environment

Results from the evaluation of Subparts C through G are summarized in Table 2. In general, Alternatives 1 through 3 would have greater impact to substrate, water quality, contaminant, and benthic organisms when compared to Alternative 4 due to the larger scope of the discharge of fill and the longer duration of construction. Alternatives 1 through 3 would have similar impacts to other parameters when compared to Alternative 4.

Table 2: Comparison of Effects on the Aquatic Environment

	Proposed Project (Alt.4)	Alt. 1	Alt. 2	Alt. 3	Alt. 6
Substrate	E	G	G	G	N
Suspended particulates and turbidity	E	G	G	G	N
Contaminants	E	E	E	E	N
Water	E	G	G	G	G
Current patterns and water circulation	E	E	E	E	N
Normal water fluctuations	E	E	E	E	N
Threatened and endangered species	E	E	E	E	N
Fish, crustaceans, and other aquatic life	E	G	G	G	N
Other wildlife	E	E	E	E	N
Sanctuaries and refuges	N	N	N	N	N
Wetlands	N	N	N	N	N
Mudflats	N	N	N	N	N
Vegetated shallows	N	N	N	N	N
Coral reefs	N	N	N	N	N
Riffle and pool complexes	N	N	N	N	N
Municipal and private water supplies	N	N	N	N	N
Recreational and commercial fisheries	E	E	E	E	N
Water-related recreation	E	E	E	E	N
Aesthetics	N	N	N	N	N
Parks, national and historical monuments, etc.	N	N	N	N	N
Chemical, biological, and physical evaluation	E	G	G	G	N

Notes:
E = Equivalent to proposed Project
L = Less than proposed Project
G = Greater than proposed Project
N = No impact

6.0 Conclusions

Alternatives 1 through 4 meet the overall project purpose and are practicable with respect to cost, technology, and logistics.

Due to the associated onshore tunneling activities, all alternatives would entail significant impacts to aesthetics, air quality, and paleontological resources.

Alternatives 1 through 3 would entail discharge of fill into 5 to 10 acres of waters of the U.S. for construction of the new offshore tunnel and ocean outfall. Alternatives 1 through 4 would entail discharge of fill into approximately 3.7 acres for rehabilitation of the existing outfalls. With respect to new ocean outfalls, approximately 30,000 to 95,000 cubic yards of rock ballast would be required for a steel or RCP diffuser structure. Approximately 7,000 to 20,000 cubic yards of rock ballast would be required for an HDPE diffuser structure, which would also require the discharge of approximately 1,500 concrete anchor blocks. Estimated quantities of dredged material are 5,000,000 to 30,000,000 cubic yards for the offshore tunnel, 40,000 to 45,000 cubic yards for the riser, and 10,000 to 50,000 cubic yards for the diffuser. Alternative 4, rehabilitation of the existing ocean outfalls only, would restrict the discharge of fill to the footprint of the existing ocean outfalls impacting approximately 3.7 acres of waters of the U.S. Approximately 15,000 to 18,000 cubic yards of rock ballast would be discharged. Therefore, Alternatives 1 through 3 would impact 8.7 to 13.7 acres of undisturbed waters of the U.S.; in contrast, Alternative 4 would limit impacts to 3.7 acres of waters of the U.S., where the existing ocean outfalls are located.

Alternative 4 would not entail large-scale, mechanized sediment disturbing activities such as dredging, hydro-jetting, grading, and pile driving. Results from the evaluation of Subparts C through G indicate that Alternatives 1 through 3 would entail greater impact to substrate, water quality, contaminant, and benthic organisms when compared to Alternative 4. With respect to non-aquatic environmental resources, Alternative 4 would entail less impacts when compared to Alternatives 1 through 3. For example, Alternative 4 would entail less air quality impacts because the overall tunneling distance is the shortest; and less noise impacts because the construction schedule is the shortest. With inclusion of special conditions to minimize effects to the aquatic environment associated with construction of Alternative 4 (Subpart H above and Section VIII(b) of the Record of Decision), direct and indirect impacts to aquatic resources associated with Alternative 4 would be avoided and minimized to the maximum extent practicable.

