



REPLY TO  
ATTENTION OF

## DEPARTMENT OF THE ARMY

LOS ANGELES DISTRICT CORPS OF ENGINEERS  
P.O. BOX 532711  
LOS ANGELES, CALIFORNIA 90053-2325

July 30, 2012

Office of the Chief  
Planning Division

To Interested Parties:

This is to announce that the Draft Environmental Assessment (DEA) for the Channel Islands/Port Hueneme Harbors Maintenance Dredging Project, Ventura County, California has been released for public review and comment. The DEA can be accessed on our website at <http://www.spl.usace.army.mil/Media/PublicNotices/ProjectPublicNotices.aspx> by selecting the Channel Islands/Port Hueneme Harbors link. A compact disk with a copy of the DEA is available upon request.

The purpose of the proposed project is to provide a plan that allows for the maintenance dredging of the existing harbors at their authorized depths and widths, allows for maintenance dredging of the sand traps outside the Channel Islands Harbor to maintain design depths and capacity, and provides beach replenishment material for down coast beaches (Silver Strand and Hueneme) eroded as a result of altered littoral drift conditions associated with Channel Islands and Port Hueneme Harbors. The program would span about 6 years and include 3 dredging cycles at Channel Islands Harbor, with dredging anticipated to occur biennially (i.e., every two years). Annual dredging may be required in the event that sediment accumulation at Channel Islands Harbor creates navigation safety issues or severe erosion occurs at down coast beaches within a 1-year period. The first dredging cycle is currently scheduled for October 2012. Port Hueneme Harbor is expected to require dredging one time within this six year period.

Interested parties are invited to provide their views on the proposed activity as described in the DEA. The comment period begins July 31, 2012, and extends through August 31, 2012. Please address your comments to:

Josephine R. Axt, Ph.D.  
Chief, Planning Division  
U.S. Army Corps of Engineers  
Los Angeles District  
P.O. Box 532711  
Attention: Ms. Tiffany Bostwick (CESPL-PD-RN)  
Los Angeles, California 90053-2325

Comments received by August 31, 2012 will be considered in preparation of the final environmental document. We will also accept comments by email and FAX. Comments can be sent by email to [tiffany.bostwick@usace.army.mil](mailto:tiffany.bostwick@usace.army.mil) or transmitted by FAX to (213) 452-4204.

If you have any questions regarding the project, please contact Ms. Tiffany Bostwick, Project Environmental Coordinator, at (213) 452-3845.

Sincerely,

A handwritten signature in black ink, appearing to read "Josephine R. Axt". The signature is fluid and cursive, with a large initial "J" and "A".

Josephine R. Axt, Ph.D.  
Chief, Planning Division

**U.S. ARMY CORPS OF ENGINEERS  
SOUTH PACIFIC DIVISION  
LOS ANGELES DISTRICT**

**DRAFT FINDING OF NO SIGNIFICANT IMPACT  
FOR THE  
CHANNEL ISLANDS/PORT HUENEME HARBORS  
MAINTENANCE DREDGING PROJECT  
VENTURA COUNTY, CALIFORNIA**

I have reviewed the attached Environmental Assessment (EA) prepared for the project in Ventura County. The proposed project is a six year maintenance dredging program at the Channel Islands and Port Hueneme Harbors with disposal of dredged materials on Hueneme and/or Silver Strand Beaches.

The proposed project is required in order to maintain federally-authorized channel configurations, restore and assure safe navigability within the harbors, sustain current recreational opportunities, and provide materials for shoreline protection and beach replenishment. A Negative Determination has been submitted to the California Coastal Commission (CCC) for project concurrence. CCC concurrence with the Negative Determination will be obtained prior to initiation of dredging and placement/disposal activities.

Project impacts on marine resources will be minor and short-term. Construction activities will be subject to conditions specified in the EA (Section 5.2). No federally-listed species will be adversely affected by project implementation. Informal consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended (ESA), has been initiated with the U.S. Fish and Wildlife Service (USFWS) and measures specified in the EA (Section 5.2) are proposed to minimize effects to federally-listed species. Per informal consultation with the USFWS, a request for an amendment to the 2006 Biological Opinion for the 2006-2011 Channel Islands/Port Hueneme Harbors Maintenance Dredging Program will be submitted to the USFWS. The amendment would extend the 2006 Biological Opinion schedule to cover the 2012-2018 Channel Islands/Port Hueneme Harbors Maintenance Dredging Program. Thus, the project will be in compliance with the ESA.

The implementing regulations for Section 106 of the National Historic Preservation Act (NHPA, 36 CFR 800) allow a federal agency to proceed with a project without further consultation if the project does not have the potential to cause effects on historic properties. Compliance with Section 106 of the NHPA is completed without input from the State Historic Preservation Officer (SHPO). The proposed project meets these criteria.

Other resources analyzed in this EA, including oceanography and water quality, air quality, noise, vessel transportation and safety, recreation uses, aesthetics, land/water uses, and ground transportation are not expected to result in significant adverse impacts.

I have considered the available information contained in this Environmental Assessment and determined that the impacts resulting from the implementation of the proposed project will not have a significant adverse impact upon the existing environment or the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

\_\_\_\_\_  
DATE

\_\_\_\_\_  
R. Mark Toy, P.E.  
Colonel, US Army  
Commander and District Engineer

**DRAFT  
ENVIRONMENTAL ASSESSMENT**

**FOR**

**CHANNEL ISLANDS/PORT HUENEME HARBORS  
MAINTENANCE DREDGING PROJECT  
Ventura County, California**

**PREPARED BY**

**U.S. ARMY CORPS OF ENGINEERS  
SOUTH PACIFIC DIVISION  
LOS ANGELES DISTRICT**

**July 2012**



## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b>	
1.1	Proposed Project .....	1
<b>2.0</b>	<b>HISTORY AND PURPOSE</b>	
2.1	Summary of Proposed Benefits .....	4
2.2	Project Purpose .....	6
<b>3.0</b>	<b>PROJECT ALTERNATIVES</b>	
3.1	Proposed Project Criteria Requirements .....	7
3.2	Alternatives Considered.....	7
<b>4.0</b>	<b>ENVIRONMENTAL INVENTORY AND CONSEQUENCES</b>	
4.1	Oceanography and Water Quality .....	9
4.2	Marine Resources.....	12
4.3	Air Quality .....	20
4.4	Noise .....	24
4.5	Cultural Resources .....	25
4.6	Vessel transportation and Safety.....	26
4.7	Recreation Uses .....	27
4.8	Aesthetics .....	28
4.9	Land/Water Uses.....	29
4.10	Ground Transportation.....	30
4.11	Growth Inducement.....	30
4.12	Cumulative Impacts .....	31
<b>5.0</b>	<b>ENVIRONMENTAL COMPLIANCE AND COMMITMENTS</b>	
5.1	Compliance .....	33
5.2	Commitments .....	39
5.3	Summary .....	40
<b>6.0</b>	<b>REFERENCES.....</b>	<b>41</b>
<b>7.0</b>	<b>DISTRIBUTION LIST.....</b>	<b>42</b>
<b>8.0</b>	<b>ACRONYMS.....</b>	<b>43</b>
<b>9.0</b>	<b>PREPARERS/REVIEWERS.....</b>	<b>44</b>
<b>APPENDICES</b>		
A.	Mailing List	
B.	Air Quality Calculations	
C.	Clean Water Act 404(b)(1) Evaluation	

**LIST OF FIGURES**

1	Project Location .....	45
2	Project Area .....	46
3	Channel Islands Harbor.....	47
4	Port Hueneme Harbor .....	48
5	Beach Cross Sections .....	49
7	Western Snowy Plover Nest Sites.....	51
8	Western Snowy Plover Critical Habitat at Hollywood Beach .....	52
9	Western Snowy Plover Critical Habitat at Hueneme Beach.....	53

**LIST OF TABLES**

1.	Water Quality Characteristics .....	9
2.	Attainment Status of South Central Coast Air Basin.....	21
3.	Summary of Proposed Project Emissions .....	22
4.	Project-related GHG Emissions .....	24
5.	Summary of Environmental Compliance.....	38

## **SECTION 1 - INTRODUCTION**

### **1.1 PROPOSED PROJECT**

**1.1.1 Location.** The proposed project is located in Ventura County (Figure 1) and consists of a 6-year program for maintenance dredging at the Channel Islands and Port Hueneme Harbors. Placement of dredged materials is expected to be on Hueneme Beach and/or Silver Strand Beach. The proposed project consists of maintenance dredging of approximately 7.9 million cubic yards (mcy) over the life of the project.

**1.1.2 Proposed Action.** At Channel Islands Harbor, material would be dredged from the entrance channel, sand traps, entrance basin, and inner basin, over a total area span of about 125.7 acres (see Figures 2 & 3). The required dredging is planned to be accomplished in three dredging cycles over 6 years. Dredging is planned to occur biennially over the 6-year program period (for example, at years 1, 3, and 5). Annual dredging may be required in the event that sediment accumulation at Channel Islands Harbor creates navigation safety issues or severe erosion occurs at down coast beaches within a 1-year period. However, dredging events would not exceed 3 cycles. Each dredging cycle would remove up to approximately 2.6 mcy of material. Project depth is -20 ft Mean Low Water (MLLW) in the main channel and -35 ft MLLW in the sand trap areas. The Entrance Basin (Area E) and Inner Basin (Area F) may be dredged during this six-year cycle if needed. Dredging of Areas E and F are not planned for the first dredging cycle.

At Port Hueneme Harbor, material would be dredged from the approach and entrance channels, and turning basin (see Figures 2 & 4). The required dredging is planned to be accomplished once on the same schedule as the dredging of Channel Islands Harbor (i.e., during one of the three cycles). The dredging cycle at Port Hueneme would remove approximately 200,000 cy of material. Project depth is -40 ft MLLW at the approach channel, -36 ft MLLW at the entrance channel and -35 ft MLLW in the turning basins.

Additional dredging cycles may take place if required to maintain project depths. Total project dredging is not expected to exceed approximately 7.9 mcy for all dredging cycles at both harbors.

Project authorization mandates dredge material placement on Hueneme Beach (over an area of about 25.8 acres) to fulfill established commitments for shore protection. Some of these materials may be placed in a nearshore placement area. Placement at Silver Strand Beach may occur on an as-needed basis to offset periodic erosion problems. During the first dredging cycle, about 2.6 mcy of sediment would be dredged from Channel Islands Harbor. Approximately 250,000 cy of this material may be placed at Silver Strand Beach to offset current erosion problems, with the remaining material placed at Hueneme Beach. Refer to Figure 5 for proposed beach profiles.

**1.1.3 Timing of Project.** Material moves onshore during summer and offshore during winter. Material placed in late summer is at risk of being moved offshore almost immediately after placement. Material placed in late winter has the potential of moving onshore, nourishing the

beach. Between July and September, the sea is most benign and would allow the dredge to safely work close to the shore.

However, construction is scheduled to occur between October 1 and March 15 to accommodate sensitive environmental windows (California least tern nesting season – April 15 to September 15; western snowy plover nesting season – March 15 to September 15; and California grunion spawning season – March 15 to September 1), summer tourist use (May to September), and peak beach use (May to September).

**1.1.4 Staging Areas.** The contractor will temporarily use two staging areas (Figure 2) for Channel Islands Harbor work. One area will be on the water and will be used for storage of the dredge and other floating equipment in the event of severe weather. The other area is located near the south jetty and includes an approximate 1.4 acre area. This area has been used for past dredging project and is expected to be used in the future. This area is currently fenced.

The contractor will utilize a section of Port Hueneme/City of Hueneme property for staging activities for Port Hueneme work. The staging area will be located in the southwestern portion of the lot and will include an approximate 0.2 acre area. This area has been used for past dredging project and is expected to be used in the future.

**1.1.5 Construction Equipment.** Beach placement would be via pipeline (Figure 4) from a hydraulic dredge or a hopper dredge with pump-out capacity. Near shore placement would be via pipeline from a hydraulic dredge, direct disposal by a hopper dredge, or a clamshell dredge with placement barge.

**Hydraulic Pipeline Dredge.** Typically, a floating dredge is used to hydraulically excavate the sand. Then, the sand slurry is pumped through a pipeline onto the receiver beach or into the nearshore area. Following pipeline transport, the sand is uniformly spread over the beach using conventional earth moving equipment (typically two bulldozers).

Approximately 10,000 to 40,000 cubic yards of sediment can be piped to the beach per day using a hydraulic dredge. The contractor is limited to 120 days (plus weather days) to complete each dredging cycle, however it is likely that actual dredging and placement/disposal operations would be completed over a period of about 85 days if a hydraulic dredge is used.

Additional construction equipment typically required to support dredging activities are three support boats (an anchor tender, a pipe tender, and a crew boat).

**Hopper Dredge.** Hopper dredges are self-propelled ships. A hopper dredge operates by pumping sand into its holds, and then moving to a placement site to pump sand onto a beach or into a near shore placement area or, it opens its hull (for split-hull designs commonly found on the west coast of the U.S.) to dump sand into near shore placement areas.

Typical hopper dredges carry 500 to 2,000 cubic yards. Normally, a load is filled in about one hour. The vessel travels with an average speed of eight miles per hour loaded and nine miles per

hour unloaded. Channel Islands Harbor would take approximately 425 days for dredging operations. Port Hueneme Harbor would take approximately 30 days for dredging operations.

The dredge typically requires a crew boat for additional support.

**Clamshell Dredge.** This method consists of a derrick mounted on a barge outfitted with a clamshell bucket. Dredged materials are placed on a separate barge for transport to the placement site. This method is generally not used for on shore placement, but can be used to place material at the nearshore placement site. Approximately 10,000 cubic yards of sediment can be removed and transported to the beach per day using a clamshell dredge. Channel Islands Harbor would take approximately 360 days for dredging operations using this method. Port Hueneme Harbor would take approximately 30 days for dredging operations.

## **SECTION 2 – HISTORY AND PURPOSE**

### **2.1 BACKGROUND**

The project area encompasses approximately 3.3 miles of shoreline, extending from Channel Islands Harbor in the north to Hueneme Beach in the south. The area is located approximately 65 miles northwest of Los Angeles at the edge of the Oxnard Plain in Ventura County (Figure 1).

**2.1.1 Channel Islands Harbor.** Channel Islands Harbor is located in the city of Oxnard. Harbor structural features consist of a 2,300 foot long offshore detached breakwater, entrance jetties, and an entrance channel leading to the harbor interior. The entrance channel is 32,000 feet long and varies in width from 300 feet at the entrance to 600 feet within the harbor. Authorized depth of the entrance channel is -20 ft Mean Low Water (MLLW). The entrance channel comprises Parcel A of the Channel Islands Harbor dredge area.

The offshore detached breakwater and entrance jetties were designed to create a sand trap. Sand which is carried downcoast by littoral drift is trapped in this area to minimize shoaling in the entrance channel. The sand trap is divided into three parcels; Areas B, C, & D. Area B is 775 feet in length and 450 feet in width. Area C is 1,650 feet in length and 1,150 feet in width. Area D is 1,650 feet in length and 460 feet in width. The traps were designed to be maintained at a depth of -35 ft MLLW. Authorized depth of the entrance basin (Area E) is -20 ft MLLW. Authorized depth of the inner basin (Area F) is -10 ft MLLW.

**Prior Channel Island Harbor Dredging.** Channel Islands Harbor receives sediments from upcoast beaches by the southerly littoral transport system. Previous maintenance dredging has been conducted routinely at Channel Islands Harbor. During the last dredging contract (2006-2011) a total of about 4.3 mcy of material was removed from Channel Islands Harbor with an average volume of 1.4 mcy per dredging cycle. An average of 1.8 mcy per dredging cycle between 2000 and 2005; 1.5 mcy was removed biennially between 1984 and 1999.

**2.1.2 Port Hueneme.** Port Hueneme is located in the city of Port Hueneme. This harbor is located approximately one mile southeast of Channel Islands Harbor. Harbor features include two entrance jetties, an approach channel, an entrance channel, and a central turning basin. The approach channel is 800 feet long, 600 feet wide, and has an authorized depth of -40 feet MLLW. The entrance channel is 1,550 feet long, 330 feet wide, and has an authorized depth of -36 feet MLLW. Authorized depth of the turning basin is -35 ft MLLW.

**Prior Port Hueneme Dredging.** Port Hueneme receives sediments from upcoast beaches by the southerly littoral transport system. Previous maintenance dredging has been conducted routinely at Port Hueneme. During the last dredging contract (2000-2005), a total of 27,000 cy was removed in 2005 from Port Hueneme. In 2009, approximately 1,106,000 cy was removed, however, this total included other dredging work added with the maintenance dredging completed as a combined effort of the Corps, Oxnard Harbor District, and U.S. Navy. A total of 27,500 cy was removed from Port Hueneme during a single dredge cycle during the 2000-2005 dredge contract. An average of 258,000 cy was removed in three cycles between 1984 and 1999.

**2.1.3 Silver Strand Beach.** Silver Strand Beach is located in the city of Oxnard, between Channel Islands Harbor and Port Hueneme. Silver Strand beach is normally approximately 5,000 feet long and 300 feet wide.

**Prior Silver Strand Beach Nourishment Projects.** Construction of Channel Islands Harbor and Port Hueneme has altered the natural transport of littoral material to downcoast beaches and periodically erodes Silver Strand Beach. This beach is heavily used during the summer. Beach replenishment through deposition of dredged materials is considered a beneficial use. During the last dredging cycle (2006-2011), 450,000 cy of material from the Channel Islands Harbor/Port Hueneme dredging programs were deposited on Silver Strand Beach. During the 2000-2005 dredge cycle, approximately 654,000 cubic yards of material were deposited on Silver Strand Beach. During 1988 to 2000, approximately 112,500 cubic yards of material from the Channel Islands Harbor/Port Hueneme dredging programs were deposited on Silver Strand Beach every two years.

**2.1.4 Hueneme Beach.** Hueneme Beach is located in the city of Port Hueneme, southeast of the harbor of Port Hueneme. Hueneme beach is approximately 2,300-4,900 feet long and 0-800 feet wide.

**Prior Hueneme Beach Nourishment Projects.** Construction of Port Hueneme harbor has altered the natural transport of littoral material to downcoast beaches and periodically erodes Hueneme Beach. This beach is heavily used during the summer. Beach replenishment has been determined to be necessary to maintain the beaches for shoreline protection and recreational uses. Beach replenishment through deposition of dredged materials is considered a beneficial use. During the last dredging cycle (2006-2011), approximately 3.9 mcy of material from the Channel Islands Harbor/Port Hueneme dredging programs were deposited on Hueneme Beach. During the 2000-2005 dredging cycle, approximately 4.8 million cubic yards of material were deposited on Hueneme Beach. During 1988 to 2000, approximately 1.9 million cubic yards of material from the Channel Islands Harbor/Port Hueneme dredging programs were deposited on Hueneme Beach every two years.

**2.1.5 Hueneme Beach Nearshore Placement Area.** The Hueneme Beach Nearshore Placement Area is located offshore of Hueneme Beach. The Hueneme Beach Nearshore Placement Area is approximately 3,700 feet long, 1,000 feet wide, and ranges in depth from -10 feet to -30 feet MLLW with an average depth of -20 feet MLLW.

**Prior Hueneme Beach Nearshore Placement Area Nourishment Projects.** Construction of Port Hueneme harbor has altered the natural transport of littoral material to downcoast beaches and periodically erodes Hueneme Beach. This beach is heavily used during the summer. Beach replenishment has been determined to be necessary to maintain the beaches for shoreline protection and recreational uses. Beach replenishment through deposition of dredged materials is considered a beneficial use. Placement of dredge materials in the nearshore zone is a proven method of nourishing adjacent and downcoast beaches. During the last dredging cycle (2006-2011), no material from the Channel Islands Harbor/Port Hueneme dredging programs was

deposited in the Hueneme Beach Nearshore Placement Area. During the previous seventeen years (1988-2005) no material from the Channel Islands Harbor/Port Hueneme dredging programs were deposited in the Hueneme Beach Nearshore Placement Area. This is due to the preference for beach placement by local officials. Maintaining this option allows the Corps to retain the option of using a clamshell dredge should non-routine dredging be required for safety reasons and a hydraulic/hopper dredge not be available.

## **2.2 PROJECT PURPOSE AND NEED**

The Corps is responsible for maintaining the Federally-authorized channel design at the Channel Islands and Port Hueneme Harbors. The purpose of the proposed project is to provide a plan that allows for the maintenance dredging of the existing harbors at their authorized depths and widths, promoting navigation safety. The proposed project also allows for maintenance dredging of the sand traps outside the Channel Islands Harbor to maintain design depths and capacity. The proposed project provides beach replenishment material for downcoast (Silver Strand and Hueneme) beaches eroded because of altered littoral drift conditions associated with Channel Islands and Port Hueneme Harbors.

A six-year program has been recommended to streamline the environmental process and expedite construction activities. If techniques or conditions vary substantially from those described within this document a Supplemental EA will be prepared. In the past, this has not been necessary.

## **SECTION 3 – PROJECT ALTERNATIVES**

### **3.1 PROPOSED PROJECT CRITERIA REQUIREMENTS**

Legislation authorizes maintenance dredging at both Channel Islands Harbor and Port Hueneme Harbor to assure continued safe navigability within these harbors and to provide suitable materials for replenishment of locally starved beached (Silver Strand and Hueneme). Evaluation criteria have been established to evaluate potential alternatives. The criteria are: 1) timing; 2) technical feasibility and effectiveness; 3) environmental impacts; 4) acceptability by the general public; and 5) economic justification in accordance with current guidelines, policies, and legislation.

### **3.2 ALTERNATIVES CONSIDERED**

Because legislation directs dredging operations to occur specifically at Channel Islands Harbor and Port Hueneme Harbor and disposal at local beaches, no other alternative dredge sites or disposal sites are considered viable. Dredging is required to maintain the established Federal channel dimensions that are authorized by Congress. Dredging past those limits is not authorized and not feasible. Dredging less than those limits would leave dangerous high spots not meeting the navigation safety requirements of the Federal channels. For placement/disposal of dredged material, Federal and state agencies require beneficial re-use of dredged material where possible. Therefore, no other alternative dredge depth or placement/disposal sites are analyzed in detail in this document. However, if the sediments are considered unsuitable for beach or nearshore disposal other options would be analyzed in a supplemental environmental document. Different options for timing the frequency of dredge and disposal activities are considered.

#### **3.2.1 No Action Alternative**

The No Action Alternative would allow the harbors to shoal which would eventually result in a condition of unsafe or impossible navigation conditions. This would result in a loss to recreation, commercial, and military operations. There is also potential for danger to life and property if the harbors are not maintained at safe depths. Eventual harbor closures could result. Without nourishment, the local beaches would continue to erode and deteriorate. This would eventually impact beach visitation, reducing the value of the recreational experience. Loss of use would result in serious economic losses to the local community. Losses of downcoast beaches would also adversely impact California grunion, the western snowy plover, and the California least tern.

#### **3.2.2 Alternatives Considered**

**Scheduling Alternatives.** The following scheduling alternatives have been considered to meet the authorized project:

- Alternative 1: Dredge annually.
- Alternative 2: Dredge biennially.

- Alternative 3: One dredging episode.

