

SPECIAL PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

BUILDING STRONG®

Availability of Prospectus: Los Angeles Harbor Department Mitigation Bank

Public Notice/Application No.: SPL-2010-00714-TS

Action: Port of Los Angeles Mitigation Bank

Comment Period: June 1, 2012 through July 2, 2012

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Applicant

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Activity

The Los Angeles Harbor Department (LAHD) has proposed to develop a single-user umbrella mitigation bank agreement (agreement) which could be modified to include new mitigation bank sites. They have also requested approval of a Bank Enabling Instrument (BEI) for the existing (legacy) single-user Port of Los Angeles Inner and Outer Harbor Mitigation Bank(s). Both actions are described in a Prospectus and require interagency review team (IRT) review and Corps approval. Use of existing credits from the Inner and Outer Harbor Mitigation Bank and production of new credits at the Inner and Outer Harbor Mitigation Bank or new mitigation bank sites would require additional public and IRT review, and Corps approval. Credits may be applied to future Port projects which require mitigation pursuant to Department of the Army permit(s). No impacts to waters of the U.S. are proposed and no permits are required as a part of the LAHDs request to the Corps.

Location

The term "service area" defined in the Corps Mitigation Rule (Rule) and is "the geographic area within which impacts can be mitigated at a specific mitigation bank or in-lieu fee program..." (33 CFR 332.3). Typically a mitigation bank site is a single location that provides compensatory mitigation for a broader geographic area within which permitted project impacts can occur. In this case, permitted project impacts would occur at a confined location (i.e., the Port of Los Angeles, POLA) and mitigation would occur at mitigation banks sites within a broader geographic area (i.e., the Southern California Bight, including the POLA). For the purposes of the proposed umbrella mitigation bank agreement, the term "service area" is not used to define a specific location. Instead, the location of the "impact area" is within the POLA Inner and Outer Harbor (approximately 33.7321 N latitude / -118.2407 W longitude) and the location of mitigation bank sites may include intertidal and subtidal marine waters within the Southern California Bight region which extends from Point Conception in Santa Barbara County to the U.S. Mexico border, inclusive of the POLA Inner and Outer Harbor.

Interested parties are hereby notified that a request has been received for development of an umbrella mitigation bank agreement and approval of the Inner and Outer Harbor Mitigation Bank for the activities described herein. We invite you to review today's public notice and provide views on the proposed action. By providing substantive comments to the Corps Regulatory Division, you provide information that supports the Corps' decision-making process. All comments received during the comment period become part of the record and will be considered in our decision. This proposed umbrella mitigation bank agreement and Inner and Outer Harbor Mitigation Bank will be approved, modified, or denied under the provisions of 33 CFR 332.

Comments should be mailed to:

U.S. Army Corps of Engineers
Los Angeles District, Regulatory Division
Ventura Field Office
Attn: CESPL-2010-00714-TS
2151 Alessandro Drive, Suite 110
Ventura, CA 93001

Alternatively, comments can be sent electronically to: theresa.stevens@usace.army.mil

Evaluation Factors

During the mitigation bank development process, the Corps carefully considers the views of other Federal, state and local agencies, interest groups, and the public. The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the merits of the proposed activity. Any comments received will be considered by the Corps in order to determine whether to approve or deny this proposal.

Proposed Activity Requiring Corps Approval

The LAHD's proposed single-user umbrella mitigation bank agreement which could be modified to include new mitigation bank sites and the proposed Inner and Outer Harbor Bank BEI require Corps approval. Use of existing credits from the Inner and Outer Harbor Mitigation Bank and production of new credits at the Inner and Outer Harbor Mitigation Bank or new mitigation bank sites would require additional public and IRT review, and Corps approval. Credits may be applied to future Port projects which require mitigation pursuant to Department of the Army permit(s). No impacts to waters of the U.S. are proposed and no permits are required as a part of the LAHDs request to the Corps.

See Page 3 for additional information.

Additional Information

At present, the LAHD's existing Inner and Outer Harbor Mitigation Bank(s) consist of shallow and deep water habitats located within the limits of the Port of Los Angeles. Presently, the Corps is not signatory to these bank(s), therefore existing credits cannot be used to provide compensatory for Corps-approved impacts within POLA. Under the proposed agreement, the LAHD may produce credits in ecologically suitable mitigation bank sites within the service area, which may include the Inner and Outer Harbor Mitigation Bank or at new mitigation bank sites with various habitat types such as tidally-influenced wetlands, outer coast or off site eelgrass, or artificial reefs.

The Rule established a process and defined requirements for the establishment and management of mitigation banks, in-lieu fee agreements and permittee-responsible mitigation (33 CFR 332). In addition, the Rule established a public review process and timeline for the development of mitigation banks and in-lieu fee agreements (Exhibit 1). This mitigation bank development process will include the following: 1) IRT coordination on the Prospectus, the agreement and the Inner and Outer Harbor BEI, 2) public review and comment on the Prospectus, 3) development of a mitigation credit production approach and credit release schedule, 4) long-term site protection and management measures, 5) financial assurances estimation approach.

In October 2011, the LAHD submitted a draft Prospectus to the Corps. Preliminary comments were provided to the LAHD. In December 2011, the Corps initiated Phase 1 of the mitigation bank development process by providing a copy of the draft Prospectus to the U.S. EPA, National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (FWS), California Coastal Commission (CCC), and California Department of Fish and Game (CDFG). At that time, these agencies were also invited to participate on the IRT and provide comment on the draft Prospectus. The first IRT meeting was held on February 1, 2012 to determine the level of interest of agency participation, discuss the overall mitigation bank development process, discuss the timeline goals, and to gather initial comments on the draft Prospectus. Subsequent IRT meetings were held on March 21, April 24, and May 24, 2012 to discuss agency comments on the draft Prospectus including comments on the proposed service area, a credit valuation approach using National Marine Fisheries Service Habitat Equivalency Analysis (HEA) or a similar functional assessment method that could be used in conjunction with HEA, the potential ecological benefits and detriments of artificial reefs as mitigation, and the suitability of including within-Port tidal wetlands habitat. The draft Prospectus was revised in response to these IRT meetings and is available for public review concurrent with this public notice (web links provided below), which initiates Phase 2 of the mitigation bank development process. Monthly IRT meetings are planned through the end of 2012.

http://www.portoflosangeles.org/mitigation/mitigation_bank.asp

<http://www.spl.usace.army.mil/Missions/CivilWorks/Regulatory.aspx>

Please note that due to limitations on electronic file storage space, the Corps is only posting the draft Prospectus with this public notice. The entire draft Prospectus, including appendices, can be obtained from the LAHD web site.

The LAHD construction planning process necessitates advanced planning for construction (and mitigation) in order to meet market demands and to most effectively respond to anticipated environmental effects. Therefore, a comprehensive approach to mitigation, and mitigation credit valuation and debiting is warranted. Future projects within the Port of Los Angeles may require Department of the Army authorization. New mitigation bank site development activities within the service area may also require Department of the Army authorization, and will require modification to

the umbrella mitigation bank agreement, through a site-specific BEI, to accept newly produced mitigation bank credits.

Due to the scale and location of most POLA construction projects, it is not possible to completely avoid impacts to waters of the U.S. The LAHD has determined the most appropriate way to mitigate impacts in harbor waters is to provide compensatory mitigation through the generation of mitigation bank credits at specific mitigation bank sites. A credit valuation approach is required by the Rule in advance of BEI approval so that the Corps, resources agencies, and the public can evaluate and understand the mitigation crediting and debiting process when new mitigation bank sites are proposed. Mitigation bank sites which would produce credits are generally considered by the Corps to be self-mitigating and thus would not require additional mitigation or debiting of available credits to offset potential impacts. However, implementation of Best Management Practices (BMPs) would be required during construction of new mitigation bank sites to avoid and minimize potential impacts to aquatic resources to the maximum extent practicable. In some cases the number of credits produced at a mitigation bank site may exceed the mitigation requirements of a Port construction project, in which case credits would be "banked" for future use by the LAHD.

A key requirement of all mitigation banks is determining the number of potential credits. In this case, the proposed umbrella mitigation bank agreement would not produce credits. However, the Prospectus proposes Corps approval of a BEI for the Inner and Outer Harbor Mitigation Bank including existing balances of 12 Inner Harbor and 101 Outer Harbor Mitigation Bank credits, respectively. The number of credits produced by new mitigation bank sites or the Inner and Outer Harbor Mitigation Bank will be determined as future proposals are evaluated by the Corps, the public, and the IRT in accordance with the Rule.

In summary, the proposed action would:

- Establish an umbrella mitigation bank agreement and a process for modifying this agreement as new mitigation bank sites and requisite BEIs are established (see 33 CFR 332.8).
- Establish a Bank Enabling Instrument (BEI) for the Inner and Outer Harbor Mitigation Bank(s) which would allow use of existing credits and production of credits under future proposals.
- Establish a mitigation credit valuation process for each proposed habitat type based on an approved functional assessment methodology or direct impact/mitigation ratio approach.
- Establish an approach to determining adequate financial assurances for long-term maintenance and management of each mitigation bank site.
- Establish requirements for long-term mitigation bank site protection.
- Establish requirements for long-term mitigation bank site maintenance, monitoring, and adaptive management.

For additional information please contact Theresa Stevens, Ph.D. of my staff at 805-585-2146 or via e-mail at theresa.stevens@usace.army.mil. This public notice is issued by the Chief, Regulatory Division.



Regulatory Program Goals:

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

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

WWW.SPL.USACE.ARMY.MIL

Compensatory Mitigation Rule Timeline for Bank or ILF Instrument Approval*

	Event	# of Days**	
Phase I	Optional Preliminary Review of Draft Prospectus	30	DE provides copies of draft prospectus to IRT and will provide comments back to the sponsor within 30 days.
Sponsor Prepares and Submits Prospectus ~DE must notify sponsor of completeness w/in 30 days of submission~			
Day 1** Complete Prospectus Received by DE			
Phase II	Public notice must be provided within 30 days of receipt of a complete prospectus	30	
Day 30			
	30-Day Public Comment Period	30	
Day 60			
	DE must provide the sponsor with an initial evaluation letter within 30 days of the end of the public comment period.	30	DE distributes comments to IRT members and sponsor within 15 days of the close of the public comment period.
Day 90			
Sponsor Considers Comments, Prepares and Submits Draft Instrument ~DE must notify sponsor of completeness w/in 30 days of submission~			
Day 1 Complete Draft Instrument Received by IRT Members			
Phase III	30-day IRT comment period begins 5 days after DE distributes draft instrument to IRT members	30	
Day 90			
	DE discusses comments with IRT and seeks to resolve issues ~ # of days variable~	60	Within 90 days of the receipt of a complete draft instrument by IRT members, the DE must notify the sponsor of the status of the IRT review.
Sponsor Prepares Final Instrument ~Sponsor provides copies to DE and all IRT members~			
Day 1 Final Instrument Received by DE & IRT			
Phase IV	DE must notify IRT members of intent to approve/not approve instrument within 30 days of receipt.	30	
Day 30			
	Remainder of time for initiation of dispute resolution process by IRT members	15	IRT members have 45 days from submission of final instrument to object to approval of the instrument and initiate the dispute resolution process.
Day 45			
INSTRUMENT APPROVED/NOT APPROVED, or DISPUTE RESOLUTION PROCESS INITIATED			

EPA/Corps draft 4/02/08

Total Required Federal Review (Phases II-IV): ≤225 Days

*Timeline also applies to amendments

**The timeline in this column uses the maximum number of days allowed for each phase.

SOUTHERN CALIFORNIA BIGHT

Point Conception

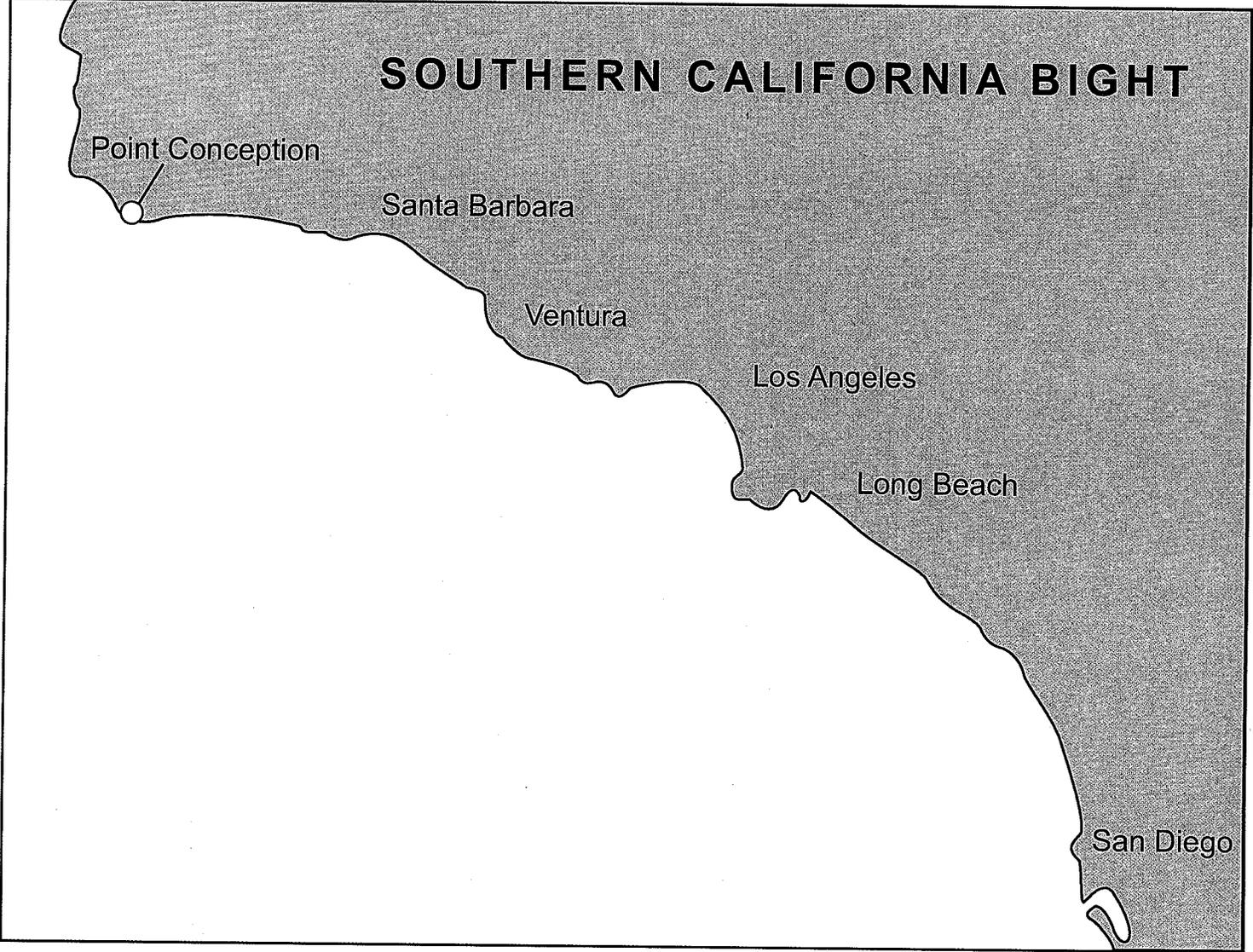
Santa Barbara

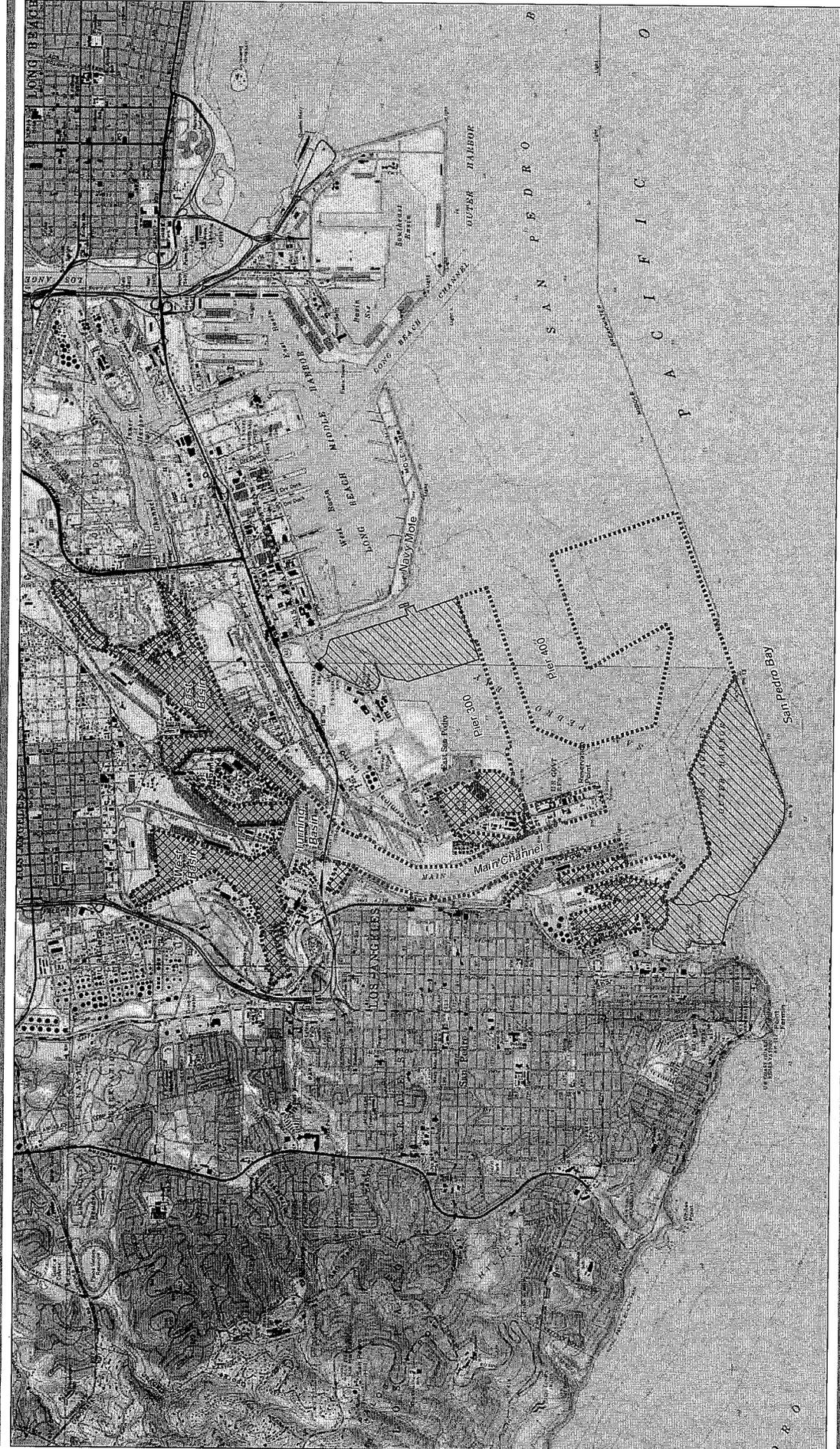
Ventura

Los Angeles

Long Beach

San Diego





Base Imagery: USGS Topographic Map, Long Beach Quadrangle, ESRI, 2008, Map Data: Port of LA, 2010a