APPENDIX B
RESPONSE TO COMMENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

DEC 10 2012

Dr. Aaron O. Allen
Regulatory Division, Ventura Field Office
U.S. Army Corps of Engineers
2151 Alessandro Drive, Suite 110
Ventura, CA 93001

Subject: Final Environmental Impact Statement for the Sanitation Districts of Los Angeles County Clearwater Program, Los Angeles County, CA (CEQ #20120359)

The U.S. Environmental Protection Agency is providing comments on the Final Environmental Impact Statement for the Clearwater Program, Los Angeles County, California. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. These comments were also prepared under the authority of, and in accordance with, the provisions of the Federal Guidelines promulgated at 40 CPR 230 under Section 404(b)(1) of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act.

EPA would like to, once again, express our appreciation for the opportunity to coordinate early and discuss our concerns with the Districts on December 10, 2007, and with the Army Corps of Engineers and the Districts on February 9, 2010 and August 24, 2011. We provided detailed comments on the January 2, 2008 Draft Notice of Intent in our letter dated March 5, 2008. EPA also submitted a letter to the Districts, dated July 30, 2008, clarifying our Superfund Program comments with respect to the effluent-affected sediment deposit on the Palos Verdes Shelf. In a November 4, 2008 letter, we confirmed that our comments on the Draft NOI still applied, based on our review of the NOI released on October 6, 2008. In addition, on April 9, 2012, EPA provided comments on the Draft Environmental Impact Statement (DEIS) for the Clearwater Program. We rated the preferred alternative, as outlined in that document, as Environmental Concerns – Insufficient Information (EC-2), primarily due to concerns regarding impacts to air quality, aquatic resources, children's health and environmental justice communities.

EPA-1

EPA continues to support the Corps' and the Districts' selection of Alternative 4 as their preferred alternative. Alternative 4 would not require the construction of new outfalls, and thereby avoids potential disturbance of contaminated sediment and generation of additional air emissions. Alternative 4 also avoids potential impacts to the Palos Verdes DDT Superfund Site and the LA-2 Ocean Disposal Site.

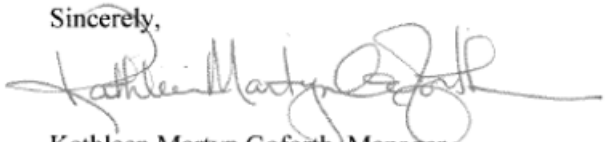
EPA-2

We thank the Army Corps of Engineers for the revisions and clarifications provided in the FEIS in response to EPA's comments on the DEIS. For instance, we note that the Army Corps has updated air quality mitigations measures MM AQ-2a, 3a and GHG-1a to apply to all on-road heavy-duty diesel trucks greater than 14,000 pounds, versus the previous 26,000 pound requirement provided in the DEIS. We also appreciate the Corps and Sanitation Districts' commitment to continue consultation and coordination with EPA in regards to all actions potentially affecting the Palos Verdes Shelf Superfund Site. EPA-3

Due to the severe existing air quality problems in the project area and the project's potential to contribute to further degradation of air quality, EPA remains concerned about the potential cumulative effect on children's health and environmental justice communities. EPA continues to recommend that the Corps consider additional mitigation strategies for reducing impacts to human health, particularly for children and low-income and minority communities. While the FEIS indicates that the project would not have a disproportionately high impact upon low-income or minority communities because air quality mitigation would reduce impacts below the threshold of significance, EPA notes that environmental justice communities have been found to be more vulnerable to pollution impacts than are other communities[1]. Thus, certain subpopulations may be at greater risk than the general population, and mitigation for reducing these impacts is appropriate. A number of examples of mitigation measures that the Corps could consider to reduce community exposure and vulnerability to adverse air quality were outlined in our comments on the DEIS. These included, the funding of proactive measures to improve air quality and general health in neighboring homes, schools, and other sensitive receptor sites; the provision of public education programs about environmental health impacts to better enable residents to make informed decisions about their health and community; engaging in proactive measures to train and hire local residents for construction or operation of the project to improve their economic status and access to health care; and, the expansion and improvement of local community parks and recreation system in areas where air quality is highest, in order to provide increased access to open space and exercise opportunities. EPA continues to recommend that the Corps consider whether these or other additional measures might be appropriate for reducing cumulative adverse impacts to sensitive and environmental justice communities. EPA-4

