3.9

MARINE TRANSPORTATION

3.9.1 Introduction

This section discusses potential marine vessel navigation impacts associated with the proposed Project and its alternatives. Information presented below outlines the environmental setting, regulatory setting, significance criteria, potential marine vessel transportation impacts, and the significance of any impacts identified in the analysis. Public safety-related impacts due to marine vessel accidents are included in Section 3.12, Risk of Upset/Hazardous Materials.

3.9.1.1 Relationship to the 1992 Deep Draft Final EIS/EIR

The 1992 Deep Draft Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR) (USACE and LAHD 1992) evaluated at a project-specific level, and recommended mitigation to the extent feasible, for all significant impacts on marine transportation arising from the navigation and landfill improvements required to create Pier 400. This includes those portions of the current proposed Project that are located on Pier 400. The Deep Draft FEIS/FEIR also evaluated at a general, or programmatic, level the foreseeable impacts associated with the development and operation of terminal facilities planned for location on Pier 400, including a marine oil terminal and associated infrastructure. The Deep Draft FEIS/FEIR indicated that marine transportation impacts could occur due to 1) loss of anchorage area during dredging and landfill activities; 2) increased vessel congestion; 3) increased vessel traffic during the No Project Alternative; 4) increased efficiencies and safety under the Proposed Action due to reduced trips and less time in the port. The Deep Draft FEIS/FEIR concluded that, with the incorporation of mitigation measures, there would be no unavoidable significant adverse impacts. Two mitigation measures were developed to mitigate the problem of distinguishing navigation lights from background lights on the new landfills (i.e., **Mitigation Measures (MM) 4E-8** and **4E-9**).

The approved Deep Draft FEIS/FEIR incorporated the Mitigation Measures listed below to address the potential impacts. One of these mitigation measures remains applicable to the current proposed Project, while all others have already been implemented or do not apply. Mitigation Measures from the Deep Draft FEIS/FEIR that still apply to the proposed Project are included in the Project MMRP.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are Applicable to the Proposed Project

The following Mitigation Measure was developed in the Deep Draft FEIS/FEIR to reduce impacts to Marine Transportation, and remains applicable to the current proposed Project:

MM 4E-8 stated that the seaward sides of terminal lights should be shielded to reduce their interference with aids to navigation lights.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are No Longer Applicable or are Not Applicable to the Proposed Project

The following Mitigation Measures were developed in the Deep Draft FEIS/FEIR to reduce impacts to Marine Transportation, but are either no longer applicable (have been implemented) or are not applicable to the proposed Project:

MM 4E-1 stated that all vessels were to contact the Marine Exchange and/or U.S. Coast Guard (USCG) for available information when they enter or leave the Precautionary Area during all aspects of dredging and landfilling associated with the Proposed Action.

Reason no longer applicable: *All dredging and landfilling associated with the Deep Draft Program has been completed; therefore MM 4E-1 no longer applies.*

MM 4E-2 stated that the pilot-boarding areas were to be moved further out in the Precautionary Area to allow a pilot to board earlier and control the vessel for a longer time on the approach and departure to and from the entrance during all aspects of dredging and landfilling associated with the Proposed Action.

Reason no longer applicable: *All dredging and landfilling associated with the Deep Draft Program has been completed; therefore MM 4E-1 no longer applies.*

MM 4E-3 stated that the dredges, construction materials, and vessels and barges were to be placed so as to minimize the impact to vessels entering or departing the harbors.

Reason no longer applicable: *All dredging and landfilling associated with the Deep Draft Program has been completed. The proposed Project does not involve vessels or barges and will not impact vessels entering or departing the harbors; therefore MM 4E-3 does not apply.*

MM 4E-4 stated that after construction activities commenced, the portions of Anchorage C still available in the Port of Los Angeles (the Port) were to be combined into two anchorage berths for use by commercial vessels. The duration of each vessel's stay at berth was to be minimized.

Reason not applicable: *The proposed Project does not involve any impacts to Anchorage C or any other anchorage berths; therefore MM 4E-4 does not apply.*

MM 4E-5 stated that pilotage fees for movements to and from anchorage berths inside the breakwater could be increased by the Port Tariff so that vessels would be encouraged

to use outside anchorage berths or to proceed directly to or from a dock (if one is available).

Reason no longer applicable: *This mitigation measure has been implemented and the proposed Project would have no effect on anchorage berths.*

MM 4E-6 stated that arriving vessels were to be encouraged to reduce speed so they may proceed directly to the dock without waiting at anchor.

Reason not applicable: *This was a general mitigation measure that applied to the entire Port. While it does not apply specifically to the proposed Project, it is a port-wide requirement in which the proposed Project would be required to follow.*

MM 4E-7 stated that the Port Pilots were to establish procedures for approaching and leaving the berths located on the landfill. Some of the channels were to be restricted to one-way traffic at any given time (e.g., while a vessel is approaching a berth through a channel, no vessel would be allowed to leave a berth in the same channel).

Reason not applicable: *The proposed Project would not affect vessel traffic or safety within any Port channel because the vessels associated with this Project would move into the Outer Harbor but not the channels; therefore MM 4E-7 is not applicable.*

MM 4E-9 stated that aids to navigation lights should be made more conspicuous and/or their number increased. Synchronized lights and/or flash-tube beacons should be used to improve their visibility. More approach buoys should be added.

Reason no longer applicable: *MM 4E-9 has already been implemented and therefore does not apply to this proposed Project.*

3.9.2 Environmental Setting

For the proposed Project, the environmental setting or baseline conditions reflect current vessel transport conditions associated with port operations.

3.9.2.1 Regional Overview

The Port is one of the largest ports in the world, with over 100 piers and wharfs. The Port has 27 major cargo terminals, including facilities to handle automobiles, containers, dry bulk products and liquid bulk products, such as crude oil. Combined, these terminals handle more than 120 million metric tons of cargo per year. Eight modern container facilities together handle in excess of five million units of cargo containers annually. The Port also handles large volumes of crude oil and other petroleum products and currently has nine liquid bulk facilities designed to handle various types of liquid commodities. Crude oil and petroleum products are two of the top five imports handled by the Port (LAHD 2004b). Liquid goods are transported by various sizes of tanker vessels and barges (LAHD 2004b).

Between 2,500 and 3,000 commercial vessels visit the Port annually. There were 2,715 vessel calls to Port in 2004 (LAHD 2004b). The Port of Long Beach is located near the

Port within San Pedro Bay. Currently the two ports receive a combined total of approximately 5,300 to 5,700 vessel calls annually (Marine Exchange 2007).

Combined operations of the two ports, and the large number of vessels that visit the San Pedro Bay Ports area, result in a risk of vessel accidents, as described in greater detail below.