-  Inner Harbor Mitigation Bank
-  Outer Harbor Mitigation Bank
-  Outer Harbor Shallow Water



Existing Port of Los Angeles Mitigation Bank Boundaries
 Port of Los Angeles Mitigation Bank Prospectus

U:\proj\10711-01 Port of Los Angeles Mitigation Bank\Map\2012_03\Figure 8 MitigationBankBoundaries.mxd Birmingham 4/4/2012 10:58:48 AM



Photo Credit:
Port of Los Angeles

PORT OF LOS ANGELES UMBRELLA MITIGATION BANKING AGREEMENT PROSPECTUS

Prepared on behalf of

Port of Los Angeles

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San Pedro, California 90733-0151

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May 2012

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May 2012

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LIST OF ACRONYMS AND ABBREVIATIONS

AB411	California Assembly Bill 411
BEI	Bank Enabling Instrument
CEQA	California Environmental Quality Act
CDFG	California Department of Fish and Game
CNPS	California Native Plant Society
CPAD	California Protected Areas Database
CRAM	California Rapid Assessment Methodology
CFR	Code of Federal Regulations
CTR	California Toxics Rule
DDT	dichlorodiphenyldichloroethylene
DO	dissolved oxygen
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
fps	feet per second
HAPC	Habitat Area of Particular Concern
HEA	Habitat Equivalency Analysis
HHW	higher high water
HLW	higher low water
IRT	Interagency Review Team
JD	jurisdictional determination
LAHD	Los Angeles Harbor District
LTMP	Long-term Management Plan
LHW	lower high water
LLW	lower low water
LNG	Liquefied Natural Gas
MHW	mean high water
MLLW	mean lower low water
MMPA	Marine Mammal Protection Act
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration

PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
Port	Port of Los Angeles
POLB	Port of Long Beach
SCEMP	Southern California Eelgrass Mitigation Policy
STA	Supplementary Transplant Area
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WRAP	Water Resources Action Plan

EXECUTIVE SUMMARY

The Port of Los Angeles (Port) is a 7,500-acre port located in San Pedro Bay, California, approximately 20 miles south of downtown Los Angeles (Figure 1). The Los Angeles Harbor District (LAHD) administers the Port and is an independent, self-supporting department of the government of the City of Los Angeles operated and managed under the California Tidelands Trust Act of 1911 (commonly referred to as the Tidelands Trust Act), which states that activities within the Port must be related to commerce, navigation, and fisheries (POLA 2010a). Funding for the Port is obtained from local revenues, including revenue from commercial shipping operations, tax revenue, and concession fees (POLA 2010b).

The Port is updating and integrating the existing Inner and Outer Harbor mitigation banks to be consistent with the mitigation rule requirements in 33 Code of Federal Regulations (CFR) 332.8(d)(2) and 40 CFR 230.98(d)(2) (eCFR 2010a, 2010b). The proposed umbrella mitigation banking agreement will focus on the harbor environment as a whole and will provide mitigation credit accounts for Inner and Outer Harbor habitats, eelgrass, and wetlands that fall within federal jurisdictions. As a working port, the Port plans and implements a variety of ongoing capital projects, as well as routine maintenance activities. A programmatic habitat banking category approach, rather than a project-specific approach, will be implemented in recognition of the dynamic nature of the Port. General habitat banking categories will be defined within an umbrella agreement framework, and credits will be added and subtracted from each individual bank site as new projects emerge.

The group of banks will be structured as an umbrella mitigation banking agreement, signed by the Port and members of the Interagency Review Team (IRT). Each mitigation bank site (mitigation sites) would have a separate Bank Enabling Instrument (BEI) with its own signatory parties. These BEIs would be added as an attachment to the umbrella mitigation banking agreement. The proposed agreement and associated mitigation sites will support a goal of no net loss of valuable habitat and ecological functions as a result of the Port's ongoing capital and maintenance projects. The extent of Port property comprises the impact area or the area in which potential impacts may occur. The location of the mitigation bank sites under the proposed umbrella mitigation banking agreement would include intertidal and subtidal marine waters within the Southern California Bight region, which extends from

Point Conception in Santa Barbara County to the U.S. Mexico border, inclusive of the Inner and Outer Harbor (Figure 2). The Port is the mitigation bank sponsor.

Under the proposed agreement, the banking categories for the proposed umbrella mitigation banking agreement would be Inner Harbor, Outer Harbor, Eelgrass, Wetlands, and Artificial Reef. Inner Harbor habitat comprises deep water fills and cuts along active shipping terminals, and is generally located north of the Vincent Thomas Bridge, as well as in various slip and harbor areas such as Fish Harbor. The boundaries of the proposed Inner Harbor habitat category are shown in Figure 6. The boundaries of the Inner and Outer Harbors have been delineated by resource agencies based on habitat quality information prior to the 1997 Outer Harbor Mitigation Bank Memorandum of Agreement (MOU) and then revised based on data from the 2000 biological baseline surveys (MEC and Associates 2002). Biological surveys prior to 1997 have determined that the Inner Harbor generally has lower quality habitat than deep water and shallow water habitats in the Outer Harbor. The 2000 biological baseline surveys determined that the habitat quality in the main channel was high enough to include it within the boundaries of the Outer Harbor. The disparity in the quality of the habitat influenced the current debiting and crediting strategy described further in this section (MEC and Associates 2002). More information regarding the Inner Harbor habitat is provided in Section 4.2.1.

Outer Harbor habitat is located generally south of the Vincent Thomas Bridge and consists of deep water habitat as well as shallow water habitat. The shallow water habitat has depths equal to or shallower than minus 20 feet mean lower low water (MLLW) (Figure 6). Adult and juvenile fish and fish larvae, invertebrates, algae, macroalgae, and phytoplankton are typically more diverse and more abundant in the Outer Harbor due to these factors, although studies conducted in 2008 showed no difference in pelagic fish diversity between the Inner and Outer Harbor (Allan Hancock Foundation 1980 as cited in USACE and LAHD 2008a; MEC and Associates 2002; MEC 1988 as cited in USACE and LAHD 2008a; SAIC 2010). Within the Outer Harbor, shallow water habitat is even more diverse and more abundant than deep water habitat, therefore providing higher quality habitat than the deep water habitat (MEC and Associates 2002; SAIC 2010). Outer Harbor habitat is defined in detail in Section 4.3.1.

The Port proposes to create an eelgrass habitat banking category, which would comprise eelgrass beds in the harbor. Creation and use of eelgrass credits would be based on the Southern California Eelgrass Mitigation Policy (SCEMP). If the SCEMP is superseded by the recently proposed California Eelgrass Mitigation Policy or any future policy, the BEI would be revised to incorporate the new policy, if appropriate.

The proposed umbrella mitigation banking agreement also includes a banking category for wetlands. It is anticipated that the Port would pursue wetland restoration and enhancement opportunities outside the Port's boundary, similar to restoration projects undertaken in the past in coastal estuaries in southern California. Limited opportunities may exist for restoration and enhancement activities of wetlands within the Port. Wetlands have been identified within the Port, but the Port currently has no plans to restore these wetland areas for mitigation purposes (Figure 7).

The Port also proposes to create an artificial reef habitat banking category, which would include the creation of an artificial reef at a location yet to be determined. This location may be within or outside of Port property. Reef design and use of credits will be determined in conjunction with the IRT.

Consistent with the existing mitigation banks, Inner Harbor and Outer Harbor credits may be used to mitigate for loss of marine habitat within Port boundaries at the following ratios (Figure 6):

- Loss or creation of 1 acre Inner Harbor habitat at any depth is equal to 1 Inner Harbor mitigation credit
- Loss or creation of 1 acre deep water Outer Harbor habitat is equal to 1 deep water Outer Harbor mitigation credit
- Loss or creation of 1 acre shallow water habitat in the Outer Harbor is equal to 1.5 Outer Harbor mitigation credits
- Inner Harbor credits may not be used for Outer Harbor impacts, including shallow water habitat, whereas Outer Harbor credits may be applied to Inner Harbor losses at a ratio of 0.5 credits per acre of Inner Harbor loss.

Eelgrass habitat loss and creation would be credited according to spatial coverage. New eelgrass habitat created for the bank and not associated with specific project-related eelgrass impacts will be deposited in the bank at a 1:1 ratio. Credits will be deducted per the guidelines specified in the SCEMP or any future policy.

Twenty percent of eelgrass habitat will be credited after the first year if the transplant success criteria outlined in the SCEMP are met. Thereafter, if transplant success criteria continue to be met, an additional 20 percent will be credited annually until 100 percent of the created eelgrass habitat has been credited. Habitat creation via transplantation completed 3 years in advance of the impact will not incur the additional 20 percent requirement and project impacts can be deducted on a 1:1 basis. Monitoring requirements remain the same for both instances. Use of eelgrass habitat credits will be negotiated with the IRT.

Successful deposit of jurisdictional wetland credits would be based on a ratio and functional assessment determined in conjunction with the IRT, such as Habitat Equivalency Analysis (HEA) or another acceptable methodology. Wetland credits may be used for loss of wetland habitat or aquatic habitat in both Inner and Outer Harbors.

Successful deposit and use of artificial reef credits will be based on a ratio and performance standards determined in conjunction with the IRT.

Once the proposed umbrella mitigation banking agreement framework and the associated BEI for the mitigation site is in place, releasing credits will be project-dependent. Monitoring will be conducted to determine whether performance standards have been met for each category. Each BEI would also include a general adaptive management plan to identify when adaptive management should be implemented and components of the adaptive management approach. Should the required performance standards not be met for the Inner Harbor, Outer Harbor, wetland, or artificial reef mitigation sites, a more detailed adaptive management plan that complies with new mitigation rule requirements in 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) will be written and submitted to the IRT for approval (eCFR 2010a, 2010b). Should the required performance standards not be met for an eelgrass mitigation site, a Supplementary Transplant Area (STA) shall be constructed and planted

following the guidelines in the SCEMP. Table 2 in Section 4.7.1 of this document lists currently estimated Outer and Inner Harbor credits and debits for committed and upcoming projects. This submittal adheres to the Prospectus for Mitigation Bank Checklist in Appendix D.

1 PROJECT BACKGROUND

1.1 Purpose and Objectives

The Port of Los Angeles (Port) is a 7,500-acre port located in San Pedro Bay, California, approximately 20 miles south of downtown Los Angeles (Figure 1). The Port is updating and integrating the existing Outer and Inner Harbor mitigation banks to be consistent with the new mitigation rule requirements in 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) (eCFR 2010a, 2010b). The Port is the mitigation bank sponsor for the existing banks and will be the sponsor for the newly established bank. The Port has the authority under the Tidelands Trust Act and the Lowenthal Amendment (Assembly Bill 2769, passed in 2003) to utilize Port property to protect fisheries, wildlife habitat, and open space consistent with the uses and trusts described in the Tidelands Trust Act as amended (POLA 2010a).

The proposed umbrella mitigation banking agreement will focus on the harbor environment as a whole and will provide mitigation credits for Outer and Inner Harbor habitats, eelgrass, and federal jurisdictional wetlands and waters of the United States using a habitat category approach. This approach will provide the greatest flexibility of implementation of individual projects but also protect sensitive habitat and natural resources by supporting a no net loss of ecological functions approach to mitigation. General habitat banking categories will be defined and credits will be added and subtracted from this framework as new projects emerge.

The extent of Port property comprises the impact area or the area in which potential impacts may occur. The location of the mitigation bank sites under the proposed umbrella mitigation banking agreement would include intertidal and subtidal marine waters within the Southern California Bight region, which extends from Point Conception in Santa Barbara County to the U.S. Mexico border, inclusive of the Inner and Outer Harbor (Figure 2). It would support only Port projects.

This prospectus serves to initiate agency and public involvement under the new mitigation rule for the proposed umbrella mitigation banking agreement. It provides a summary of existing conditions, regulations related to this effort, the rationale for site selection

(including an overview of habitat), and the proposed umbrella mitigation banking agreement structure.

1.2 Summary of Existing Conditions

The following sections provide an overview of existing conditions including land uses, zoning, water quality, and hydrology. More information on existing habitat and protected species is provided in Section 4.1. Photographs of the Port are provided in Appendix A. The proposed Inner and Outer Harbor mitigation banks are the only known areas of the proposed umbrella mitigation banking agreement and are located in San Pedro Bay. Other, as yet unidentified mitigation banks (mitigation sites) will be located along the coastline from Point Conception to the Mexican border. To get to the administrative building at Berth 161, take the Interstate Highway 110 (Harbor Freeway) South and exit at the State Highway 47/Vincent Thomas Bridge/Harbor Boulevard off-ramp. Turn right on Harbor Boulevard. Turn right on 5th Street and then turn right onto Palos Verdes Street. Visitor parking is available in the Liberty Hill Plaza parking lot directly across the street from the Port of Los Angeles Administration Building.

1.2.1 Past and Present Land Uses and Zoning

The Port was established in 1907 and continues to operate in the same location today in San Pedro, California (Figure 1). Development of Port infrastructure on land and within the harbor has grown steadily since that time (POLA 1979), consistent with the Tidelands Trust Act. Areas within the harbor have been and continue to be routinely dredged and widened to accommodate larger vessels. In 1979, the Board of Harbor Commissioners developed the Port Master Plan to establish policies and guidelines to direct the future development of the Port. This Master Plan documented that land use priorities for the Port would be “promotion and use for commerce, navigation, and fisheries” (POLA 1979). The Master Plan remains the principal planning document for long-range Port development. Changes in land uses would require evaluation and approval under the California Environmental Quality Act and City of Los Angeles planning procedures and approval by the California Coastal Commission.

Currently, the Port is divided into nine development areas, and the Master Plan, as amended, provides comprehensive descriptions of these areas, including their existing uses (POLA 2002). Shipping-related industrial and commercial uses make up the majority of the Port's land use, although it also supports commercial fishing facilities, recreational boating, and tourism. Some of the Port development projects completed within the last 20 years include the Pier 300 Project, Pier 400 Landfill and Deepwater Channels Project, Main Channel Deepening Project, Channel Deepening and Fill Project, West Channel/Cabrillo Marina Phase II Development Project, and the China Shipping Container Terminal Project. Relevant Master Plan amendments include Amendment Number 15, which established the harbor landfill mitigation account through the acquisition and restoration of the Bolsa Chica Lowlands, and Amendment Number 17, which allowed for the development of Pier 400 and associated mitigation. Later amendments focused on improvements to the harbor including deepening of the main channel.

The majority of Port property and water areas are zoned Qualified Light Industrial (Q) M-2 and (Q) M3 Qualified Heavy Industrial Zone by the City of Los Angeles Municipal Code (City of Los Angeles 2010, as amended) (Figure 3). The qualified classification is used when a property might not be available for all uses ordinarily permitted in a particular zone classification, and/or that development is required to conform to certain standards. The qualified classification for this zone restricts uses to General Cargo, limited Port-related commercial, industrial, and support uses (Ordinance 165406, effective February 1990; City of Los Angeles 2010, as amended). Land uses within Port property are also light industrial and associated with Port activities.

1.2.2 Surrounding Land Uses and Zoning

Land uses surrounding the Port are primarily industrial, residential, and open space (Figure 4). The communities of San Pedro and Wilmington, both parts of the incorporated City of Los Angeles, are adjacent to the west side and north side of the Port, respectively (Figure 1). The Port of Long Beach (POLB) is to the east and San Pedro Bay is to the south. Ken Malloy Harbor Regional Park, managed by the City of Los Angeles, is located to the north of the Port. The zoning authorities for the Port and adjacent areas are the Cities of Los Angeles and Long Beach.