**Alternative 1** would allow for annual dredging and provide for a more regular supply of sand for local beach nourishment projects. However, for most years the amount of sediment buildup in the harbors is not sufficient enough to justify annual dredging from an economics, boating access (navigational impacts related to the presence of the dredge within a narrow navigational channel), or environmental impacts perspective. The option to dredge annually, however, is retained should sediments build up sufficiently to justify it from a navigational safety perspective, or should severe erosion of downcoast beaches occur.

**Alternative 2** is the authorized project for Channel Islands Harbor. This alternative will allow maximum channel and sand traps sediment loading while still allowing for safe navigability for the Channel Islands Harbor. However, the amount of sediment buildup in the Port Hueneme Harbor is not sufficient to justify biennial dredging from an economics, boating access (navigational impacts related to the presence of the dredge within a narrow navigational channel), or environmental impacts perspective.

**Alternative 3** is not considered feasible for Channel Islands Harbor because this would result in unacceptable shoaling in the harbor and its channels resulting in the creation of navigational hazards, and unacceptable erosion of downcoast beaches. For Port Hueneme Harbor, this is the authorized project. This alternative will allow maximum channel sediment loading while still allowing for safe navigability for Port Hueneme Harbor.

### **3.2.3 Alternatives Carried Forward**

As discussed above, based on factors considered, Alternative 2 (biennial dredging) is identified as the proposed project action at Channel Islands Harbor. Alternative 1 (annual dredging) is also identified as an option due to the potential of navigation safety issues arising in the event of sediment accumulation or severe erosion of down coast beaches over a one-year period. Therefore, Alternatives 1 and 2 are carried forward for further analysis for dredging of Channel Islands Harbor, and is identified as the proposed action. Due to a limited rate of sediment loading into Port Hueneme, Alternative 3 is the only feasible alternative for dredging Port Hueneme Harbor, and therefore carried forward for further analysis under the proposed action.

## **SECTION 4 - ENVIRONMENTAL INVENTORY AND CONSEQUENCES**

This section provides an assessment of existing conditions and potential impacts for the no action alternative and the proposed project. As described in Sections 1 and 3, the proposed action includes 3 cycles of maintenance dredging of Channel Islands Harbor within a 6-year program period, with dredging to occur biennially, with the option of annual dredging, as needed. Proposed dredging of Channel Islands Harbor would not exceed 3 dredging cycles. The proposed action also includes a one-time dredging of Port Hueneme Harbor during the 6-year program period. If analyses show significant adverse impacts, then mitigation measures have been included to avoid the impact or reduce the level to insignificance.

### **4.1 Oceanography and Water Quality**

**4.1.1 Affected Environment.** The tides in southern California are mixed, semi-diurnal tides with two unequal high tides and low tides roughly per day. Tidal variations are caused by the passage of two harmonic tidal waves; one with a period of 12.5 hours and one with a period of 25 hours. This causes a difference in height between successive high and low waters. The result is two high waters and two low waters each day, consisting of a higher high water and a lower high water, and a higher low water and a lower low water; respectively referred to as HHW, LHW, HLW, and LLW.

A greater than average range between HHW and LLW occurs when the moon, sun, and earth are aligned with each other to create a large gravitational effect. This spring tide corresponds to the phenomenon of a new or full moon. Neap tides, which occur during the first and third quarters of the moon, have a narrower range between HHW and LLW. In this situation, the moon, sun, and earth are perpendicular to each other, thereby reducing the gravitational effects on water levels.

The mean tidal range for the project site is 5.4 feet. The extreme range is about 9.5 feet.

Water quality is typically characterized by salinity, pH, temperature, clarity, and dissolved oxygen (DO). Table 2 characterizes the overall water quality parameters for the project site.

<b>Water Quality Characteristics</b>	
<b>Parameters</b>	<b>Project Site</b>
Salinity (ppt)	32.9 to 34.4
Surface Temperature (F)	55.8 to 62.5
pH	7.4 to 7.6
Clarity (ft.)	13 to 15
D.O. (mg/l)	8.9

Generally, at Channel Islands Harbor at the end of each two-year cycle, sand has built up in the sand trap extending the existing beach, sand buildup has narrowed the channel into Channel Islands Harbor, and the downcoast beaches have lost sand. The northern end of Hueneme Beach erodes completely back to the revetment fronting city property.

#### 4.1.2 Environmental Consequences.

**Criteria:** An impact to Oceanography and Water Quality will be considered significant if:

1. The project results in the release of toxic substances that would be deleterious to human, fish, or plant life;
2. Discharges create a pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code.

**Dredging.** Dredging provides a beneficial impact to local oceanographic conditions. This is achieved by picking up sand deposited in the sand trap at Channel Islands Harbor and in the channels of both Channel Islands Harbor and Port Hueneme and depositing it downcoast of the harbors. This activity allows the dredged sands to reenter the littoral transport regime and prevent impacts to downcoast beaches. Dredging with beach disposal, therefore, artificially maintains natural littoral transport.

Water quality would be temporarily affected during the dredging process. Decreases in DO; increases in nutrients, suspended and dissolved contaminants, and turbidity could occur. Turbidity from dredging has the potential to decrease DO in the immediate vicinity (within about 300 feet) of the dredge. Since the dredging would occur in open waters (in the sand trap at Channel Islands Harbor and the outer portion of the entrance channel at Port Hueneme) or in waters immediately adjacent to open waters (the entrance channels at Channel Islands Harbor and the inner portion of the entrance channel to Port Hueneme) where DO levels are normally above 5.0 (see Table 2), the potential for decreasing below that level are negligible.

Based on past testing conducted during previous dredging cycles, dredged sediments at these harbors typically consist of clean sand, ranging from 96 to 100% sand ranging in size between 0.25 mm and 1.00 mm. There have been no recent documented contaminant spills in the area. Sand in these particle size ranges is generally larger and coarser than grain sizes where pollutants are generally found. Additionally, the Channel Islands Harbor was last dredged in 2011 and is dredged annually to biennially, limiting the ability of contaminants to accumulate. Port Hueneme Harbor was last dredged in 2009. The sands are moved into the sites via littoral transport which constantly moves and resuspends the sands as it moves downcoast. Therefore, organic detritus and chemical contaminants are not expected to occur in these materials. Increases in nutrients and/or suspended and dissolved contaminants are not expected to occur because of dredging.

Sediments will be assessed in accordance with the Ocean Dredge Testing Manual (also known as the Green Book; USEPA & USACE, 1991) prior to each dredging cycle for each harbor. After completion of a Tier I assessment the materials are expected to comply with the 40 CFR 227.13(b) exclusion criteria from further testing and to be considered suitable for use as beach replenishment at Silver Stand and Hueneme Beaches or placement within the nearshore. This determination will be made in coordination with the U. S. Environmental Protection Agency (USEPA) and the Dredged Material Management Team (DMMT).

Tier I assessment of the sediment within the proposed Channel Islands Harbor dredged areas was

completed in June 2012 in preparation of the first dredging cycle. Results showed that the proposed dredged material in areas A-D was overall below detection or small compared to effects based on screening values (Corps 2012). Of the list of contaminants concentrations detected, DDT was the only contaminant detected above a NOAA ERL (Effects Range-Low) value in three of the five composite areas (Areas A, C, and E), with Area E having the highest value; however, values were about five times lower than the ERM (Effects Range-Median) value of 46.1 µg/kg.

As reported in the Sampling and Analysis Results for the Channel Islands Harbor Geotechnical and Environmental Investigation Project (Corps 2012), all contaminants detected in the Channel Islands Harbor sediments were well below the RSLs (Regional Screening Levels) and CHHSLs (California Human Health Screening Levels) for residential soils developed for human protection except for arsenic. Elevated arsenic concentrations occur commonly in Southern California dredge sediments and soils, and the concentrations of arsenic in the Channel Islands Harbor samples were less than the background concentration (3.5 mg/kg) of soils throughout California (Bradford et al., 1996).

Sulfide content from Areas A and E were somewhat elevated, which could result in the production of smells and odors during placement activities. However, the report findings conclude that there are very little or no soluble sulfides suggesting the volatilization of hydrogen sulfide should be minor.

The Corps initiated coordination with the DMMT, which includes USEPA, California Coastal Commission, and the Regional Water Quality Control Board, in May 2012 for proposed dredged material suitability determination for beach placement. Results of the sampling and analysis were submitted to the DMMT for review and consideration in June 2012. The Corps is seeking suitability determination for Areas A, B, C, and D. Since there is very low volume of material above the authorized depth in Area E and F, these areas would not be dredged during the first dredging cycle. Any dredging of Areas E and F would entail testing of those areas prior to any future dredging cycles.

Due to the elevated arsenic concentrations, the Corps will conduct additional sampling and analysis of sediments up-coast of the Channel Islands Harbor and at Hueneme Beach, a proposed receiver site, to verify background arsenic levels in the area. It is highly likely that arsenic levels within the proposed dredge area are a reflection of existing background levels. Due to the proposed dredged material type (i.e., sand), potential contaminants are less likely to be present in a form that is toxic to humans. Coordination with the DMMT regarding the arsenic levels is ongoing.

Based on the 2012 sampling results, material grain size ranged in size from fine to coarse grained sand. It is likely that a hydraulic dredge will be used for this project. Previous studies have shown that turbidity detectable above background levels are usually confined to within 300 feet of the dredge. Other dredge types (i.e. hopper dredge and/or clamshell dredge) can have turbidity plumes larger than the hydraulic dredge. However, due to the nature of this material, such increases are expected to be minimal and remain at an insignificant level. Sandy sediments historically settle rapidly and return to background levels within two hours after the stop of

dredging and/or disposal activities.

In summary, potential impacts to coastal processes and water quality from dredging would be short-term and considered less than significant.

**Placement.** Water quality would be temporarily affected during the placement or disposal process. Decreases in DO; increases in nutrients, suspended and dissolved contaminants, and turbidity could occur at the placement sites. It is expected that any impacts to water quality would not be significantly greater than those that are caused by natural surf zone processes. The dredged material would redistribute and settle as a result of normal surf and littoral transport processes. Impacts would be temporary and not significant.

Accidents resulting in spills of fuel, lubricants, or hydraulic fluid from the equipment used during dredging and disposal could occur during the project and adversely affect water quality. Impacts would depend on the amount and type of material spilled as well as specific conditions (i.e. currents, wind, temperature, waves, tidal stage, and vessel activity). In such cases, spills would be cleaned up immediately, causing less than significant impacts. A larger spill that could have significant impacts on water quality is not expected to occur, even under reasonable worst-case conditions.

Because oceanographic and water quality impacts are considered insignificant, mitigation measures are not required.

**No action alternative.** Impacts from dredging and placement activities would not occur. Littoral transport systems would continue to be disrupted. This could result in the eventual closings of both harbors because of safety concerns caused by shoaling. Downcoast beaches would lose their sand source and would continue to erode. This would result in lost recreational uses of these beaches as well as lost protection to structures and facilities currently located behind the downcoast beaches.

## 4.2 Marine Resources

**4.2.1 Affected Environment.** Marine life in the dredging and disposal areas is expected to be those species that inhabit sandy intertidal and subtidal environments.

**Vegetation.** Vegetation in the dredged sites is expected to be minimal owing both to the sandy, unconsolidated nature of the bottom and the frequent dredging which takes place in these areas. Nearshore areas and sandy beaches where the dredged material will be deposited is expected to support a typical sand bottom community with little or no vegetation owing to the high energy present in the area and high turbidity owing to wave action stirring up and transporting bottom sediments.

**Invertebrates.** The invertebrate population in the dredge areas is expected to be similar to adjacent open coast, shallow water habitat. Common infaunal species consist of the sand crab (*Emerita anloga*), clams (i.e. *Tellina modesta*), and polychaetes (i.e. *Nephtys cliforniensis*).

The nearshore areas and sandy beaches, where dredged material is to be placed, is a rigorous environment typical of open coast sandy beaches. Characteristic sandy beach organisms typically consist of sand crabs (*Emerita anloga*), bloodworms (*Euzonus mucronata*), beach hoppers (*Orchestoidea sp.*), and the Pismo clam (*Tivela stultorum*). Pismo clams are considered a sensitive species by the state of California.

**Fishes.** Common fish species in the shallow offshore environments and in the harbors include thornback rays (*Platyrrhinoidea triseriata*), lizard fish (*Synodus lucioceps*), speckled sanddab (*Cithrichthys stigmaeus*), northern anchovy (*Engraulis mordax*), white croaker (*Genyonemus lineatus*), and walleye surfperch (*Hyperprosopon argenteum*). Grunions (*Leuresthes tenuis*) use the beaches at Silver Strand and may use the beaches at Hueneme Beach for spawning between March and September. Peak grunion spawning activity occurs between April and June. Grunion is considered a sensitive species by the state of California. Breakwaters and jetties support the following fishes: Garibaldi (*Hypsypops rubicundus*), sargo (*Anisotremus davidsonii*), opaleye (*Girella nigricans*), rock wrasse (*Halichoeres semicinctus*), seniorita (*Oxyjulis californica*), half moon (*Medialuna californiensis*), and kelp bass (*Paralabrax clathratus*).

**Birds.** The project area and surrounding jetties and breakwaters provide loafing, foraging, and roosting areas for a variety of shorebirds and waterfowl. Brown pelicans (*Pelecanus occidentalis californicus*), gulls (*Larus sp.*), ruddy and black turnstones (*Arenaria interpres* and *A. melanocephala*, respectively), black oystercatchers (*Haematopus bachmani*), and wandering tattlers (*Heteroscelus incanus*) use the breakwaters and jetties for loafing.

A variety of seabirds are expected to use the sandy beaches where dredged material is deposited. This type of habitat along with the adjacent shallow waters also provide foraging and loafing areas for many shorebird species including the long-billed curlew (*Neminius americanus*), willet (*Catoptrophorus semipalmatus*), black-bellied plover (*Pluvialis dominica*), sanderling (*Calidris alba*), western sandpiper (*Calidris mauri*), and California least tern (*Sterna antillarum browni*).

**Marine mammals.** The only marine mammals expected in the dredging area would be California sea lions (*Zalophus caliornianus*) and harbor seals (*Phoca vitulina*). Harbor seals and sea lions are expected to forage in the harbor and rest on the breakwater jetties, and navigational buoys. Several species of whales and porpoises are also found offshore (pilot whale, *Globicephala macrorhynchus*; harbor porpoise, *Phocena phocena*; common dolphin, *Delphinus delphis*; Pacific white-sided dolphin, *Lagenorhynchus obliquidens*; and the bottlenose dolphin, *Tursiops truncatus*). Marine mammals are protected by the Marine Mammal Protection Act (MMPA).

**Threatened and endangered species** which may occur at the project site include the California least tern (*Sterna antillarum browni*) and the western snowy plover (*Charadrius alexandrinus*).

California least tern. The California least tern is present in small numbers from April to August. The California least tern forage near the disposal site, primarily on surface fishes such as topsmelt and anchovies. A nesting colony is located at Ormond Beach; 2 to 3 miles downcoast

from the dredging areas, 2 miles from Silver Strand Beach, and less than 1 mile from Hueneme Beach. Nesting has also occurred on the beach adjacent to the sand trap (Hollywood Beach) and on the temporary beach that occasionally forms in the sand trap (Area D). The last known nesting at or adjacent to the sand trap was in 2010 where one nest was initiated (Smith, Ventura Audubon Society, 2010). That year, six terns were observed at Hollywood Beach. No nesting was detected during the 2011 and 2012 breeding seasons (Ventura Audubon Society 2012, pers. comm., Alexis Frangis, July 11, 2012). No designated critical habitat occurs within the project area.

Western snowy plover. Snowy plovers forage on invertebrates in the wet sand and cast-off kelp found in the intertidal zone, in dry sandy areas above high tide, on salt pans, and along the edges of salt marshes and salt ponds. This species nests in dune areas of Ormond Beach between April and the end of July. Plovers are known to nest on the established Hollywood Beach, as well as on the temporary beach that occasionally forms in the sand trap. In 2012, 10 nests were detected at Hollywood Beach, with 5 nests located on the temporary beach created in the sand trap (Figure 6) (Ventura Audubon Society 2012, pers. comm., Alexis Frangis, July 9, 2012). The number of plovers observed between April 1, 2012 and July 6, 2012 ranged from 6 to 31 individuals. A total of 9 nests were detected in 2011 at Hollywood Beach, with 7 of the 9 nests located in or adjacent to the temporary beach in the sand trap. The monitored nesting activity suggests that there were about 2-3 females nesting 1-2 times during the breeding season (Smith 2011). In that year, the number of plovers observed between April 21, 2012 and September 13, 2012 ranged from 2 to 65 individuals. The beach area (Hollywood Beach) adjacent to the sand trap is a part of the revised critical habitat designated for the western snowy plover by the U.S. Fish and Wildlife Service (USFWS) (June 19, 2012) (Figure 7). Examination of the recent designation shows a small portion of critical habitat overlapping with the sand trap in Area D (about 1.6 acres). Critical habitat is also designated at Hueneme Beach (Figure 8).

**Essential Fish Habitat (EFH).** In accordance with the 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act, an assessment of Essential Fish Habitat (EFH) has been conducted for the proposed project. The project is located within an area designated as EFH for two Fishery Management Plans (FMPs): Coastal Pelagics Plan and Pacific Groundfish Management Plan. Many of the 86 species federally managed under these plans are known to occur in the area and could be affected by the proposed project. Additionally, the breakwaters within the project area are considered Habitat Areas of Particular Concern (HAPC), which is a subset of EFH.

#### **4.2.2 Environmental Consequences**

**Criteria.** An impact to Marine Resources will be considered significant if:

1. The population of a threatened, endangered, or candidate species is directly affected or its habitat lost or disturbed;
2. If there is a net loss in value of a sensitive biological habitat including a marine mammal haul out site or breeding area, seabird rookery, or Area of Special Biological Significance (ASBS);

3. If the movement or migration of fish is impeded; and/or
4. If there is a substantial loss in the population or habitat of any native fish, wildlife, or vegetation (a substantial loss is defined as any change in a population which is detectable over natural variability for a period of 5 years or longer).

**Dredge impacts.** Temporary increase in turbidity and suspended solids may decrease the amount of DO near the dredge site, thus affecting fish and other marine life within the area. Motile species are expected to relocate out of the area until dredging activities are completed. Some marine populations would be destroyed by dredging, but are expected to recolonize the area once dredging has ceased.

The temporary beach that forms within the sand trap would be removed by dredging. This beach accretes slowly over time and is not present following each dredge cycle. Presence of the beach is cyclical with extent determined by the number and severity of winter storms that move sand into the sand trap. Some years the beach forms during the winter following dredging, other years it may not form at all. However, since most of southern California's beaches are dynamic areas, constantly gaining and losing area, this impact is not considered significant.

Channel Islands Harbor was created in 1960 and dredging in the sand trap areas and entrance channels has been conducted approximately every other year since that date. This continuous dredging limits the ability of the benthos to recover in between dredging cycles. However, the sand trap was designed to intercept sand to prevent the closure of Channel Islands Harbor and Port Hueneme. The benefits, in terms of serving the public interest, in keeping these harbors open and in bypassing sand around them was determined (in 1960) to outweigh the continuous impacts to the relatively small sand trap areas and entrance channel at Channel Islands Harbor. In addition, down coast beaches benefit from the continuous supply of sand supplied by the dredging projects. This includes public interest as well as wildlife benefits (in particular to California grunion, Pismo clam, California least tern, and the western snowy plover).

Shorebirds and other waterfowl would be able to continue foraging in the general area having to avoid only the immediate dredge area. Additionally, there is evidence that indicates that shorebirds including the California brown pelican are actually attracted to the margins of dredging areas, attracted by the disturbance to benthic organisms that in turn attracts fish which they can prey upon.

Port Hueneme is dredged far less frequently, on the order of about once every five years. This time interval is sufficient for the benthos to recover in between dredging events. Public interest and down coast beach benefits are the same as for Channel Islands Harbor although on a smaller scale.

Overall, dredging will be of short duration; potential impacts would be adverse but temporary. Thus, no significant environmental impacts are expected on marine life in the dredge area.

**Placement sites.** The proposed project would result in minor impacts. Some disturbances to macrobenthic fauna may occur at the placement/disposal sites, but these are expected to be short-

term with recolonization occurring rapidly once placement/disposal operations are completed. Dredging and beach replenishment are scheduled to be completed by March 15 for each dredging cycle, well in advance of the California grunion spawning and California least tern nesting seasons. Therefore, impacts at the disposal site are expected to have no adverse effects on the California grunion or the California least tern. Disposal in the near shore area, if necessary, would be restricted to water depths greater than -10 ft MLLW. This restriction would avoid impacts to the Pismo clam, if it is present, in the intertidal and subtidal areas where it may be located adjacent to Hueneme Beach. Restoration of the eroded beach at Hueneme Beach would have beneficial effects on the California grunion by ensuring the presence of a beach on which to spawn. Eroded beaches, with little or no sand are not usable sites for California grunion spawning. Likewise, beach restoration would provide beach invertebrate populations (i.e. Pismo clam) enhanced habitat. The freshly nourished area may then attract more birds to the area to forage for food. Potential impacts to marine resources from placement/disposal activities are not considered significant.

**Marine mammals.** The MMPA prohibits the taking of marine mammals without prior approval from the National Marine Fisheries Service (NMFS). The regulatory definition of take includes harassing or attempting to harass any marine mammal. Harassment may occur as the result of noise associated with dredging. However, the likelihood of this is considered to be very low. The type of dredge that would most likely be used generates an Leq of 71.5 dBA at 50 feet (Parsons Engineering Science, Inc. 1996). Ambient noise levels in harbors have been measured at between Leq 56.5 and 75.5 dBA depending on the time of day and day of the week. During daylight hours, particularly on the weekend, dredge noise would be indistinguishable from background noise levels. During night time operations dredge noises would be discernible. However, hydraulic dredges tend to make a uniform noise that would not elicit startle reactions from sea lions or harbor seals. Dredging is scheduled to take place 24 hours per day, so start up noises are not expected.

Marine mammals in this area are accustomed to daily noise from people, boat traffic, and marine operations. The proposed project activities, therefore is not likely to result in a taking, as defined in the MMPA. Further coordination and/or authorization for taking is not required for this project.

### **Threatened and Endangered Species**

**California least tern.** The Corps has determined that the proposed project may affect the California least tern at Channel Islands Harbor due to the proposed dredging of the temporary beach that forms within the sand trap where the tern has nested in the past. Although California least terns did not nest within the sand trap in 2011 or 2012, in the event that California least terns do nest within the sand trap during the 6-year maintenance dredging program period, the Corps has initiated informal consultation with the USFWS. Based on informal consultation with the USFWS, the Corps will request an amendment of the 2006 BO, which addresses the California least tern and the western snowy plover and its critical habitat, to extend the dredging schedule to include the proposed 2012-2018 dredging project. With the inclusion of minimization measures, the proposed project will not significantly affect any federally-listed

endangered or threatened species, or their critical habitat.