3.9.2.2 Navigational Hazards

The San Pedro Bay Ports areas are protected by three breakwaters: San Pedro Breakwater, Middle Breakwater, and Long Beach Breakwater. The openings between these breakwaters, known as Angel's Gate and Queens Gate, provide entry to the Port of Los Angeles and the Port of Long Beach, respectively. Pier 400 is located close to Angel's Gate and is the entry for most of the vessels entering the Port.

Port Pilots can easily identify fixed navigational hazards in the ports, including breakwaters protecting the outer harbor, anchorage areas, and various wharfs and land masses which comprise the harbor complex. These hazards are both easily visible by radar and are currently well-lighted. Four bridges cross the navigation channels of both ports. All have restricted vertical clearances, and two have restricted horizontal clearances as well. Also, overhead power lines with restricted vertical clearance cross the Cerritos Channel.

Vessels that are waiting to enter the harbor and moor at a berth can anchor at the anchorages outside and inside the breakwaters. Vessels do not require tug assistance to anchor outside the breakwater. The Port currently does not have any available anchorages inside the breakwater. For safety reasons, Vessel Traffic Service (VTS) will not assign an anchorage in the first row of sites closest to the breakwater to tankers or vessels exceeding 200 m (656 ft) in length.

Vessels are required by law to report failures of navigational equipment, propulsion, steering, or other vital systems to the USCG via the Captain of the Port (COTP) office or the COTP representative at VTS (see description below) as soon as possible. According to VTS, approximately 1 in 100 vessels calling at the Ports of Los Angeles or Long Beach experiences a mechanical failure during their inbound or outbound transit (Harbor Safety Committee, 2007).

Table 3.9-1 summarizes the numbers of commercial vessels that call at the Port annually; approximately 2,700 calls in 2004. The number of vessels passing through the breakwaters (entering and leaving) can be approximated by doubling the number of arrivals listed in the table. The Port of Long Beach experienced approximately 3,380 vessel calls in 2004. As shown in the table below, the number of vessel calls to the Port is fairly static in spite of the substantial increase in cargo volume. This is because larger cargo ships are replacing smaller ones and fewer ships are needed to transport a similar amount of cargo. While there have been substantial increases in the volume of cargo entering the San Pedro Bay Ports, the utilization of larger cargo vessels has resulted in the reduced number of cargo ship arrivals. For example, in 2001 1,584 container ships delivered 5,183,520 twenty-foot equivalent units (TEUs), while only 2,341 container ship calls were required to deliver 7,484,625 TEUs in 2005.

Table 3.9-1. Vessel Calls at the Port of Los Angeles

Year	*Vessel Calls*
2007	2,773
2006	2,923
2005	2,341
2004	2,715
2003	2,660
2002	2,526
2001	2,899
2000	3,060
1999	2,630
1998	2,569
1997	2,786
Source: LAHD 2007; LAHD 2008.	

Although marine safety is thoroughly regulated and managed, various undesirable events can occur during marine navigation. These conditions include "vessel accidents," "near misses," and "close quarters." Brief descriptions of these events are given below. The most significant historical incidents in the San Pedro Bay Ports areas include a potentially disastrous collision between two loaded tankers in 1981, and close quarters such as a 1982 occurrence involving two passenger ships, a freighter, and a tanker.

Vessel Accidents. Marine vessel accidents include vessel "allisions" (between a moving vessel and a stationary object, including another vessel), collisions (between two moving vessels), and vessel groundings. Table 3.9-2 shows that the number of vessel allisions, collisions, and groundings (ACGs) in the San Pedro Bay Ports has remained fairly constant over the seven years between 1996 and 2003. Between 1992 and 1998 there were, on average, 4 ACG incidents per year in the San Pedro Bay Ports (U.S. Naval Academy 1999). While there is no reliable data on the level of recreational boating incidents in the ports over this time period, the level of commercial traffic transits has remained fairly constant (± 2 percent). During this time, there has also been a large amount of construction and channel deepening within the ports. Each of these accidents was subject to USCG marine casualty investigation, and the subsequent actions taken were targeted at preventing future occurrences.

Ships (including tankers) are typically involved in about 11 percent of all marine incidents or only 7.7 percent of ACG incidents (U.S. Naval Academy 1999). (In addition to ACG incidents, "all incidents" also include events such as electrical power loss, flooding, personnel injury, pollution, and abandonment.) The largest number of accidents involved tug boats and barges. Table 3.9-3 lists accident rates reported by different studies.

Approximately 2 percent of all incidents involving tankers result in an oil spill (Etkin 2001). According to the USCG vessels accidents database, the San Pedro Bay Ports Harbor area has one of the lowest accident rates among all U.S. ports, with the ACGs frequency of 4.6×10^{-4} per transit (0.046 percent chance per transit), as compared to the average of 2.5×10^{-3} per transit (0.25 percent chance per transit) for all U.S. ports.

Table 3.9-2. Allisions, Collisions, and Groundings – San Pedro Bay Ports (1996-2005)

Year	*ACG Incidents*				*Total*
	ALLISIONS	COLLISIONS	GROUNDINGS	FIRES	
1996	2	4	1	0	7
1997	1	3	2	0	6
1998	1	2	3	0	6
1999	3	4	2	0	9
2000	3	2	1	0	6
2001	4	1	0	0	5
2002	6	5	0	0	11
2003	4	2	2	0	8
2004	2	4	6	0	12
2005	0	1	3	3	7

Sources: Harbor Safety Committee 2007; U.S. Naval Academy 1999.

Note: These commercial vessel accidents meet a reportable level defined in 46 CFR 4.05, but do not include commercial fishing vessel or recreational boating incidents.

Table 3.9-3. Vessel Accident Rates

Study/ Source	*Years, Range*	*Ships/Conditions Involved*	*Type of Accident*	*Probability per transit (percent)*
MIT	1981-95	All ships	All accidents	0.065–0.11
USCG	1992-98	All US ports, deep draft only	ACGs	0.20
USCG	1992-98	Ships only	At sea collisions	0.013
USCG	1992-98	Ships only	At sea groundings	0.010
USCG	1992-98	Ships only	At sea allisions	0.0082
FEMA	1980-1988	In harbors/bays	Collisions and groundings	0.10
FEMA	1980-1988	In harbors/bays	Collisions while moored	0.02
San Pedro Bay Ports	1997-2005	In San Pedro Bay Ports	Total All ACGs	0.046

Sources: MIT 1998; U.S. Naval Academy 1999; FEMA 1989; Harbor Safety Committee 2007.

Note: These commercial vessel accidents meet a reportable level defined in 46 CFR 4.05, but do not include commercial fishing vessel or recreational boating casualties.