Parcels that are located to the southwest, west, and north of the mitigation bank are zoned by the City of Los Angeles (Figure 3). The San Pedro Waterfront (located to the west of the southwestern extent of the mitigation bank) consists of residential, agricultural, light/heavy industrial, and open space land uses (LAHD and USACE Los Angeles District 2009). The area is primarily zoned residential (including single family and multi-family residential) with commercial, open space, public facility, and agricultural zoning with limited areas zoned for commercial manufacturing or manufacturing (Los Angeles County Department of Regional Planning 2005; City of Los Angeles Department of Planning 2011) (Figure 3). A majority of the area to the northwest of the proposed Inner and Outer Harbor mitigation banks are zoned for open space with a similar combination of other uses as the San Pedro Waterfront (Figure 4). The northern portion of the site consists of public facility zoning adjacent to the Port with residential and commercial uses. A corridor of commercial manufacturing and manufacturing or industrial land uses is located adjacent to the East Basin.

Parcels that are located to the northeast and east of the mitigation bank are zoned by the City of Long Beach. Terminal Island, Navy Mole, and areas adjacent to the northeastern and eastern boundaries of the mitigation bank are zoned Port-Related Industrial (IP) (City of Long Beach 2011). Properties located to the east of the Wilmington area are primarily zoned for Planned Development (PD) with some Public Right of Way (PR). The area also exhibits other land use protections, including conserved lands. Conserved lands are located within and adjacent to the proposed Inner and Outer Harbor mitigation banks (Figure 4). Conserved lands are defined as “protected park and open space in California” (GreenInfo Network 2011).¹

The proposed Inner and Outer Harbor mitigation banks are compatible with adjacent property land uses and zoning designations because the bank restores and enhances existing open water and wetland habitat within the context of the working Port and will not conflict with established uses, zoning, or the Port’s Master Plan. Rezoning is not necessary for the establishment of the mitigation bank because it is an acceptable form of use under the

¹ Conserved lands were obtained from the California Protected Areas Database (CPAD). This information identified lands held in fee ownership by public agencies and non-profits but does not include private conservation easements.

Qualified Light Industrial (Q) M-2 and (Q) M3 Qualified Heavy Industrial zones of the local municipal codes.

1.2.3 Water Quality

Water quality in the harbor is affected by a variety of inputs and processes. Potential influences include landside runoff, stormwater runoff, air deposition, point source discharges, and sediments. These inputs may provide a source for bacteria and contaminants that are freely dissolved or bound to particles in suspension or bedded in surficial sediments, which in turn may impact the beneficial uses that the mitigation banks are meant to support (e.g., protection of aquatic life, rare and endangered species, and habitat). With the promulgation of state and federal water quality regulations in the 1970s, subsequent stormwater controls and discharge limitations required throughout the watershed have resulted in a substantial improvement to water quality in recent decades. Those improvements are further supported by ongoing and developing Total Maximum Daily Loads (TMDLs).

The Port is an active stakeholder in the established Los Angeles Harbor Main Channel and Inner Cabrillo Beach Bacteria TMDL (Los Angeles Regional Water Quality Control Board 2004) and the pending Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants (Toxics TMDL; Los Angeles Regional Water Quality Control Board 2011). The Bacteria TMDL addresses bacteria concentrations in the water column. The Toxics TMDL will address localized sediment quality and regional fish tissue quality. The TMDLs require extensive monitoring and special studies to evaluate the effectiveness of actions implemented to meet the TMDL compliance criteria. The actions taken by the Port to meet the TMDLs are expected to further improve water quality in the coming years. A summary of the overall current water quality condition of the harbor is provided in the Water Resources Action Plan (WRAP; POLA and POLB 2009).

Acceptable water quality to support a mitigation bank is a key component of a successful program per 33 CFR 332.4(c)/40 CFR 230.92.4(c). Water quality throughout the harbor currently supports a healthy and diverse biological community and will continue to support establishment and operation of a mitigation bank.

1.2.4 Hydrology

The Los Angeles Harbor is a southern extension of the relatively flat coastal plain, bounded on the west by the Palos Verdes Hills, which offer protection to the bay from prevailing westerly winds and ocean currents (USACE and LAHD 2008a). It is considered part of the Dominguez watershed, a 132-square-mile area that includes portions of the southern part of the City of Los Angeles, much of the cities of Lomita, Carson, Gardena, Inglewood, Hawthorne, Lawndale, and Torrance, and portions of the South Bay cities, the Palos Verdes peninsula, and the City of Long Beach. The harbor area was once an estuary that received freshwater from the Los Angeles and San Gabriel Rivers. Over the past 100 years, dredging, filling, and channelization has occurred throughout the Los Angeles and Long Beach Harbors and completely altered previous estuarine conditions. The waters of the Los Angeles Harbor are not hydrodynamically separate from the rest of San Pedro Bay, but hydrodynamic modeling indicates that Los Angeles Harbor industrial activities do not appear to have much influence on eastern San Pedro Bay.

Tidal currents in the harbors consist of two harmonic tide waves, typically producing two high and two low tides each day. The result is a tidal current consisting of a higher high water (HHW) and a lower high water (LHW), and a higher low water (HLW) and a lower low water (LLW) each day. The mean tidal range for the outer harbor is 3.76 feet and the mean average difference between the HHW and LLW is approximately 5.6 feet. The extreme tidal range between maximum high and maximum low waters is about 10.5 feet. The highest and lowest tides reported are 7.96 feet above mean lower low water (MLLW) and -2.56 feet below MLLW, respectively. Los Angeles Harbor Department (LAHD) tide data (from 1923 to 1984) indicate that the highest water elevations usually occur during November through March, which is concurrent with the more severe offshore storm season typical of the California coast.

The Port is directly exposed to ocean swells entering from the south and southeast, regardless of swell origin (southern hemisphere swell, northern hemisphere swell, and swells resulting from local winds). The more severe waves from extra-tropical storms typically originate from the south. The Channel Islands and Santa Catalina Island provide some sheltering from the larger waves, depending on the direction of approach. Most swells from the southern hemisphere arrive at Los Angeles from May through October, and the swells are typically

less than 4 feet in height in deep water with periods as long as 18 to 21 seconds. Northern hemisphere swells generally occur from November through April with deep water wave heights of between 12 and 20 feet with wave periods generally ranging from 12 to 18 seconds. Local wind-generated swells are predominantly from the west and southwest, but they can originate from all offshore directions throughout the year. Their wave heights are typically less than 6 feet in height with periods of less than 10 seconds.

Circulation patterns in the harbor are regulated by a combination of tide, wind, thermal structure, and local topography. Flood tides in the Port flow into the harbor and up the channels, while ebb tides flow down the channels and out of the Port. In the Outer Harbor, near Angel's Gate and Queen's Gate, maximum surface tidal velocities are approximately 0.8 feet per second (fps), while minimum tidal velocities of 0.088 fps occur in the Inner Harbor areas since the construction of the Pier 400 landfill (Wang et al. 1995 in USACE and LAHD 2008d).

A large clockwise gyre is found in the surface waters of the outer Los Angeles and Long Beach Harbors during both rising and falling tides. The net tidal exchange is inward through Angel's Gate, outward through Queen's Gate, and the gap between the eastern end of Long Beach Breakwater and Alamitos Bay. As a result, there is a net eastward flow within the harbor.

Mixing occurs less in the Inner Harbor than in the Outer Harbor with tidal-induced water exchange in the Inner Harbor reaching 22 percent of the total harbor water volume per day. Overall tidal exchange rates (based on the prism method without discharges) fluctuate between 8 and 25 percent; the flushing rate is estimated at 90 tidal cycles (USACE and LAHD 2008a).

1.3 History of the Mitigation Banks

1.3.1 Inner Harbor Mitigation Bank

The current Inner Harbor mitigation bank was established in 1984 to provide mitigation for unavoidable impacts to marine habitat in advance of construction projects that involved excavation or fill within the Inner Harbor (Harbor Department of the City of Los Angeles et

al. 1984). As defined, the initial bank included the Main Channel and Inner Channels, West and East Channels, and Fish Harbor. Subsequent biological evaluations such as the comprehensive biological studies conducted in 1988 and 2000 have been used to redefine the boundaries of the Inner Harbor (Figure 5; MEC 1988; MEC and Associates 2002). The current boundaries of the bank are shown in Figure 6.

A Memorandum of Understanding (MOU) establishing the bank was signed by the Harbor Department of the City of Los Angeles, the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), and the National Marine Fisheries Service (NMFS). The USFWS participated under authority established by the Fish and Wildlife Coordination Act, and both NMFS and CDFG had a trustee role regarding fisheries impacts. State and federal regulatory agencies, such as the U.S. Environmental Protection Agency (USEPA), California State Lands Commission, California Coastal Commission, or U.S. Army Corps of Engineers (USACE), were not involved in the negotiations (Hartmann 2000). Impacts to special status species were not covered under the agreement and are excluded from the MOU.

The Inner Harbor mitigation bank established no net loss, in-kind compensation for both temporal and spatial impacts to marine habitat at a 1:1 ratio. Marine habitat was measured by the water surface area at mean high water (MHW) (+4.8 feet MLLW). When land is excavated, available credits would be added to the mitigation bank. When marine areas are filled to become land, credits would be subtracted from the mitigation bank. Final accounting of credits to be withdrawn from the mitigation bank is conducted after the project has been completed in its entirety and the actual extent of reduction or increase of marine habitat is known.

The mitigation credits are only applicable to projects within the boundaries of the Inner Harbor. (An overview of current habitat within the Inner and Outer Harbors is provided in Sections 4.2 and 4.3.) While the mitigation bank has no set acreage, the original number of credits in the bank was established by the MOU at 17.7 acres. This was based on the net increase in marine habitat as a result of projects within the Inner Harbor from June 1975 to 1984 (Environmental Law Institute 1994). The mitigation bank was intended to be active

until all bank credits have been used or until the existence of the bank is rescinded upon agreement by all signatories to the MOU.

No maintenance or monitoring activities are required by the agencies per the MOU. The mitigation bank has been successful, and biotic communities have been established within 5 years of marine habitat creation (Environmental Law Institute 1994). The current number of existing credits in the bank is 6.2. Committed and upcoming projects will add a net of 5.8 credits, if approved, for a total of 12.0 credits (Section 4.7.1; Prickett 2011a).

1.3.2 Outer Harbor Mitigation Bank

The Outer Harbor mitigation bank was established in 1997 to provide mitigation for unavoidable impacts to marine habitat as a result of the Pier 400 Dredging and Landfill Program and other development projects that involved excavation or fill with the Port's boundaries (City of Los Angeles et al. 1997). As defined, the initial bank included the Outer Harbor, which did not include the Main Channel and Inner Channels, West and East Channels, and Fish Harbor. Subsequent biological evaluations have been used to redefine the boundaries of the Outer Harbor (Figure 5). The current boundaries of the bank are shown in Figure 6.

An MOU establishing the mitigation bank was signed by the City of Los Angeles, USFWS, CDFG, and NMFS. As with the Inner Harbor mitigation bank, the USFWS participated under Fish and Wildlife Coordination Act authority, and both NMFS and CDFG had a trustee role regarding fisheries impacts. State and federal regulatory agencies were not involved in the negotiations, and impacts to special status species were not covered under the agreement and are excluded from the MOU. The mitigation bank was intended to be active until all bank credits have been used or until the existence of the bank is rescinded upon agreement by all signatories to the MOU.

In the years between the Inner Harbor Mitigation Bank MOU and the Outer Harbor Mitigation Bank MOU, biological studies were conducted that indicated that the habitat quality in the Outer Harbor was greater than that in the Inner Harbor. As a result of this information, the Outer Harbor mitigation bank established no net loss, out-of-kind

compensation for both temporal and spatial impacts to marine habitat at varying ratios, depending on the location of the impacts. Both deep water and shallow water in the Outer Harbor are considered to be of greater habitat value than waters in the Inner Harbor.

Credits in the Outer Harbor mitigation bank would be used to mitigate any marine habitat impacts within the Port's boundaries at the following ratios (Figure 6):

- 1 acre Inner Harbor habitat to 0.5 mitigation credit
- 1 acre deep water Outer Harbor habitat to 1 mitigation credit
- 1 acre shallow water Outer Harbor habitat to 1.5 mitigation credits

Ongoing biological studies conducted at the Port have been used by resource agencies to determine the quality of the habitat as well as the boundaries and mitigation values for both the Inner and Outer Harbors. While the study showed an increase in the habitat quality in the Port overall, the Main Channel was determined to have higher quality habitat than previously assumed and was re-categorized from lower quality Inner Harbor habitat to higher quality Outer Harbor habitat (LAHD 2004; USACE and LAHD 2008a). The Outer Harbor mitigation bank currently has 49 existing credits. Committed and upcoming projects will add 52 credits, if approved, for a total of 101 credits (Section 4.3; Prickett 2011a).

1.4 General Need for the Mitigation Bank

The Port is the nation's busiest container port and handles almost a quarter of the cargo that enters the United States annually (POLA 2010c). In order to meet the ongoing development needs of a large port, pursuant to the Tidelands Trust and the California Coastal Act, infrastructure improvement and maintenance projects are necessary.

These improvements may result in impacts to sensitive habitats, such as Inner and Outer Harbor waters, eelgrass, and federal jurisdictional wetlands. By establishing a mitigation bank to address these impacts in advance of the construction of the projects, overall impacts to the environment are reduced. The bank has been planned with a watershed perspective and is the preferred mitigation option for impacts to waters of the United States, as listed in the new mitigation rule requirements in the 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) (eCFR 2010a, 2010b).

The habitat category-based approach is proposed to reflect the dynamic nature of the working waterfront in the Port. Both capital and routine maintenance projects are constantly in motion; thus, establishing a variety of credit accounts that can accommodate the constantly changing nature of the Port's waterfront is required.

2 MITIGATION BANKING REGULATIONS, POLICY GUIDANCE, AND ESTABLISHMENT

2.1 Banking Regulations and Policy Guidance

The USEPA and the USACE issued revised regulations governing compensatory mitigation for impacts to waters of the United States under Section 404 of the Clean Water Act on March 31, 2008 (eCFR 2010a, 2010b). The regulations can be found at 33 CFR 332 and 40 CFR 230. These regulations took effect on June 29, 2008.

The regulations standardize the requirements for mitigation banks, in-lieu fee mitigation, and permittee-responsible mitigation and establish one set of regulations for compensatory mitigation. They rank the preferred methods for mitigation, with mitigation bank credits most preferable, followed by in-lieu fee program credits, and then permittee-responsible mitigation.

Compensation provided by mitigation banks, in-lieu fee mitigation, and permittee-responsible compensatory mitigation must have mitigation plans that include the same 12 fundamental components: objectives, site selection criteria, site protection instruments (e.g., conservation easements), baseline information for both impact and mitigation sites, credit determination methodology, a mitigation work plan, a maintenance plan, ecological performance standards, monitoring requirements, a long-term management plan (LTMP), an adaptive management plan, and financial assurances (eCFR 2010a, 2010b). These components will be addressed in the individual project's BEI and LTMP and in the umbrella mitigation banking agreement to the extent feasible.

2.2 Proposed Interagency Review Team

The review and approval of mitigation banks is a multi-agency process. The anticipated Interagency Review Team (IRT) for the umbrella banking agreement prospectus consists of the following state and federal agencies: USACE, USFWS, NMFS, USEPA, and CDFG.

The following contact listed for each agency is subject to confirmation by the agencies:

USACE

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2.3 Review Process and Public Outreach

The Multi-Agency Product Delivery Team *Mitigation Banking Proposal Procedures* recommend submitting a Mitigation Bank Draft Prospectus, a Prospectus, and a Draft and

Final BEI to initiate the development of mitigation banking proposals in the state of California (Multi-Agency Product Delivery Team 2010).

While the proposed banks will be structured under an umbrella agreement, which is not a part of the Compensatory Mitigation Rule process described below, the Port will follow the recommendations of the Multi-Agency Product Delivery Team and the Compensatory Mitigation Rule public outreach process. The Port will submit a Mitigation Bank Draft Prospectus and Prospectus for the umbrella agreement and convene an IRT for agency approval of the document. Draft and Final BEIs for the Inner and Outer Harbor banks will also be submitted. These BEIs would be added as an attachment to the umbrella agreement. Additional BEIs will be submitted for each additional mitigation site under the agreement. The umbrella mitigation banking agreement will be signed by the Port and members of the IRT listed in Section 2.2. Each BEI will have its own signatory parties.

The following paragraphs describe the public outreach process recommended in the Compensatory Mitigation Rule for individual and umbrella mitigation banking instruments (USEPA and USACE 2008). It involves four phases. As previously stated, Phases I and II will be completed for the umbrella mitigation banking agreement. Phases III and IV will initially be completed for the proposed Inner and Outer Harbor mitigation banks and as needed for each additional mitigation site:

- Optional Preliminary Review of the Draft Prospectus (Phase I)
- Review of the Complete Prospectus by the Public (Phase II)
- Development of a Draft BEI and Review by the IRT (Phase III)
- Preparation of the Final Instrument by the Sponsor for Consideration of the USACE and Comment by the IRT (Phase IV)

Procedures and durations for specific steps within those procedures have been established for the review and approval of the Prospectus and BEI in the 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) (eCFR 2010a, 2010b). The entire process² takes a minimum of 350 days; approval of the Prospectus takes a minimum of 120 days and approval of the BEI takes a

² This excludes the initial research, conceptual designs, and functional assessments to prepare the Draft Prospectus.

minimum of 240 days. Additional time may be required due to the addition of the artificial reef category, since this type of mitigation is relatively new and unexplored. Actual agency processing time and workload are also unpredictable factors.