**Western snowy plover.** The proposed dredging and disposal/placement activities would occur during the non-breeding season when western snowy plover are not nesting. Therefore, effects to nesting snowy plovers would be avoided during their nesting season. Ventura Audubon Society documented 5 western snowy plover nests in 2012 and 4 nests in 2011 on the temporary beach that forms in the sand trap from coastal littoral processes (Figure 6). Although the proposed dredging operations would avoid direct effects to nests and nesting snowy plovers, the dredging operations would remove the temporary beach on which those nests were detected. This is not considered a significant impact as there are additional beach areas available to the snowy plover to nest on at Hollywood Beach. As discussed above, the Corps will request an amendment to the 2006 BO to address potential effects to western snowy plovers.

Potential effects from dredging and disposal/placement operations on foraging snowy plovers during the non-breeding season are considered negligible since the immediate dredging and disposal/placement impact area is small compared to the surrounding area that is available to the plovers and other shorebirds for foraging. The snowy plovers are expected to move out of the impact area to forage on nearby beaches that are within the designated critical habitat as they have for past dredging projects at the same site.

**Sand Accumulation.** At the end of each two-year cycle, sand has built up in the sand trap extending the existing beach, sand buildup has narrowed the channel into Channel Islands Harbor, and the down coast beaches have lost sand. The northern end of Hueneme Beach erodes completely back to the revetment fronting city property. The dredging cycle is maintained at two years to provide the maximum benefit with minimum environmental impacts. The dredging cycle is also conducted during winter months for the same reason (specifically to avoid impacts to nesting California least terns, western snowy plovers, and to spawning California grunion). Currently, Hueneme Beach is starved of sand and the navigation channel is severely restricted in width (emergency dredging was conducted during the summer of 2006 by the county of Ventura).

The temporary beach that forms within the sand trap is removed by dredging. Presence of this beach is cyclical with extent determined by the number and severity of winter storms that move sand into the sand trap. Some years the beach forms during the winter following dredging, other years it may not form at all. Moreover, most of southern California's beaches are dynamic areas, constantly gaining and losing area, this minor loss is not considered significant.

The species discussed above that use the temporary beach also utilize the down coast beaches that are put back and nourished during each dredging cycle. Sand dredged from the sand trap area placed at Hueneme Beach provides sand into a circulation cell that extends down coast to Point Mugu. These down coast beaches, particularly Ormond Beach, are used as nesting sites by California least tern and by the western snowy plover. These down coast beaches are also used for spawning by the California grunion (*Leuresthes tenuis*).

The Corps does not consider this ephemeral beach to be essential nesting habitat for either the western snowy plover or the California least tern. The USFWS concurred with this assessment

on past dredging projects at this same site. Moreover, the Corps considers the years when sufficient beach is available for nesting to be a beneficial impact of the practice of biennial dredging versus annual dredging. An annual dredging cycle, which would meet project purposes, would ensure that the temporary beach does not form. Removal of the temporary beach, which must occur for the harbors to stay open and for the down coast beaches to receive sands, is therefore not considered an adverse impact to these species.

Critical Habitat. An analysis of the proposed project with the recent re-designation of critical habitat shows that the proposed dredge area overlaps slightly with critical habitat for the western snowy plover at Hollywood Beach (about 1.6 acres, see Figure 7). The proposed dredging operations would result in the removal of the accumulated sand that creates the temporary beach within the sand trap, thereby potentially removing 1.6 acres of critical habitat. Dredging at Channel Islands Harbor has been continuous since 1959; therefore, this removal of the temporary beach during maintenance dredging operations would not be a new occurrence to the western snowy plover in this area. Sand is expected to continue to accumulate following dredging cycles, potentially providing habitat for the snowy plovers to use during non-dredging years. It is reasonable to expect that snowy plovers would continue to use this area when sufficient beach is present in the sand trap as it has been for the last several years. As discussed above, the biennial dredging cycle is considered a benefit to the snowy plover when sufficient beach is present.

Critical habitat is designated at Hueneme Beach, including the western end where a beach exists only temporarily when the Corps places sand as part of the Channel Islands/Port Hueneme Harbors Maintenance Dredging Program. Although the proposed dredge material placement/disposal site (Figure 8) is within designated critical habitat, the site does not contain primary constituent elements (PCE) essential to the conservation of the western snowy plover as identified in the USFWS listing. The listing identifies “Sandy beaches, dune systems immediately inland of an active beach face, salt marshes, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil sites, with: (1) Areas that are below heavily vegetated areas or developed areas and above the daily high tides; (2) Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow, subject to inundation but not constantly under water, that supports small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources; (3) Surf- or water-deposited organic debris, such as seaweed (including kelp and eelgrass) or driftwood located on open substrates that supports and attracts small invertebrates described in PCE 2 for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection (crypsis) for nests, chicks, and incubating adults; and (4) Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.

The majority if not all of the proposed placement/disposal site is currently under water and has no beach/habitat for the snowy plovers to nest on, as observed during a site visit by members of the Corps project delivery team (PDT) and Ventura County Harbor Department on June 20, 2012. As mentioned above, the beach is only present at the western end when sand is placed/disposed as part the Corps channel maintenance program. Therefore, items 2 and 3 of the

PCE description are not present, and only potentially present after the beach is created by the Corps channel maintenance operations. This would result in a beneficial effect as additional beach would be created for western snowy plovers to use. Hueneme Beach is heavily used by the public for recreation, especially during the summer season when temperatures are warmer. This does not support item 4 in the PCE description. Nevertheless, potential beneficial effects are being addressed through the informal consultation with the USFWS and the requested amendment to the 2006 BO.

Minimization Measures. The following minimization measures are proposed to further minimize potential affects to the California least tern and western snowy plover:

1. The limits of the dredging activities shall be clearly marked to prevent dredging equipment from entering areas beyond the smallest footprint needed to complete the project. Colored flagging would be appropriate to delineate the project boundaries.
2. Vehicles and all dredging activities shall remain within the defined activity area and use only designated access points and staging areas.
3. The work area shall be kept clean to avoid attracting predators. All food and trash shall be disposed of in closed containers and removed from the project site.
4. No pets shall be allowed on the construction site.

Conclusion. In conclusion, the Corps has determined that the proposed dredging and placement/disposal operations may affect the western snowy plover and its critical habitat. The Corps initiated informal consultation with the USFWS in June 2012. The USFWS has confirmed their opinion on the proposed project as reflected in their 2006 BO, that although dredging of the sand trap would occur during the non-nesting season, the resultant removal of the temporary beach is considered a “take” of western snowy plover by removing the habitat it has nested on. The Corps will therefore request an amendment of the 2006 BO, which addresses the California least tern and the western snowy plover and its critical habitat, to extend the dredging schedule to include the proposed 2012-2018 dredging project. With the inclusion of avoidance and minimization measures, the proposed project would not likely jeopardize the continued existence of either species or destroy or adversely modify critical habitat for the western snowy plover. The proposed project would not result in significant impacts to any federally-listed endangered or threatened species, or their critical habitat. The amendment will be obtained prior to dredging and placement/disposal activities.

**Essential Fish Habitat (EFH).** The Corps has determined that the proposed project may adversely affect EFH, but would not result in a significant, adverse impact to any species on the Fishery Management Plan or to their habitat. The following is a discussion of potential affects to EFH.

Potential impacts to EFH could result from proposed dredging and placement/disposal activities and include direct removal/burial of organisms, turbidity, suspension of sediments, release of

contaminants from equipment, entrainment, and noise. Direct removal/burial of organism and water quality impacts are considered potential adverse impacts to EFH, while other impacts are not likely or not adverse. Dredging activities would be short-term in duration. Turbidity caused by dredging and placement/disposal activities would subside as suspended sediments begin to settle following dredging and disposal activities. Organisms would also recolonize the impacted area. Given the high energy wave environments and dynamic coastal littoral process, potential effects from dredging and placement/disposal operations are not considered significant. Sand dredged from these harbors provides sand into a circulation cell that extends down coast to Point Mugu to help maintain the coastal environs down coast.

The inner harbor areas of both the Channel Islands Harbor and Port Hueneme could be suitable habitat for *Caulerpa taxifolia* and project activities could result in significant spread of *Caulerpa taxifolia*, if present. However, the Sand Trap Areas and the Entrance Channel in Channel Islands Harbor and the Approach Channel and Entrance Channel in Port Hueneme are neither suitable habitat for *Caulerpa taxifolia* nor would project activities result in significant spread of *Caulerpa taxifolia*, if present. These areas are high energy wave environments with substantial sand movement that would preclude the establishment of *Caulerpa taxifolia*. Additionally, should *Caulerpa taxifolia* somehow become established in this environment, the wave and sand environment would disperse the *Caulerpa taxifolia* far faster and wider than any project activities. These areas are also far removed from any potential sources of *Caulerpa taxifolia* that are more likely to be located in the inner harbors, close to the Basins that will be surveyed. Accordingly, the Corps will require that a survey be conducted in the Entrance Basin and Inner Basin (Areas E and F) of Channel Islands Harbor and the Turning Basin of Port Hueneme prior to any dredging of those basins. The survey will be carried out in accordance with the established *Caulerpa Control Protocol*.

**No action alternative.** Impacts from dredging and placement/disposal activities would not occur. Neither would there be any of the expected beneficial impacts to marine resources resulting from replenishment of down-coast eroded beaches. As a result, the project's overall beneficial effects to the coastal littoral process and ecosystem would be lost.

### **4.3 Air Quality**

**4.3.1 Affected Environment.** The proposed project is located in the South Central Coast Air Basin. The climate in the project area is characterized by moderate summer temperatures, mild winters, frequent morning coastal stratus clouds, infrequent rainfall confined mainly from late fall to early spring, and moderate onshore breezes. Overall, ambient air quality is considered good in the project area.

National air quality standards (National Ambient Air Quality Standards (NAAQS)) and state air quality standards (California Ambient Air Quality Standards (CAAQS)) are listed in Table B-1 in Appendix B. The Ventura County Air Pollution Control District (VCAPCD) shows occasional violations of the ozone and total suspended particulate standards, but no violations for carbon monoxide (CO) or nitrogen dioxide (NO<sub>2</sub>) at the El Rio monitoring station. A summary of air quality status within the South Central Coast Air Basin, which VCAPCD is a part of, is provided

in Table B-1 (Appendix B). Table 2 below lists the attainment status of different pollutants for the CAAQS and NAAQS.

**Table 2. Attainment Status of South Central Coast Air Basin**

Pollutant	ADAB Attainment Status	
	Federal	State
Ozone - 8-hour	Nonattainment	Nonattainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
PM <sub>10</sub>	Unclassified	Nonattainment
PM <sub>2.5</sub>	Unclassified/Attainment	Nonattainment
Lead	Unclassified/Attainment	Attainment

Source: CARB 2011 and USEPA 2011.

#### 4.3.2 Environmental Consequences

**Criteria** The Clean Air Act (CAA) as amended specifies in Section 176(a) that no department, agency, or instrumentality of the federal government shall engage in, support in any way, or provide financial assistance for, license or permit, or approve any activity which does not conform to an implementation plan after it has been approved or promulgated under Section 110 of this title. “Conformity” is defined in Section 176(c) of the CAA as conformity to the State Implementation Plan’s (SIP) purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of such standards, and that the activity will not:

1. Cause or contribute to any new violation of an standard in any area;
2. Increase the frequency or severity of any existing violation of any standard in any area;
3. Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area;
4. Expose the public (especially sensitive receptors) to substantial pollutant concentrations;
5. Create objectionable odors affecting a substantial number of people.

**Dredge impacts.** Emissions associated with the proposed dredging activities will come mainly from the dredge motor drive and pumping operations. This operation will cause some minor air quality impacts. Because of the temporary nature of the emissions and the offshore location of the dredge operation, it is not expected to have a significant impact on air quality in the area.

Dredging operations are expected to be conducted by a hydraulic dredge. While a hopper or clamshell dredge could possibly complete the work, it is not likely. Material dredged by the hydraulic dredge would be pumped through pipelines to the receiver sites, on Hueneme Beach,

and limited quantities on Silver Strand Beach. Construction equipment (bulldozer) will be used to grade the newly placed sand. A tug boat will be used to move the hydraulic dredge as necessary within the dredge footprint. A crew boat will be used to ferry crew out to the tug and for miscellaneous transport of personnel and equipment on an as-needed basis. Beach placement of dredged material will not produce dust since the material is primarily wet sand. Near shore placement of dredged material will not produce dust since both of these operations are aquatic disposal with sediments being placed into the water. There may be some odor from the freshly dredged material placed on the beach, but it will be minor, short-term, and not significant to affect air quality in the area.

If a hopper dredge is used, the self-propelled vessel would transport the material to a nearshore site, off of Hueneme Beach. If a clamshell dredge is used, material would be placed onto barges and transported by tugboat to the nearshore site for placement. A crew boat will be used to ferry crew out to the tug and for miscellaneous transport of personnel and equipment on an as-needed basis.

Air emissions calculations for this project are provided in Appendix B. Results are provided in Table 3 below. Only one dredge type will be used in a given dredge event. The hydraulic and hopper dredge estimated emissions would exceed the NOx threshold level, and the hopper dredge would also exceed the SOx threshold level. However, all dredges would not exceed the General Conformity *de minimis* thresholds for all criteria pollutants. Use of a hopper dredge or a clamshell dredge is not unlikely and is considered in this analysis only as a contingency.

**Table 3. Summary of Proposed Project Emissions**

<b>Total Project Emissions - Daily</b>	<b>Pounds Per Day</b>				
<b>Project Emissions</b>	<b>ROC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>
Hydraulic Dredge	64.26	226.16	794.45	19.32	23.56
Clamshell Dredge	27.86	16.98	98.52	34.21	16.86
Hopper Dredge	3.24	147.83	345.55	214.16	18.81
On-Road Vehicles	0.37	3.60	0.36	0.01	0.04
<b>Daily Threshold Levels*</b>	<b>75</b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>150</b>

\*SCAQMD

<b>Total Project Emissions - Yearly</b>	<b>Tons Per Year</b>				
<b>Project Emissions</b>	<b>ROC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>
Hydraulic Dredge*	2.36	8.28	27.51	0.03	0.83
Clamshell Dredge	5.09	3.10	17.98	6.24	3.08
Hopper Dredge	0.69	31.41	73.43	45.51	4.00
On-Road Vehicles	0.01	0.12	0.01	0.00	0.00
<b>de minimis Thresholds</b>	<b>10</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>70</b>

The contractor will be required to obtain all necessary air quality permits and comply with the VCAPCD Guidelines. Construction equipment will be properly maintained to reduce emissions. Emissions associated with the proposed dredging activities derive almost exclusively from the dredge's motor drive and pumping operations. Compared to the hundreds of tons of pollutants emitted in the County each day, the limited levels of dredge drive exhaust pollutants are small, but still adverse. Impacts, however, will be temporary and will be further reduced by measures required by the Corps. Such measures would include: (1) retarding injection timing of diesel-powered equipment for nitrogen oxide (NOX) control, and (2) using reformulated diesel fuel to reduce ROC and SO<sub>2</sub>.

Impacts from air emissions for the combined maintenance dredging/disposal operations would be adverse, but temporary, and is therefore not considered significant. As stated above, project emissions are not expected to exceed "*de minimis*" levels established as a criteria for a finding of conformity. Therefore, the project is consistent with the SIP and meets the requirements of Section 176(c) of the CAA.

**Placement/Disposal Site.** Emissions at the beach disposal site would come from construction equipment used to grade the newly placed sand. Because of the intermittent and short-term nature of expected emissions, it is not expected to have a significant impact on air quality in the area. The disposal of dredged material will not produce dust since the material is primarily wet sand with small amounts of organic material. There may be some odor from the freshly dredged material, but it will be minor, short-term, and not affect air quality in the area. Emission calculations at the placement/disposal site are included in Appendix B, and results included in Table 3 above.

**Green House Gases (GHGs).** GHGs are defined as any gas that absorbs infrared radiation in the atmosphere. GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Increasing GHG concentrations in the atmosphere are believed to cause global warming and climate change.

On February 18, 2010, the Council for Environmental Quality (CEQ) issued its "Draft NEPA Guidance on Considerations of the Effects of Climate Change and Greenhouse Gas Emissions." On page 1 of the Draft NEPA Guidance, CEQ "affirms the requirements of the statute [i.e., NEPA] and regulations and their applicability to GHGs and climate change impacts." CEQ also underscores the practical limits on the analysis of global climate change. For example, CEQ provides that "agencies should recognize the scientific limits of their ability to accurately predict climate change effects, especially of a short-term nature, and not devote effort to analyzing wholly speculative effects." (Draft NEPA Guidance, p. 2.)

In the absence of an adopted or science-based GHG standard, the Corps will not propose a new GHG standard or make a NEPA impact determination for GHG emissions anticipated to result from the proposed Project or alternative. Rather in compliance with the CEQ's Draft NEPA Guidance on GHG's, the Corps used the 25,000 metric tons as an indicator level as to whether additional analysis is warranted.

Calculations of potential GHG emissions (CO<sub>2</sub>) from dredging and placement activities are provided in Table 4 below. Given the short-term, temporary nature of the proposed project and the estimated emission calculations, the Proposed Action would not result in significant GHG emissions and further analysis is not needed.

**Table 4. Project-related GHG Emissions**

Total Project GHG Emissions - Yearly	Tons Per Year
<b>Project Emissions</b>	<b>CO<sub>2</sub></b>
Hydraulic Dredge	3428.5
Clamshell Dredge	9.8
Hopper Dredge	2.0
On-Road Vehicles	17.1

The contractor will be required to obtain all necessary air quality permits and comply with the VCAPCD's Guidelines. Proposed mitigation measures include: (1) retarding injection timing of diesel-powered equipment for nitrogen oxide (NO<sub>x</sub>) control, and (2) using reformulated diesel fuel to reduce ROC and SO<sub>2</sub>.

**No action alternative.** Dredging and placement emissions associated with the project would not occur. However, if further shoaling occurs, frequent emergency dredging operations may result to relieve dangerously shoaled conditions, which have occurred in the past. If emergency dredging were necessary, temporary increases in emissions from the dredge equipment, ancillary vessels, and laborers' vehicles would be expected as well as temporary increases in noise levels. This increase would be short term and insignificant.

#### 4.4 Noise

Noise is defined as unwanted sound. Noise disrupts normal activities and diminishes the quality of the environment. There are two types of noise sources: stationary sources which are typically related to specific land uses, and transient sources which move through the environment. A locale's total acoustical environment is the blend of the background or ambient acoustics with unwanted noise. Human response to noise is diverse and varies with the type of noise, the time of day, and the sensitivity of the receptor. The decibel (dB) is the accepted standard unit for measuring the level of noise, which is generally adjusted to the A scale (dBA) to correspond to the range of normal human hearing.

Slight changes in loudness are difficult to detect. A 3-dBA change is considered a just-perceivable difference. A change of at least 5 dBA is required before any noticeable change in community response would be expected. A 10-dBA change is subjectively heard as approximately a doubling in loudness. Exterior noise becomes increasingly noticeable at night and most people are very sensitive to nighttime noise intrusion.

**4.4.1 Affected Environment.** Dominant noise sources include waves, beach recreation activities, and vehicle noise on adjacent roads. The sound of wave action will vary with factors including wave height, period, frequency, angle of attack, season, and wind conditions.

#### **4.4.2 Environmental Consequences**

##### **Criteria**

Project noise impacts would be considered significant if noise resulting from the project results in an increase of 10 dBA above background during the day or a night-time increase of 5 dBA above background. This is a short-term project and a perceived daytime doubling of noise levels is considered significant. A lower threshold is used for nighttime noise to reflect the increased sensitivity of people to nighttime sources of noise.

**Dredge impacts.** Project noise sources are limited to the dredge, booster station, and construction equipment to be used on the beach. Dredging and placement operations would occur over about 12 weeks. Because of the temporary nature of the dredging and the offshore location of the dredge operation, it is not expected to have a significant impact on the area. Refer to section 4.2.2 for a discussion on the potential for noise impacts to marine mammals.

**Disposal site.** Construction equipment (bulldozer) will be used to grade the newly placed sand. Given the general background noise levels, including those from existing boat and vehicular traffic as well as beach users, project noise impacts are not expected to be discernible from background noise levels. Impacts, thus, are expected to be less than significant. Moreover, construction activities may be limited to the hours of 7 AM to 10 PM on Silver Strand Beach or Hueneme Beach if noise complaints are received during construction.

Project specification will also require utilization of engine shrouds to reduce noise and a public awareness program to educate and notify the public about the benefits and impacts of the proposed project. Potential impacts from noise would be temporary and not significant.

**No action alternative.** Dredging and placement emissions associated with the project would not occur. However, if further shoaling occurs, frequent emergency dredging operations may result to relieve dangerously shoaled conditions, which have occurred in the past. If emergency dredging were necessary, temporary increases in noise levels from the dredge equipment, ancillary vessels, and laborers' vehicles would be expected. This increase would be short term and insignificant.

#### **4.5 Cultural Resources**

**4.5.1 Affected Environment.** Routine maintenance dredging in the Channel Islands Harbor has occurred every two years since 1969, and every four years in Port Hueneme Harbor beginning in 1975. Disposal of dredged materials had always been done on Hueneme and Silver Strand Beaches. Two nearshore disposal areas were added in 1994. Some sediments may be deposited in nearshore location off of Hueneme Beach. The current project involves dredging

and disposal of the sediments in the same locations as with the last five-year dredging cycle. All affected areas have been found to be negative for cultural resources.

#### **4.5.2 Environmental Consequences**

**Criteria.** The project would have a significant effect on cultural resources if it:

1. Will disturb, remove from original context, or introduce incompatible elements out of character with any property considered eligible for the National Register of Historic Places.

**Overall.** No impacts to cultural resources are anticipated. Determination was made that the previous six-year dredging programs would not involve National Register eligible or listed properties (i.e., historic properties). The State Historic Preservation Officer (SHPO) concurred in letters dated January 31, 1989, and March 23, 1994 that there were no historic properties present in the area of potential effects (APE). Additionally, the SHPO concurred in a letter dated October 5, 1994, that no historic properties would be affected. Because there will be no possibility of impacts to cultural resources involved, consultation with the SHPO is not required. The current project will be in compliance with Section 106 of the National Historic Preservation Act pursuant to 36 CFR 800.3(1), *No potential to cause effect*.

**Dredge Impacts.** No impacts to cultural resources are anticipated. Determination was made that the previous six-year dredging programs would not involve historic properties.

**Disposal site.** There will be no change in the routinely used disposal sites. A remote sensing survey in 1994 was conducted that verified that no cultural resources were in the APE for the nearshore disposal locations.

**Environmental Commitments.** If cultural resources are discovered prior to or during work and cannot be avoided, work will be suspended in that area until resources are evaluated for eligibility for listing in the NRHP after consultation with the SHPO. If resources are deemed eligible for the NRHP, the effects of the project will be taken into consideration in consultation with the SHPO. The Advisory Council on Historic Preservation (ACHP) will be provided an opportunity to comment in accordance with 36 CFR 800.11.