Near Misses. The San Pedro Bay Ports Harbor Safety Committee defines "near miss" as:

> *A reportable 'Near Miss' is an incident in which a pilot, master or other person in charge of navigating a vessel, successfully takes action of a 'non-routine nature' to avoid a collision with another vessel, structure, or aid to navigation, or grounding of the vessel, or damage to the environment.*

The most practical and readily available near miss data can be obtained from VTS reports, which are available from the Los Angeles Harbor Department (LAHD). Near miss information is reported as a Close Quarters event as described below.

Close Quarters. To avoid commercial vessels passing too close together, the VTS documents, reports, and takes action on "close quarters" situations. VTS close quarters situations are described as vessels passing an object or another vessel closer than 0.25 nautical miles (nm) or 500 yards. These incidents usually occur within the traffic Precautionary Area. No reliable data are available for close quarter incidents outside the VTS area. Normal actions taken in response to close quarters situations include: initiating informal USCG investigation; sending Letters of Concern to owners and/or operators; having the involved vessel Master(s) visit VTS and review the incident; and USCG enforcement boardings. A six-year history of the number of close quarters situations is presented in Table 3.9-4. Given the relatively steady amount of commercial transits over the past five years, a decreasing trend in close quarters incidents is discernable (Harbor Safety Committee 2004).

Table 3.9-4. Number of VTS-recorded "Close Quarters" Incidents, 1998-2003

Year	*No. of Close Quarters*
1998	9
1999	5
2000	1
2001	2
2002	6
2003	4
2004	0
2005	0
Source: Harbor Safety Committee 2007.	

3.9.2.3 Vessel Navigation at the Ports of Los Angeles and Long Beach

Several restricted navigation areas and routes have been designated to ensure safe vessel navigation, and are regulated by various agencies and organizations to ensure navigational safety; these are described below.

Traffic Separation Schemes (TSS). A TSS is an internationally recognized vessel routing designation, which separates opposing flows of vessel traffic into lanes, including a zone between lanes where traffic is to be avoided. TSSs have been designated to help direct offshore vessel traffic along portions of the California coastline, such as the Santa Barbara Channel. Vessels are not required to use any designated TSS, but failure to use one, if available, would be a major factor for determining liability in the event of a collision. TSS designations are proposed by the USCG, but must be approved by the International Maritime Organization (IMO), which is part of the United Nations. See Figure 3.9-1, which identifies the TSS nearest the San Pedro Bay Ports.

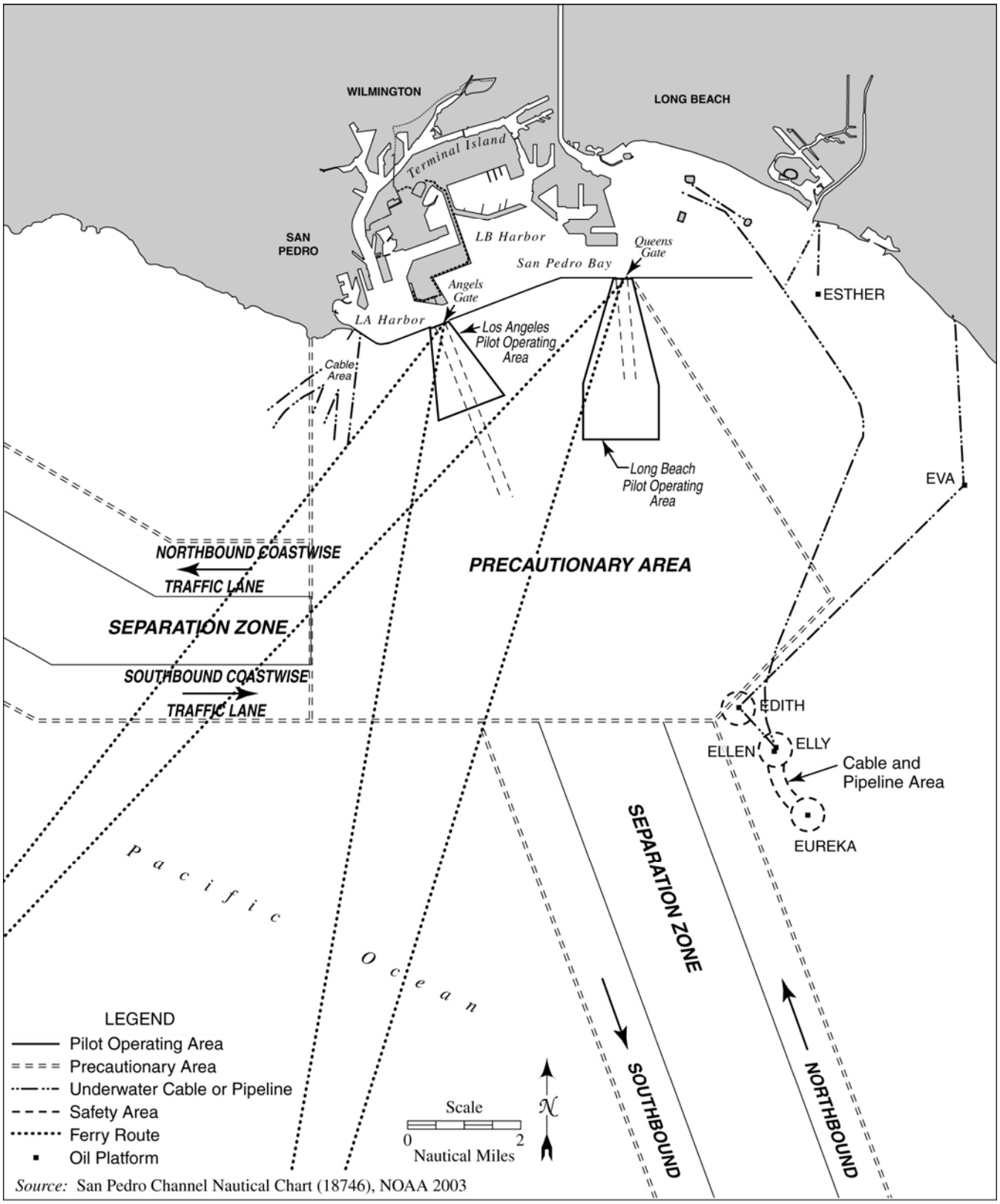

Figure 3.9-1. Vessel Navigation Safety Areas at the San Pedro Bay Ports

Safety Fairways. Offshore waters in high traffic areas are designated as safety fairways, which mean that placement of surface structures, such as oil platforms, is prohibited to ensure safer navigation. The U.S. Army Corps of Engineers (USACE) is prohibited from issuing permits for surface structures (e.g., oil platforms) within safety fairways, which are frequently located between a port and the entry into a TSS.

Precautionary and Regulated Navigation Areas. A Precautionary Area is a routing measure comprising an area within defined limits where ships must navigate with particular caution and is designated in congested areas near the San Pedro Bay Ports harbor entrances to set speed limits or to establish other safety precautions for ships entering or departing the Harbor. A regulated navigation area (RNA) is defined as a water area within a defined boundary, for which federal regulations for vessels navigating within this area have been established under the Code of Federal Regulations (CFR) 33 Part 165, Subsection 165.1109. In the case of the Los Angeles/Long Beach Harbor, RNA boundaries match the designated Precautionary Area. CFR 33, Part 165, Subsection 165.1152, identifies portions of the Precautionary Area as RNA.