The proposed umbrella mitigation banking agreement process begins with the submittal of the Umbrella Mitigation Banking Agreement Draft Prospectus to the USACE. Once the Prospectus is submitted, the USACE has 30 days to determine if the Draft Prospectus is complete. Once the Draft is accepted as complete, the USACE circulates the Draft Prospectus to the IRT, who has 30 days to respond with any comments. Once reviewed and approved by the IRT, the Prospectus must be placed on 30-day public review by the USACE. The IRT initial evaluation letter must be completed within 30 days after the public comment period has ended.

After the planning framework for the proposed umbrella mitigation banking agreement is established and public review of the Prospectus is completed, Draft BEIs for both the Inner and Outer Harbor mitigation banks will be prepared and negotiated with the USACE, who has 30 days to determine if they are complete. Per the requirements of 33 CFR 332.8, the BEIs must include several items describing the overall function of the bank, with specific emphasis on accounting and credit-valuation systems. Within 5 days, the USACE must distribute the Draft BEIs to the IRT for a 30-day comment period, after which USACE and the Port must resolve comments and issues with the IRT. The IRT has 90 days to notify the sponsor of the status of the review. Following response to comments on the Draft BEIs, the Port is required to submit the proposed Final BEIs to the USACE and the IRT, along with supporting documentation regarding resolution of comments on the Draft BEIs.

The USACE has 30 days to accept the BEIs and notify the IRT. Following the notification, additional discussions with the IRT might continue to further refine the document. Upon submittal of the Final BEIs that incorporate any responses to comments from the district engineer and the IRT, the USACE will notify the sponsor within 30 days if they intend to accept the Final BEIs. If there is no objection from the IRT, the USACE will notify the sponsor of the final decision within 45 days. The process ultimately concludes with a decision to approve or not approve the BEIs or initiate the dispute resolution process.

LTMPs detailing how the bank areas would be managed over time will also be submitted and approved by the agencies prior to the successful establishment of each proposed bank. Rules codified in 33 CFR 332.8 also require long-term site protection in perpetuity for a mitigation bank.

2.3.1 Bank Contacts

2.3.1.1 Bank Sponsor

The umbrella mitigation bank agreement and individual mitigation banks sponsor is the Port. Kat Prickett is the project manager. Her contact information is:

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425 S. Palos Verdes Street
San Pedro, CA 90731
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Telephone: (310) 732-3951
Fax: (310) 547-4643

2.3.1.2 Property Owner

The waters of the Inner and Outer Harbors are considered tidelands of the State of California. The State deeded the lands, including the surface and subsurface rights, to the City of Los Angeles. The owners of the unidentified mitigation banks are as yet unknown.

2.3.1.3 Consultants

Anchor QEA is the consultant for the proposed umbrella mitigation banking agreement and the proposed Inner and Outer Harbor mitigation banks. Dr. Joshua Burnam is the project manager. His contact information is:

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3 SITE SELECTION RATIONALE AND GENERAL APPROACH TO MITIGATION CATEGORIES

The known sites within the proposed umbrella mitigation banking agreement are in the same location as the existing Inner and Outer Harbor mitigation banks (Figures 5 and 7). The location of the proposed mitigation sites for the wetland, eelgrass, and artificial reef habitat categories are unknown. The extent of Port property comprises the impact area or the area in which potential impacts may occur. The location of the mitigation bank sites under the proposed umbrella mitigation banking agreement would include intertidal and subtidal marine waters within the Southern California Bight region, which extends from Point Conception in Santa Barbara County to the U.S. Mexico border, inclusive of the Inner and Outer Harbor (Figure 2). The proposed Inner and Outer Harbor mitigation banks do not conflict with any conserved lands (Figure 4), conservation plans, CDFG conceptual area plans,³ or other land use plans, policies, or regulations (USACE and LAHD 2008a; CDFG 2009), and are not designated for purposes that are inconsistent with habitat preservation. They have not been designated or dedicated as a passive park or for open space use.

Habitats present within the Los Angeles Harbor in San Pedro Bay include open water, sandy bottom, pilings, riprap slopes, shallow water, eelgrass, and kelp. Typical infrastructure improvement and maintenance projects include cutting and filling areas within the harbor, creation or replacement of pilings and other structures, and dredging.

The proposed Inner and Outer Harbor mitigation banks would contribute to connectivity and ecosystem function because it would further improve existing open water habitat quality at the Port, as well as add to the existing eelgrass and rocky substrate (e.g., riprap) communities, creating higher quality habitat overall. The shallow water habitat created as a result of the fill projects as part of the existing Outer Harbor habitat category supports more diverse and abundant adult and juvenile fish and fish larvae, invertebrates, algae, macroalgae, and phytoplankton due to the diversity of habitats as well as its location and lower pollution levels (Allan Hancock Foundation 1980 as cited in USACE and LAHD 2008a; MEC and Associates 2002; MEC 1988 in USACE and LAHD 2008a). The installation of new pilings and

³ The locations of Natural Community Conservation Plans were used to identify CDFG conceptual area plans.

riprap slopes in both the Inner Harbor and Outer Harbor create structures that provide habitat for adult fish, invertebrates, algae, kelp, and macroalgal communities, and the addition of artificial reef structures near the breakwater would provide additional habitat for species already utilizing other structures in the Harbor. Similarly, the creation of additional eelgrass habitat would also improve existing conditions in the Harbor.

3.1 General Biological Description of the Port of Los Angeles Harbor

Biological resources within the Los Angeles and Long Beach Harbors in San Pedro Bay have been researched since the 1950s, with comprehensive biological studies recently conducted in 1988, 2000, and 2008 (MEC 1988; MEC and Associates 2002; SAIC 2010). The most recent study conducted in 2008 is shown in Appendix B. The objectives of the 2008 survey included (SAIC 2010):

- Provide physical and chemical characterization of environmental conditions during the summer by measuring water quality and sediment grain size
- Provide an update on the status of larval, juvenile, and adult fish populations
- Provide an update on the status of the benthic invertebrate communities
- Provide an updated description of biological communities attached to rocky riprap habitats
- Provide an update of the harbor bird communities, including a summary of marine mammals observed during the surveys
- Map kelp and eelgrass distributions and describe macroalgal communities
- Identify the relative occurrence of non-indigenous (exotic) species among native populations
- Provide a comparison of changes in current marine habitats with previous (historical) studies
- Provide a comparison of benthic sampling methods

The studies measured a variety of biological parameters including species abundance, or the number of individuals present; species diversity, or the number of species present; community development, or the process by which an ecological community transforms into a stable community; and species biomass, or overall mass of a species in the Port.

Survey station locations for the 2008 surveys remained the same as the 2000 surveys to aid in the comparison of results. The information from the 1988 and 2000 surveys has been summarized in many reports, including most recently the *Draft Supplemental Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) Port of Los Angeles Channel Deepening Project* (USACE and LAHD 2008a), and *Draft EIS/EIR for Berth 97-109 (China Shipping) Container Terminal Project* (USACE and LAHD 2008b), and the *Draft EIS/EIR for the San Pedro Waterfront Project* (USACE and LAHD 2008c). The results of the 2000 and 2008 Biological Baseline Studies are summarized below and in Sections 4.2.1 and 4.3.1

There has been a steady improvement in water quality and benthic habitat quality since the 1980s, evidenced by an increase in species diversity and a decline of pollution-tolerant species. This is due to federal and state water quality regulations such as the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act as well as changes in the industrial activity of the harbor (USACE and LAHD 2008c). Water quality was generally uniform between the Inner and Outer Harbors in 2008.

More than 250 species of benthic infauna and larger macroinvertebrates were collected in 2008 throughout the harbor (SAIC 2010). The sediments in the harbor are predominantly sand/silt, although the proportions and distributions vary according to area (USACE and LAHD 2008c). Distinct benthic faunal zones created by gradients in physical and biological characteristics from the Outer Harbor to the Inner Harbor have been observed during previous surveys. In 2008, benthic invertebrate habitat did not differ substantially between the two harbors, although there was a difference between Outer Harbor shallow water habitats and open-water deep water habitats within both the Inner and Outer Harbor (HEP 1976 as cited in USACE and LAHD 2008c; SAIC 2010). Species composition did not differ substantially between the summer and winter surveys, although abundances were higher in the summer (SAIC 2010).

Macroinvertebrate species composition was uniform throughout the Inner and Outer Harbor, although they were more abundant at night than during the day and more abundant in the winter and spring than during the rest of the year (SAIC 2010).

The riprap and breakwaters present in both the Inner and Outer Harbor provide important habitat for adult fish, invertebrates, algae, kelp, and macroalgal communities. A total of 334 species of invertebrates and algae were identified within the riprap community throughout the harbor complex in 2008 (SAIC 2010).

In 2000, 74 fish species were collected, and 59 fish species were collected in 2008. Northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), white croaker (*Genyonemus lineatus*), queenfish (*Seriphus politus*), and California grunion (*Leuresthes tenuis*) were most abundant in lampara samples during 1986 to 1987 (MEC 1988, as cited in SAIC 2010).

Lampara samples tend to capture pelagic fish species or fish within the water column as opposed to species more closely associated with benthic habitats. Northern anchovy, Pacific sardine, white croaker, queenfish, and topsmelt (*Antherinops affinis*) were most abundant in lampara samples during the 1990s and 2000 (SAIC 2010). These results were similar to those in the most recent survey in 2008, when four species— northern anchovy, California grunion, Pacific sardine, and topsmelt—comprised greater than 98 percent of the total catch. Fish were more abundant in the summer and more diverse in the shallow water areas of the Outer Harbor in 2008.

During the 2000 surveys, pelagic fish diversity was lower in the Inner Harbor than in the Outer Harbor. High fish abundance and richness occurred in winter and early spring, and low abundance and richness occur in summer and early fall (MEC and Associates 2002). In 2008, there were no consistent differences in pelagic fish species assemblages between the Outer and Inner Harbor areas (SAIC 2010).

The most abundant species caught during otter trawl surveys in 2008 were northern anchovy, white croaker, queenfish, shiner surfperch, and white surfperch. Otter trawl surveys generally capture epibenthic and demersal fish species, or species on or close to the sea floor. Otter trawl studies have been conducted at the Port intermittently since the 1970s and, generally, the same dominant species of white croaker, northern anchovy, and queenfish have been recorded, indicating that demersal species composition has been relatively stable over time (SAIC 2010).

Seventy-one species of fish larvae were identified within the harbor complex. Results from the 2000 and 2008 surveys showed similar species composition. Species composition varied among different areas and habitats in the harbor. The most abundant taxon was a complex of three goby species consisting of early larvae of the arrow goby (*Clevelandia ios*), cheekspot goby (*Ilypnus gilberti*), and shadow goby (*Quietula y-cauda*), making up 44.6 percent of the total catch. The next most abundant larvae were combtooth blennies (*Hypsoblennius* spp.; 34.0 percent), bay gobies (*Lepidogobius lepidus*; 8.6 percent), and clingfishes (*Gobiesocidae*; 2.9 percent). The abundances of most larval taxa differed between the three depths sampled; all the gobies were least abundant in the surface water. Combtooth blennies were in lowest abundance in the epibenthic layer and clingfishes were in highest abundance in the epibenthic samples. Silversides (California grunion, jacksmelt, and topsmelt) were in highest abundance in the surface waters (SAIC 2010).

More than 100 avian species have been observed at the Port and POLB. Sixty-eight of these species are dependent on marine habitats. In 2008, birds were not equally distributed among survey zones. Bird species are discussed in more detail in Sections 4.1.1, 4.2, and 4.3.

3.1.1 Special-Status Species

The USFWS species list for Los Angeles County, the California Native Plant Society (CNPS) Inventory of Rare and Endangered Species for the San Pedro Bay and Torrance USGS 7.5 minute quadrangles, and previous surveys conducted at the Port were reviewed to determine which species have the potential to occur in the Port and POLB (USFWS 2011; CNPS 2011; USACE and LAHD, 2008a, 2008b and 2008c; SAIC 2010; MEC 1988; MEC and Associates 2002; and LAHD and Jones & Stokes 2003 in LAHD and USACE Los Angeles District, 2009).

In addition to state and federally listed species, other special status species include those that are afforded protection under the following regulations:

- **CDFG Species of Special Concern:** Vertebrates with declining population levels, limited ranges, and/or continuing threats make them vulnerable to extinction.
- **CDFG Watch List:** Birds that: 1) are not on the Bird Species of Special Concern list, but were on previous lists and have not been listed under the California Endangered Species Act (ESA); 2) were previously state or federally listed, and now are on neither

list; or 3) are on the list of Fully Protected Species.

- **CDFG Fully Protected:** This was the state’s initial effort to identify and protect animals that were rare or faced possible extinction. Most of the animals on the Fully Protected list were subsequently listed under state and/or federal ESAs. It is unlawful to take these species except with an authorization for necessary scientific research.
- **USFWS Birds of Conservation Concern:** Birds of Conservation Concern are those identified by the USFWS that represent the highest conservation priorities. The designation is meant to draw attention to species in need of conservation action (USFWS 2008).
- **Marine Mammal Protection Act of 1972 (MMPA) (16 USC 1371):** It is unlawful to take or import marine mammals and marine mammal products. Under Section 101(a)(5)(D) of the MMPA, an incidental harassment permit may be issued for activities other than commercial fishing that may impact small numbers of marine mammals. An incidental harassment permit covers activities that extend for periods of not more than 1 year and that will have a negligible impact on the impacted species.

Table 1 lists all the special status species known to occur in the Port and POLB. No plant species were identified as having the potential to occur within the study area due to the limits of their range, lack of habitat, including lack of specific requirements for soil and hydrology as well as the species’ level of disturbance tolerance.

Table 1
Special Status Species Known to Occur in the Port and POLB

Common Name	Scientific Name	Federal Status	State Status	Notes
American peregrine falcon	<i>Falco peregrinus anatum</i>	USFWS BCC	CDFG FP	Nests on the Schuyler Heim and Gerald Desmond Bridges. Usually observed near nesting sites; three observations near Pier 300 in 2007-2008.
Belding’s savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	–	SE	Inhabits pickleweed marsh; transient visitor to harbor. No individuals observed in 2007-2008.

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Common Name	Scientific Name	Federal Status	State Status	Notes
Black oystercatcher	<i>Haematopus bachmani</i>	USFWS BCC	–	Nested in Ports Complex in 2007-2008; six individuals observed between Piers 300-400 in 2007-2008.
Black skimmer	<i>Rynchops niger</i>	USFWS BCC	CDFG SSC (nesting colony only)	No nesting in the harbor in 2008; two individuals observed near Pier 300 in 2007-2008.
Brant	<i>Branta bernicla</i>	–	CDFG SSC (wintering and staging only)	Six individuals observed during February 2008 in Long Beach Outer Harbor; no observations near Pier 300.
Burrowing owl	<i>Athene cunicularia</i>	USFWS BCC	CDFG SSC (burrowing sites and some wintering sites only)	Observed on Pier 400 in 2007-2008; nesting status within the Port Complex unknown.
California brown pelican	<i>Pelecanus occidentalis californicus</i>	–	CDFG FP	Abundant throughout Port Complex; 567 observations near Pier 300 in 2007-2008.
California least tern	<i>Sterna antillarum browni</i>	FE	SE	Breeds on Pier 400 from about approximately April through August; forages preferentially over shallow waters; 14 sightings near Pier 300 in May and June 2008.
California sea lion	<i>Zalophus californianus</i>	MMPA	–	Regularly observed foraging and swimming within the Outer Harbor, especially the Main Channel
Caspian tern	<i>Hydroprogne caspia</i>	USFWS BCC	–	Nested on Pier 300 in 2008-2009; about 170 observations during 2007-2008 surveys near Pier 300. Nesting occurred at backlands off 305 in April 2010, but subsequently abandoned.
Common dolphin	<i>Delphinus delphis</i>	MMPA	–	Observed occasionally in the Outer Harbor

Site Selection Rationale
and General Approach to Mitigation Categories

Common Name	Scientific Name	Federal Status	State Status	Notes
Common loon	<i>Gavia immer</i>	–	CDFG SSC (nesting only)	Thirteen individual observed throughout Port Complex in 2007-2008; no observations near Pier 300.
Double-crested cormorant	<i>Phalacrocorax auritus</i>	–	CDFG Watch List (nesting colony only)	Nested in transmission towers in Long Beach Harbor in 2007-2008; among most abundant birds in the harbor.
Elegant tern	<i>Thalasseus elegans</i>	–	CDFG Watch List (nesting colony only)	Nested on Pier 400 in 1998-2005, and on Pier 300 since 2007-2008; very abundant, forages over water near nests. Nesting occurred near Pier 305 in April 2010, but subsequently abandoned.
Gray whale	<i>Eschrichtius robustus</i>	MMPA	–	Observed occasionally in the Outer Harbor
Harbor seal	<i>Phoca vitulina</i>	MMPA	–	Observed occasionally in the Outer Harbor
Loggerhead shrike	<i>Lanius ludovicianus</i>	USFWS BCC	CDFG SSC (nesting only)	Observed in Inner Harbor areas of Port Complex in 2001-2002; no observations near Pier 300 in 2007-2008.
Long-billed curlew	<i>Numenius americanus</i>	USFWS BCC	CDFG Watch List (nesting only)	Single individual observed near Pier 300 during 13 surveys in 2007-2008.
Merlin	<i>Falco columbarius</i>	–	CDFG Watch List (wintering only)	One individual observed on riprap in Long Beach Outer Harbor in December 2007; no observations near Pier 300 in 2007-2008.
Osprey	<i>Pandion haliaetus</i>	–	CDFG Watch List	Observed in Port Complex during all surveys in 2007-2008; 10 observations (all single individuals) near Pier 300.
Pacific bottle-nose dolphin	<i>Tursiops truncatus</i>	MMPA	–	Observed occasionally in the Outer Harbor
Pacific pilot whale	<i>Globicephala macrorhynchus</i>	MMPA	–	Observed occasionally in the Outer Harbor

Common Name	Scientific Name	Federal Status	State Status	Notes
Pacific white sided dolphin	<i>Lagenorhynchus obliquidens</i>	MMPA	–	Observed occasionally in the Outer Harbor
Risso’s dolphin	<i>Grampus griseus</i>	MMPA	–	Observed occasionally in the Outer Harbor
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	FT, USFWS BCC	CDFG SSC	Infrequent visitor to harbor; observed on Pier 400. No observations during 2007-2008 surveys.