**No action alternative.** The "No Action" alternative would not affect cultural resources.

#### **4.6 Vessel Transportation and Safety**

**4.6.1 Affected Environment.** Channel Island and Port Hueneme Harbors are heavily used recreational and small commercial vessel water bodies. Boat traffic, including commercial boats, fishing vessels, and recreational vessels, often traverse the proposed project site. Safe navigation is maintained by well marked channels and the presence and activity of various law enforcement agencies (i.e. County Lifeguards, U.S. Coast Guard, California Department of Fish and Game). Sediment accumulation within the sand trap area at Channel Island Harbor often forms a beach

adjacent to the existing Hollywood Beach, as observed during a field site visit on June 20, 2012. Further sediment accumulation within the sand trap area and entrance channel at Channel Island Harbor and within the entrance channel at Port Hueneme will further pose hazards to vessel traffic.

#### **4.6.2 Environmental Consequences**

**Criteria.** A significant impact would occur if the proposed project:

1. Results in a substantial reduction of current safety levels for vessels in the Bay.
2. Safety impacts would be considered significant if activities present a navigational hazard to boat traffic or interfere with any emergency response or evacuation plans.

**Construction activities.** Project impacts are not expected to significantly increase vessel traffic levels. Timing requirements to avoid impacts to sensitive species will result in the proposed project taking place during the off-tourist season. Boat traffic will, therefore, be at a minimum during all construction activities. Additionally, all construction vessels will be marked and lighted in accordance with U.S. Coast Guard regulations and notices will be published in Local Notice to Mariners warning boat users about times, durations, and locations of construction activities. Vessel traffic should be able to easily navigate around any short-term obstacles created by construction traffic. Construction will not impede access to any channels or entrance ways. Therefore, impacts to vessel traffic are considered insignificant.

Because impacts to vessel transportation and safety are considered insignificant, mitigation measures are not required.

**No action alternative.** Additional vessel traffic associated with the project would not occur. Shoaling would result in severe navigational hazards, particularly in the Channel Islands Harbor. However, the project's beneficial effects to the ecosystem would be lost, as downcoast beaches would lose their sand source and would continue to erode.

#### **4.7 Recreation Uses**

**4.7.1 Affected Environment.** The project area is a mix of public and private recreational boating and commercial uses. The coastal waters provide for recreational boating and fishing. Silver Strand and Hueneme Beaches are widely used year round with peak uses during the summer season. Beaches down coast of the harbors erode due to the interruption of sediment transport by Channel Islands and Port Hueneme Harbors. Under eroded conditions, recreational use is limited to the existing beach area.

#### **4.7.2 Environmental Consequences**

**Criteria.** Impacts will be considered significant if the project results in a permanent loss of existing recreational uses.

**Dredge Impacts.** Impacts to recreational boaters will be negligible (see Section 4.6 above). Long-term impacts will be beneficial. The dredging will maintain, sustain, and support recreational and commercial boating by keeping the approaches and entrance channels open and free of navigational hazards.

**Disposal site.** Beach closures would be limited to the placement/disposal site. The closure would be short-term and limited to the winter months when dredging and placement/disposal activities would occur. During this time beach use is at its lowest point and beaches to be nourished are at their narrowest or even non-existent. Nearby beaches will remain open and will be unimpaired. Beach nourishment, over the long term, will result in wider beaches, yielding increased recreational opportunities on the nourished beaches.

Placement/disposal of dredged material at the beaches would not significantly affect the surfing in the area. The proposed project would be bypassing sand accumulating at Channel Islands and Port Hueneme Harbors with placement/disposal of that sand on down coast beaches. This would result in creation and/or building up of beaches and help to maintain material cycling through the coastal littoral system, which would be a benefit to surfing.

**Overall.** The proposed project will substantially and beneficially increase the recreational opportunities currently afforded to the area. The proposed project will not result in any permanent closures. Therefore, recreational impacts are considered insignificant.

Because impacts to recreation are considered insignificant, mitigation measures are not required.

**No action alternative.** The additional recreational benefits to boating and beach use would not occur. However, the project's beneficial effects to the ecosystem would be lost.

## 4.8 Aesthetics

**4.8.1 Affected Environment.** The overall aesthetic character of the project area is composed of a mix of residential and water-oriented facilities. The beaches further add to the overall impression of a recreational-oriented visual setting. The area is well maintained. The natural resources in the area provide a visually attractive setting and relaxing atmosphere for residents and tourists.

### 4.8.2 Environmental Consequences

**Criteria.** The project would significantly impact the aesthetics if a landscape is changed in a manner that permanently and significantly degrades an existing viewshed or alters the character of a viewshed by adding incompatible structures.

**Dredge Impacts.** The proposed dredging would result in mixed impacts depending on the opinion of the viewer. Many viewers will consider the presence of the dredge to be an adverse impact, interrupting viewpoints from local land points and from boats. Many other viewers will consider the presence of the dredge to be a beneficial impact providing an interesting feature to

the existing view. Given that the dredge would be present during the tourist off season and would be a short-term impact, aesthetic impacts will be insignificant.

**Disposal site.** Dredged material is usually darker in color and its discharge on the beach will cause temporary adverse impacts. Once the sand dries, it will lighten to match existing beach sands. Equipment placed on the beach will also result in short-term adverse impacts. Considering the fall and winter timing of these operations, the magnitude of these impacts to the public will likely be minimal. Short-term aesthetic impacts will be adverse, but not significant.

Long-term aesthetic impacts will be beneficial. The nourished beach will be wider and will consist of good quality sand. Aesthetically, the nourished beach will be far superior to the eroded beaches present at the start of each dredging cycle. Because impacts to aesthetics are considered insignificant, mitigation measures are not required.

**No action alternative.** Beneficial impacts discussed above would not be attained. Aesthetics of the area would remain unchanged. However, the project's beneficial effects to the ecosystem would be lost.

## **4.9 Land/Water Uses**

**4.9.1 Affected Environment.** Land use in Channel Islands Harbor is primarily characterized by the marina catering to recreational boaters and sports fishing operations. Boat rentals, a public launch ramp, and a U.S. Coast Guard Station are located along the eastern edge of the harbor.

Port Hueneme Harbor is used primarily by commercial cargo ships and Navy vessels. Charter fishing boats moor in the inner channel.

The two beaches (Silver Strand Beach and Hueneme Beach) support restaurants, hotels, shopping, and sports fishing facilities in support of the beach recreational uses.

### **4.9.2 Environmental Consequences**

**Criteria.** Impacts would be considered significant if: access to existing uses is substantially restricted or is eliminated.

**Dredge Impacts.** The presence of the dredge and its supporting vessels would restrict vessel traffic to both harbors during dredging. Boat access would be maintained throughout all stages of construction. Timing requirements to avoid impacts to sensitive species would result in the proposed project taking place during the off-tourist season. Boat traffic would, therefore, be at a minimum during all construction activities. Therefore, the proposed project is expected to result in adverse, but insignificant impacts to existing uses.

**Disposal site.** Earth-moving equipment will be required to grade the beach. Activities will restrict use of sections of the beach. However, construction will take place during the winter

months, when beach use is at its lowest point. Nearby beaches will remain open and will be unrestricted. Beach nourishment, over the long term, will result in wider beaches, yielding increased recreational opportunities on the nourished beaches. Project benefits provide for long-term beach stabilization.

Because impacts to land and water uses are considered insignificant, mitigation measures are not required.

**No action alternative.** Beneficial impacts discussed above would not be attained. Over time, continued accumulation of sediment at the harbors and erosion at the beaches would result in the loss of commercial and recreational use of those areas. Additionally, the project's beneficial effects to the ecosystem would be lost.

#### **4.10 Ground Transportation**

**4.10.1 Affected Environment.** Both harbors as well as the beaches are accessed by several major routes. Seasonal variations can result in large differences in road use. Summer is the peak season and it is the basis for design of road capacity.

#### **4.10.2 Environmental Consequences**

**Criteria.** A significant impact would occur if the proposed project results in:

1. Inadequate parking facilities;
2. An inadequate access or on-site circulation system; or
3. The creation of hazardous traffic conditions.

**Construction Impacts.** Construction will require the use of heavy equipment which requires manpower. A total construction crew of 17 people is anticipated for the proposed project (1 leverman, 1 watch engineer, 2 boat operators, 1 deckmate, 1 welder, 2 deckhand, 2 dump foremen, 1 dozer operator, 1 loader/skidder operator, 2 shoremen, 1 captain, 1 chief engineer, and 1 deck captain), per 12-hour shift, with 2 shifts per day. Additionally, the proposed project will take place during the tourist off-season. The proposed project therefore, is expected to have minor adverse impacts to ground transportation which are not considered significant.

Because impacts to ground transportation are considered insignificant, mitigation measures are not required.

**No action alternative.** Construction activities associated with the project would not occur. However, the project's beneficial effects to the ecosystem would be lost.

#### **4.11 Growth Inducement**

The proposed project is located at Channel Islands and Port Hueneme Harbors in Ventura County. The proposed project is a 6-year maintenance dredging program plan for these two

harbors, which placement/disposal of the dredged material on down coast beaches. The proposed project is not in support of planned infrastructure improvements that would result in additional growth. The proposed project would not require additional employees other than temporary dredging laborers to perform the maintenance dredging and placement/disposal operations. The proposed project would not displace numbers of people except for temporary disruption to vessels utilizing the harbors, and people recreating at the placement/disposal sites. The proposed project would not induce a significant impact on growth in the project area.

#### **4.12 Cumulative Impacts**

Channel Islands Harbor receives sediments from upcoast beaches by the southerly littoral transport system. To maintain the channels authorized depths and widths, the Channel Islands Harbor has been dredged since its construction in 1960. During the last dredging contract (2006-2011) a total of about 4.3 mcy of material was removed from Channel Islands Harbor with an average volume of 1.4 mcy per dredging cycle. An average of 1.8 mcy per dredging cycle between 2000 and 2005; 1.5 mcy was removed biennially between 1984 and 1999. For the next 6 years, the Corps would dredge the entrance channel, sand traps, entrance basin, and inner basin as needed to maintain its authorized depths and widths. The Corps anticipates 3 dredging cycles to be implemented over the next 6 years. It is estimated that about 2.6 mcy would be dredged during each dredge cycle.

Port Hueneme Harbor, built in 1940, lies about 1 nautical mile downcoast of Channel Islands Harbor. Port Hueneme Harbor receives some sediment input from upcoast littoral drift processes, however, not comparable quantities to that of Channel Islands Harbor since the Channel Islands Harbor was built. Thus, the need for maintenance dredging at Port Hueneme Harbor has been less frequent than Channel Islands Harbor. During the last dredging contract (2000-2005), a total of 27,000 cy was removed in 2005 from Port Hueneme. In 2009, approximately 1,106,000 cy was removed, however, this total included other dredging work added with the maintenance dredging completed as a combined effort of the Corps, Oxnard Harbor District, and U.S. Navy. A total of 27,500 cy was removed from Port Hueneme during a single dredge cycle during the 2000-2005 dredge contract. An average of 258,000 cy was removed in three cycles between 1984 and 1999. The Corps anticipates dredging Port Hueneme one time during the proposed 6-year maintenance dredging program. It is estimated that about 200,000 cy would be dredged during the one-time dredging event, that would coincide with 1 of the 3 Channel Islands Harbor dredge cycles.

Potential impacts to coastal processes and water quality from the proposed project would be short term and less than significant. The proposed project bypasses sediment (i.e., sand) that deposits at Channel Islands and Port Hueneme Harbors, and places the material on down coast beaches. This provides for sands to reenter the littoral transport regime and prevents and/or minimizes impacts to downcoast beaches. Therefore, the proposed project provides a beneficial impact to local oceanographic conditions and is not expected to result in significant cumulative impacts.

The proposed project is not expected to result in significant impacts to marine resources. The bypassing of sand that accumulates at the harbors from littoral processes to down coast beaches

are considered a benefit to oceanographic conditions, which would indirectly benefit biological resources that utilize sandy beaches and the marine environment. Measures will be implemented to avoid and minimize effects to federally listed species. The proposed project is not expected to result in cumulatively significant impacts.

As discussed in Section 4.3, estimated daily NO<sub>x</sub> emissions would exceed the Ventura County Air Pollution Control District and South Coast Air Quality Management District's daily emission standard if a hydraulic or hopper dredge is used. Estimated daily SO<sub>x</sub> emissions would also exceed regional thresholds if a hopper dredge is used. However, estimated emissions for all criteria pollutants are not expected to exceed Federal "*de minimis*" levels established as a criteria for finding of conformity. Due to the short-term temporary nature of the proposed project activities (i.e., dredging with a hydraulic dredge is anticipated to take around 85 days and be done once every two years at Channel Islands Harbor and once during the 6-year maintenance dredging program for Port Hueneme Harbor), impacts from emissions are not considered significant. The temporary emissions resulting from the proposed project are not expected to significantly contribute to other project emissions in the area.

Potential impacts to all other environmental resources including noise, cultural resources, vessel transportation and safety, recreational uses, aesthetics, land/water uses, and ground transportation would be minimal and less than significant. The proposed project would result in an overall beneficial impact as the harbors' authorized depths and widths would be maintained for safe navigation and sand is bypassed to down coast to reenter the littoral regime. Potential impacts to these resources from the proposed project are not expected to result in significant cumulative impacts.

## **SECTION 5 - ENVIRONMENTAL COMPLIANCE AND COMMITMENTS**

### **5.1 COMPLIANCE**

The Corps is required to comply with all pertinent Federal and state policies; project compliance is described in the following subsections and is also summarized in Table 5 at the end.

#### **5.1.1 National Environmental Compliance Act of 1969 (Public Law (PL) 91-190); National Environmental Policy Act (NEPA) of 1969 (42USC4321 et seq., PL 91-190); Council on Environmental Quality Regulations for Implementing NEPA, 40 CFR Parts 1500 to 1508; USACE Regulations for Implementing NEPA, 33 CFR Part 220.**

The National Environmental Compliance Act includes the improvement and coordination of Federal plans to attain the widest range of beneficial uses of the environment and to achieve a balance between population and resource use permitting high standards of living and a wide sharing of life's amenities.

The NEPA was established to ensure that environmental consequences of federal actions are incorporated into Agency decision making processes. It establishes a process whereby parties most affected by impacts of a proposed action are identified and opinions solicited. The proposed action and several alternatives are evaluated in relation to their environmental impacts, and a tentative selection of the most appropriate alternative is made.

This EA has been prepared to address impacts and develop mitigation (if warranted) associated with the proposed project, in compliance with NEPA. Similar to the EIS process, the Draft EA is circulated for public review and appropriate resource agencies, environmental groups and other interested parties provide comment on document adequacy. Comment responses are incorporated into the Final EA and a Finding of No Significant Impact (FONSI) is signed by the LAD District Engineer, if it is determined the project will not have a significant impact upon the existing environment or the quality of the human environment. Subsequently, the Final EA and FONSI are made available and distributed to the public. If it is determined the project will have a significant impact upon the existing environment or the quality of the human environment, an EIS would be required.

#### **5.1.2 Clean Water Act of 1972 (33 USC 1251 et seq.)**

The Clean Water Act (CWA) was passed to restore and maintain chemical, physical, and biological integrity of the Nation's waters. Specific sections of the CWA control the discharge of pollutants and wastes into aquatic and marine environments. The major section of the CWA that applies to the proposed project is Section 401, which requires certification that the permitted project complies with the State Water Quality Standards for actions within state waters, and Section 404(b)(1), which establishes guidelines for discharge of dredged or fill materials into an aquatic ecosystem. Although Sections 401 and 404(b)(1) of the CWA apply, by their own terms, only to applications for Federal permits, the Corps has made a policy decision to apply them to their own projects. This policy is set out in Corps regulations at 33 CFR Part 336. Section

336.1(a) of that regulation states, "Although the USACE does not process and issue permits for its own activities, the USACE authorizes its own discharges of dredge or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the Section 404(b)(1) guidelines." The Corps will request for a Section 401 Water Quality Certification or waiver and has prepared an approved Section 404(b)(1) Analysis (see Appendix B) for the authorized project.

### **5.1.3 Endangered Species Act of 1973 (16 USC 1531 et seq.)**

The Endangered Species Act (ESA) protects threatened and endangered species by prohibiting federal actions that would jeopardize continued existence of such species or result in destruction or adverse modification of any critical habitat of such species. Section 7 of the Act requires consultation regarding protection of such species be conducted with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) prior to project implementation. During the planning process, the USFWS and the NMFS evaluate potential impacts of all aspects of the project on threatened or endangered species. Their findings are contained in letters that provide an opinion on whether a project will jeopardize the continued existence of endangered species or modify critical habitat. If a jeopardy opinion is issued, the resource agency will provide reasonable and prudent alternatives, if any, that will avoid jeopardy. A non-jeopardy opinion may be accompanied by reasonable and prudent measures to minimize incidental take caused by the project.

Informal consultation with the USFWS was initiated by the Corps in June 2012. Section 4.2 of this EA provides an evaluation of potential effect to the California least tern and the western snowy plover. The Corps has determined that the proposed project may affect the California least tern and western snowy plover due to its nesting activity on a portion of the temporary beach that forms within the sand trap. With respect to designated critical habitat, the Corps concludes the proposed project may affect, but would not result in adverse modification of western snowy plover critical habitat. To comply with Section 7 of the ESA, the Corps has requested an amendment of the 2006 BO, which addresses the California least tern and western snowy plover and its critical habitat, to include the proposed 2012-2018 dredging project. With the inclusion of avoidance and minimization measures, would not likely jeopardize the continued existence of either species or destroy or adversely modify critical habitat for the western snowy plover. The BO amendment would be obtained prior to dredging and placement/disposal activities.

### **5.1.4 Coastal Zone Management Act of 1976 (PL 92-583; 16 USC 1456 et seq.)**

Under the Coastal Zone Management Act (CZMA), any federal agency conducting or supporting activities directly affecting the coastal zone must demonstrate the activity is, and proceed in a manner, consistent with approved State's Coastal Zone Management Program, to the maximum extent practicable. As no federal agency activities are categorically exempt from this requirement, the Corps will obtain concurrence from the California Coastal Commission (CCC) with a Negative Determination (ND). Federal consistency regulations allow a Negative Determination to be submitted for an activity "which is the same as or similar to activities for

which consistency determinations have been prepared in the past.” In 1994, the Corps received concurrence from the CCC for a Consistency Determination prepared for the 1994-1999 Channel Islands/Port Hueneme Harbors Maintenance Dredging Program. In 2000 and 2006, the CCC concurred with the Corps NDs for two extensions of the 6-year dredging program. The proposed project is an extension of the maintenance dredging program at Channel Islands and Port Hueneme Harbors to include an additional 3-dredging cycles over a 6 year period (2012-2018). Therefore, in coordination with CCC staff, the Corps has determined that an ND is appropriate for the proposed project. Concurrence would be obtained prior to the start of the first dredging cycle. The project would be consistent with the CZMA.

#### **5.1.5 Clean Air Act of 1969 (42USC7401 et seq.); CAA Amendments of 1990 (PL101-549)**

Air quality regulations were first promulgated with the Clean Air Act (CAA). The CAA is intended to protect the Nation's air quality by regulating emissions of air pollutants. Section 118 of the CAA requires that all Federal agencies engaged in activities that may result in the discharge of air pollutants comply with state and local air pollution control requirements. Section 176 of the CAA prohibits federal agencies from engaging in any activity that does not conform to an approved State Implementation Plan.

The CAA established the NAAQS and delegated enforcement of air pollution control to the states. In California, the Air Resources Board (ARB) has been designated as the state agency responsible for regulating air pollution sources at the state level. The ARB, in turn, has delegated the responsibility of regulating stationary emission sources to local air pollution control or management districts which, for the proposed project, is the Ventura County Air Pollution Control District (VCAPCD).

The CAA states that all applicable federal and state ambient air quality standards must be maintained during the operation of any emission source. The CAA also delegates to each state the authority to establish their own air quality rules and regulations. State adopted rules and regulations must be at least as stringent as the mandated federal requirements. In states where the NAAQS are exceeded, the CAA requires preparation of a State Implementation Plan (SIP) that identifies how the state will meet standards within timeframes mandated by the CAA. The 1990 CAA established new nonattainment classifications, new emission control requirements, and new compliance dates for areas presently in nonattainment of the NAAQS, based on the design day value. The design day value is the fourth highest pollutant concentration recorded in a 3-year period. The requirements and compliance dates for reaching attainment are based on the nonattainment classification.

One of the requirements established by the 1990 CAA was an emission reduction amount, which is used to judge how progress toward attainment of the ozone standards is measured. The 1990 CAA requires areas in nonattainment of the NAAQS for ozone to reduce basin wide VOC emissions by 15 percent for the first 6 years and by an average 3 percent per year thereafter until attainment is reached. Control measures must be identified in the SIP, which facilitates reduction in emissions and show progress toward attainment of ozone standards.

The 1990 CAA states that a federal agency cannot support an activity in any way unless it determines the activity will conform to the most recent EPA-approved SIP. This means that Federally supported or funded activities will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any standard; or (3) delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area. In accordance with Section 176 of the 1990 CAA, the EPA promulgated the final conformity rule for general Federal actions in the November 30, 1993 *Federal Register*.

Project emissions are not expected to exceed “de minimis” levels established as a criteria for a finding of conformity. Therefore, the project is consistent with the SIP and meets the requirements of Section 176(c).

#### **5.1.6 National Historic Preservation Act of 1966 (16 USC 470 et seq.)**

The purpose of the National Historic Preservation Act (NHPA) is to preserve and protect historic and prehistoric resources that may be damaged, destroyed, or made less available by a project. Under this Act, federal agencies are required to identify cultural or historical resources that may be affected by a project and to consult with the State Historic Preservation Officer (SHPO) when a federal action may affect cultural resources.

Studies indicate that no cultural resources exist in the project area. All project coordination with respect to Section 106 of the NHPA (36 CFR 800) will be completed prior to construction.

If previously unknown cultural resources are identified during project implementation, all activity will cease until requirements of 36 CFR 800.13(b), *Discovery of Properties during Implementation of an Undertaking*, are met.

#### **5.1.7 Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (FWCA) requires the Corps to consult with the U. S. Fish and Wildlife Service whenever the waters of any stream or other body of water are proposed to be impounded, diverted, or otherwise modified. Coordination efforts will continue in order to fulfill the requirements of the FWCA; at this time, we are in full compliance with its provisions.

#### **5.1.8 Magnuson-Stevens Fishery Management and Conservation Act, as amended.**

This Draft EA contains an EFH Assessment as required by the Magnuson-Stevens Act. Although construction will occur within Essential Fish Habitat, the Corps has determined that the proposed project may adversely affect EFH, but would not result in a significant, adverse impact. In compliance with the coordination and consultation requirements of the Act, the Draft EA will be sent to the NMFS for their review and comment.

### **5.1.9 Executive Order 12898, Environmental Justice in Minority and Low-Income Populations**

President Clinton signed Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,” on February 11, 1994. It requires, to the greatest extent practicable, each Federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

The minority population in the project area is significantly smaller than the minority population in the County. Therefore, the dredging would not result in disproportionate impacts to minority populations.