The Precautionary Area for San Pedro Bay Ports is defined by a line that extends south from Point Fermin approximately seven nautical miles, then due east approximately seven nautical miles, then northeast for approximately three nautical miles, and then back northwest (see Figure 3.9-1). Ships are required to cruise at speeds of 12 knots or less upon entering the Precautionary Area. A minimum vessel separation of 0.25 nm is also required in the Precautionary Area. The Marine Exchange of Southern California monitors vessel traffic within the Precautionary Area.

3.9.2.4 Factors Affecting Vessel Traffic Safety

This section summarizes environmental conditions that could impact vessel safety in the San Pedro Bay Ports area. More detailed information can be found in the existing conditions description of other sections (e.g., detailed meteorological description can be found in Section 3.2, Air Quality).

Fog. Fog is a well-known weather condition in southern California. Harbor area fog occurs most frequently in April and from September through January, when visibility over the bay is below 0.5 mile (0.8 km) for 7 to 10 days per month. Fog at the ports is mostly a land (radiation) type fog that drifts offshore and worsens in the late night and early morning. Smoke from nearby industrial areas often adds to its thickness and persistence. Along the shore, fog drops visibility to less than 0.5 mile (0.8 km) on three to eight days per month from August through April, and is generally at its worst in December (Harbor Safety Committee 2004).

Winds. Wind conditions vary widely, particularly in fall and winter. Winds can be strongest during the period when the Santa Ana winds (prevailing winds from the northeast occurring from October through March) blow. The Santa Ana winds, though infrequent, may be violent. A Santa Ana condition occurs when a strong high-pressure system resides over the plateau region of Nevada and Utah and generates a northeasterly to easterly flow over southern California. Aside from weather forecasts, one gets little warning of a Santa Ana's onset, although shortly before arriving on the coast, it may appear as an approaching dark-brown dust cloud; this positive indication often provides a 10- to 30-minute warning. Good visibility and unusually low humidity often prevail

for some hours before the Santa Ana arrives. The Santa Ana wind may come at any time of day and can be reinforced by an early morning land breeze or weakened by an afternoon sea breeze (Harbor Safety Committee 2004).

Winter storms produce strong winds over San Pedro Bay, particularly southwesterly through northwesterly winds. Winds of 17 knots or greater occur about 1 to 2 percent of the time from November through May. Southwesterly through westerly winds begin to prevail in the spring and last into early fall (Harbor Safety Committee 2004).

Tides. The mean range of tide is 3.8 ft (1.2 m) for the Port and 3.7 ft (1.1 m) for the Port of Long Beach. The diurnal range is about 5.4 ft (1.6 m) for both harbors and a range of 9 ft (2.7 m) may occur at maximum tide. The time of tide is about the same for both harbors (Harbor Safety Committee 2004).

Currents. The tidal currents follow the axis of the channels and rarely exceed one knot. The San Pedro Bay Ports Harbor area is subject to seiche and surge, with the most persistent and conspicuous oscillation having about a one-hour period. Near Reservation Point, the prominent hourly surge causes velocity variations as great as one knot. These variations often overcome the lesser tidal current, so that the current ebbs and flows at half-hour intervals. The more restricted channel usually causes the surge through the Back Channel to reach a greater velocity at the east end of Terminal Island, rather than west of Reservation Point. In the Back Channel, hourly variation may be 1.5 knots or more. At times the hourly surge, together with shorter, irregular oscillations, causes a very rapid change in water height and current direction/velocity, which may endanger vessels moored at the piers (Harbor Safety Committee 2007).

USACE ship navigation studies indicate that within the Port channels, current magnitudes are essentially a negligible 1/3 knot or less on average. Maximum current velocity in the Angel's Gate area is less than one knot. These current magnitudes, determined during a simulation study, indicate depth-averaged values over three layers. According to Jacobsen Pilot Service, the Long Beach Queen's Gate has deeper water than Angel's Gate and has more open waterways just inside the breakwater. The pilots have never experienced a current greater than one knot in this area (Harbor Safety Committee 2007). Pier 400 is adjacent to Angel's Gate and currents in the area are considered negligible in terms of potential impacts on ship movements.

Physical Oceanographic Real Time System (PORTS). In partnership with the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), California Office of Spill Prevention and Response (OSPR), U.S. Geological Survey (USGS), and some businesses operating in the San Pedro Bay Ports, the Marine Exchange operates PORTS as a service to those making operational decisions based on oceanographic and meteorological conditions in the vicinity of the San Pedro Bay Ports. PORTS is a system of environmental sensors and supporting telemetry equipment that gathers and disseminates accurate "real time" information on tides, visibility, winds, currents, and sea swell to maritime users to assist in the safe and efficient transit of vessels in the port area. Locally, PORTS is designed to provide crucial information in real-time to mariners, oil spill response teams, managers of coastal resources, and others about the San Pedro Bay Ports water levels, currents, salinity, and winds.

The instruments that collect the information are deployed at strategic locations within the Ports to provide data at critical locations, and to allow "now-casting" and forecasting using

a mathematical model of the Harbor's oceanographic processes. Data from the sensors are fed into a central collection point; raw data from the sensors are integrated and synthesized into information and analysis products, including graphical displays of PORTS data.

Water Depths. The USACE maintains the Federal Channels in the San Pedro Bay Ports. Table 3.9-5 lists water depths in the LA Harbor. Some of the channels have been dredged deeper than the required proposed Project depth by the Port of Los Angles, and are maintained by the Port.

Table 3.9-5. Water Depths within Port of Los Angeles

Channel/Basin	*Depth – MLLW ft (m)*
Main Channel	-53 (-16.2)
Turning Basin	-53 (-16.2)
West Basin	-53 (-16.2)
East Basin	-45 (-13.7)
North Channel (Pier 300/400)	-53 (-16.2)
North Turning Basin	-81 (-24.7)
Approach and Entrance Channels	-81 (-24.7)

Source: Harbor Safety Committee 2007.
Note: MLLW: mean lower low water.

Pilotage. Use of a Port Pilot for transit in and out of the San Pedro Bay area and adjacent waterways is compulsory for all vessels of foreign registry, and for those U.S. vessels under enrollment as not having a federally licensed pilot on board (some U.S.-flag vessels have a trained and licensed pilot onboard; those vessels are not required to take on a Port Pilot for navigating through the port). Los Angeles Harbor Pilots (Jacobsen Pilot Service for the Port of Long Beach) provide pilotage to the Ports. For the Port, pilots typically board the vessels at the Angel's Gate entrance, and then pilot the vessels to their destinations. Pilots normally leave the vessels after docking, and re-board the vessels to pilot them back to sea or to other destinations within the Ports.