Notes:

FE = federal endangered

FT = federal threatened

SE = state endangered

USFWS BCC = USFWS bird of conservation concern

CDFG SSC = CDFG species of special concern

CDFG FP = CDFG fully protected

MMPA = Marine Mammal Protection Act

Source: CDFG 2011; data in notes from SAIC (2010);and LAHD and USACE (2009).

3.2 Inner Harbor

The Inner Harbor Mitigation Bank had a balance of 17.7 credits of deep water habitat at its inception in 1984, based on the net increase in marine habitat as a result of projects within the Inner Harbor from June 1975 to 1984 (Environmental Law Institute 1994). With the construction of Berths 225-229 and 212-215 and Fire Stations 111 and 112, some of these credits have been used. Currently, 6.2 existing credits are available and a net of 5.8 credits are planned for committed and upcoming projects, including Cabrillo Phase II, San Pedro Waterfront, the Al Larson Boat Shop, and Berth 121-131 (Yang Ming), for a total of 12.0 total credits (Section 4.7.1). Deep water habitat within the Inner Harbor is typically greater than 20 feet deep and provides habitat such as unconsolidated bottoms, wood and concrete pilings and open water for fish, birds and invertebrates (Environmental Law Institute 1994).

3.2.1 Description of Inner Harbor Habitat

Marine habitat in the Inner Harbor consists of open water of varying depths, soft bottom substrates, and hard substrates, such as docks, piers, bank protection structures, and piles associated with Port facilities. In general, the habitat quality in the Inner Harbor is

relatively lower than that of the Outer Harbor, due to factors such as the homogeneity of habitat types, location in the harbor, and environmental factors such as the dredging and legacy pollutants in the area. More specifically, tidal flushing is reduced, wave surge and currents decrease, water temperatures and sedimentation increase, dissolved oxygen levels decline, freshwater intrusion decreases salinity in winter, and evaporation increases salinity in summer (USACE and LAHD 2008c).

While species diversity and abundance varied among different habitats and locations within the harbor, invertebrates, algae, macroalgae, and phytoplankton were typically less diverse and less abundant in the Inner Harbor (Allan Hancock Foundation 1980 as cited in USACE and LAHD 2008b; MEC 1988 as cited in USACE and LAHD 2008b; MEC and Associates 2002).

The number of invertebrate and algal species increased with increasing depth. Stress-tolerant algal species, such as *Ulva* spp., and *Enteromorpha* spp., that can survive in areas with limited tidal circulation were more abundant in the Inner Harbor than in the Outer Harbor, although total coverage was sparse. Overstory species *Sargassum* spp., and feather boa kelp (*Egregia menziesii*) occurred in the subtidal zone of the riprap in the Inner Harbor.

Species assemblages can be indicative of habitat quality because some species are more tolerant of low organic enrichment or pollution. The Inner Harbor supports diverse benthic invertebrate and epifaunal populations that predominantly thrive in bay habitats with low to moderate organic enrichment (MEC Analytical Systems 1988 in USACE and LAHD 2008c; SAIC 2010).

The abundance of many bird species at Inner Harbor locations were an order of magnitude smaller than those in the main shipping channel (SAIC 2010). Western gull (*Larus occidentalis*), rock dove (*Columba livia*), Heermann's gull (*Larus heermanii*), federal threatened California brown pelican (*Pelecanus occidentalis occidentalis*), and California gull (*L. californicus*) were the most abundant species in the Inner Harbor in the year 2000 baseline study. Upland birds and waterfowl were also common. All other avian guilds (large shorebirds, wading/marsh birds, aerial foragers, and raptors) were present but less abundant.

Other special status birds have been observed foraging within the Inner Harbor. These species include the state endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) and state species of special concern loggerhead shrike (*Lanius ludovicianus*). The state endangered and fully protected American peregrine falcon (*Falco peregrines anatum*) has been known to nest within the Inner Harbor and forages on birds throughout the harbor (USACE and LAHD 2008a).

A search of the California Natural Diversity Database (CDFG 2011) showed that there are no new (post-2008) recorded observations of potentially present special status species within the project quadrangles (San Pedro, Torrance, and Long Beach quadrangles).

3.3 Outer Harbor Habitat

As mitigation for development activities within the harbor, 422 acres of shallow water habitat have been created within the Outer Harbor in two locations since the inception of the Outer Harbor Mitigation Bank in 1997: the Cabrillo Shallow Water Habitat adjacent to the San Pedro Breakwater and the Pier 300 Shallow Water Habitat adjacent to Pier 300 (Figure 6). There are currently 49 existing credits available. Further, at the Cabrillo Shallow Water Habitat, an additional 54 acres have been constructed and 50 more acres are currently under construction. Neither of these areas has been credited yet to the existing Outer Harbor Mitigation Bank, but is expected to provide additional 27 and 25 credits, respectively.⁴ If these credits are approved, 52 committed credits would be available, for a total of 101 credits (Section 4.7.1). This shallow water habitat has increased species diversity and abundance within the Outer Harbor and provides important foraging and rearing habitat and feeding area for marine birds and fish, particularly juveniles.

3.3.1 Description of Outer Harbor Habitat

Marine habitat in the Outer Harbor consists of deep and shallow water, deep and shallow soft bottoms, and hard substrates, such as riprap and pilings. Baseline biological surveys conducted in 2000 have determined that both the deep water and shallow water habitats in the Outer Harbor, including the Main Channel, have higher quality habitat than the habitat

⁴ Loss of deep water habitat at a 1:1 credit to acre ratio and gain of shallow water habitat at 1.5:1 ratio results in a net gain of 0.5 credits per acre of shallow water habitat created.

in the Inner Harbor (MEC and Associates 2002). Adult and juvenile fish and fish larvae, invertebrates, algae, macroalgae, and phytoplankton are typically more diverse and more abundant in the Outer Harbor due to these factors, although studies conducted in 2008 showed no difference in pelagic fish diversity between the Inner and Outer Harbor (Allan Hancock Foundation 1980 as cited in USACE and LAHD 2008a; MEC and Associates 2002; MEC 1988 as cited in USACE and LAHD 2008a; SAIC 2010).

The habitat quality for benthic invertebrates was highest in the Outer Harbor (MEC and Associates 2002; SAIC 2010). The benthic and epifaunal (or benthic organisms that live on substrate) invertebrates found in the Outer Harbor were dominated by coastal species (MEC and Associates 2002; SAIC 2010). Tidal elevation was the main factor influencing benthic species assemblages, and location within the harbor was the second factor. Benthic species abundance increased with increasing depth, but total epibenthic abundance was constant throughout the upper and lower intertidal and subtidal zones (MEC and Associates 2002 as cited in USACE and LAHD 2008c).

There was a general decline of algal diversity and cover from the outermost portions of the harbor to the innermost channel environments in 2000 and 2008 (MEC and Associates 2002; USACE and LAHD 1984; SAIC 2010). Between 50.4 and 77.8 acres of giant kelp (*Macrocystis pyrifera*) were estimated to exist within the Port and POLB Harbors in 2008 (SAIC 2010). Giant kelp is most abundant in the spring and naturally decreases in the fall. Kelp forests are considered a Habitat Area of Particular Concern (HAPC) under the *Groundfish Fishery Management Plan* (PFMC 2008). The size of the community varies seasonally, growing quickly in the spring and declining in the summer. In 2000, the majority of giant kelp was present in the Outer Harbor along the breakwaters, on the containment dike for the Cabrillo Shallow Water Habitat, at Reservation Point, along the eastern sides of Pier 400, near Cabrillo Beach, and along the Naval Mole (Figure 7). In 2008, it was also observed in Middle Harbor including: East Channel, Berths 69 to 70 of Main Channel, and the jetty near the entrance to Fish Harbor (Weston 2008) (Figure 7). Red and brown algal species, including *Sargassum* spp., *Taonia* spp., *Gigartina* spp., and *Corallina* spp. are also abundant in the Outer Harbor (USACE and LAHD 1984 as cited in USACE and LAHD 2008a). Macroalgal communities were substantially more diverse in 2008 than in 2000, perhaps due to improvements in the habitat quality in the area.

While the 1988 and 2000 baseline studies found greater community development in riprap-associated species in the Outer Harbor compared to the Inner Harbor, the 2008 baseline study found only increased diversity in the Outer Harbor compared to the Inner Harbor. This diversity was primarily associated with the upper intertidal zone. Other biological parameters such as species abundance and biomass defined in Section 4.1 remained the same between the 2000 and 2008 baseline studies. Trawl-caught fish, typically bottom-dwelling species, were greater in number, biomass, and diversity than in Inner Harbor areas (SAIC 2010). Eelgrass is also present within the Outer Harbor and is discussed in Section 4.4.

The California sea lion (*Zalophus californianus*) has been regularly observed foraging and swimming within the Outer Harbor (USACE and LAHD 2008c). They are most common on the Main Channel adjacent to the commercial fish markets and around sport fishing boats. Although uncommon, other marine mammals have been observed in the Harbor, including harbor seal (*Phoca vitulina*), Pacific bottle-nose dolphin (*Tursiops truncatus*), common dolphin (*Delphinus delphis*), Pacific white sided dolphin (*Lagenorhynchus obliquidens*), Risso's dolphin (*Grampus griseus*), Pacific pilot whale (*Globicephala macrorhynchus*), and gray whale (*Eschrichtius robustus*) (LAHD and Jones & Stokes 2003 in LAHD and USACE Los Angeles District 2009).

Aerial foragers and gulls were the most abundant avian guilds in the Outer Harbor, although waterfowl were also common. The western gull (*Larus occidentalis*) was present year-round while Heermann's gull (*Larus heermanni*) was common from June through January. Western grebes (*Aechmophorus occidentalis*) were also present throughout the year. The zone with the most abundant number of birds was the main shipping channel in 2008 (SAIC 2010).

A number of special status bird species are known to nest within the boundaries of the Outer Harbor. The California least tern (*Sternula antillarum browni*), a state and federal endangered and state fully protected species, nests at Pier 400 and forages within the shallow waters of the Outer Harbor (Keane Biological Consulting 1997 in USACE and LAHD 2008a). Peregrine falcon (*Falco peregrines*) was delisted by the federal government in 1999 and by the state in November 2009. It remains a CDFG fully protected species and a USFWS bird of

conservation concern. Peregrine falcons nest at several locations in both the Inner and Outer Harbor.

Special status species that are not state or federally listed or that have been delisted that nest within the boundaries of the Outer Harbor include:

- Black skimmer (*Rynchops niger*) – state species of special concern
- Black oystercatcher (*Haematopus bachmani*) – USFWS bird of conservation concern
- Loggerhead shrike (*Lanius ludovicianus*) – USFWS bird of conservation concern and state species of special concern
- Caspian terns (*Hydroprogne caspia*) – nesting colonies are on the CDFG watch list
- Royal terns (*Thalasseus maximus*) – protected under the Migratory Bird Treaty Act
- Elegant terns (*Sterna elegans*) – USFWS bird of conservation concern

Double-crested cormorant (*Phalacrocorax auritus*), whose nesting colonies are on the CDFG watch list, is one of the most abundant species in the Port Complex. While it is not known to nest within the Port harbor, it nests on transmission towers in the adjacent Long Beach Harbor.

Other special status bird species have been observed foraging and roosting, but not nesting, within the boundaries of the Outer Harbor. The western snowy plover (*Charadrius alexandrinus nivosus*), a federal threatened species, USFWS bird of conservation concern, and state species of special concern, is a transient migratory visitor, and a few individuals have been observed on Pier 400 in recent years (Keane Biological Consulting 2005a, 2005b). California brown pelican (*Pelecanus occidentalis californicus*) was delisted by the state in June 2009 and by the federal government in November 2009. It is a CDFG fully protected species, and is present year-round throughout the Port Complex.

Other special status species that forage or roost within the boundaries of the Outer Harbor include:

- Burrowing owl (*Athene cunicularia*) – a state species of special concern and USFWS bird of conservation concern
- Black skimmer (*Rynchops niger*) – USFWS bird of conservation concern and state

species of special concern for nesting areas only

- Long-billed curlew (*Numenius americanus*) – USFWS bird of conservation concern and whose nesting colonies are on the CDFG watch list
- Merlin (*Falco columbarius*) – wintering areas are on the CDFG watch list
- Osprey (*Pandion haliaetus*) – a species on the CDFG watch list

The common loon (*Gavia immer*), a CDFG species of special concern for nesting sites only, and brant (*Branta bernicla*), a state species of special concern in its wintering and staging areas, have been observed in Long Beach Harbor. Neither of these species have been observed within the Los Angeles Harbor but are mentioned because they have been observed on land immediately adjacent to it. Table 1 lists the locations of special status species observed within the Los Angeles Harbor in more detail.

3.4 Eelgrass Habitat

Eelgrass is present predominantly at three locations within the Port: Inner Cabrillo Beach and Salt Marsh, Pier 300, and at the southern point of Mormon Island (MEC and Associates 2002 as cited in Weston 2008; Weston 2008) (Figure 7). Small patches of eelgrass have also been found at Cabrillo Way Marina, and may occur in other parts of the harbor. The Pier 300 location includes shallow water habitat west of Pier 300 and in Seaplane Lagoon. The Cabrillo Beach location includes the areas offshore of Cabrillo Beach and Cabrillo Beach Youth Facility. Approximately 5.72 acres of eelgrass were present in the Port during the time of the latest survey in 2008 (POLA 2008).

Eelgrass is considered a special aquatic site under Section 404(b)(1) of the Clean Water Act. Special aquatic sites are areas determined to have special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values (40 CFR 230). Under the 404(b)(1) guidelines, special aquatic sites are afforded greater protection than other waters of the United States because of their significant contribution to the overall environment. Mitigation guidelines for eelgrass in southern California are outlined in the SCEMP, a joint document issued by NMFS, USFWS, and the CDFG (NMFS 1991). Should the SCEMP be superseded by the recently proposed California Eelgrass

Mitigation Policy, the Bank Enabling Instrument (BEI) would be revised to incorporate the new policy, if appropriate.

3.5 Wetland Habitat

3.5.1 Proposed and Existing Wetland Habitat

The Port supports two types of wetlands: salt marsh and freshwater marsh. Salt marsh is present near the Anchorage Road Sediment Storage Site and at the Cabrillo Salt Marsh (Figure 7). The Cabrillo Salt Marsh was restored as mitigation for impacts to other waters of the United States at Berths 206 and 232 as well as for the upcoming San Pedro Waterfront project. There is potential for additional wetland restoration in this area, though the Port has no current plans and may never elect to pursue restoration in this area for mitigation purposes.

The only freshwater marsh at the Port is located along and at the base of the slope at 22nd Street and Crescent Avenue (Figure 7). It is adjacent to the former Crescent Avenue tank farm site. In 2007, the USACE determined that this wetland was isolated and, therefore, not considered jurisdictional. These freshwater wetlands will not be included in the proposed wetland habitat category and are not mentioned further in this document.

3.5.2 Salt Marsh

Salt marsh habitat is present inland of Anchorage Road near the northern limits of the Inner Harbor. The 0.67-acre salt marsh occurring near Anchorage Road is a small inland pond with tidal connectivity to the San Pedro Bay maintained through a small culvert, with limited tidal exchange. The pond is ringed by salt marsh, and both of these areas are surrounded by steep earthen banks. The salt marsh is somewhat degraded and contains upland species as well as wetland species. Plant species present include sea-blite (*Suaeda esteroa*), mulefat (*Baccharis salicifolia*), coyote brush (*Baccharis pilularis*), glasswort (*Salicornia subterminalis*), pickleweed, salt grass (*Distichlis spicata*), sea lavender (*Limonium californicum*), and telegraph weed (*Heterotheca grandiflora*) (Weston Solutions 2008). This area has not yet received a jurisdictional determination from the USACE.