**Table 5  
Summary of Environmental Compliance**

Statute	Status of Compliance
National Environmental Policy Act (NEPA) of 1969, 42 U.S.C., as amended  Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR 1500-1508) dated July 1986	This Draft EA is completed and submitted for public review. Upon review of the Final EA, if impacts are determined to be less than significant, the District Engineer would issue a Finding of No Significant Impact (FONSI).
Clean Air Act, 42 U.S.C. 740B	A permit to construct will be obtained by contractor, if necessary.
Clean Water Act, 33 U.S.C. 1344	A section 404(b)(1) analysis has been conducted for the recommended plan. A Section 401 water quality certification will be requested from the California Regional Water Quality Control Board. Sediments were tested in accordance with Corps/USEPA (1998) protocol. All tested sediments were determined to be suitable for beach or near shore placement.
Rivers and Harbors Act of 1899, 33 U.S.C. 403	Not applicable.
National Oceanic and Atmospheric Administration Federal Consistency Regulation (15 CFR 930)  Coastal Zone Management Act of 1972, 16 U.S.C. 1451 et seq  California Coastal Act of 1976	A Negative Determination will be prepared by the Corps and transmitted to the California Coastal Commission for concurrence.
Joint Regulations (U.S. Fish and Wildlife Service and National Marine Fisheries Service) Endangered Species Committee Regulations, 50 CFR 402 Interagency Cooperation  Endangered Species Act of 1973, 16 U.S.C. 1531, as amended  Fish and Wildlife Coordination Act, 16 U.S.C. 661-666c  Migratory Bird Treaty Act, 16 U.S.C. 703-711  Marine Protection, Research, and Sanctuaries Act of 1972, as amended, 33 U.S.C. 1413  Marine Mammal Protection Act, 16 U.S.C. 1361 et seq	An analysis of potential effects to federally-listed endangered and/or threatened species has been conducted and coordination is on-going with the U. S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The Corps has initiated informal consultation with the USFWS pursuant to the Endangered Species Act and will continue coordination efforts with the NMFS.  Coordination is underway.  No effect.  Not applicable, there is no placement within marine sanctuaries or protected areas.  The Corps has determined that the proposed project will be in full compliance with the Marine Mammal Protection Act.
National Historic Preservation Act, 16 U.S.C. 470 and 36 CFR 800: Protection of Historic Properties  Executive Order 11593: Protection and Enhancement of the Cultural Environment, May 13, 1971  Executive Order 12898, Environmental Justice in Minority and Low-Income Populations	Per 36 CFR 800.3(1), the proposed project has no potential to cause effects; no further consultation is required with the State Historic Preservation Officer (SHPO). The project will be in compliance with Section 106 of the Act.  The proposed project will benefit all harbor and beach users equally.

## 5.2 COMMITMENTS

Following is a proposed summary of future commitments:

1. It is the Contractor's responsibility to obtain all applicable air permits and comply with federal, state, and local air and noise regulations.
2. The Contractor shall implement retarding injection timing of diesel-powered equipment for nitrogen oxide (NO<sub>x</sub>) control, and use reformulated diesel fuel to reduce ROC and SO<sub>2</sub> emissions.
3. If cultural resources are discovered prior to or during work and cannot be avoided, work will be suspended in that area until resources are evaluated for eligibility for listing in the NRHP after consultation with the SHPO. If resources are deemed eligible for the NRHP, the effects of the project will be taken into consideration in consultation with the SHPO. The Advisory Council on Historic Preservation (ACHP) will be provided an opportunity to comment in accordance with 36 CFR 800.11.
4. The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters.
5. The Contractor shall implement a Water Quality Monitoring Plan at the dredge and beach disposal sites.
6. All dredging and fill activities will remain within the boundaries specified in the plans. There will be no dumping of fill or material outside of the project area or within any adjacent aquatic community. This includes the restriction on placement in the nearshore area to depths greater than -10 ft MLLW.
7. The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife.
8. The contractor shall mark the dredge and all associated equipment in accordance with U.S. Coast Guard regulations. The contractor must contact the U.S. Coast Guard two weeks prior to the commencement of dredging. The following information shall be provided: the size and type of equipment to be used; names and radio call signs for all working vessels; telephone number for on-site contact with the project engineer; the schedule for completing the project; and any hazards to navigation.
9. The contractor shall move equipment upon request by the U.S. Coast guard and Harbor patrol law enforcement and rescue vessels.
10. Dredging shall occur between October 1 and March 15. Should dredging extend past March 15 the following measures will be required:

a. The Corps will coordinate with concerned federal and state resource agencies concerning possible impacts to threatened or endangered species;

b. Beach disposal will be limited to a diked, single-point disposal site to minimize turbidity and grunion smothering;

11. Disposal activities requiring heavy equipment may be limited to the hours of 7 AM to 10 PM on Silver Strand Beach or Port Hueneme City Beach if noise complaints are received during construction.

12. Dredging and disposal at Channel Islands Harbor shall include the following measures as provided in the consultation process under Section 7 of the ESA:

- a. The limits of the dredging activities shall be clearly marked to prevent dredging equipment from entering areas beyond the smallest footprint needed to complete the project. Colored flagging would be appropriate to delineate the project boundaries.
- b. Vehicles and all dredging activities shall remain within the defined activity area and use only designated access points and staging areas.
- c. The work area shall be kept clean to avoid attracting predators. All food and trash shall be disposed of in closed containers and removed from the project site.
- d. No pets shall be allowed on the construction site.

13. A pre-construction survey for *Caulerpa taxifolia* shall be conducted, in accordance with the *Caulerpa* Control Protocol, prior to any dredging in the Entrance Basin and Inner Basin (Areas E and F) of Channel Islands Harbor and the Turning Basin in Port Hueneme. If *Caulerpa taxifolia* is detected within the project area, no work shall be conducted until the infestation has been isolated, treated, and the risk of spread is eliminated.

### **5.3 SUMMARY**

The proposed project is a navigation maintenance project designed and scheduled to avoid and/or minimize probable effects on the environment while maximizing ecosystem restoration. It is determined the proposed project will not have a significant impact upon the existing environment or the quality of the human environment, as documented in this EA. As a result, preparation of an EIS is not required.

## **SECTION 6 – REFERENCES**

- Frangis, Alexis. 2012. Personal communication, email transmitting western snowy plover nesting data. Ventura Audubon Society. July 9 and 11.
- Parsons Engineering Science, Inc. 1996. Letter report from Marlund Hale to James McNally, Great Lakes Dredge & Dock Company, regarding Noise Level Testing Weekend Day Results.
- Smith, Reed V. 2011. Hollywood Beach Western Snowy Plover Nesting 2011. Ventura Audubon Society.
2010. Hollywood Beach California Least Tern and Western Snowy Plover Nesting 2010. Ventura Audubon Society.
2009. Hollywood Beach California Least Tern and Western Snowy Plover Nesting 2009. Ventura Audubon Society.
- U.S. Army Corps of Engineers (Corps). 2012. Sampling and Analysis Results for the Channel Islands Harbor Geotechnical and Environmental Investigation Project. Prepared for the Corps Los Angeles District by Diaz Yourman, GeoPentech, Kinnetic Laboratories/Joint Venture. June.
- USEPA & USACE (U. S. Environmental Protection Agency & U. S. Army Corps of Engineers). 1991. Evaluation of Dredged Material Proposed for Ocean Disposal Testing Manual. EPA 503/8-91/001.

## **SECTION 7 - DISTRIBUTION LIST**

### **Federal Agencies:**

U.S. Environmental Protection Agency, Region IX  
U.S. Fish and Wildlife Service  
National Marine Fisheries Service  
U.S. Coast Guard  
Channel Islands National Park  
Naval Base Ventura County

### **State Agencies:**

Coastal Commission  
Fish and Game  
Regional Water Quality Control Board, Los Angeles Region  
Clearinghouse/Association of Governments  
Department of Boating and Waterways  
State Historic Preservation Officer  
Resources Agency  
Ventura County Air Pollution Control District  
County of Ventura Planning Division

### **Local Agencies:**

City of Oxnard Planning Division  
Port of Hueneme Oxnard Harbor District  
Channel Islands Harbor  
Ventura Port District

## SECTION 8 - ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
ARB	Air Resources Board
ASBS	Area of Special Biological Significance
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CO	Carbon monoxide
CWA	Clean Water Act
DO	Dissolved oxygen
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FEA	Final Environmental Assessment
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
LAD	Los Angeles District
MLLW	Mean Lower Low Water
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO2	Nitrogen dioxide
PL	Public Law
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VCAPCD	Ventura County Air Pollution Control District

## **SECTION 9 - PREPARERS/REVIEWERS**

### **8.1 Preparers**

Tiffany Bostwick                      Corps LAD, Biologist, Environmental Policy Group

### **8.2 Reviewers**

Larry Smith                              Corps LAD, Environmental Policy Group  
Hayley Lovan                            Corps LAD, Ecosystem Planning Section  
Jodi Clifford                            Corps LAD, Chief, Environmental Resources Branch  
Jeffrey Cole                              Corps LAD, Project Management

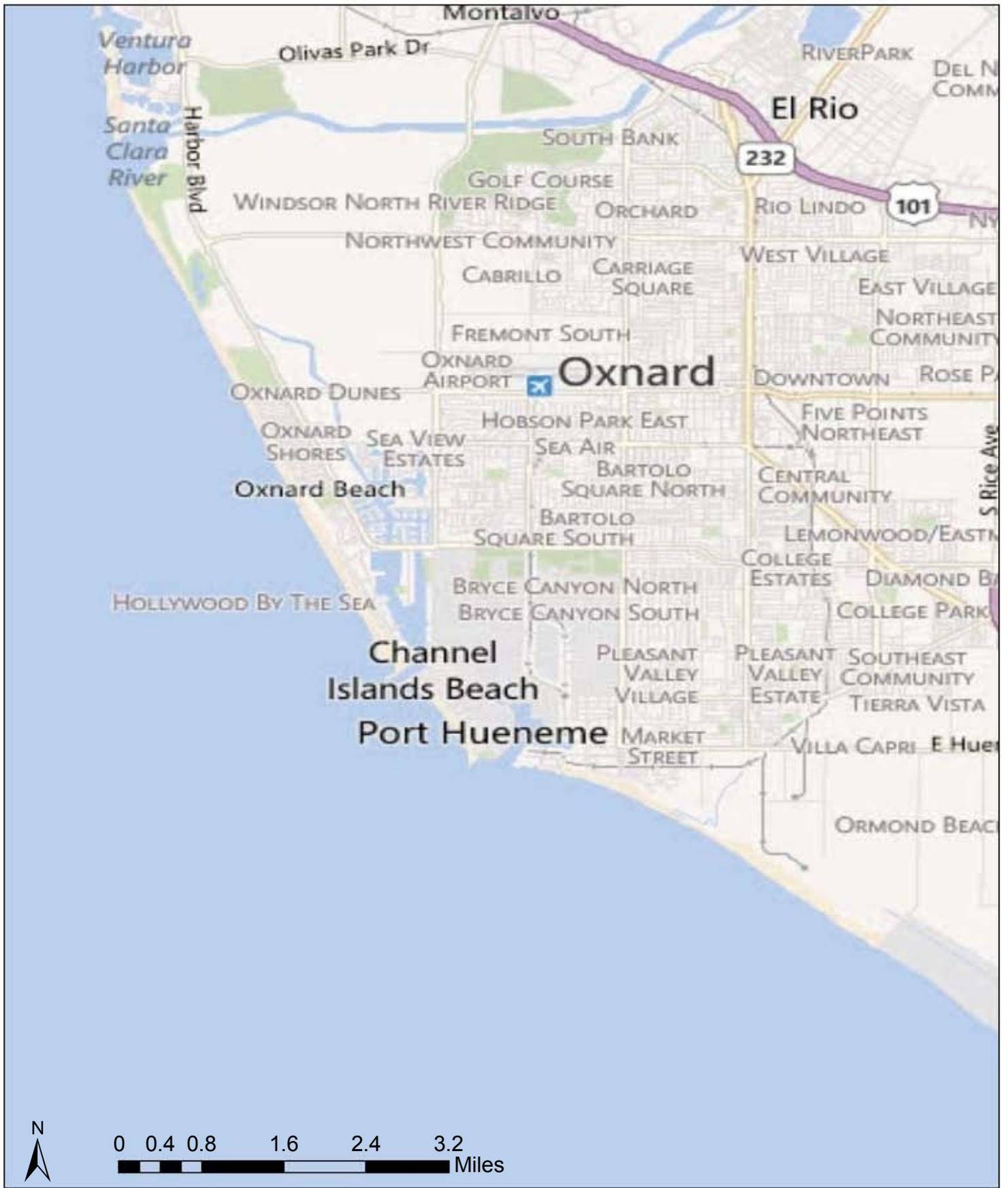
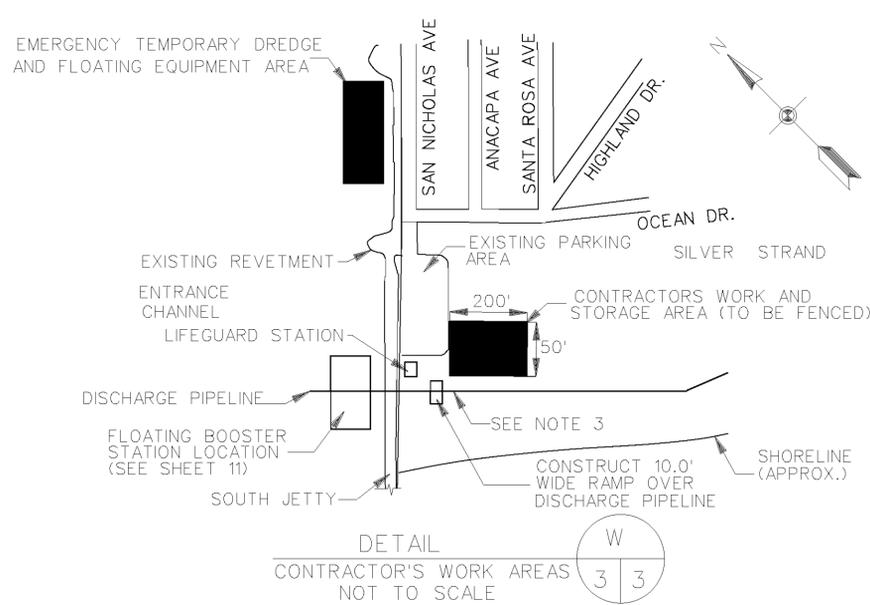
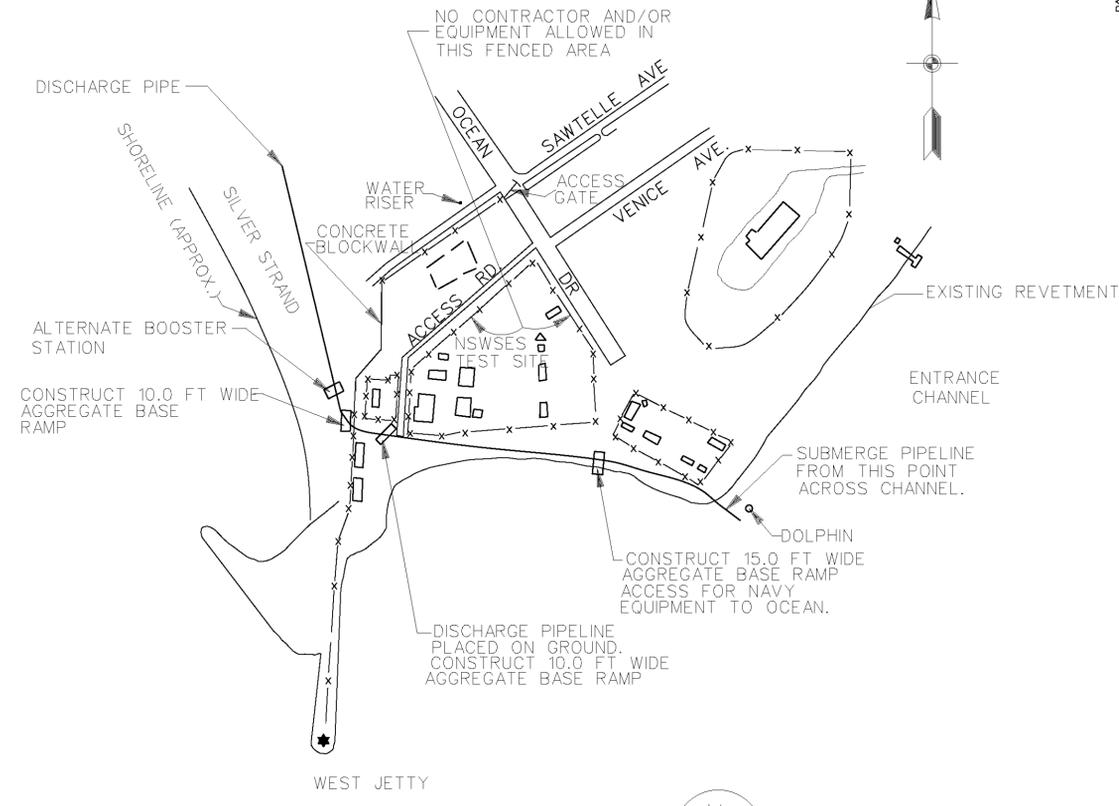
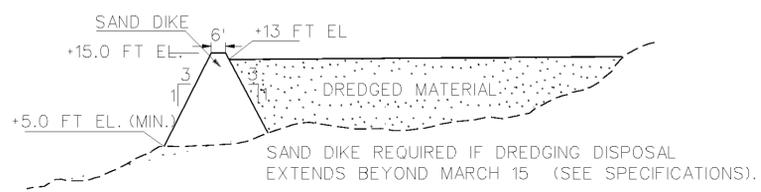
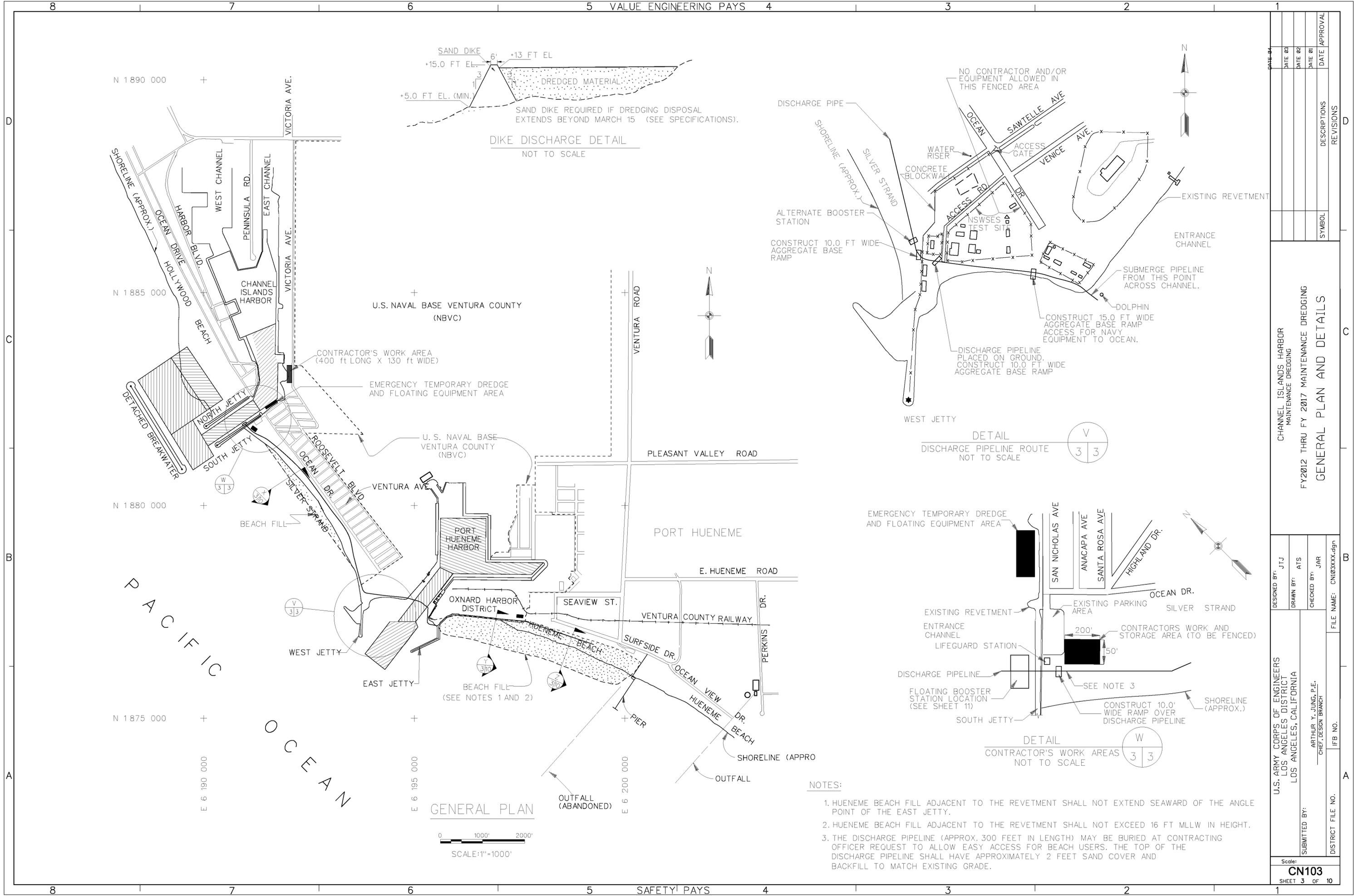


Figure 1. Location



- NOTES:**
- HUENEME BEACH FILL ADJACENT TO THE REVETMENT SHALL NOT EXTEND SEAWARD OF THE ANGLE POINT OF THE EAST JETTY.
  - HUENEME BEACH FILL ADJACENT TO THE REVETMENT SHALL NOT EXCEED 16 FT MLLW IN HEIGHT.
  - THE DISCHARGE PIPELINE (APPROX. 300 FEET IN LENGTH) MAY BE BURIED AT CONTRACTING OFFICER REQUEST TO ALLOW EASY ACCESS FOR BEACH USERS. THE TOP OF THE DISCHARGE PIPELINE SHALL HAVE APPROXIMATELY 2 FEET SAND COVER AND BACKFILL TO MATCH EXISTING GRADE.