We appreciate the opportunity to review this FEIS. When the ROD is published, please send one electronic copy to the address above (mail code: CED-2). If you have questions, please contact me at (415) 972-3521 or Carter Jessop of my staff at (415) 972-3815. EPA-5

Sincerely,



Kathleen Martyn Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

Response to EPA-1

The comment provides an introduction and references the U.S. Environmental Protection Agency's (USEPA) comments on the Final EIS. The comment also expresses appreciation for the coordination meetings conducted during the planning process. The comment also documented the chronology of written comments provided by the USEPA, and noted the Environmental Concern (EC-2) rating given to the Draft EIS/EIR.

The U.S. Army Corps of Engineers (Corps) appreciate the USEPA's acknowledgement of the Clearwater Program agency scoping meetings, and notes the written comments provided as well as the EC-2 rating.

Response to EPA-2 and EPA-3

The comment supports the Corps' selection of Alternative 4 as the preferred alternative.

The Corps appreciates the USEPA's concurrence that Alternative 4 should be selected as the preferred alternative because it would not require the construction of new outfalls and thereby avoids potential disturbance to contaminated sediment and generation of additional air emissions.

Response to EPA-4

The comment expresses appreciation for the revisions and clarifications provided in the Final EIS in response to the USEPA's comments on the Draft EIS.

The Corps appreciates the USEPA's acknowledgement of our revisions and clarifications in response to their comments on the Draft EIS.

Response to EPA-5

The comment advises the Corps to consider additional mitigation measures for reducing impacts to human health, particularly for children and low-income and minority communities. Some of the mitigation measures proposed by the USEPA include:

- funding of proactive measures to improve air quality and general health in neighboring homes, schools, and other sensitive receptor sites;
- providing public education programs about environmental health impacts;
- training and hiring local residents for construction and operation of the project to improve their economic status and access to health care; and
- the expansion and improvement of local community parks and recreation systems where air quality impacts are deemed to be the highest.

As described in Section 3.5 of the Final EIS, the Corps' NEPA scope of analysis includes all waters of the United States as well as any additional areas of non-jurisdictional waters or uplands where there is sufficient federal control and responsibility. Furthermore, because the Sanitation

Districts would not construct a new underground tunnel from the JWPCP to the existing ocean outfalls under the No Federal Action Alternative (See Section 3.4.1.6), the NEPA scope of analysis was expanded to include the construction of some project elements in the uplands. As a result, the EIS evaluated impacts and identified appropriate mitigation measures associated with construction activities located outside of waters of the U.S. With respect to air quality impacts associated with construction activities in the uplands, the Corps and the Sanitation Districts have updated air-quality mitigation measures MM AQ-2a, AQ-3a and GHG-la to apply to all on-road heavy-duty diesel trucks greater than 14,000 pounds, versus the previous 26,000 pound requirement provided in the Draft EIS/EIR per recommendation from the USEPA. However, the additional mitigation measures identified in their comment letter on the Final EIS would not directly contribute to further minimizing construction related air quality impacts to less than significant levels. Furthermore, there is very limited federal control and responsibility under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act in adopting the USEPA mitigation measures recommended above. The Final EIS has identified air quality mitigation measures that would minimize construction related air quality impacts. It is recognized that the Sanitation Districts, as the local agency with continuing program responsibility over the entire project throughout its useful life, will implement, maintain, and monitor the full suite of mitigation measures identified in their certified EIR. Mitigation measures the Corps has determined enforceable and subject to our continuing program responsibility are included in this ROD.