The Port Tariffs require vessels of greater than 300 gross tons to use a federally-licensed pilot whenever navigating inside the breakwater. In most circumstances, vessels employ the services of a federally-licensed local pilot from the Los Angeles Harbor Pilots (for the Port) or Jacobsen Pilot Service (for the Port of Long Beach). In instances where a local pilot is not used, masters must have a local federal pilot license and receive approval by the USCG COTP prior to entering or departing the Port.

The Port Tariffs also require that a vessel notify the affected pilot station(s) in the rare instances when a pilot is not needed before entering, leaving, shifting, or moving between the Ports. By Port Tariffs rule, pilots stay on outbound vessels until clear of the breakwater entrance. In bad weather, pilots who cannot disembark safely outside the breakwaters may disembark inside, once they assure the vessel's safe transit.

Port Pilots receive special training that is instituted by the pilot companies and overseen by the Harbor Safety Committee (see description in the "Harbor Safety Committee" section below).

Tug Escort/Assist for Tank Vessels. "Tug Escort" refers to the stationing of tugs in proximity of a vessel as it transits into port to provide immediate assistance should a steering or propulsion failure develop. "Tug Assist" refers to the positioning of tugs alongside a vessel and applying force to assist in making turns, reducing speed, providing propulsion, and docking. Tanker ships, as well as most of the ocean-going vessels, are required to have tug escort within the San Pedro Bay Ports harbors (Harbor Safety Committee 2007). Current regulatory language allows for exemption from mandatory escorts for fully redundant tankers with double hulls.

Outbound, laden (carrying as cargo a total volume of oil greater than or equal to 5,000 long tons) tanker vessels are not required to use tugs once they have safely cleared the breakwater. All tanker vessels shifting within the harbor(s) (including dock to anchor, anchor to anchor, and dock to dock) are required to comply with the escort requirements. State regulations for inbound laden tanker vessels require escort tug(s) to meet the tank vessel at the appropriate sea buoy. The tug(s) then accompany the tanker vessel to the berth and assist in berthing. Outbound, laden tank vessels must use escort tugs from departing the berth until clearing the breakwater entrance. Tractor tugs must be tethered during arrival and departure. Conventional tugs may be tethered upon arrival, but must be tethered upon departure.

Escort tugs are usually considered servants of the vessel and carry out the orders of the master or pilot to the best of their ability. Therefore, during emergency situations and where safety of the vessel (tug and/or tanker) is in question, the COTP or the master/pilot may waive normal operating procedures.

3.9.3 Applicable Regulations

Many laws and regulations are in place to regulate marine terminals, vessels calling at marine terminals, and emergency response/contingency planning. Responsibilities for enforcing or executing these laws and regulations fall to various international, federal, state, and local agencies. The various agencies and their responsibilities are summarized below. Regulations associated with safety are summarized in Section 3.12, Risk of Upset/Hazardous Materials.

3.9.3.1 International Maritime Organization (IMO)

The major body governing the movement of goods at sea is the IMO, which does so through a series of international protocols. Individual countries must approve and adopt these protocols before they become effective. The International Convention for the Prevention of Pollution from Ships (MARPOL 1973/1978 and amendments) governs the movement of oil and specifies tanker construction standards and equipment requirements. More detailed information on IMO regulations is summarized in Section 3.12, Risk of Upset/Hazardous Materials.

3.9.3.2 Federal Agencies

A number of federal laws regulate marine terminals and vessels. These laws address, among other things, design and construction standards, operational standards, and spill prevention and cleanup. Regulations to implement these laws are contained primarily in

Titles 33 (Navigation and Navigable Waters), 40 (Protection of Environment), and 46 (Shipping) of the CFR. More detailed information on safety and safe navigation laws are summarized in Section 3.12, Risk of Upset/Hazardous Materials.

U.S. Army Corps of Engineers (USACE)

Since 1789, the Federal government has authorized navigation channel improvement projects; the General Survey Act of 1824 established the USACE's role as the agency responsible for the navigation system. Since then, ports have worked in partnership with the USACE to maintain waterside access to port facilities.

The USACE serves as lead agency for compliance with Section 404 of the Clean Water Act, Section 103 of the Marine Protection, Research, and Sanctuaries Act, and Section 10 of the River and Harbor Act. Section 10 of the River and Harbor Act regulates any work or structures that potentially affect the navigable capacity of the water body.

U.S. Coast Guard (USCG)

USCG, through Title 33 (Navigation and Navigable Waters) and Title 46 (Shipping) of the CFR, is the federal agency responsible for vessel inspection, marine terminal operations safety, coordination of federal responses to marine emergencies, enforcement of marine pollution statutes, marine safety (navigation aids, etc.), and operation of the National Response Center (NRC) for spill response. The USCG is also the lead agency for offshore spill response. More detailed information on safety and safe navigation responsibilities of USCG are summarized in Section 3.12, Risk of Upset/Hazardous Materials.

USCG establishes minimum clearances (between the deepest point on the vessel and the bottom in still water conditions) for the ports; those clearances depend upon transit/anchor location. On November 27, 1996, USCG underkeel clearance regulations for tanker vessels without double hulls became effective (33 CFR 157.455). These regulations require, in part, that the ship's master calculate the tanker's deepest navigational draft and the controlling depth of the intended transit, and discuss these issues with the pilot prior to any transit.

Bulk chemical tank vessels carrying particularly hazardous and/or toxic cargoes (including crude oil and intermediary products) are required to follow the Plan's tug escort standards and any additional USCG or appropriate port requirements for tug escort/assist deemed necessary. Bulk chemical tank vessels are those which carry in bulk any of the commodities listed under 46 CFR, Part 150, Table 1 (e.g., crude oil). Bulk is defined as cargoes pumped and/or dumped into any tank(s) or hold(s) integral to the vessel. This definition includes large independent tanks within or atop vessels, but not IMO tanks.

Current USCG regulations require a federally licensed pilot aboard every tanker vessel mooring and unmooring at offshore marine terminals. At the request of the USCG, the Los Angeles Pilots and Jacobsen Pilots have agreed to ensure continual service of a licensed pilot for vessels moving between the Ports of Los Angeles and Long Beach outside the breakwater.

Department of Defense (DoD)

The DoD, through the USACE, is responsible for reviewing all aspects of a project and/or spill response activities that could affect navigation. The USACE has specialized equipment and personnel for maintaining navigation channels, removing navigation obstructions, and accomplishing structural repairs. The USACE has jurisdiction under Section 10 of the River and Harbor Act of 1899.

Department of Homeland Security

The Department of Homeland Security is discussed in Section 3.12.2.6, Risk of Upset/Hazardous Materials.