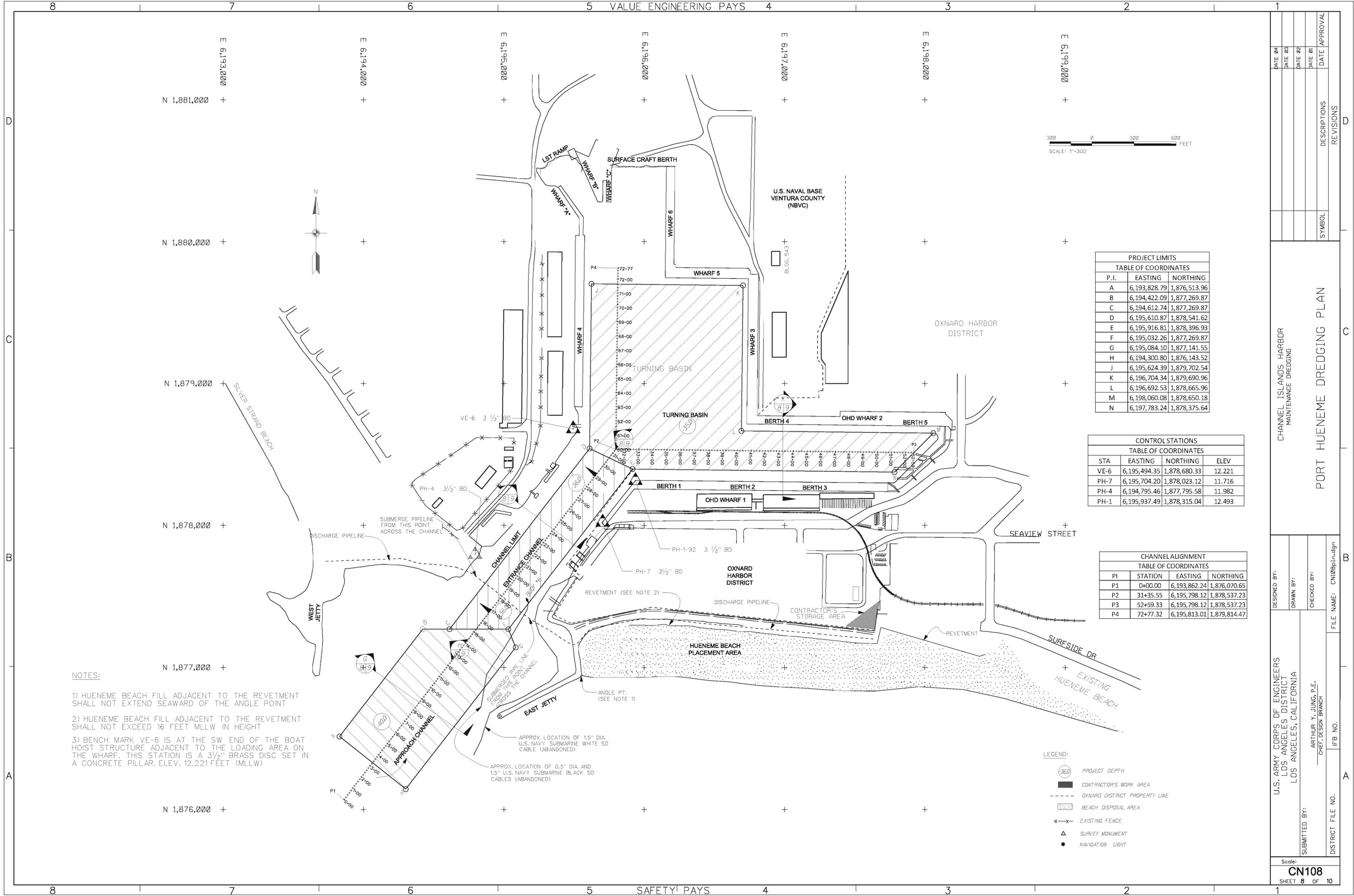
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SHEET 3 OF 10	

DATE	SYMBOL	DESCRIPTIONS	DATE	APPROVAL

CHANNEL ISLANDS HARBOR  
MAINTENANCE DREDGING  
FY2012 THRU FY 2017 MAINTENANCE DREDGING  
GENERAL PLAN AND DETAILS

U.S. ARMY CORPS OF ENGINEERS  
LOS ANGELES DISTRICT  
LOS ANGELES, CALIFORNIA





PROJECT LIMITS			
TABLE OF COORDINATES			
P.I.	EASTING	NORTHING	
A	6,193,828.79	1,876,513.96	
B	6,194,422.09	1,877,269.87	
C	6,194,612.74	1,877,269.87	
D	6,195,610.87	1,878,541.62	
E	6,195,916.81	1,878,396.93	
F	6,195,032.26	1,877,269.87	
G	6,195,084.10	1,877,141.55	
H	6,194,300.80	1,876,143.52	
J	6,195,624.39	1,879,702.54	
K	6,196,704.34	1,879,690.96	
L	6,196,692.53	1,878,665.96	
M	6,198,060.08	1,878,650.18	
N	6,197,783.24	1,878,375.64	

CONTROL STATIONS			
TABLE OF COORDINATES			
STA	EASTING	NORTHING	ELEV
VE-6	6,195,494.35	1,878,680.33	12.221
PH-7	6,195,704.20	1,878,023.12	11.716
PH-4	6,194,795.46	1,877,795.58	11.982
PH-1	6,195,937.49	1,878,315.04	12.493

CHANNEL ALIGNMENT			
TABLE OF COORDINATES			
PI	STATION	EASTING	NORTHING
P1	0+00.00	6,193,862.24	1,876,070.65
P2	31+35.55	6,195,798.12	1,878,537.23
P3	52+59.33	6,195,798.12	1,878,537.23
P4	72+77.32	6,195,813.01	1,879,814.47

- NOTES:
- HUENEME BEACH FILL ADJACENT TO THE REVETMENT SHALL NOT EXTEND SEAWARD OF THE ANGLE POINT
  - HUENEME BEACH FILL ADJACENT TO THE REVETMENT SHALL NOT EXCEED 16 FEET MLLW IN HEIGHT
  - BENCH MARK VE-6 IS AT THE SW END OF THE BOAT HOIST STRUCTURE ADJACENT TO THE LOADING AREA ON THE WHARF. THIS STATION IS A 3/2" BRASS DISC SET IN A CONCRETE PILLAR. ELEV. 12.221 FEET (MLLW)

- LEGEND:
- (-36.0) PROJECT DEPTH
  - CONTRACTOR'S WORK AREA
  - OXNARD DISTRICT PROPERTY LINE
  - BEACH DISPOSAL AREA
  - EXISTING FENCE
  - SURVEY MONUMENT
  - NAVIGATION LIGHT

DATE 04	DATE 03	DATE 02	DATE 01	APPROVAL
SYMBOL				DESCRIPTIONS
				REVISIONS

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 CHECKED BY: LOS ANGELES, CALIFORNIA  
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 SUBMITTED BY: ARTHUR Y. JUNG, P.E.  
 CHIEF DESIGN BRANCH  
 DISTRICT FILE NO. \_\_\_\_\_

U.S. ARMY CORPS OF ENGINEERS  
 LOS ANGELES DISTRICT  
 LOS ANGELES, CALIFORNIA

CHANNEL ISLANDS HARBOR  
 MAINTENANCE DREDGING

PORT HUENEME DREDGING PLAN

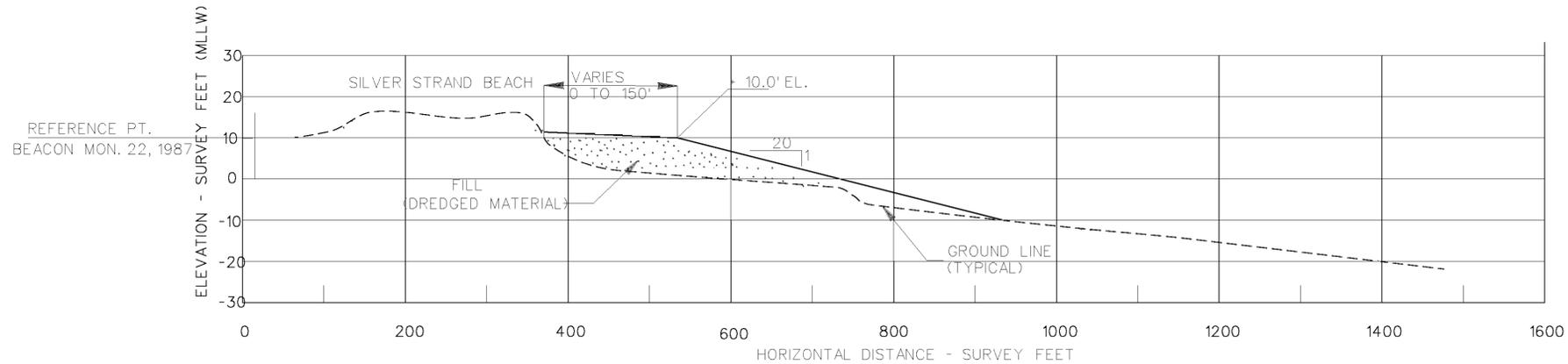
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VALUE ENGINEERING PAYS

SAFETY PAYS

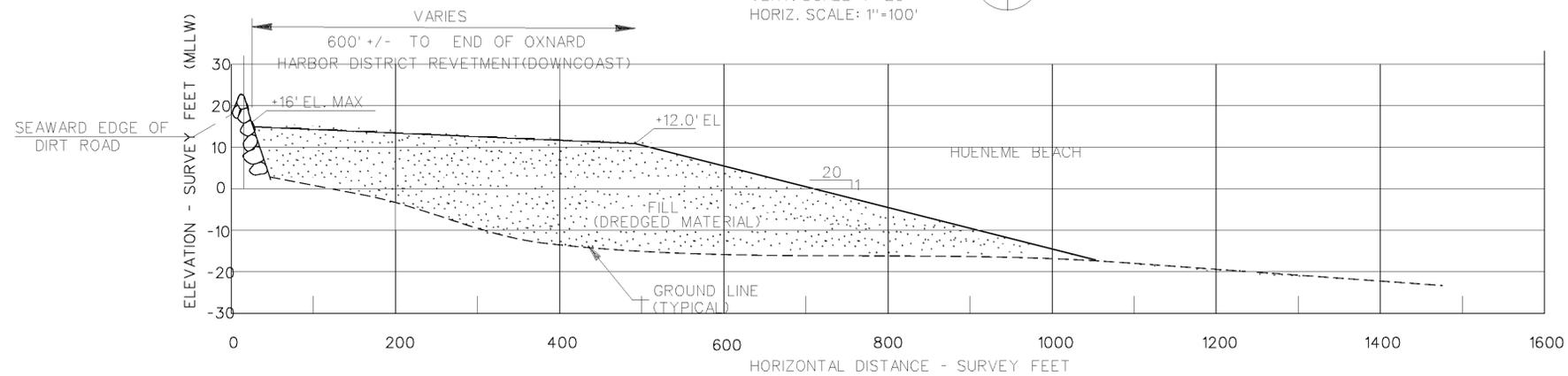
SECTION X

VERT. SCALE: 1"=20'  
HORIZ. SCALE: 1"=100'



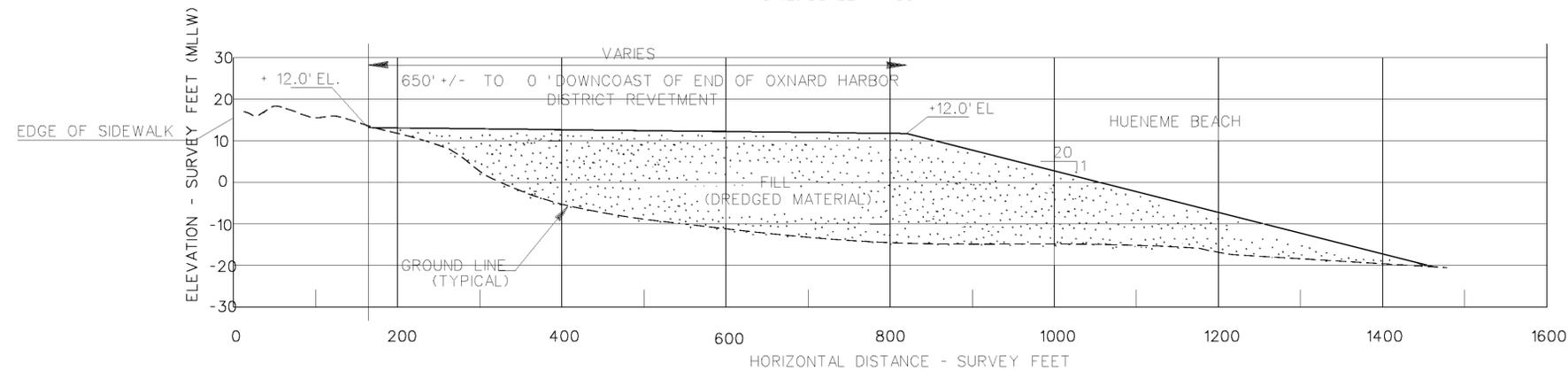
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SECTION Z

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DATE	SYMBOL	DESCRIPTIONS	DATE	APPROVAL

CHANNEL ISLANDS HARBOR  
MAINTENANCE DREDGING

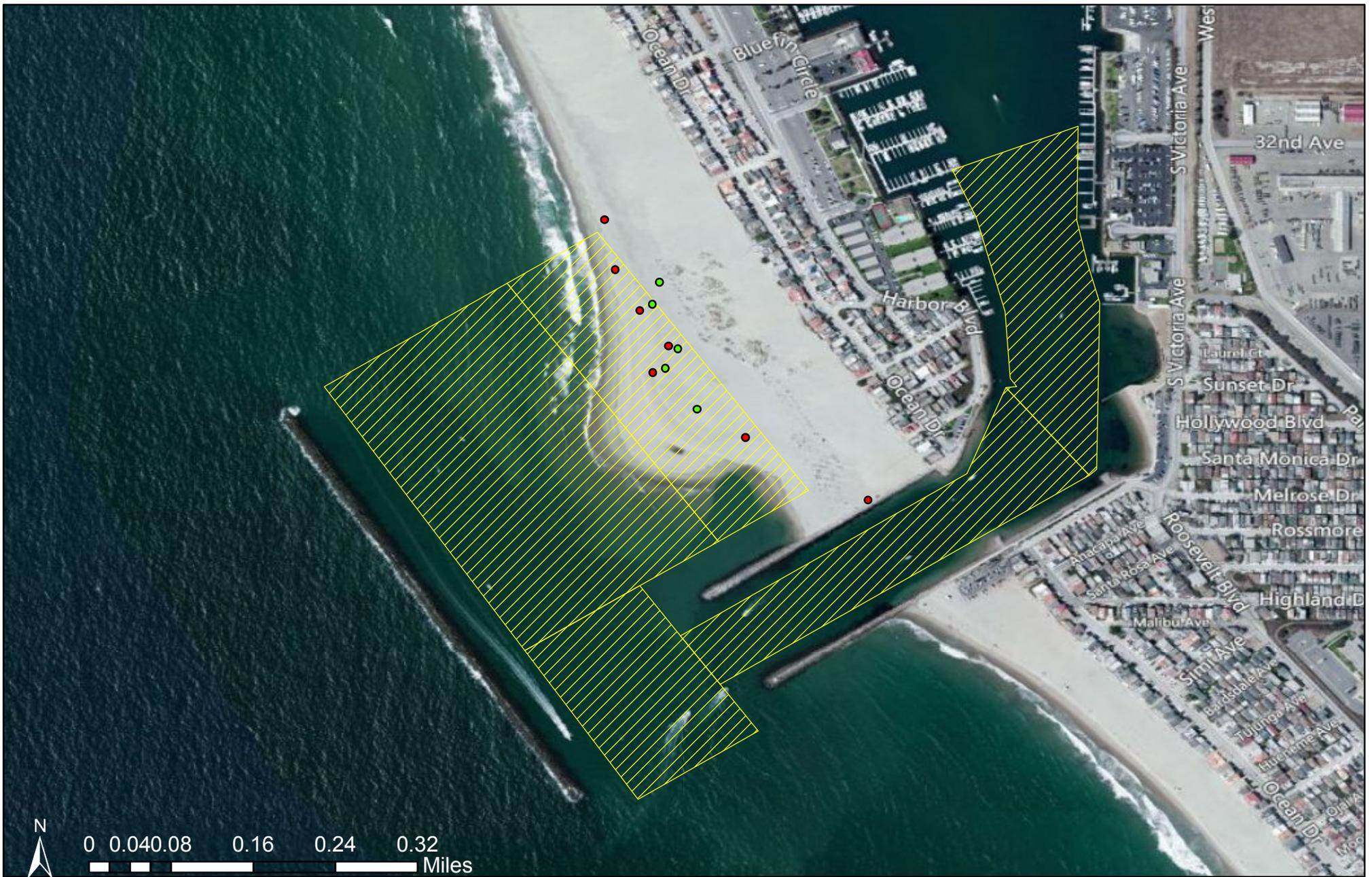
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LOS ANGELES DISTRICT  
LOS ANGELES, CALIFORNIA

SUBMITTED BY: ARTHUR Y. JUNG, P.E.  
CHIEF DESIGN BRANCH

DISTRICT FILE NO. IFB NO.

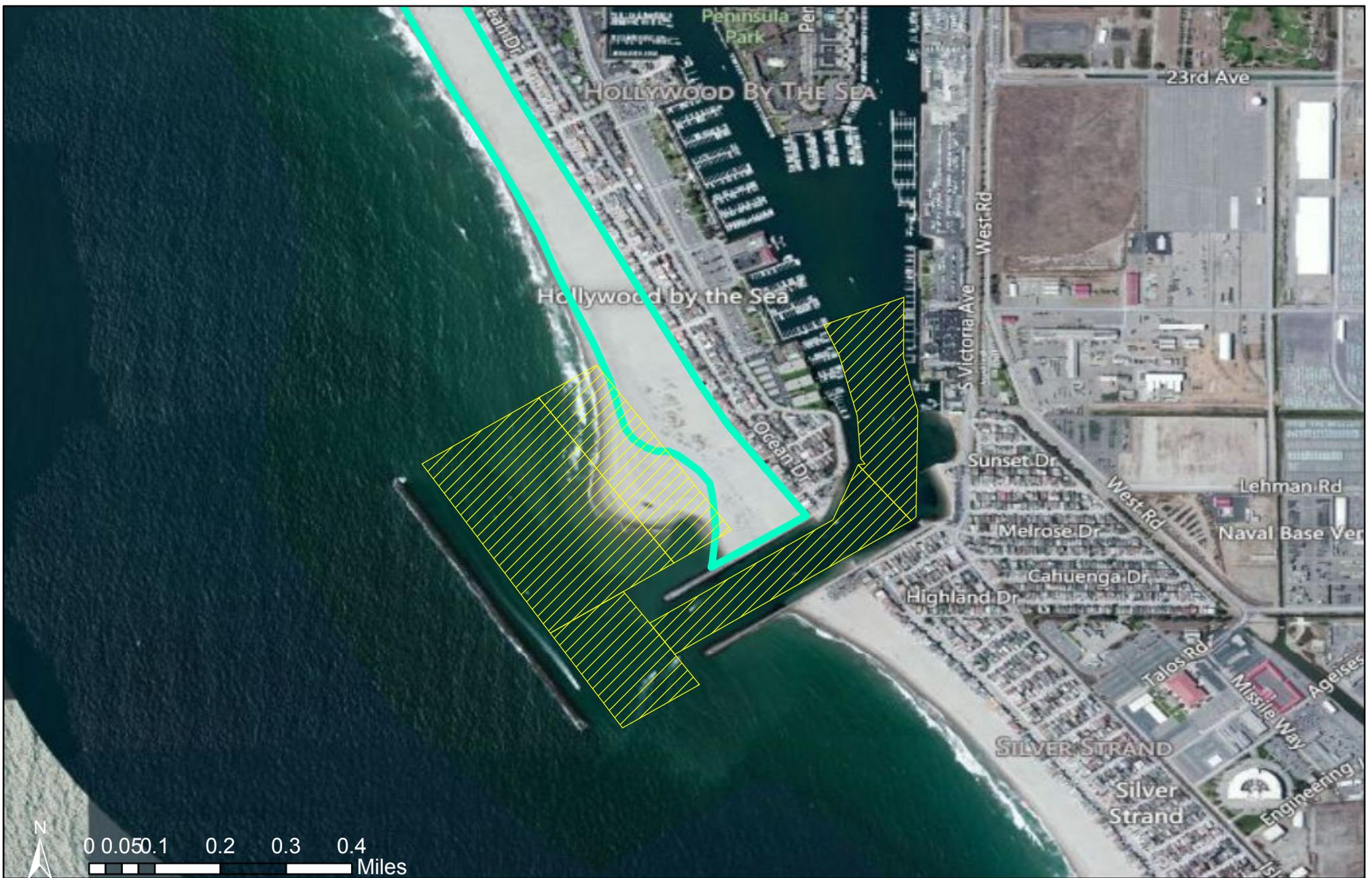
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**Legend**

- 2011
- 2012

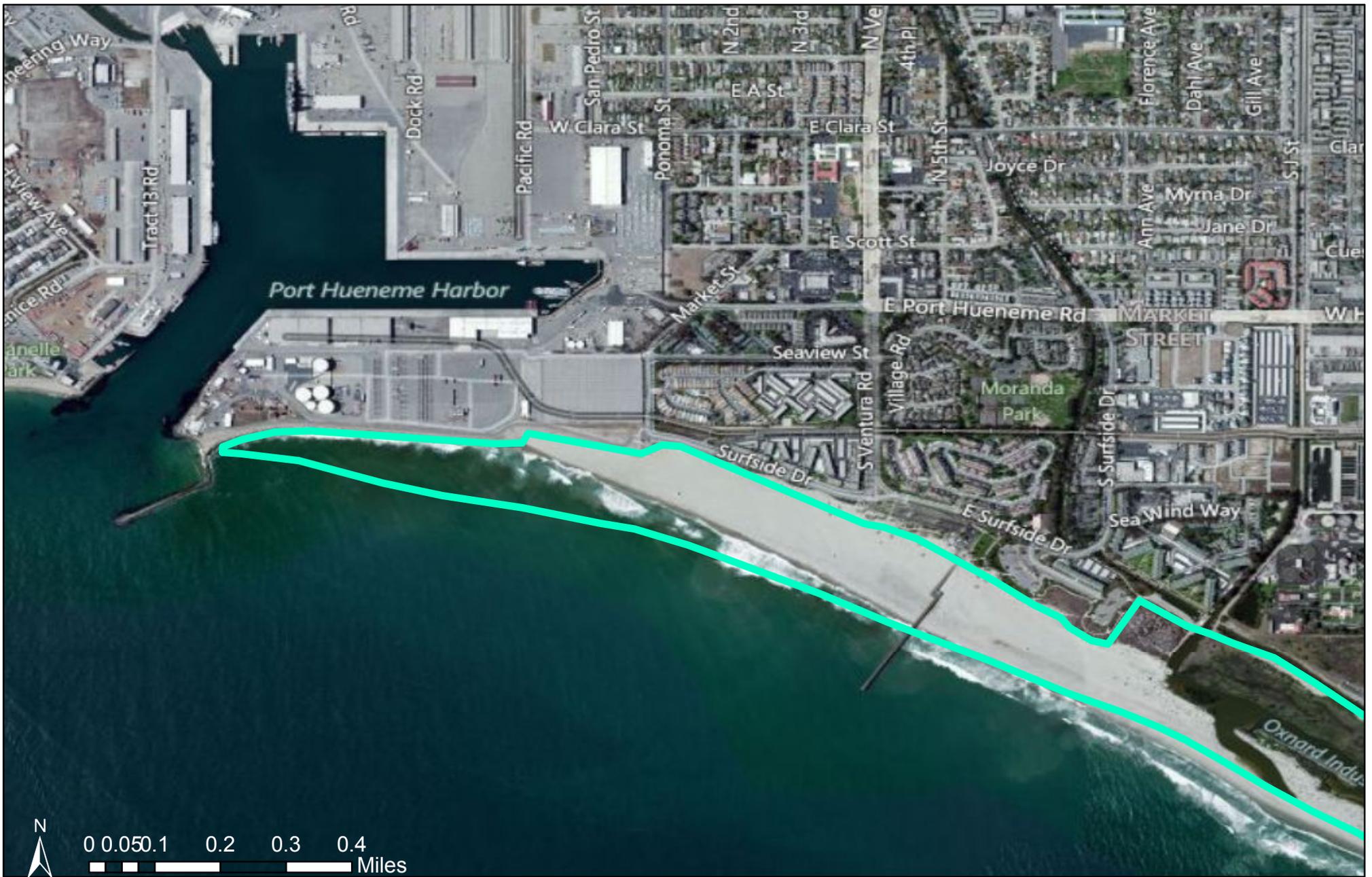
**Figure 6. 2011 and 2012 Western Snowy Plover Nest Sites**