The 4.06-acre Cabrillo Salt Marsh is a tidally influenced marsh that was created in the mid-1980s as mitigation for fills at Berths 206 and 232. Pickleweed (*Salicornia virginica*) and saltwort (*Batis maritima*) are present in the upper intertidal areas. Upland habitat adjacent to the marsh consist of native vegetation such as lemonadeberry (*Rhus integrifolia*) and California sagebrush (*Artemisia californica*) as well as exotic vegetation such as date palms (*Phoenix dactylifera*), fan palms (*Washingtonia filifera*), and acacia (*Acacia* sp.) (Weston Solutions 2008).

3.5.3 Potential Restoration Areas

Although limited wetlands exist within Port property, there are currently no plans to pursue restoration or enhancement of these areas for mitigation purposes. For purposes of generating mitigation credits through wetland restoration and enhancement, the Port would pursue off-site opportunities within the proposed umbrella mitigation banking agreement within the intertidal and subtidal marine waters within the Southern California Bight region, which extends from Point Conception in Santa Barbara County to the U.S. Mexico border, inclusive of the Inner and Outer Harbor. Site-specific wetland restoration and enhancement plans would be developed in coordination with the IRT pursuant to the terms of the BEI.

3.6 Proposed Artificial Reef Habitat

The objective of a proposed artificial reef is to enhance the bottom topography, create marine habitat, and provide an alternative disposal option for clean construction debris. In 2000, rocks were used to create an artificial reef in the harbor as on-site, in-kind mitigation for impacts to a small diving reef in the harbor as compensatory mitigation for the Pier 400 Offshore Channel project. In addition, a California Environmental Quality Act (CEQA) mitigated negative declaration was written by the Port for an artificial reef project in 2003 (LAHD 2003; Appendix C). This project was never implemented.

The proposed reef, located within Port property, or potential off-site locations that are selected as mitigation for Port projects, would be constructed of suitable materials to create the desired structure, potentially including rock, concrete, or other foundational materials. Development activities at the Port and other areas frequently generate excess concrete construction materials or require the disposal of demolished concrete structures such as

wharves and foundations. Historically, these materials have been crushed and used as building materials, disposed of at landfills, or disposed of at permitted underwater artificial reef sites. All materials used in the creation of an artificial reef would be free from contaminants.

The current version of the NOAA National Artificial Reef Plan (NOAA 2007) provides guidance regarding the many facets of artificial reef development and use, including the use of artificial reefs for mitigation of impacts to subtidal habitats. The original National Artificial Reef Plan was developed in 1985 (NOAA 1985) pursuant to the National Fishing Enhancement Act of 1984 (Public Law 98-623) to be a dynamic working document that would be updated as new information became available. The current version of the plan states that artificial reefs may be appropriate to mitigate for loss of non-reef habitats when fishery resources are affected.

Artificial reef construction is one aspect of the CDFG's Nearshore Sportfish Habitat Enhancement Program for restoring or enhancing sportfish habitat along the southern California coastline. The program's objective is to maintain sportfishing's success as fisheries face cumulative pressure from fishing and shore-based impacts. Coastal sportfishing in California is important in providing food and recreation to a large and growing human population. Many popular sportfish species exist where natural reefs, rocky headlands, and shoals are located. However, most Southern California coastal subtidal areas are characterized by sand, silt, or muddy bottom, with only occasional small rocky patches. Such areas provide little support for reef-associated sportfishes or for the marine life that these fishes require for food and habitat (CDFG 2001). With this in mind, in 1958 the CDFG began a program of artificial reef research and development. The reef design will be determined in conjunction with the IRT.

3.7 Crediting Schemes

Consistent with the existing mitigation banks, Inner and Outer Harbor credits may be used to mitigate for loss of marine habitat within Port boundaries at the following ratios (Figure 6):

- Loss or creation of 1 acre Inner Harbor habitat is equal to 1 Inner Harbor credit

- Loss or creation of 1 acre deep water Outer Harbor habitat is equal to 1 Outer Harbor mitigation credit
- Loss or creation of 1 acre shallow water Outer Harbor habitat is equal to 1.5 Outer Harbor mitigation credits

Inner Harbor credits may not be used for Outer Harbor habitat impacts, including shallow water habitat, whereas Outer Harbor credits may be applied to Inner Harbor losses at a ratio of 0.5 credits per acre of Inner Harbor loss.

Eelgrass habitat loss and creation would be credited according to loss and gain of square meter of eelgrass, according to current policy. If transplant success criteria are met, 20 percent of eelgrass habitat will be credited at the completion of habitat creation. Thereafter, if transplant success criteria continue to be met, an additional 20 percent will be credited annually until 100 percent of the created eelgrass habitat has been credited. Should the required eelgrass transplant fail to meet any of the established criteria, then an STA shall be constructed and planted following the guidelines in the SCEMP. Transplant mitigation completed 3 years in advance of the impact will not incur the additional 20 percent requirement and project impacts can be deducted on a 1:1 basis. Monitoring requirements remain the same for both instances. Use of eelgrass habitat credits will be negotiated with the IRT.

Deposit of jurisdictional wetland credits would be based on a ratio and functional assessment determined in conjunction with the IRT, such as Habitat Equivalency Analysis (HEA) or another acceptable methodology. Wetland credits may be used for loss of wetland habitat or aquatic habitat in both Inner and Outer Harbors.

Deposit and use of artificial reef credits will be based on a ratio and performance standards determined in conjunction with the IRT. Artificial reef creation credits may be used for loss of aquatic habitat in both Inner and Outer Harbors.

Once the proposed umbrella mitigation banking agreement framework is in place, releasing proposed credits will be dependent on establishing a new mitigation site and corresponding BEI. Within the mitigation site, the release of credits will be dependent on specific project

impacts as well as on monitoring to determine the success of the mitigation. Performance standards and monitoring are discussed in Section 5.

3.7.1 *Current and Future Proposed Credits and Debits*

A current list of committed mitigation credits and future proposed projects for the proposed Inner and Outer Harbor mitigation banks are provided in Table 2, to be updated by the Port as needed. Section 4.3 discusses the accounting procedures for the proposed mitigation banking categories in detail.

Table 2
Estimated Inner and Outer Harbor Credits and Debits
for Committed and Upcoming Port Projects

Projects	Outer Harbor Credits/Debits	Inner Harbor Credits/Debits
Total Existing Credits	49	6.2
<i>Committed Mitigation Credits</i>		
<i>Channel Deepening Credits</i>		
Cabrillo Shallow Water Habitat Expansion A	27*	
<i>Channel Deepening Additional Disposal, 2009</i>		
Cabrillo Shallow Water Habitat Expansion B	25**	
Cabrillo Phase II		2.9***
<i>San Pedro Waterfront</i>		1.8
Subtotal	52	10.9
<i>Upcoming Projects</i>		
Al Larson Boat Shop		-0.5
Berth 121-131 (Yang Ming)		1.6
Subtotal		1.1
Total Planned Credits (Existing and Committed)	101	12.0

Notes:

*Constructed but currently under review by NMFS.

**Under construction.

***Constructed but not yet formally added to the existing mitigation bank accounting.

Source: Prickett 2011b

3.8 Sea Level Rise

Sea level rise would be addressed adaptively during design and later monitoring. Individual projects will be designed to comply with the USACE's Civil Works Circular *Incorporating Sea-Level Change Considerations in Civil Works Programs, EC-1165-2-211* or similar guidance (USACE 2010).

4 MITIGATION BANK ESTABLISHMENT AND OPERATION

The mitigation bank will be operated by the Port. The Port has successfully managed an open water mitigation bank since 1984, when the MOU for the Inner Harbor mitigation bank was signed. The Inner Harbor mitigation bank has been successful and biotic communities, including adult and juvenile fish, ichthyoplankton, benthic invertebrates, riprap-associated organisms, kelp and macroalgae, and birds, have been established within 5 years of marine habitat creation (Environmental Law Institute 1994). Birds and pelagic species, such as adult and juvenile fish, are present almost immediately following creation of open water habitat, while the establishment of benthic invertebrates and other marine communities take longer. This submittal adheres to the Prospectus for Mitigation Banks Checklist shown in Appendix D.

4.1 Performance Standards for Determining Credit Availability and Overall Success

A BEI and LTMP will be developed and provided to the resource agencies prior to, or concurrent with, the initiation of the mitigation (eCFR 2010a, 2010b). These will include:

- Bank objectives
- Site selection criteria
- Site protection instruments (e.g., conservation easements)
- Baseline information for both impact and mitigation sites
- Credit determination methodology
- Mitigation work plan
- Maintenance plan
- Ecological performance standards
- Monitoring requirements
- LTMP
- Adaptive management plan
- Financial assurances as required per the regulation

The mitigation work plan will describe the types of resources to be mitigated and the plan for construction (USACE Los Angeles District 2008). The LTMP and maintenance plans will address funding for ongoing activities, such as management and monitoring of the bank;

provisions for security, safety, and public access; management of habitat including removal of invasive species; reporting; and modifications to the bank. The adaptive management plan will establish performance standards and actions to ensure compliance with the performance standards. For purposes of this approach, those documents will be at a programmatic level. Site-specific programs will be developed for individual projects and added to the bank in the future.

4.1.1 Monitoring Procedures and Release of Credits

Baseline monitoring in the Port's harbor is conducted periodically and is currently planned for every 5 years. The Port will seek to integrate monitoring of mitigation sites with the ongoing baseline monitoring where feasible (based on monitoring schedules). Monitoring reports shall be provided to the resource agencies within 60 days after the completion of each required monitoring period. Creation of harbor cuts and fills, creation of shallow water habitat for the purpose of mitigation, creation or replacement of structures such as pilings or riprap slopes, creation or loss of eelgrass, and wharf maintenance are the primary Port activities that either generate or require mitigation credits.

4.1.1.1 Inner Harbor

One monitoring event will be conducted for Inner Harbor mitigation areas 1 year after the mitigation, as agreed upon by the Port and USACE during the project kick-off meeting on November 18, 2010. The monitoring will include surveys of the physical/chemical environment (water quality and sediment grain size), adult and juvenile fish, larval fish (ichthyoplankton), benthic invertebrates, attached organisms on breakwaters and other rocky riprap, kelp and macroalgae, eelgrass, birds, marine mammals, and non-indigenous species. Results will be compared with the recent baseline studies for the Inner Harbor to determine the success of mitigation, including species composition and survival rates. Twenty percent of the Inner Harbor habitat mitigation area will be credited at the completion of habitat creation. Thereafter the remaining 80 percent will be released at the end of the proposed 1-year monitoring period, as long as monitoring indicates success of the site. The BEI would include a general adaptive management plan to identify when adaptive management should be implemented and components of the adaptive management approach. Should the required performance standards not be met, a more detailed adaptive

management plan that complies with new mitigation rule requirements in 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) will be written and submitted to the IRT for approval (eCFR 2010a, 2010b).

4.1.1.2 Outer Harbor

Annual monitoring for up to 5 years will be conducted for Outer Harbor habitat mitigation areas, as agreed upon by the Port and USACE during the Project Kick-off Meeting on November 18, 2010. The actual length of the monitoring period will be determined on a project-by-project basis, in conjunction with the IRT. The length of the monitoring period will be determined by the nature of the project and its impacts.

Monitoring will include surveys of the physical/chemical environment (water quality and sediment grain size), adult and juvenile fish, larval fish (ichthyoplankton), benthic invertebrates, attached organisms on breakwaters and other rocky riprap, kelp and macroalgae, eelgrass, birds, marine mammals, and non-indigenous species. Results will be compared with the most recent baseline studies, as well as the site baseline, to determine the success of mitigation, including species composition and survival rates. Twenty percent of the Outer Harbor habitat mitigation area will be credited at the completion of habitat creation. Thereafter, an additional 20 percent will be credited annually until 100 percent of the created habitat has been credited, as long as monitoring indicates success of the site. The BEI would include a general adaptive management plan to identify when adaptive management should be implemented and components of the adaptive management approach. Should the required performance standards not be met, a more detailed adaptive management plan that complies with new mitigation rule requirements in 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) will be written and submitted to the IRT for approval (eCFR 2010a, 2010b). Once comparisons indicate that the Outer Harbor mitigation areas have achieved expected aquatic resource functions, then all credits will be released, even if the 5-year monitoring period has not ended. Monitoring shall continue for 5 years in any case to ensure long-term site stability.

4.1.1.3 *Eelgrass Mitigation*

Eelgrass mitigation areas will be monitored for 5 years, per the SCEMP guidance. If the SCEMP is superseded by the recent California Eelgrass Mitigation Policy or any future policy, the BEI would be revised to incorporate the new policy, if appropriate. The SCEMP guidance states the following regarding monitoring and success criteria:

Monitoring the success of eelgrass mitigation shall be required for a period of five years for most projects. Monitoring activities shall determine the area of eelgrass and density of plants at the transplant site and shall be conducted at initial planting, 6, 12, 24, 36, 48, and 60 months after completion of the transplant. All monitoring work must be conducted during the active vegetative growth period and shall avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 6-month survey shall be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60-month period may be required in those instances where stability of the proposed transplant site is questionable or where other factors may influence the long-term success of transplant. The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program. A monitoring schedule that indicates when each of the required monitoring events will be completed shall be provided to the resource agencies prior to or concurrent with the initiation of the mitigation. Monitoring reports shall be provided to the resource agencies within 30 days after the completion of each required monitoring period and shall include the summary sheet included at the end of the policy.

Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the adjusted project impact area (i.e., original impact area multiplied by 1.2) and mitigation site(s). Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed. Specific criteria are as follows:

- a. the mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.
- b. the mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.
- c. the mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth and fifth years. (NMFS 1991)

Twenty percent of eelgrass habitat will be credited after the first year if the transplant success criteria are met. Thereafter, if transplant success criteria continue to be met, an additional 20 percent will be credited annually until 100 percent of the created eelgrass habitat has been credited. Should the required eelgrass transplant fail to meet any of the established criteria, then an STA shall be constructed, if necessary, and planted following the guidelines in the SCEMP. Monitoring shall continue for 5 years in any case to ensure long-term site stability and consistency with SCEMP guidance. Use of eelgrass habitat credits will be negotiated with the IRT.

4.1.1.4 Wetland Mitigation

Successful deposit of jurisdictional wetland credits would be based on a ratio and functional assessment determined in conjunction with the IRT, such as HEA or another acceptable methodology. If the performance standards are met, 20 percent of wetland habitat will be credited at the completion of habitat creation. Specific performance standards will be detailed in the BEI. Once comparisons indicate that the wetland mitigation areas have achieved expected resource functions, then all credits will be released, even if the 5-year monitoring period has not ended. The BEI would include a general adaptive management plan to identify when adaptive management should be implemented and components of the adaptive management approach. Should the required performance standards not be met, a more detailed adaptive management plan that complies with new mitigation rule requirements in 33 CFR 332.8(d)(2) and 40 CFR 230.98(d)(2) will be written and submitted to the IRT for approval (eCFR 2010a, 2010b). Monitoring shall continue for 5 years in any

case to ensure long-term site stability. Wetland habitat credits may be used to mitigate for impacts to wetland habitat and for impacts to other subtidal habitats.

In addition to generation of mitigation credits through creation and restoration of wetland habitat, if appropriate, wetland mitigation credits may be generated by enhancing existing wetlands and sensitive habitats through performance of maintenance activities, such as dredging to maintain tidal circulation.

4.1.1.5 Artificial Reef

Successful deposit of artificial reef credits will be based on performance standards determined in conjunction with the IRT. If the performance standards are met, 20 percent of artificial reef habitat will be credited at the completion of habitat creation. Thereafter, if the performance standards continue to be met, an additional 20 percent will be credited annually until 100 percent of the created artificial reef habitat has been credited.

4.1.2 General Rules for the Use and Transfer of Credits

Inner and Outer Harbor credits as well as wetland and artificial reef credits in the proposed umbrella mitigation banking agreement may be used to mitigate for loss of marine habitat within the Inner and Outer Harbor within the Port's boundaries at the ratios described in Section 4.7. Both deep water and shallow water in the Outer Harbor are considered to be of greater habitat value than waters in the Inner Harbor; therefore, Inner Harbor credits may not be used for Outer Harbor impacts. Wetland credits may be used for loss of wetlands and loss of aquatic habitat in the Inner and Outer Harbor. Artificial reef credits may be used for both Inner and Outer Harbor impacts. Eelgrass credits may be used for eelgrass impacts and for loss of other subtidal habitats, in conjunction with the IRT.

4.2 In-perpetuity Protection and Financial Assurances

The proposed umbrella mitigation banking agreement would address the general need for financial assurances to be established for each mitigation bank developed under the agreement. A detailed description of the financial assurances for each bank would be included in the BEI for each individual bank so that the assurances could be tailored to the specific requirements of the individual banks. For the Inner and Outer Harbor mitigation

banks, an MOU will be entered into between the City of Los Angeles, Harbor Department, NOAA Fisheries, USFWS, CDFG, USEPA, and USACE. The purpose of the MOU will be to ensure the long-term protection and financial assurance of the proposed Inner and Outer Harbor mitigation banks within the proposed umbrella mitigation banking agreement. The MOU will be consistent with the Los Angeles City Charter and the State of California Tidelands Grant. This grant, in conjunction with California law, specifies the Los Angeles Board of Harbor Commissioners as the public entity responsible for the possession, management, and control of all navigable waters and all tidelands and submerged lands, whether filled or unfilled, situated below the line of mean high tide northerly and easterly of the United States government breakwater at Los Angeles Harbor and within the limits of the City of Los Angeles; and all harbor and port improvements, works, utilities, facilities and watercraft owned, controlled or operated by the department. The state Tidelands Grant prohibits the permanent transfer of any tidelands or submerged lands, including easements, without an act of the California legislature, and then only under very restrictive conditions. To achieve the Port's goal of no net loss of habitat and ecological functions, the Port will incorporate the no net loss policy into the MOU.