3.9.3.3 State Agencies

Information on safety regulations under jurisdiction of California State Lands Commission (CSLC), California Department of Fish and Game (CDFG), and California Coastal Commission (CCC) are summarized in Section 3.12, Risk of Upset/Hazardous Materials.

California Code of Regulations (CCR)

A summary of CCR Title 14, Division 1, Subdivision 4, OSPR, Chapter 4 Vessel Requirements, Subchapter 2 follows. These regulations have specific requirements for tanker vessels, tug escort requirements, crew and supervisors requirements, tanker vessel equipment requirements, and tanker and tug(s) matching criteria, as described by the Tank Vessel Escort Program for the San Pedro Bay Ports Harbor, Sections 851.20 – 851.32.

851.20. Purpose and Scope. This subchapter sets forth tank vessel escort requirements for tank vessels underway in the Los Angeles/Long Beach Harbor area and its approaches. When required, the escort tug(s) take action under the direction of the tank vessel master or pilot, to influence the speed and direction of travel of the tanker vessels in the event of a casualty, or steering or propulsion failure, thereby reducing the possibility of groundings or collisions, as well as the risk of an oil spill.

851.25. Speed Limits for Tanker Vessels.

a. Tanker vessels transiting between the seaward limits of the pilot operating areas and anywhere inside the Federal Breakwater shall restrict their speed as follows:

   1. eight (8) knots for vessels 60,000 displacement tons and less; and
   2. six (6) knots for vessels exceeding 60,000 displacement tons.

3.9.3.4 Other Organizations and Regional Programs

Marine Exchange of Southern California. The Marine Exchange is a non-profit organization affiliated with the L.A. Chamber of Commerce. The organization is supported by subscriptions from Port-related organizations that recognize the need for such an organization and use its services. This voluntary service is designated to enhance navigation safety in the Precautionary Area and harbor area of the Ports. The Marine Exchange monitors vessel traffic within the Precautionary Area and arrival and

departure traffic lanes. The Marine Exchange also operates PORTS (described earlier) as a service to those making operational decisions based on oceanographic and meteorological conditions in the vicinity of the Ports.

Harbor Safety Committee. The San Pedro Bay Ports have a Harbor Safety Committee (Committee) which is responsible for planning the safe navigation and operation of tankers, barges, and other vessels within San Pedro Bay and the approaches thereto. This Committee has been created under the authority of Government Code Section 8670.23(a), which requires the Administrator of the Office of Oil Spill Prevention and Response to create a Harbor Safety Committee for the Los Angeles/Long Beach Harbor area. The Committee issued the original Harbor Safety Plan (HSP) in 1991, and has issued annual updates since. Major issues the Committee addresses include questions regarding the need for escort tugs, required capabilities of escort tugs, and/or need for new or enhanced vessel traffic information systems to monitor and advise vessel traffic.

The Committee developed a regulatory scheme to institutionalize Good Marine Practices and guide those involved in moving tanker vessels, which include the minimum standards that are applicable under favorable circumstances and conditions. The master or pilot shall arrange for additional tug assistance if bad weather, unusual port congestion, or other circumstances so require.

Harbor Safety Plan. The HSP contains specific speed limits and rules for the tanker vessels containing oil (Tug Escort/Assist for Tank Vessels [Chapter XII]):

> *All laden tank vessels (tankers or barges carrying as cargo a total volume of oil greater than or equal to 5,000 long tons of oil) entering the port should ensure proper implementation of the Displacement Ton/Tug Braking Force* [the table that includes the Braking Force values is provided in the HSP, however, due to length, is not repeated here]. *In addition, to meet the requirements of the Force Selection Matrix, tractor tugs shall be tethered, inbound and outbound. Conventional tugs may be tethered or untethered inbound, but shall be tethered outbound. Inbound, laden Oil and Chemical Tank Vessels shall not proceed closer than two nm from the Federal Breakwater entrance unless the prescribed escort tug(s) are in position at the southern boundary of the pilot operating areas. Masters shall also ensure that anchors are ready for letting go prior to entering the pilot operating areas. The tank vessel master/pilot shall hold a "pre-escort conference" that should at a minimum include:*
>
> 1. *contacting the escort tug operator to confirm the number and position of the escort tug(s); and*
> 2. *establishing the radio frequency to be used; and*
> 3. *establishing the destination of the tank vessel; and*
> 4. *discussing any other pertinent information that the master/pilot and escort tug operator deem necessary.*
>
> *These standards reflect favorable circumstances and conditions. Adverse weather, unusual port/traffic congestion or other conditions/circumstances may require additional tugboat assistance* (Harbor Safety Committee 2004).

The HSP provides specific rules for navigation of tankers in reduced visibility conditions, and does not recommend transit for tankers greater than 150,000 dead-weight tons (DWT) if visibility is less than 1 nm, and for all other tankers and petroleum barges if visibility is less than 0.5 nm.

The HSP covers tanker vessels in the San Pedro Bay Ports area carrying all types of petroleum cargoes. Most tanker vessels carrying crude oil are loaded when inbound to either the Port of the Port of Long Beach terminals. Product- or chemical-carrying tank vessels are usually loaded or partially loaded both inbound and outbound. The USCG may require additional tug escort/assist capabilities as the situation warrants.

The HSP establishes vessel speed limits. In general, speeds within the Precautionary Area should not exceed 12 knots, and within the harbor – 6 knots. These speed restrictions do not preclude the master or pilot from adjusting speeds to avoid or mitigate unsafe conditions. Weather, vessel maneuvering characteristics, traffic density, construction/dredging activities, and other possible issues are taken into account.

Vessel Traffic Service. VTS is a shipping service operated by USCG or public/private sector consortiums. These services monitor traffic in both approach and departure lanes, as well as internal movement within harbor areas. These services use radar, radio, and visual inputs to gather real time vessel traffic information and broadcast traffic advisories and summaries to assist mariners. The VTS that services the San Pedro Bay Ports is located at the entrance of the Ports. The system is owned by the Marine Exchange and operated jointly by the Marine Exchange and the USCG under the over-sight of the Office of OSPR and the San Pedro Bay Ports Harbor Safety Committee.

This system provides information on vessel traffic and ship locations so that vessels can avoid ACGs in the approaches to the Los Angeles/Long Beach Harbor. The VTS assists in the safe navigation of vessels approaching the San Pedro Bay Ports in the Precautionary Area. The partnership is a unique and effective approach that has gained acceptance from the maritime community.

3.9.4 Impacts and Mitigation Measures

3.9.4.1 Methodology

The analysis considers the specific type and number of vessels that currently visit the Port and pass by Pier 400, and evaluates the number and characteristics of tankers that would be calling at the new Marine Terminal after implementation of the proposed Project or alternative. Specific design features of the proposed Project Marine Terminal, and the historical accident record for similar terminals at other ports, are evaluated. Information regarding potential hazards during vessel approaches and departure is evaluated based on historical data, interviews with relevant Port personnel, and information available from the Harbor Safety Committee and Port Pilots.