**Legend**

-  Maintenance Dredging Areas A-E
-  Critical Habitat

**Figure 7. Western Snowy Plover Critical Habitat at Hollywood Beach**



**Legend**

 Critical Habitat

**Figure 8. Western Snowy Plover Critical Habitat at Hueneme Beach**

**APPENDIX A**

**MAILING LIST**

California Department of Boating & Waterways  
2000 Evergreen Street Suite 100  
Sacramento, CA 95815

Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814

The Resources Agency of California  
1416 Ninth Street  
Sacramento, CA 95814

Ventura Air Pollution Control District  
669 County Square Drive  
Ventura, CA 93003

State Clearing House  
1400 Tenth Street, Room 121  
Sacramento, CA 95814

State Lands Commission  
100 Howe Avenue  
#100S  
Sacramento, CA 95852-8202

State of California Department of Transportation, District 7  
100 S. Main Street  
Los Angeles, CA 90012

Milford Wayne Donaldson, FAIA  
State Historic Preservation Officer  
Office of Historic Preservation  
1725 23rd Street, Suite 100  
Sacramento, California 95816

Dr. Charles Lester  
California Coastal Commission  
Attention: Mr. Larry Simon  
45 Fremont Street, Suite 2000  
San Francisco, CA 94105

Marilyn Fluharty  
CA Dept of Fish & Game  
4949 View Ridge Avenue  
San Diego, CA 92123

Chris Delith  
U.S. Fish & Wildlife Service  
2493 Portola Road, Suite B  
Ventura, CA 93003

Eric Raffini  
U.S. Environmental Protection Agency  
600 Wilshire Boulevard Suite 1460  
Los Angeles, CA 90017

Michael Lyons  
Regional Water Quality Control Board  
320 W. 4th Street, Suite 200  
Los Angeles, CA 90013

Rodney McInnis  
National Marine Fisheries Service  
501 W. Ocean Blvd., Suite 4200  
Long Beach, CA 92802

U.S. Environmental Protection Agency (USEPA), Region IX  
75 Hawthorne Street  
Attn: Allan Ota (WTR-8)  
San Francisco, CA 94105

Channel Islands National Park  
National Park Service  
1901 Spinnaker Drive  
Ventura, CA 93001

County of Ventura  
Planning Division  
800 South Victoria Ave.  
Ventura, CA 93009

Commanding Officer  
U.S. Coast Guard District  
165 North Pico Avenue  
Long Beach, CA 90802-1096

Port of Hueneme  
Oxnard Harbor District  
333 Ponomo Street  
Port Hueneme, CA 93044-0608

City of Oxnard  
Planning Division  
214 South "C" Street  
Oxnard, CA 93030

Channel Islands Harbor  
Attn: Jack Peveler  
3900 Pelican Way  
Oxnard, CA 93035

Oxnard Public Library  
Downtown Main Library  
251 South 'A' Street  
Oxnard, CA 93030

Oxnard Public Library  
South Oxnard Branch  
4300 Saviers Road  
Oxnard, CA 93033

Ray D. Prueter Library  
510 Park Ave.  
Port Hueneme, CA 93041

Naval Base Ventura County  
311 Main Road  
Bld. 1  
Point Mugu, CA 93042-5033

Ventura Port District  
1603 Anchors Way Drive  
Ventura, CA 93001

## **APPENDIX B**

### **Air Quality Calculations**

**Table B-1. National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>1</sup>	National Standards <sup>2</sup>	
			Primary <sup>3,4</sup>	Secondary <sup>3,5</sup>
Ozone (O <sub>3</sub> )	8-hour <sup>6</sup> 1-hour	0.070 ppm (137 µg/m <sup>3</sup> ) 0.09 ppm (180 µg/m <sup>3</sup> )	0.075 ppm (147 µg/m <sup>3</sup> ) --	Same as Primary Standard
Carbon Monoxide (CO)	8-hour 1-hour	9.0 ppm (10 mg/m <sup>3</sup> ) 20.0 ppm (23 mg/m <sup>3</sup> )	9.0 ppm (10 mg/m <sup>3</sup> ) 35 ppm (40 mg/m <sup>3</sup> )	-- --
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Avg. 1-hour	0.030 ppm (57 µg/m <sup>3</sup> ) 0.18 ppm (339 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> ) 0.100 ppm (188 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> ) --
Sulfur Dioxide (SO <sub>2</sub> )	24-hour 3-hour 1-hour	0.04 ppm (105 µg/m <sup>3</sup> ) -- 0.25 ppm (655 µg/m <sup>3</sup> )	-- -- .075 ppm (196 µg/m <sup>3</sup> )	-- 0.5 ppm (1300 µg/m <sup>3</sup> ) --
Respirable Particulate Matter (PM <sub>10</sub> )	24-hour Ann. Arith. Mean	50 µg/m <sup>3</sup> 20 µg/m <sup>3</sup>	150 µg/m <sup>3</sup> --	Same as Primary Standard
Suspended Particulate Matter (PM <sub>2.5</sub> ) <sup>7</sup>	24-hour Ann. Arith. Mean	-- 12 µg/m <sup>3</sup>	35 µg/m <sup>3</sup> 15 µg/m <sup>3</sup>	Same as Primary Standard
Sulfates (SO <sub>4</sub> )	24-hour	25 µg/m <sup>3</sup>	NS	NS
Lead (Pb)	30-day Avg. Calendar Qtr. Rolling 3-Month Avg.	1.5 µg/m <sup>3</sup> NS NS	NS 1.5 µg/m <sup>3</sup> 0.15 µg/m <sup>3</sup>	NS Same as Primary Standard
Hydrogen Sulfide (H <sub>2</sub> S)	1-hour	0.03 ppm (42 µg/m <sup>3</sup> )	NS	NS
Vinyl Chloride	24-hour	0.010 ppm (26 µg/m <sup>3</sup> )	NS	NS
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles when relative humidity is less than 70% (CA only)	NS	NS

Notes: NS = no standard; ppm = parts per million; µg/m<sup>3</sup> = microgram per cubic meter; mg/m<sup>3</sup> = milligrams per cubic meter

1. California standards for O<sub>3</sub>, CO, SO<sub>2</sub> (1 and 24 hour), NO<sub>2</sub>, and PM<sub>10</sub> and visibility reducing particles are values that are not to be exceeded. SO<sub>4</sub>, Pb, H<sub>2</sub>S, and Vinyl Chloride standards are not to be equaled or exceeded.

2. National Standards (other than O<sub>3</sub>, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The O<sub>3</sub> Standard is attained when the fourth highest eight hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year within a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. On June 2, 2010, the U.S. EPA established a new 1-hour SO<sub>2</sub> standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The EPA also revoked both the existing 24-hour SO<sub>2</sub> standard of 0.14 ppm and the annual primary SO<sub>2</sub> standard of 0.030 ppm, effective August 23, 2010. The secondary SO<sub>2</sub> standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA.
7. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
8. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Source: California Air Resources Board 2010 (<http://www.arb.ca.gov>)

**SUMMARY TOTALS**

<b>Total Project Emissions - Daily</b>	<b>Pounds Per Day</b>				
<b>Project Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>
Hydraulic Dredge	64.26	226.16	794.45	19.32	23.56
Clamshell Dredge	27.86	16.98	98.52	34.21	16.86
Hopper Dredge	3.24	147.83	345.55	214.16	18.81
On-Road Vehicles	0.37	3.60	0.36	0.01	0.04
<b>SCAQMD Daily Significance Levels*</b>	<b>75</b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>150</b>

<b>Total Project Emissions - Yearly</b>	<b>Tons Per Year</b>				
<b>Project Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>
Hydraulic Dredge*	2.36	8.28	27.51	0.03	0.83
Clamshell Dredge	5.09	3.10	17.98	6.24	3.08
Hopper Dredge	0.69	31.41	73.43	45.51	4.00
On-Road Vehicles	0.01	0.12	0.01	0.00	0.00
<b>de minimis Thresholds</b>	<b>10</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>70</b>

\* Total does not include tug boat emissions since it is assumed to be covered in existing SIP

<b>Total Project GHG Emissions - Yearly</b>	<b>Tons Per Year</b>
<b>Project Emissions</b>	<b>CO2</b>
Hydraulic Dredge	3428.5
Clamshell Dredge	9.8
Hopper Dredge	2.0
On-Road Vehicles	17.1

Sources: South Coast Air Basin Fleet Average Emission Factors (Diesel)  
 Highest (Most Conservative) EMFAC2007 (version 2.3), Emission Factors for On-Road Passenger Vehicles & Delivery Trucks, and Heavy-Heavy-Dut Diesel Trucks; SCAQMD.  
 SCAQMD 2012. Website accessed July 6.

## Maintenance Dredging

### Emission Source Data for Maintenance Dredging - Hydraulic Dredge

Construction Activity/Equipment Type	Power Rating (bhp) <sup>3</sup>	HP Factor <sup>2</sup>	No. of Equipment	bhp-Hrs (Hourly)	Fuel Use GPH	Hrs / Day (Schedule)	Total Work Days <sup>1</sup>	Daily Total bhp-Hrs
28" Hydraulic Dredge*	9,000	0.045	1	405	N/A	22	85	8,910
Booster Station	5,200	0.045	1	234	N/A	22	76	5,148
Work Tug boats	250	0.045	1	11	8.0	22	85	248
Derrick for Pipelines	200	0.011	1	2	N/A	11	85	24
Boat/Launch (13-ft)	50	0.011	1	1	1.5	11	42	6
Tender/Crew/Survey Boat (14-ft)	100	0.045	1	5	3.0	11	42	50
Dozer (Shore) - D8	310	0.044	1	14	11.0	22	85	300
Loader (Shore) - 980	350	0.041	1	14	11.0	22	85	316
Log Skidder (Shore)	160	0.010	1	2	5.0	11	42	18

\* One hydraulic dredge engine assumed to be in operation at one time (not concurrently with engines); emission calculations assumes a 9,000 power rating.

### Emission Factors for Construction Dredging Equipment

Equipment Type	ROG	CO	NOx	SOx	PM10
28" Hydraulic Dredge (lbs/hr)	0.8673	3.0642	10.8871	0.0105	0.3104
Booster Station (lbs/hr)	1.1456	4.0641	14.2305	0.0136	0.4081
Work Tug boats (lbs/1,000 Gal)	18.2000	57.0000	419.0000	75.0000	9.0000
Derrick for Pipelines	0.1517	0.5426	1.6573	0.0025	0.0545
Boat/Launch (13-ft)	0.0842	0.2740	0.2707	0.0004	0.0228
Tender/Crew/Survey Boat (14-ft)	0.1104	0.5320	0.7540	0.0009	0.0633
Dozer (Shore) - D8	0.2386	0.7714	2.2621	0.0039	0.0784
Loader (Shore) - 980	0.2386	0.7714	2.2621	0.0039	0.0784
Log Skidder (Shore)	0.1058	0.5866	0.8294	0.0011	0.0478

### Daily Emissions from Construction Activities - Hydraulic Dredge

Construction Activity/Equipment Type	Pounds per day				
	ROG	CO	NOx	SOx	PM10
28" Hydraulic Dredge	19.0798	67.4124	239.5156	0.2320	6.8298
Booster Station	25.2041	89.4106	313.0719	0.2997	8.9779
Work Tug boats	4.5045	14.1075	103.7025	18.5625	2.2275
Derrick for Pipelines	1.6691	5.9688	18.2307	0.0274	0.5997
Boat/Launch (13-ft)	0.9260	3.0139	2.9782	0.0040	0.2508
Tender/Crew/Survey Boat (14-ft)	1.2144	5.8522	8.2935	0.0104	0.6965
Dozer (Shore) - D8	5.2503	16.9708	49.7667	0.0854	1.7253
Loader (Shore) - 980	5.2503	16.9708	49.7667	0.0854	1.7253
Log Skidder (Shore)	1.1638	6.4530	9.1236	0.0125	0.5257
<b>Peak Daily Emissions</b>	<b>64.2623</b>	<b>226.1602</b>	<b>794.4495</b>	<b>19.3193</b>	<b>23.5586</b>

### Yearly Emissions from Construction Activities - Hydraulic Dredge

Construction Activity/Equipment Type	Tons per Year				
	ROG	CO	NOx	SOx	PM10
28" Hydraulic Dredge	0.8109	2.8650	10.1794	0.0099	0.2903
Booster Station	0.9578	3.3976	11.8967	0.0114	0.3412
Derrick for Pipelines	0.0709	0.2537	0.7748	0.0012	0.0255
Boat/Launch (13-ft)	0.0194	0.0633	0.0625	0.0001	0.0053
Tender/Crew/Survey Boat (14-ft)	0.0255	0.1229	0.1742	0.0002	0.0146
Dozer (Shore) - D8	0.2231	0.7213	2.1151	0.0036	0.0733
Loader (Shore) - 980	0.2231	0.7213	2.1151	0.0036	0.0733
Log Skidder (Shore)	0.0244	0.1355	0.1916	0.0003	0.0110
<b>Yearly Emission Totals</b>	<b>2.3552</b>	<b>8.2805</b>	<b>27.5094</b>	<b>0.0302</b>	<b>0.8345</b>

Assume total dredge volume of about 2,550,000 cubic yards (cy) (30,000 CY/Day) including overdraft and placing first 250,000 cy at Silver Strand Beach and rest at Hueneme Beach; booster station is required for pumping the material to Hueneme Beach, but is not required for pumping to Silver Strand Beach.

Emissions factors for Maintenance Dredging for tugboat taken from the Port of Los Angeles Channel Deepening Project Final Supplemental Environmental Impact Statement/Environmental Impact Report, September 2000.

**GHG Emissions**

**Maintenance Dredging**

**Emission Source Data for Maintenance Dredging - Hydraulic Dredge**

Construction Activity/Equipment Type	Power Rating	Load Factor	# Active	Hourly Hp-Hrs	Fuel Use GPH	Hrs per Day	Total Work Days <sup>(1)</sup>	Daily Total Hp-Hrs
28" Hydraulic Dredge*	9,000	0.045	1	405	N/A	22	85	8,910
Booster Station	5,200	0.045	1	234	N/A	22	76	5,148
Work Tug boats	250	0.045	1	11	8.0	22	85	248
Derrick for Pipelines	200	0.011	1	2	N/A	11	85	24
Boat/Launch (13-ft)	50	0.011	1	1	1.5	11	42	6
Tender/Crew/Survey Boat (14-ft)	100	0.045	1	5	3.0	11	42	50
Dozer (Shore) - D8	310	0.044	1	14	11.0	22	85	300
Loader (Shore) - 980	350	0.041	1	14	11.0	22	85	316
Log Skidder (Shore)	160	0.010	1	2	5.0	11	42	18

\* One hydraulic dredge engine assumed to be in operation at one time (not concurrently with engines); emission calculations assumes a 9,000 power rating.

**Emission Factors for Construction Equipment**

Equipment Type	lbs/hr CO2
28" Hydraulic Dredge	1048.6
Booster Station	1354.8
Work Tug boats (Grams per HP-HR)	509.0
Derrick for Pipelines	254.2
Boat/Launch (13-ft)	28.0
Tender/Crew/Survey Boat (14-ft)	80.9
Dozer (Shore) - D8	344.9
Loader (Shore) - 980	344.9
Log Skidder (Shore)	101.4

**Estimated Emissions from Construction Equipment**

Equipment Type	CO2	
	lbs/day	tons total
28" Hydraulic Dredge	23,069.3	980.4
Booster Station	29,806.4	1,132.6
Work Tug boats	11,198.0	475.9
Derrick for Pipelines	2,796.6	118.9
Boat/Launch (13-ft)	307.9	6.5
Tender/Crew/Survey Boat (14-ft)	889.4	18.7
Dozer (Shore) - D8	7,586.8	322.4
Loader (Shore) - 980	7,586.8	322.4
Log Skidder (Shore)	1,115.3	23.4
<b>Total</b>	<b>84,356.5</b>	<b>3,401.3</b>
<b>Total Equivalent CO2</b>	<b>85,031.3</b>	<b>3,428.5</b>

CO2 Equivalent = CO2\*1.008

## Maintenance Dredging

### Emission Source Data for Maintenance Dredging - Clamshell and Hopper Dredge

Construction Activity/Equipment Type	Power Rating	Load Factor	# Active	Hourly Hp-Hrs	Fuel Use GPH	Hrs per Day <sup>(1)</sup>	Total Work Days <sup>(2)</sup>	DailyTotal Hp-Hrs (1)
Clamshell dredge	N/A	N/A	N/A	N/A	N/A	22	365	N/A
Tug boat-clamshell dredge	800	0.20	1	160	8.0	22	365	176
Hopper Dredge-propulsion	1,140		2	2,280	NA	22	425	TBD
Hopper Dredge-generator	805	0.70	2	1,127	NA	18	425	20,286

Hopper propulsion load factor = 50% for loaded transit, 10% for empty transit, 10% for dredging

### Emission Factors for Construction Equipment

Equipment Type	ROG	CO	NOx	SOx	PM10
Clamshell dredge (lb/hr)	1.1	0.3	1.1	1.0	0.7
Tugboat (lbs/1,000 Gal)	18.2	57.0	419.0	75.0	9.0
Hopper Dredge (lb/hp-hr)	0.0001	0.0055	0.0130	0.0081	0.0007

### Daily Emissions from Construction Activities Clamshell Dredge

Construction Activity/Equipment Type	Pounds per day				
	ROG	CO	NOx	SOx	PM10
Clamshell dredge	23.8	6.6	24.0	20.9	15.2
Tug boat-clamshell dredge	3.2	10.0	73.7	13.2	1.6
Crew boat <sup>(3)</sup>	0.9	0.4	0.8	0.1	0.1
<b>Peak Daily Emissions</b>	<b>27.9</b>	<b>17.0</b>	<b>98.5</b>	<b>34.2</b>	<b>16.9</b>

### Daily Emissions from Construction Activities Hopper Dredge

Construction Activity/Equipment Type	Pounds per day				
	ROG	CO	NOx	SOx	PM10
Hopper dredge-dredging	2.4	134.1	317.1	197.3	17.1
Hopper dredge-transit loaded	0.2	9.4	22.2	13.8	1.2
Hopper dredge-transit unloaded	0.0	1.9	4.4	2.8	0.2
Crew boat <sup>(3)</sup>	0.4	0.3	0.8	0.1	0.1
Worker Vehicles <sup>(3)</sup>	0.2	2.1	1.0	0.1	0.2
<b>Peak Daily Emissions</b>	<b>3.2</b>	<b>147.8</b>	<b>345.5</b>	<b>214.2</b>	<b>18.8</b>

**Total Project Construction Emissions**

Project Emissions	Tons				
	ROG	CO	NOx	SOx	PM10
Clamshell Dredge	5.1	3.1	18.0	6.2	3.1
Hopper Dredge	0.7	31.4	73.4	45.5	4.0

Assumes 2-hour down time per day for shift change, maintenance, fueling. Two shifts per day.

Assume dredge volume of 2,550,000 cubic yards, maximum expected based on funding limitations

Emissions factors for Maintenance Dredging for tugboat aken from the Port of Los Angeles Channel Deepening Project Final Supplemental Environmental Impact Statement/Environmental Impact Report, September 2000.

Emissions factors for Maintenance Dredging for the Clamshell Dredge provided by Justice and Associates for a Manson clamshell dredge.

Clamshell: assumes near shore disposal at a rate of 7,000 cubic yards per day, clamshell.

Emission factors for hopper dredge taken from AP-42 for diesel engines.

Hopper dredge specifications based on Corps dredge Yaquina

Capacity: 1,000 cubic yards

2 x 1,140 hp main engines

2 x 805 hp generators

2 x 565 hp pumps (generator load factor =  $565/805 = 70\%$ )

Loaded speed 10 knots

Unloaded speed 10.5 knots

Distance to disposal site 1.5 nm

Transit time loaded = 15 minutes

Transit time unloaded = 15 minutes

Dredge cycle = 3 hours

6 dredge cycles per day

6,000 cubic yards per day, 425-day project duration to dredge 2,550,000 cubic yards

**GHG Emissions**

**Maintenance Dredging**

**Emission Source Data for Maintenance Dredging - Hopper/Clamshell**

Construction Activity/Equipment Type	Power Rating	Load Factor	# Active	Hourly Hp-Hrs	Fuel Use GPH	Hrs per Day	Total Work Days(3)	DailyTotal Hp-Hrs (1)
Clamshell dredge	1,890	1.0	1	1,890	N/A	22	365	41,580
Tug boat-clamshell dredge	800	0.20	1	160	8.0	22	365	176
Crew Boat	50	NA	1	NA	NA	4	425	NA
Hopper Dredge	2,000					22	425	22,000

**Emission Factors for Construction Equipment**

Equipment Type	Grams per HP-HR
Clamshell dredge	568
Tugboat	509
Crew Boat	75
Hopper Dredge	183

**Estimated Emissions from Construction Equipment**

Equipment Type	CO2	
	lbs/day	tons total
Clamshell dredge	27.6	5.0
Tugboat	24.7	4.5
Crew Boat	0.7	0.1
Hopper Dredge	8.9	1.9
<b>Total</b>	<b>61.8</b>	<b>0.6</b>
Clamshell dredge	52.9	9.7
Hopper Dredge	9.5	2.0
<b>Total Equivalent CO2</b>		
Clamshell dredge	53.3	9.8
Hopper Dredge	9.6	2.0

CO2 Equivalent = CO2\*1.008

**Assumptions**

Onroad			Total Mi/Trip	Unpaved Mi/Trip	Worst case Daily Trips	Total Trips
Phase	Trip Type	Veh Type				
Dredging	Employee	Passenger	10	0	2	2,700
	Pickup Truck	Passenger	1	0	4	264

Estimating fugitive emissions for Vehicle Miles Traveled (VMT) for construction laborers (SCAQMD CEQA Quality Handbook Table A9-9-A with updates through 2010)

\* On road sources include:

- A) 17 personnel traveling to and from work site (9 vehicles used; assume carpool); personnel would commute from approximately 20 miles roundtrip on freeway.
- B) Two pickup trucks (passenger) to travel within and around project site on local roads.

$V=W \times (X/Y) \times Z$ ; where V=VMT, W=Distance x # of trips, X=number of vehicles, Y=1 hour, Z=estimated travel time

Passenger (Commuting): VMT = 20 miles/day x 2 trip x (9 vehicles/hr) x 1 hr = 360 miles per day

Passenger (Onsite Pickup Trucks): VMT = 5 miles/day x 1 trips x (2 vehicles/hr) x 11 hr = 110 miles per day

Estimating fugitive emissions from passenger (commuter) Vehicle Travel on Paved Roads (SCAQMD CEQA Air Quality Handbook Table A9-9-B with updates through 2010)

$E = V \times G$  (with street cleaning and is dependent on type of road; where E=emissions for passenger vehicles; V=VMT; and G=0.00065 for freeways, 0.018 for local streets (SCAQMD CEQA Air Quality Handbook Table A9-9-B-1 with updates through 2010).