The MOU will contain financial assurances, such as the establishment of a restricted mitigation fund, which would be used to fund the initial costs associated with engineering, permitting, constructing, monitoring, and maintaining the banks. Thereafter, the MOU would further provide for funding to achieve the performance standards defined within the BEI sections of the MOU. This mechanism would establish a restricted mitigation fund with the City of Los Angeles Treasury in compliance with the City's Investment Policy. This approach will allow for periodic updates to the IRT.

4.3 Accounting Procedures

The Port will be responsible for maintaining an accurate and up-to-date mitigation bank ledger for each mitigation site. A ledger for each mitigation site will be provided to the IRT members annually and each time that credits are added or subtracted from a bank.

The Port may debit the marine habitat losses resulting from contemplated port development against the remaining balance of previously created habitat values for the proposed Inner and

Outer Harbor mitigation banks with the agreement of the IRT. Such debits would involve habitat shown to be necessary, water-dependant, and port-related within the Los Angeles Harbor; these impacts would be the minimum impact possible or practicable. Habitat additions or debits would be based on post-construction as-built drawings. For the proposed Inner and Outer Harbor mitigation banks as well as for future mitigation banks, Inner and Outer Harbor, wetland, and artificial reef mitigation credits would apply to areas of impacts to open water calculated at +4.8 MLLW. Use of eelgrass habitat credits will be negotiated with the IRT during the BEI process. The Port may accrue gains in habitat values resulting from Los Angeles Harbor development projects that create eelgrass, wetland, shallow or deep water habitat per Section 5.1.1, Monitoring Procedures and Release of Credits. Such habitat values shall be credited on a project-by-project basis and only upon the approval of the IRT.

Accounting notifications for each proposed mitigation site shall be indicated at the earliest appropriate opportunity by the Port and the IRT in an official and public manner, during completion of the BEI.

With the written consent of the IRT, the Port may allow the use of previously created habitat value as compensation by others proposing a landfill in the Los Angeles Harbor or accrue habitat value from habitat created by others in the proposed Inner and Outer Harbor mitigation banks. Prior approval from the Port is required and the authorized person or entity must be an applicant for a USACE permit or the project must be constructed under the authority of the federal government.

No contemplated Los Angeles Harbor project shall exceed in area the then-remaining balance of previously created habitat value for the proposed Inner and Outer Harbor mitigation banks as determined by Table 2 and modified as habitat is added or debited. Habitat shall be created prior to or concurrent with the proposed development project. The credits established by this umbrella mitigation banking agreement may be used at the Port's discretion in combination with credits from other sources (e.g., the Bolsa Chica mitigation bank) in mitigating Harbor District development projects.

Habitat value that is created and lost pursuant to this agreement is separate and apart from the requirements of the state and federal ESA requirements.

4.4 Federal, State, and Local Permits Required

No federal, state, or local permits are required to create the structure of the proposed umbrella mitigation banking agreement or to develop the proposed Inner and Outer Harbor mitigation BEIs. However, federal, state, and local permits may be required for development of other individual mitigation sites. These projects will undergo individual environmental review and will meet all requirements as determined by state, local, and federal regulations as well as CEQA and NEPA.

5 DOCUMENT PREPARATION PERSONNEL

Kat Prickett is an environmental specialist with 20 years of experience in water quality, environmental toxicology, and marine biology. Since 2003, she has been a Project Manager with the Port in the Water Resources Group of the Environmental Management Division. Among her work at the Port, Kat manages the Port's Clean Marina Program, was instrumental in developing the Water Resources Action Plan, and specializes in biological resources. She began her career in a bioassay lab, determining the effects of municipal wastewater on freshwater and marine organisms. During her years in environmental consulting, the majority of her work focused on environmental risk assessments and natural resource damage assessments of freshwater and wetland habitats.

Dr. Shelly Anghera is a principal scientist with more than 15 years of experience conducting field and laboratory studies related to marine ecotoxicology and sediment quality characterization. Dr. Anghera has focused on providing specialized environmental services for the Port for the past 7 years. Her expertise centers on contaminated sediment management strategies, starting with an understanding of the behavior of contaminants in the environment to relevant environmental policies. Dr. Anghera has extensive experience in field study design, field sampling, sediment characterization, water and sediment testing and analysis, and California's Sediment Quality Objectives. Her projects often focus on the integration of multiple lines of evidence to determine sediment quality for dredged material, beneficial reuse of contaminated sediment, and sediment TMDL implementation planning. Recent projects for the Port include TMDL strategy support, sediment and water quality characterization studies in support of the WRAP, and a port-wide Sediment Management Plan.

Dr. Joshua Burnam, MPH, D.Env., is a principal environmental planner with 15 years of environmental planning and permitting experience. He specializes in the preparation of local, state, and federal environmental documentation relating to waterfront redevelopment, navigation, coastal infrastructure, and sediment management. Prior to joining Anchor QEA, Dr. Burnam functioned as a senior regulatory project manager for the USACE Regulatory Program, Los Angeles District regulatory dredging coordinator, chairman of the Dredging Operations Subcommittee of the Los Angeles Contaminated Sediments Task Force, a member

of the USACE/USEPA National Dredge Team, USACE Representative on the California Statewide Liquefied Natural Gas (LNG) Interagency Task Force, and a senior regulatory permit manager in Los Angeles County.

Lara Jarrett, AICP, PMP, MSCRP is a senior managing planner with 17 years of environmental planning and permitting experience. She specializes in the preparation of local, state, and federal environmental documentation and feasibility studies related to water resources projects, including navigation, ecosystem restoration, water supply (including coastal environments), flood management, waterfront redevelopment, remediation, and recreational projects.

Corinna Lu is a senior biologist with more than 12 years of experience in environmental consulting. She has a strong background in permitting and managing biological resource projects. She is skilled in environmental regulations, technical report writing, and biological survey techniques.

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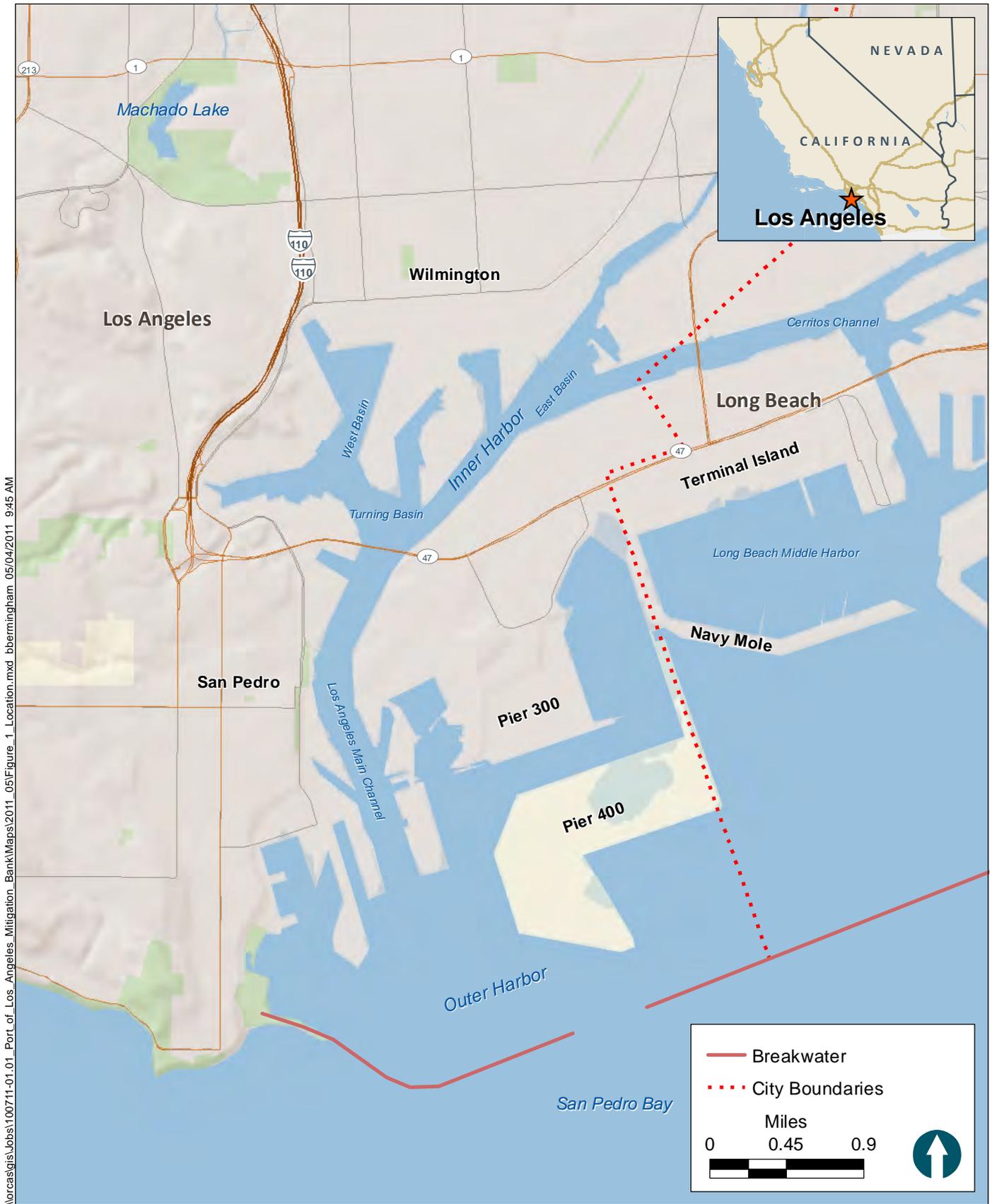
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FIGURES



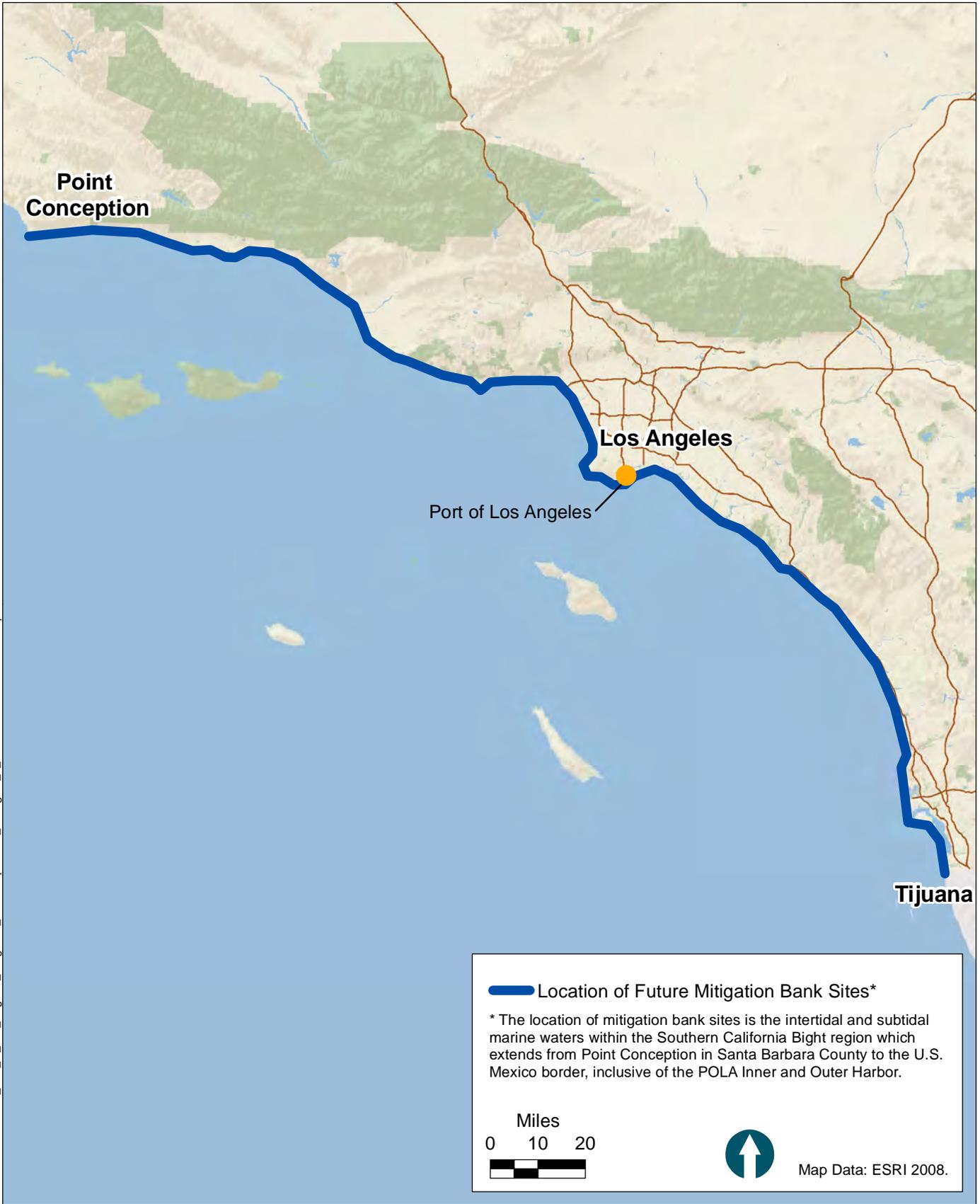
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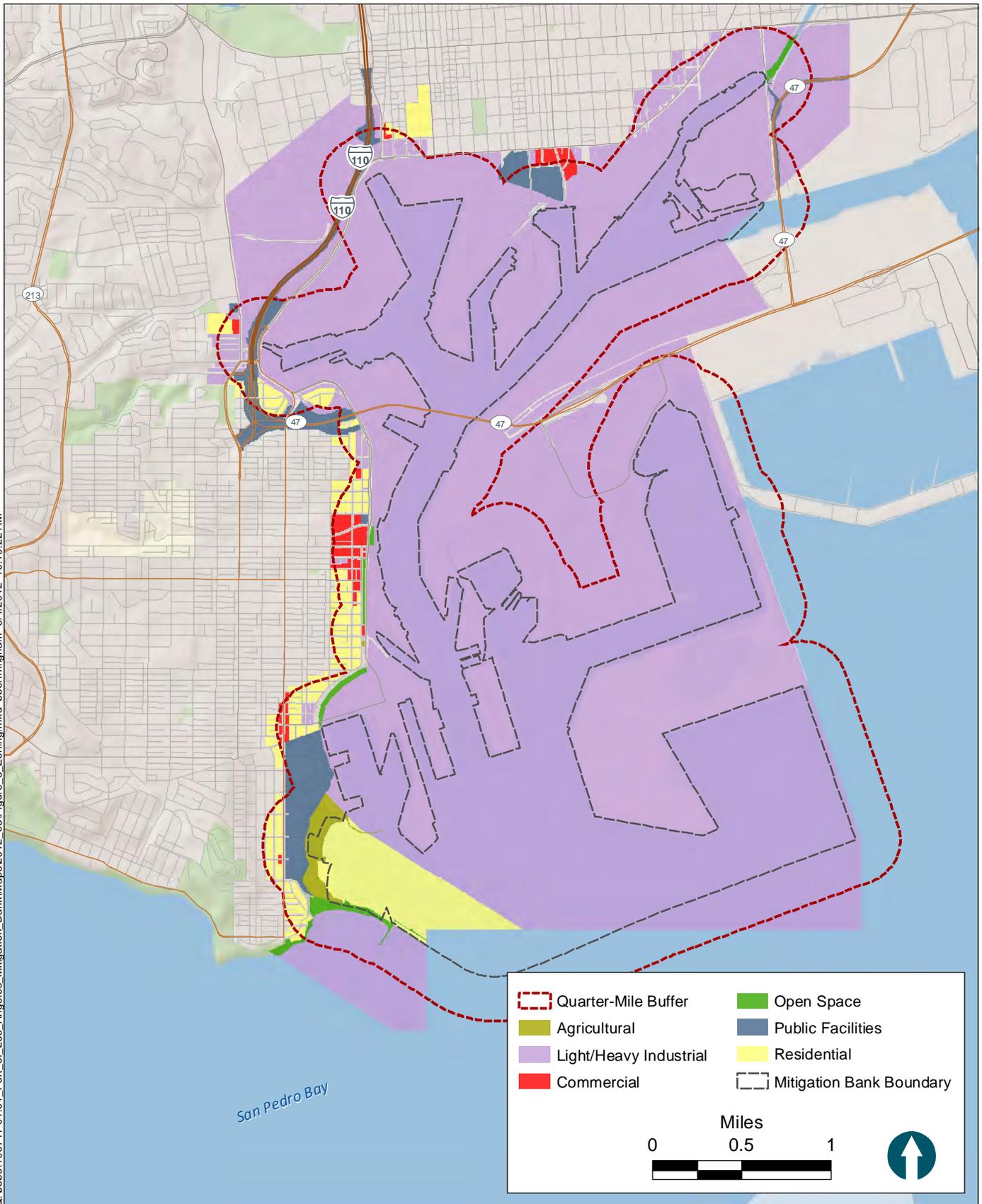