3.9.4.1.1 CEQA Baseline

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the

NOP. These environmental conditions would normally constitute the baseline physical conditions by which the CEQA lead agency determines whether an impact is significant. For purposes of this Draft SEIS/SEIR, the CEQA Baseline for determining the significance of potential impacts under CEQA is June 2004. CEQA Baseline conditions are described in Section 2.6.2.

The CEQA Baseline represents the setting at a fixed point in time, with no project growth over time, and differs from the "No Federal Action/No Project" Alternative (discussed in Section 2.5.2.1) in that the No Federal Action/No Project Alternative addresses what is likely to happen at the site over time, starting from the baseline conditions. The No Federal Action/No Project Alternative allows for growth at the proposed Project site that would occur without any required additional approvals.

3.9.4.1.2 NEPA Baseline

For purposes of this Draft SEIS/SEIR, the evaluation of significance under NEPA is defined by comparing the proposed Project or other alternative to the No Federal Action scenario (i.e., the NEPA Baseline and No Federal Action Alternative are equivalent for this project). Unlike the CEQA Baseline, which is defined by conditions at a point in time, the NEPA Baseline/No Federal Action is not bound by statute to a "flat" or "no growth" scenario; therefore, the USACE may project increases in operations over the life of a project to properly analyze the NEPA Baseline/No Federal Action condition.

The NEPA Baseline condition for determining significance of impacts is defined by examining the full range of construction and operational activities that are likely to occur without a permit from the USACE. As documented in Section 2.6.1, the USACE, the LAHD, and the applicant have concluded that no part of the proposed Project would be built absent a USACE permit. Thus, for the case of this project, the NEPA Baseline is identical to the No Federal Action/No Project Alternative (see Section 2.6.1). Elements of the NEPA Baseline include:

- Paving, lighting, fencing, and construction of an access road at Tank Farm Site 1 to allow temporary storage of chassis-mounted containers on the site by APM;
- Paving, fencing, and lighting at Tank Farm Site 2 to accommodate temporary wheeled container storage by APL or Evergreen; and
- Additional crude oil deliveries at existing crude oil terminals in the San Pedro Bay Ports.

Significance of the proposed Project or alternative is defined by comparing the proposed Project or alternative to the NEPA Baseline (i.e., the increment). The NEPA Baseline conditions are described in Section 2.6.1 and 2.5.2.1.

3.9.4.2 Thresholds of Significance

The following significance criterion is based on the *L.A. CEQA Thresholds Guid*e (City of Los Angeles 2006). The proposed Project or alternative would have a significant impact on vessel transportation if it would:

MT-1: Reduce the existing level of safety for vessels navigating the Precautionary area, Angel's Gate, Main Channel, and/or other areas affected by the proposed Project or alternative.

3.9.4.3 Project Impacts and Mitigation

3.9.4.3.1 Proposed Project

3.9.4.3.1.1 Construction Impacts

Impact MT-1.1: Project construction-related marine traffic could impact marine vessel safety within the Port of Los Angeles.

Construction of the Marine Terminal would require use of marine-based construction equipment (e.g., primarily tugs and barges to support pile driving and installation of structures). Marine vessels would include a derrick barge, workboat/crewboat, heavy-lift derrick barge and work tug. During construction activities these vessels would essentially be stationary at the Berth 408 construction site.

CEQA Impact Determination

Port pilots would be briefed on all Berth 408 construction activities, and by following standard safety procedures while piloting larger vessels through harbor waters adjacent to the construction site would avoid the relatively fixed hazard that the construction activities at Berth 408 would represent. The construction contractor would be required by standard conditions of the USACE permit and by the Port contract to follow standard safety precautions and notification procedures. Accordingly, the short-term presence of construction vessels at the proposed Berth 408 would not reduce the existing level of safety for vessel navigation in the Port. Therefore, construction impacts to vessel traffic would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Impacts under NEPA are identical to the CEQA impact determination. Per conditions of the USACE permit, all construction activities would be well marked and limited to the immediate vicinity of Berth 408. Port pilots would be briefed on all Berth 408 construction activities and could easily avoid this semi-stationary hazard. As standard safety precautions would be utilized by the Port (see sections above) in piloting larger vessels through harbor waters and adjacent to the construction vessels at Berth 408, the short-term presence of construction vessels at the proposed Berth 408 would not reduce the existing level of safety for vessel navigation in the Port. Therefore, construction impacts to vessel traffic would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

3.9.4.3.1.2 Operational Impacts

Impact MT-1.2: Tankers transporting oil to the Project Marine Terminal could impact marine vessel safety within the Port of Los Angeles.

Pier 400 is a rock-dike-retained hydraulic landfill peninsula that has about 590 acres (239 hectares) of manmade land and more than 6 miles (9.7 km) of shoreline. Pier 400 was created as part of the Deep Draft Navigation Improvements Project (Deep Draft Project) in the Port, which was partially intended to optimize navigation channels within the Port. Pier 400 was specifically designed to safely accommodate a marine petroleum terminal and container terminals (USACE and LAHD 1992). The location and design parameters of the Marine Terminal allow for safe maneuvering and passage through the Main Channel of all ships that currently call at the Port. The subsequent deepening of the Main Channel and the turning basins further ensure that the larger ships (e.g., Very Large Crude Carriers [VLCCs]) can safely navigate within the Port (USACE 2000). The proposed Project would not require any dredging as Berth 408 already has sufficient water depth (-81 ft MLLW) to accommodate VLCC vessels (drafts of up to 75 ft (23 m)). The Port Pilots have further confirmed that: (1) tankers proposed to call at Pier 400 could safely navigate to the new Berth 408; and (2) moored tankers at this berth would not prevent safe maneuvering of other vessels into the Port (Morgan 2004).

The proposed Project would increase the total number of tankers calling at the Port by about 129 (in 2010) to 201 (in 2025 through 2040) vessels per year (approximately 12 to 21 per month). This represents an approximately 7.4 percent increase over the 2,715 vessels that currently call at the Port annually (2004 baseline). The proposed Project would also require local barge deliveries of marine gas oil (MGO) for refueling of tankers visiting Berth 408. Barge deliveries would range from six per year in 2010 to 12 per year in 2040. The Port Pilots have indicated that scheduling and safe navigation of these additional tankers through the Port would not introduce any new safety concerns (Morgan 2004).