Passenger (Commuting): 360 miles/day x 0.00065 lbs/mile = 0.234 lbs/day

Passenger (Onsite Pickup Truck): 110 mile/day x 0.018 lbs/mile = 1.98 lb/day

**On-Road Fugitive Emissions Summary - Daily**

Type of Vehicle	Number of Vehicles	VMT/DAY (On-Road)	VMT/DAY (Off-Road)	Emissions (On-Road) (lbs/day)
Passenger (Commuter)	9	360	0	0.234
Passenger (Onsite Pickup Truck)	2	110	0	1.980
Total	11	470	0	2.214

## Onroad Emissions (Construction-Offsite)

### SCAQMD Emission Factors - 2012 (lbs/mile)

	ROG	CO	NOx	SOx	PM10	PM2.5	CO2
Passenger	0.00079628	0.00765475	0.00077583	0.00001073	0.00008979	0.0000575	1.1015254
Delivery	0.00223776	0.01545741	0.01732423	0.00002667	0.00064975	0.00054954	2.76628414
Heavy-Heavy Duty	0.00252764	0.01021519	0.03092379	0.00004042	0.00149566	0.00129354	4.21590774

## Dredging and Excavation

### - Worst Case Daily Emissions

Vehicle Type	VMT	Emissions lbs -2012						
	Total	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
Passenger	360	0.29	2.76	0.28	0.00	0.03	0.02	396.55
Passenger (Pickup Truck)	110	0.09	0.84	0.09	0.00	0.01	0.01	121.17
Heavy-Heavy Duty								
<b>Totals</b>		<b>0.37</b>	<b>3.60</b>	<b>0.36</b>	<b>0.01</b>	<b>0.04</b>	<b>0.03</b>	<b>517.72</b>

On-Road Emission (lb/day): 40 mph

Travel Emission Formula= (emission factors (Exhaust+Tire wear)) x (Distance traveled (VMT))

## Dredging and Excavation

### - Yearly Emissions

Vehicle Type	VMT	Emissions tons -2012						
	Total	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
Passenger	30,600	0.01	0.12	0.01	0.00	0.00	0.00	16.85
Passenger (Pickup Truck)	144	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Heavy-Heavy Duty								
<b>Totals</b>		<b>0.01</b>	<b>0.12</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>16.93</b>

CO2 Equivalent = 17.07

### VMT 2012

	Miles/Day	Total Days	Total
Passenger (Commuting)	360	85	30600
Passenger (Onsite Pickup Trucks)	110	85	144
Heavy-Duty (Sediment Transport)			

## Channel Islands / Port Hueneme Maintenance Dredging 2012

### Emission Source Data for Dredging - Assumptions

Construction Activity/Equipment Type	Power Rating (bhp) <sup>3</sup>	HP Factor <sup>2</sup>	No. of Equipment	bhp-Hrs (Hourly)	Fuel Use GPH	Hrs / Day (Schedule)	Total Work Days <sup>1</sup>	Daily Total bhp-Hrs
28" Hydraulic Dredge (Main pump output)	9,000	0.045	1	405	N/A	22	85	8,910
28" Hydraulic Dredge (Electr Gen)	830	0.045	1	37	N/A	22	85	822
28" Hydraulic Dredge (2nd Engine)	3,310	0.045	1	149	N/A	22	85	3,277
Booster Station	5,200	0.045	1	234	N/A	22	76	5,148
Work Tug boats	250	0.045	1	11	8.0	22	85	248
Derrick for Pipelines	200	0.011	1	2	N/A	11	85	24
Boat/Launch (13-ft)	50	0.011	1	1	1.5	11	42	6
Tender/Crew/Survey Boat (14-ft)	100	0.045	1	5	3.0	11	42	50
Dozer (Shore) - D8	310	0.044	1	14	11.0	22	85	300
Loader (Shore) - 980	350	0.041	1	14	11.0	22	85	316
Log Skidder (Shore)	160	0.010	1	2	5.0	11	42	18
Pickup Trucks (Shore)	130	0.020	2	5	2.0	11	85	57

#### Notes

1. Total work days was based on dredging 2,550,000 CY (30,000 CY/DAY) from Channel Islands and placing the first 250,000 CY of dredged material at Silverstrand Beach and the rest at Hueneme Beach. Booster Station is required for pumping the material to Hueneme Beach, but it is not required for pumping to the Silverstrand Beach. Work tug boats and derricks are used to reposition the pipeline.

2. The HP Factor (HPF) represents an "average" percent of full-rated horsepower used by the engine. HPF is an estimate of the engine load under average working conditions. Values were obtained from CEDEP and Equipment Manual, EP 1110-1-8, Vol 7, 30 Nov 11, App D under column headings. Equipment Fuel Factors. The objective of the HP Factor (HPF) is to modify the equipment Rated Hp as engines in actual production do no work at their full-rated capacity at all times. Periods spent at idle, travelling empty, and close maneuvering at part throttle are examples of conditions that reduce the HPF. HP Factors were for severe conditions (saltwater environment).

3. bhp = brake horse power

4. Assumed number of equipment operators and workers per shift:

Leverman (1), Watch Eng (1), boat oper(2), deckmate(1), welder(1), deckhand (2), dump foreman(2), dzt oper(1), ldr/skidder oper(1), shoremen (2)

Total of 14 workers per shift times 2 - 12 hrs shifts (28 ea), plus the captain (1), chief engineer (1), and deck captain (1).

## **APPENDIX C**

### **Clean Water Act 404(b)(1) Evaluation**

**THE EVALUATION OF THE EFFECTS  
OF THE DISCHARGE OF DREDGED OR FILL MATERIAL  
INTO THE WATERS OF THE UNITED STATES  
IN SUPPORT OF THE ENVIRONMENTAL ASSESSMENT FOR THE  
CHANNEL ISLANDS/PORT HUENEME HARBORS MAINTENANCE  
DREDGING PROJECT  
LOCATED IN  
VENTURA COUNTY, CALIFORNIA**

I. **INTRODUCTION.** The following evaluation is provided in accordance with Section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (Public Law 95-217). Its intent is to succinctly state and evaluate information regarding the effects of discharge of dredged or fill material into the waters of the U.S. As such, it is not meant to stand alone and relies heavily upon information provided in the environmental document to which it is attached. Citation in brackets “[ ]” refer to expanded discussion found in the Environmental Assessment (EA), to which the reader should refer for details.

II. **PROJECT DESCRIPTION.** [1.1]

a. Location. The proposed project encompasses a 3.3-mile stretch of shoreline extending from Channel Islands Harbor in the north to Hueneme Beach in the south. The project area is located in Ventura County, California (see Figure 1 in the attached Environmental Assessment).

b. General Description. [1.1.2] The proposed project consists of a 6-year program for maintenance dredging at the Channel Islands and Port Hueneme Harbors, and disposal at Silver Strand and Hueneme Beaches. At Channel Islands Harbor, material will be dredged from the entrance channel and sand traps. The required dredging is to be accomplished in three biennial dredging cycles. Each dredging cycle would remove up to approximately 2.6 million cubic yards (mcy) of material. Project depth is -20 ft Mean Low Water (MLLW) at the main channel and -35 ft MLLW at the sand trap areas. At Port Hueneme Harbor, material could be dredged from the approach and entrance channels, and basins. The required dredging is to be accomplished once on the same schedule as the dredging of Channel Islands Harbor (i.e., during one of the three cycles). The dredging cycle would remove approximately 200,000 cubic yards (cy) of material. Project depth is -40 ft MLLW at the approach channel and -36 ft MLLW at the entrance channel. Additional dredging cycles may take place if required to maintain project depths. Total project dredging will not exceed 7.9 mcy of material for all dredging cycles. Project authorization mandates dredge material disposal on Hueneme Beach to fulfill established commitments for shore protection. Some of these materials may be placed in a near shore disposal area. Disposal at Silver Strand Beach may occur on an as-needed basis to offset periodic erosion problems. During the first dredging cycle, 2.6 mcy of sediment would be dredged from Channel Islands Harbor. Approximately 250,000 cy may be placed at Silver Strand Beach on an as-needed basis to offset periodic erosion problems.

c. Authority and Purpose. [2] This evaluation has been prepared pursuant to Section 404(b)(1) of the Clean Water Act of 1977 (38 USC 1344) which applies to the discharge of dredged or fill materials into waters of the United States. The primary purpose of the proposed project is to dredge Channel Islands and Port Hueneme Harbors for navigability and safety purpose, and to dispose material at Silver Strand and Hueneme Beaches for shoreline protection and recreation purposes.

d. General Description of Dredged or Fill Material. [4.1.2] The areas to be dredged have traditionally generated sediments characterized as predominantly fine (0.25mm) to coarse (1.0 mm) grain sand particles. Previous testing of the dredged material indicates that the material is generally clean and the grain size is compatible with disposal beaches. It is expected, based on historical records that less than 5% of the material will pass through a 200 sieve. Sediments at each Harbor will be sampled and tested in accordance with the Ocean Dredge Testing Manual (also known as the Green Book; USEPA & USACE, 1991) prior to the first dredging cycle covered in this EA to confirm suitability of the sediments for beach nourishment.

Tier I assessment of the sediment within the proposed Channel Islands Harbor dredged areas was completed in June 2012 in preparation of the first dredging cycle. Results showed that the proposed dredged material in areas A-D was overall below detection or small compared to effects based on screening values (Corps 2012). Of the list of contaminants concentrations detected, DDT was the only contaminant detected above a NOAA ERL (Effects Range-Low) value in three of the five composite areas (Areas A, C, and E), with Area E having the highest value; however, values were about five times lower than the ERM (Effects Range-Median) value of 46.1 µg/kg.

As reported in the Sampling and Analysis Results for the Channel Islands Harbor Geotechnical and Environmental Investigation Project (Corps 2012), all contaminants detected in the Channel Islands Harbor sediments were well below the RSLs (Regional Screening Levels) and CHHSLs (California Human Health Screening Levels) for residential soils developed for human protection except for arsenic. Elevated arsenic concentrations occur commonly in Southern California dredge sediments and soils, and the concentrations of arsenic in the Channel Islands Harbor samples were less than the background concentration (3.5 mg/kg) of soils throughout California (Bradford et al., 1996).

Sulfide content from Areas A and E were somewhat elevated, which could result in the production of smells and odors during placement activities. However, the report findings conclude that there are very little or no soluble sulfides suggesting the volatilization of hydrogen sulfide should be minor.

The Corps initiated coordination with the Dredged Material Management Team (DMMT), which includes USEPA, California Coastal Commission, and the Regional Water Quality Control Board, in May 2012 for proposed dredged material suitability determination for beach placement. Results of the sampling and analysis were submitted to the DMMT for review and consideration in June 2012. The Corps is seeking suitability determination for Areas A, B, C, and D. Since there is very low volume of material above the authorized depth in Area E and F, these areas would not be dredged during the first dredging cycle. Any dredging of Areas E and F would entail testing of those areas prior to any future dredging cycles.

Due to the elevated arsenic concentrations, the Corps will conduct additional sampling and analysis of sediments up-coast of the Channel Islands Harbor and at Hueneme Beach, a proposed receiver site, to verify background arsenic levels in the area. It is highly likely that arsenic levels within the proposed dredge area are a reflection of existing background levels. Due to the proposed dredged material type (i.e., sand), potential contaminants are less likely to be present in a form that is toxic to humans. Coordination with the DMMT regarding the arsenic levels is on-going, and approval for the placement/disposal of the dredged material at Silver Strand and/or Hueneme Beaches for the first dredge cycle would be obtain by the DMMT prior to the Finding of No Significant Impact.

e. Description of the Proposed Discharge Site [2.1.3 and 2.1.4]: Dredged material will

be disposed of at Silver Strand and/or Hueneme Beaches. The following disposal methods are viable: 1) onshore disposal and/or 2) near shore disposal (between -10' and -30' MLLW). The characteristic habitat type subject to impact by dredge material discharge is open-coast sandy beach and near shore subtidal soft-bottom, sandy habitat.

f. Description of Dredging and Disposal Methods: [1.1.5] If dredged material disposal occurs with onshore placement (the likely scenario), material will be dredged and transported via a hydraulic pipeline or a hopper dredge with a pump-out capability. If the dredged material is placed in the near shore zone, material will be dredged and transported via hydraulic pipeline dredge and hydraulic pipeline, a hopper dredge, or a clamshell dredge and barges.

g. Timing and duration of Discharge [1.1.3] Each dredging cycle may take approximately 4 months to complete. Construction is scheduled to occur between October 1 and March 15.

III. **FACTUAL DETERMINATIONS.**

a. Disposal Site Physical Substrate Determinations:

b. Substrate Elevation and Slope.

Impact:  N/A  INSIGNIFICANT  SIGNIFICANT

The proposed project is not expected to result in significant substrate impacts.

c. Sediment type.

Impact:  N/A  INSIGNIFICANT  SIGNIFICANT

Evidence from past dredging indicates that the sediment consists primarily of fine (0.25 mm) to coarse (1.00 mm) grain sands. Disposal sediments are expected to be compatible with disposal area materials. Recent sediment testing (June 2012) supports conclusion.

d. Dredged/Fill Material Movement.

Impact:  N/A  INSIGNIFICANT  SIGNIFICANT

The purpose of the project is to bypass accumulated sand at Channel Islands and Port Hueneme Harbors by dredging and place the material onto Silver Strand and Hueneme Beaches. Dredged material will be placed onshore or in the near shore zone at Silver Strand and Hueneme Beaches. The majority of the materials will remain in the coastal littoral system to supply sediment to sand-starved beaches downcoast.

e. Physical Effects on Benthos (burial, changes in sediment type, composition, etc.).

Impact:  N/A  INSIGNIFICANT  SIGNIFICANT

Temporary, short-term impacts will occur. However, no long-term significant impacts are expected. Organisms are expected to recolonize the area once dredging and placement/disposal activities cease.

f. Other Effects.

Impact:  N/A  INSIGNIFICANT  SIGNIFICANT

g. Actions Taken to Minimize Impacts.

Needed:  YES  NO

If needed, Taken:  YES  NO

h. Effect on Water Circulation, Fluctuation, and Salinity Determinations:

(1) Water. The following potential impacts were considered:

Salinity	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Water Chemistry	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Clarity	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Odor	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Taste	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT

Dissolved gas levels	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Nutrients	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Eutrophication	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Others	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT

The proposed project is not expected to significantly affect water circulation, fluctuation, and/or salinity.

(2) Current Patterns and Circulation. The potential of discharge on the following conditions were evaluated:

Current Pattern and Flow	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Velocity	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Stratification	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Hydrology Regime	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT

The proposed project is not expected to significantly affect current patterns or circulation.

(3) Normal Water Level Fluctuations. The potential of discharge on the following were evaluated:

Tide	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
River Stage	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT

The proposed project is not expected to have a significant impact on normal water level fluctuations.

i. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site.

Impact:  N/A  INSIGNIFICANT  SIGNIFICANT

Impacts will be temporary and adverse, but not significant. Suspended particulates in the dredge area would settle after dredging and placement/disposal activities cease. It is expected that any impacts from suspended particulates and turbidity would not be significantly greater than those that are caused by natural surf zone processes at the receiver sites.

(2) Effects on Chemical and Physical Properties of the Water Column.

Light Penetration	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Dissolved Oxygen	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Toxic Metals & Organic	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Pathogen	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Aesthetics	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Others	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT

Sediment testing results show proposed dredged material is overall clean sand. See section II d of this evaluation and section 4.1.2 of the EA for further discussion.

(3) Effects of Turbidity on Biota.

Primary Productivity	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Suspension/Filter Feeders	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT
Sight feeders	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> INSIGNIFICANT	<input type="checkbox"/> SIGNIFICANT

Impacts will be temporary and adverse, but not significant. See section 4.1.2 and 4.2.2 of the EA for further discussion.

(4) Actions Taken to Minimize Impacts.

Needed:  YES  NO

If needed, Taken:  YES  NO

j. Contaminant Determination. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.

- (1) Physical characteristics .....
- (2) Hydrography in relation to known or anticipated sources of contaminants .....
- (3) Results from previous testing of the material or similar material in the vicinity of the proposed project .....
- (4) Known, significant sources of contaminants (e.g. pesticides) from land runoff or percolation.....
- (5) Spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances .....
- (6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources .....

(7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities.....

(8) Other sources (specify) .....

An evaluation of the appropriate information above indicates that there is reason to believe the proposed dredge material is not a carrier of contaminants, or that levels of contaminants are substantively similar to extraction and disposal sites and are not likely to be constraints. See section 4.1.2 of the EA for further discussion.

The material meets the testing exclusion criteria. YES X NO \_\_\_\_

Impact: \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

If the material does not meet the testing exclusion criteria above, describe what testing was performed and results: N/A

k. Effect on aquatic Ecosystem and Organism Determinations.

Plankton \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Benthos \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Nekton \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Food Web \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Sensitive Habitats

Sanctuaries, refuges \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Wetlands \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Mudflats \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Eelgrass beds \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Riffle & pool complexes \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Threatened & endangered species \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

Other wildlife \_\_\_\_N/A X INSIGNIFICANT \_\_\_\_ SIGNIFICANT

l. Actions Taken to Minimize Impacts.

If construction ceases prior to March 15, no significant impacts are expected to result to marine resources. However, if construction proceeds through March 31, there is a potential to affect the following species: snowy plover, grunion, and California least tern.

**Snowy plover.** Dredging operations and near shore disposal may affect the snowy plover and its critical habitat. However, specific measures shall be taken to avoid and minimize effects to nesting and wintering snowy plovers. These measures include: (1) completion of all beach disposal activities by March 15; (2) The limits of the dredging activities shall be clearly marked to prevent dredging equipment from entering areas beyond the smallest footprint needed to complete the project; colored flagging would be appropriate to delineate the project boundaries; (3) Vehicles and all dredging activities shall remain within the defined activity area and use only designated access points and staging areas; (4) The work area shall be kept clean to avoid attracting predators. All food and trash shall be disposed of in closed containers and removed from the project site; (5) No pets shall be allowed on the construction site. If disposal occurs past March 15, then additional measures concerning pipeline placement, vehicle use, and other disposal activities will be imposed as discussed below to minimize potential impacts to the snowy plover. (1) Agency coordination will be reinitiated when it appears operations may continue beyond March 15. (2) Beach disposal will be limited to a diked, single-point disposal site. (3) The Corps will have a qualified expert survey the project area and document snowy

plover activity. If it is documented that no plover nesting activities are occurring or found in the project area, then operations may continue with triweekly surveys (3 times per week). If snowy plover sites are found or nesting activities are noted, activities will be marked and mapped. Field monitoring will be conducted to determine impacts to the snowy plover. The Corps will consult with the resource agencies to determine the level of impacts to the snowy plover. If, at any time, it is determined that construction will affect active nesting snowy plovers, the Corps will instruct the contractor to immediately stop operations. With implementation of avoidance and minimization measures, the project would not result in significant impacts to the snowy plover. Based on informal consultation with the USFWS, the Corps will request an amendment of the 2006 BO, which addresses the California least tern and the western snowy plover and its critical habitat, to extend the dredging schedule to include the proposed 2012-2018 dredging project.

**California least tern.** Specific measures shall be taken to avoid and minimize impacts to nesting and foraging California least tern. These measures include those listed above for the western snowy plover. If disposal occurs past March 15, then additional measures concerning pipeline placement, vehicle use, and other disposal activities will be imposed as discussed below to minimize potential impacts to the snowy plover. (1) Agency coordination will be reinitiated when it appears operations may continue beyond March 15. (2) Beach disposal will be limited to a diked, single-point disposal site. Based on informal consultation with the USFWS, the Corps will request an amendment of the 2006 BO, which addresses the California least tern and the western snowy plover and its critical habitat, to extend the dredging schedule to include the proposed 2012-2018 dredging project.

**Grunion.** Grunion use the beach for spawning, therefore, there is a potential to disturb grunion eggs. These impacts will be avoided by conducting the beach disposal between October and March when grunion spawning does not occur. If it is necessary to conduct the disposal during summer spawning, impacts will be avoided by observing the beach during the spawning time (night-time, high, spring tides) prior to the proposed operation to determine if grunion has spawned in the proposed disposal area. If grunion has spawned, no disposal activities will occur until the eggs are hatched at the following two spring-tide series. Other disposal alternative methods that may be used to minimize impacts to grunion include a diked, single-point disposal site.

If activities occur at Hueneme Beach between +1 m (+3 ft) MLLW and -3 m (-10 ft) MLLW there is a potential to impact existing Pismo clam populations. Beach disposal would take place above the +1m MLLW level to allow working of the sands with construction equipment and near shore disposal would be restricted to depths greater than -3 m MLLW thus avoiding impacts to existing Pismo clam populations.

m. Proposed Disposal Site Determinations. Is the mixing zone for each disposal site confined to the smallest practicable zone?  YES  NO

n. Determination of Cumulative Effects of Disposal or Fill on the Aquatic Ecosystem.  
Impacts:  N/A  INSIGNIFICANT  SIGNIFICANT

o. Determination of Indirect Effects of Disposal or Fill on the Aquatic Ecosystem.  
Impacts:  N/A  INSIGNIFICANT  SIGNIFICANT

#### IV. **FINDING OF COMPLIANCE**

a. Adaptation of the Section 404 (b)(1) Guidelines to this Evaluation. No significant adaptations of the guidelines were made relative to this evaluation.

b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site

Which Would Have Less Adverse Impact on the Aquatic Ecosystem. All practicable alternatives for dredging/disposal were evaluated (see section 3 of the EA). The proposed project is the most cost effective and least environmentally damaging.

c. Compliance with Applicable State Water Quality Standards: The proposed project will comply with State water quality standards promulgated by the California Regional Water Quality Control Board, Central Coast Region.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition under Section 307 of the Clean Water Act: No toxic materials/wastes are expected to be produced or introduced into the environment by this project.

e. Compliance with the Endangered Species Act of 1973: As discussed in the attached EA, the Corps has determined the proposed project may affect the western snowy plover and California least tern, but with implementation of avoidance and minimization measures, impacts will not be significant. Based on informal consultation with the USFWS, the Corps will request an amendment of the 2006 BO, which addresses the California least tern and the western snowy plover and its critical habitat, to extend the dredging schedule to include the proposed 2012-2018 dredging project.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972: No sanctuaries as designated by the Marine Protection, Research and Sanctuaries Act of 1972 will be affected by the proposed project.

g. Evaluation of Extent of Degradation of the Waters of the United States: No significant degradation of municipal or private water supplies, special aquatic sites, or plankton resources will occur. The project will have a short-term effect upon fish and invertebrates due to project-related turbidity and the burial of organisms. Impacts are not significant.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem: Specific environmental commitments are outlined in the attached EA.

i. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material is:

- (1) Specified as complying with the requirements of these guidelines; or,  
 (2) Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem; or,  
 (3) Specified as failing to comply with the requirements of these guidelines.