Figure 1
 General Location Map
 Port of Los Angeles Mitigation Bank

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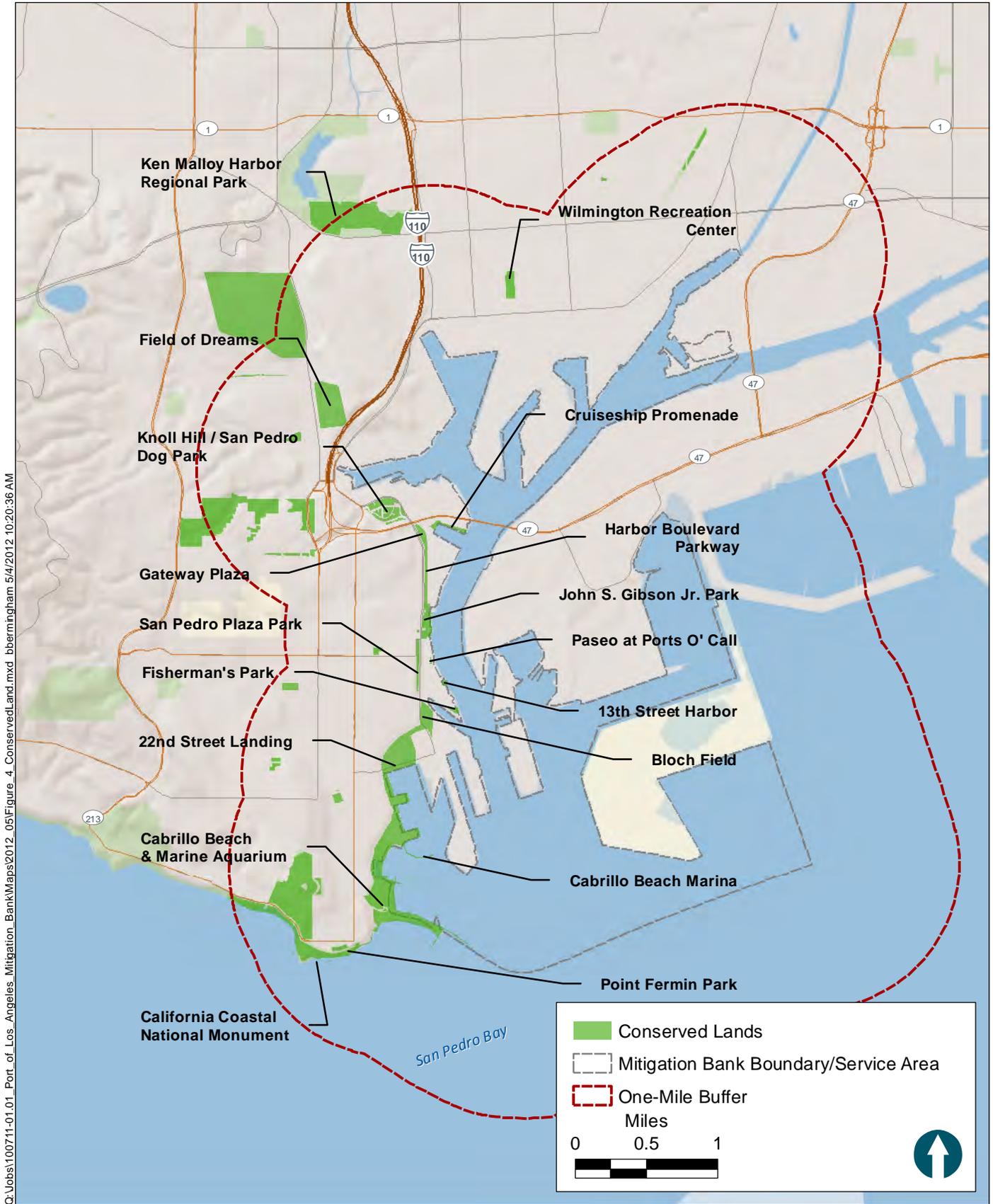


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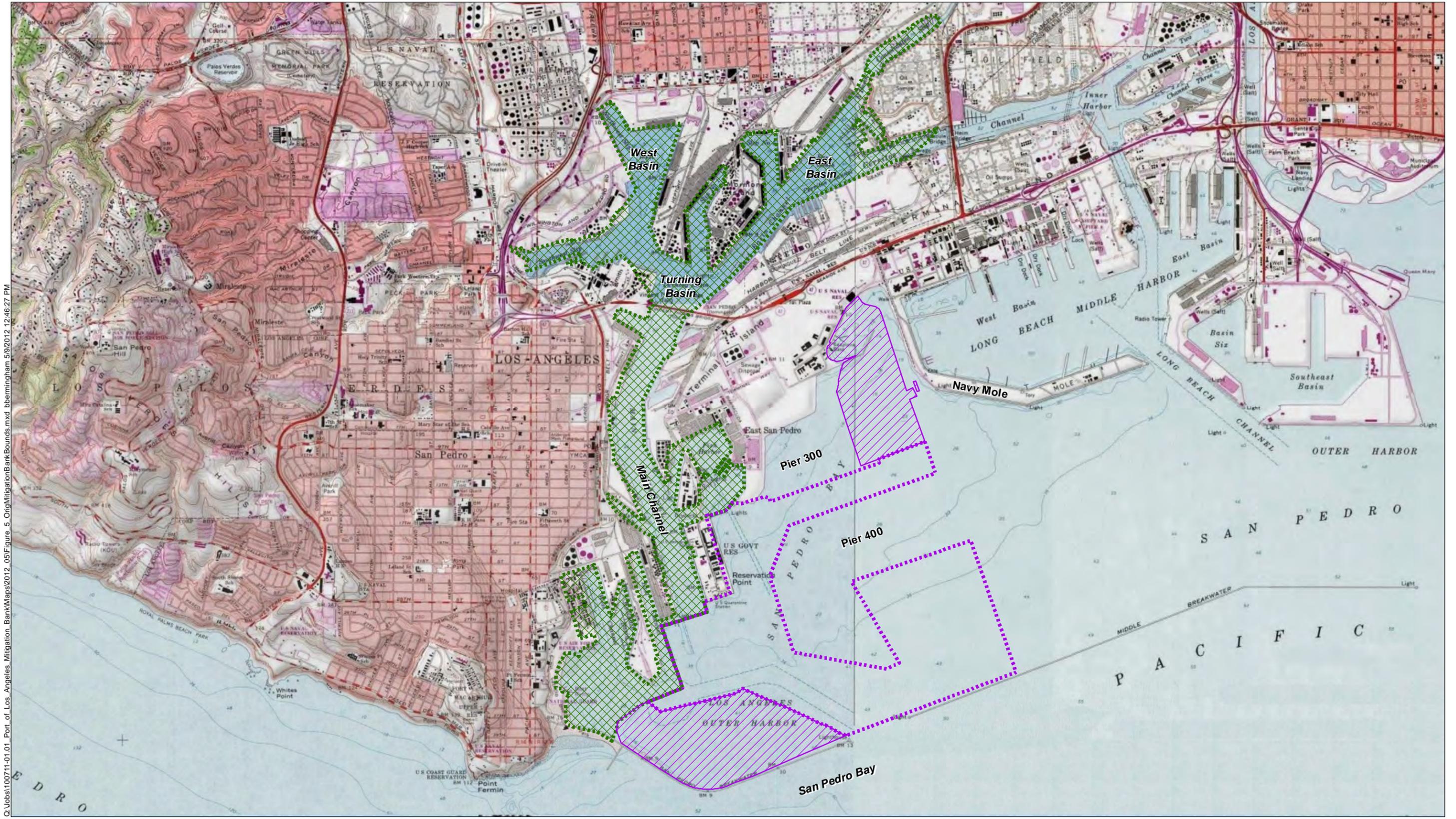
Map Data: ESRI, 2008, Port of LA 2011

Figure 3
Zoning within a Quarter Mile of the Proposed Inner and Outer Harbor Mitigation Banks
Port of Los Angeles Umbrella Mitigation Banking Agreement Prospectus



Map Data: ESRI, 2008, California Protected Areas Database, 2011

Figure 4
 Conserved Lands within One Mile of the Proposed Inner and Outer Harbor Mitigation Banks
 Port of Los Angeles Umbrella Mitigation Banking Agreement Prospectus



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Base Imagery: USGS Topographic Map, Long Beach Quadrangle, ESRI, 2008, Map Data: Port of LA, 2010a



- Inner Harbor Mitigation Bank (1984 Boundaries)
- Outer Harbor Mitigation Bank (1997 Boundaries)
- Outer Harbor Shallow Water

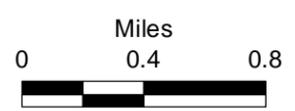
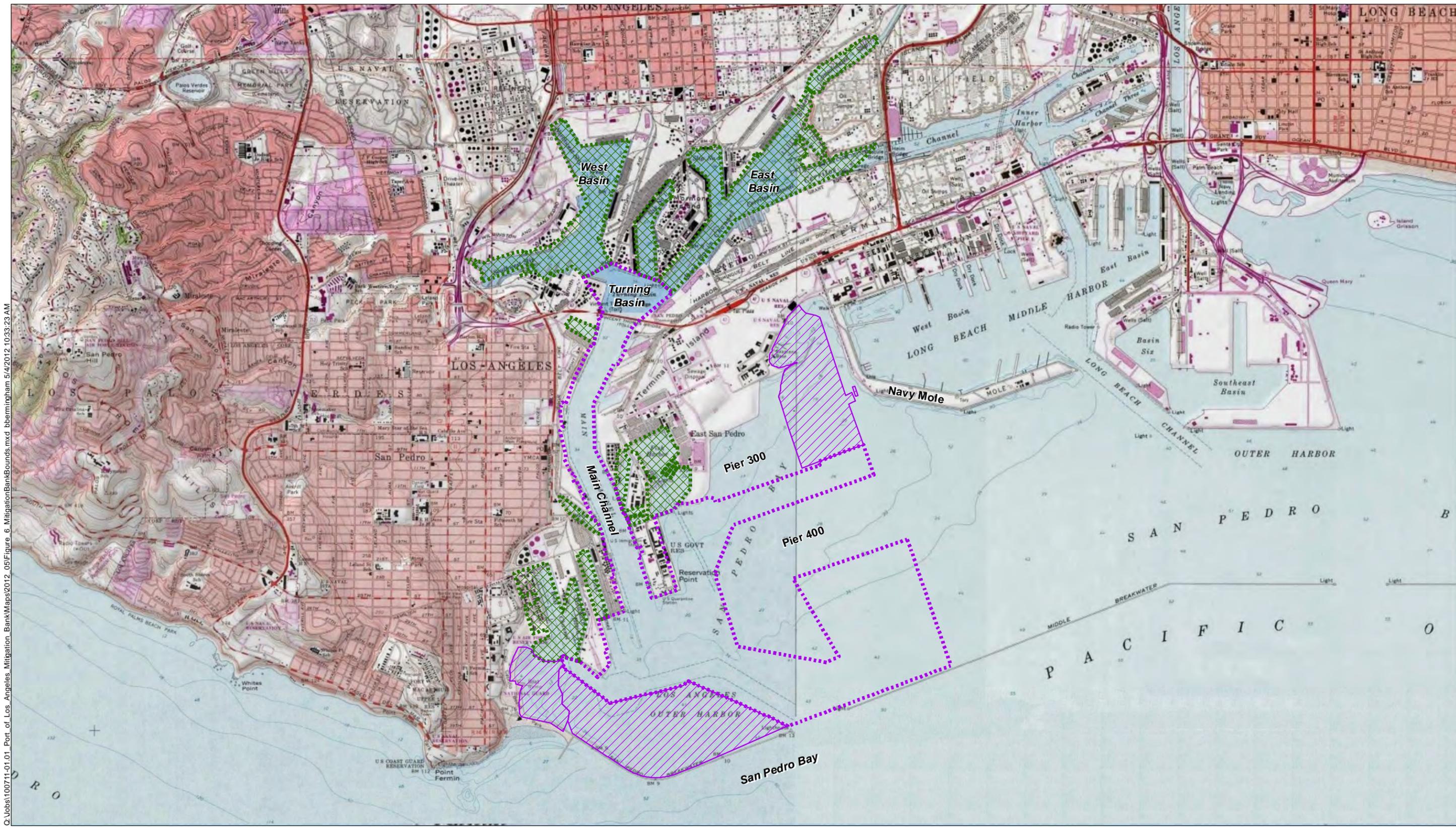


Figure 5
Original Inner and Outer Harbor Mitigation Banks Boundaries
Port of Los Angeles Umbrella Mitigation Banking Agreement Prospectus



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Base Imagery: USGS Topographic Map, Long Beach Quadrangle, ESRI, 2008, Map Data: Port of LA, 2010a



- Inner Harbor Mitigation Bank
- Outer Harbor Mitigation Bank
- Outer Harbor Shallow Water

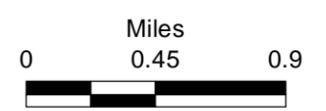
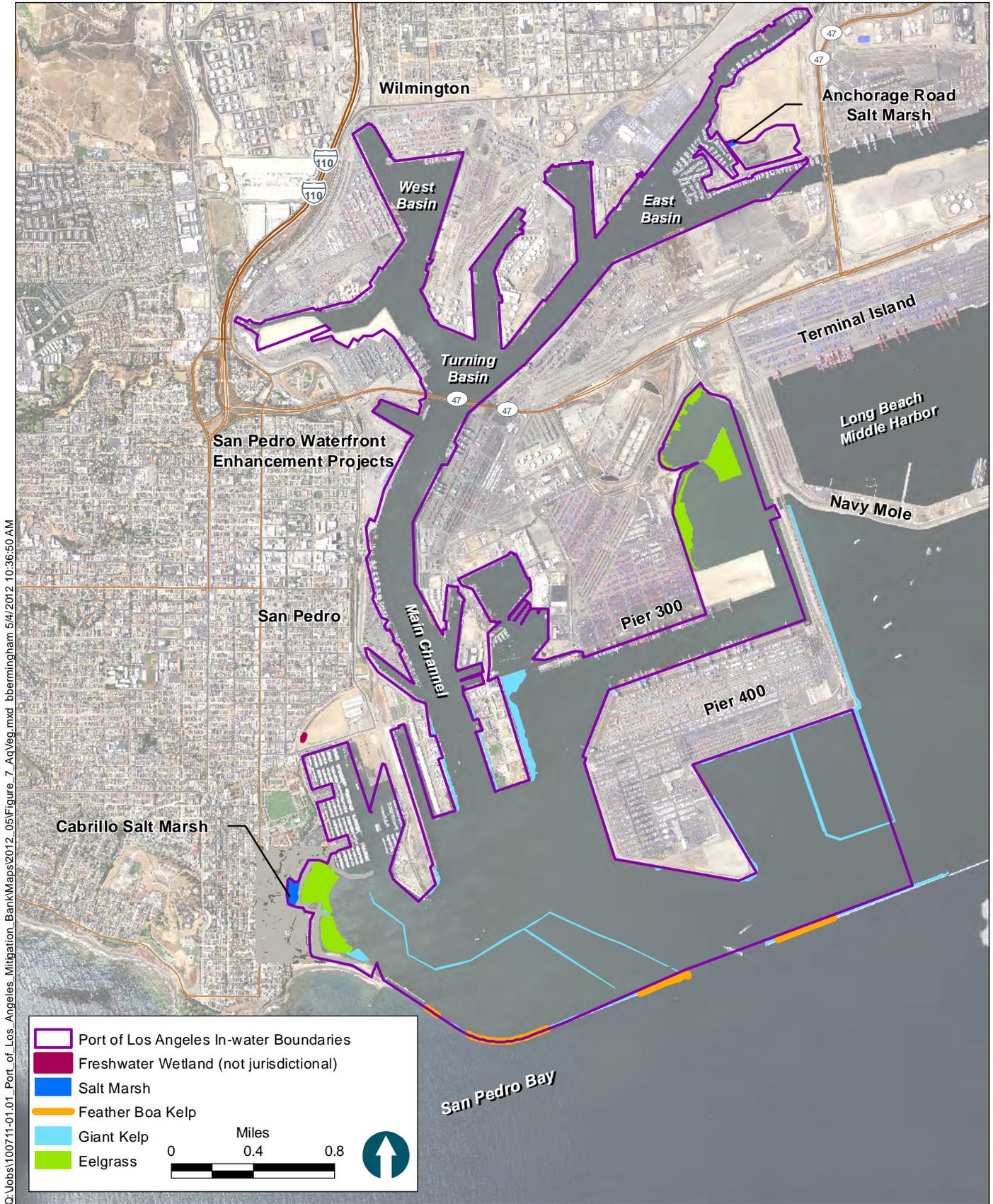


Figure 6
Existing and Proposed Inner and Outer Harbor Mitigation Banks Boundaries
Port of Los Angeles Umbrella Mitigation Banking Agreement Prospectus



Aerial Imagery: NAIP, 2009, Map Data: Port of LA, 2008



Figure 7
Existing Wetlands and Submerged Aquatic Vegetation within the Port
Port of Los Angeles Umbrella Mitigation Banking Agreement Prospectus