In 2004, the number of vessel calls at the Port was lower than it was in 1991 – 2,715 vessels per year. Based on today's ship traffic levels, the addition of 11 to 17 vessel calls per month would result in fewer total vessel calls than the Port has already experienced and safely handled. Accordingly, the Project operations would not reduce the existing level of safety for vessels navigating in the areas affected by the Project. As noted in Appendix E, Pacific L.A. Marine Terminal LLC (PLAMT) would adhere to the International Safety Guide for Oil Tankers and Terminals (ISGOTT) and the Oil Companies International Marine Forum (OCIMF) Tanker Mooring Guidelines for tanker mooring and operations at the terminal. While the increased ship size may affect maneuverability, the risk of accident is largely based on the number of vessels present (U.S. Naval Academy 1999); accordingly, the larger size of the vessels would therefore not have significant impacts on safety within the Port.

The available statistical data on accidents that involve ships and tankers (see Table 3.9-3) suggest that Project tankers are likely to have one or more ACG incidents during the life of the Project. At peak capacity of 201 vessel calls per year, the probability of a Project-related ACG would be 6.27×10^{-2}/year, or once every 15.9 years for open ocean transit. Within Port waters at a peak capacity of 201 vessel calls per year, the probability of a Project-related ACG would be 9.25×10^{-2}/year, or once every 10.8 years. However, the potential for this to happen is minimized by the Project's location, which requires minimal transit time from the Angels Gate entry to Pier 400 and is away from the Main Channel where the highest level of ship traffic occurs. In addition, the Project would have an Oil Spill Contingency Plan that would identify and plan as necessary for contingency measures that would minimize damage to water quality and provide for restoration to pre-spill conditions in the event that an accident involving marine vessels does occur (see Section 3.12.4.3).

CEQA Impact Determination

For the above reasons, the vessel transportation impacts due to proposed Project operation would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Potential impacts under NEPA are approached slightly differently than under CEQA since it is assumed that additional vessel deliveries would occur to other San Pedro Bay Port terminals regardless of proposed Project construction. Under this assumption, there would be a baseline of 267 additional vessels calling at the San Pedro Bay Ports in 2040 (compared to 2004 conditions), versus a Project-related maximum of 201 vessels. More crude oil vessel deliveries would occur under the NEPA Baseline since the existing terminals cannot accommodate the larger classes of vessels (no Suezmax or VLCCs), and thus require more crude oil deliveries than would occur under the proposed Project. Vessel transportation impacts due to proposed Project operation under NEPA would be considered less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant.

Impact MT-1.3: Support vessels and waterside berth facilities associated with the Project Marine Terminal could impact marine vessel safety within the Port.

Numerous vessels would be associated with normal terminal operations, including tugboats to assist the tankers and support vessels for activities such as oil spill boom deployment. These vessels could contribute to vessel navigation hazards. In addition, the terminal would include several structures on the waterside of the dock, including the mooring dolphins, the alternative maritime power (AMP) platform, and loading arms. All of these facilities would be constructed within the established berth footprint and would include navigational aids to mark the potential hazard.

CEQA Impact Determination

Port pilots would be briefed on all Berth 408 operational activities and would easily avoid the potential hazards posed by dockside activities. As standard safety precautions would be utilized by the Port (see sections above) in piloting larger vessels through harbor waters and adjacent to the operational support vessels at Berth 408, the short-term presence of support vessels at the proposed Berth 408 would not reduce the existing level of safety for vessel navigation in the Port. Therefore, operational impacts to vessel traffic would be less than significant.

Mitigation Measures

No mitigation is required. However, **MM 4E-8** from the Deep Draft FEIS/FEIR (Shield Terminal Lights) would apply. As discussed in Section 3.9.1.1, this measure was developed to mitigate the problem of distinguishing navigation lights from background lights on Pier 400. Under this mitigation measure, the seaward sides of terminal lights would be shielded to reduce their interference with aids to navigation lights.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Potential impacts under NEPA would be identical to impacts identified in the CEQA analysis and therefore would be less than significant.

Mitigation Measures

No mitigation is required. However, **MM 4E-8** from the Deep Draft FEIS/FEIR (Shield Terminal Lights) would apply. As discussed in Section 3.9.1.1, this measure was developed to mitigate the problem of distinguishing navigation lights from background lights on Pier 400. Under this mitigation measure, the seaward sides of terminal lights would be shielded to reduce their interference with aids to navigation lights.

Residual Impacts

Less than significant impacts are anticipated.

3.9.4.3.2 No Federal Action/No Project Alternative

Under the No Federal Action/No Project Alternative, proposed Project facilities would not be constructed or operated. As described in Section 2.5.2.1, the No Federal

Action/No Project Alternative considers the only remaining allowable and reasonably foreseeable use of the proposed Project site: Use of the site for temporary storage of wheeled containers on the site of Tank Farm 1 and on Tank Farm Site 2. This use would require paving, construction of access roads, and installation of lighting and perimeter fencing.

In addition, for analysis purposes, under the No Federal Action/No Project Alternative a portion of the increasing demand for crude oil imports is assumed to be accommodated at existing liquid bulk terminals in the San Pedro Bay Ports, to the extent of their remaining capacities. Although additional demand, in excess of the capacity of existing marine terminals to receive it, may come in by rail, barge, or other means, rather than speculate about the specific method by which more crude oil or refined products would enter southern California, for analysis purposes, the impact assessment for the No Federal Action/No Project Alternative in this SEIS/SEIR is based on marine deliveries only up to the available capacity of existing crude oil berths. As described in Section 2.5.2.1, the impact assessment for the No Federal Action/No Project Alternative also assumes existing terminals would eventually comply with the California State Lands Commission (CSLC) Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS), that LAHD and the Port of Long Beach would renew the operating leases for existing marine terminals, and that existing terminals would comply with Clean Air Action Plan (CAAP) measures as of the time of lease renewal (i.e., 2008 for Port of Long Beach Berths 84-87, 2015 for LAHD Berths 238-240, and 2023 for Port of Long Beach Berths 76-78).

The NEPA Baseline condition coincides with the No Federal Action/No Project Alternative for this project because the USACE, the LAHD, and the applicant have concluded that, absent a USACE permit, no part of the proposed Project would be built (Section 2.6.1). All elements of the No Federal Action/No Project Alternative are identical to the elements of the NEPA Baseline. Therefore, under a NEPA determination there would be no impact associated with the No Federal Action/No Project Alternative.

3.9.4.3.2.1 Construction Impacts

Impact MT-1.1: No Federal Action/No Project Alternative construction-related marine traffic would not impact marine vessel safety within the Port.

As no construction vessel activity would occur, there would be no impacts to marine vessel safety within the Port due to construction-related marine traffic.

CEQA Impact Determination

No construction would occur within the Port waters, and therefore there would be no impact to marine traffic.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No Federal Action/No Project Alternative is identical to the NEPA Baseline in this project, under NEPA the No Federal Action/No Project Alternative would have no impact.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no residual impact.

3.9.4.3.2.2 Operational Impacts

Impact MT-1.2: Tankers transporting oil to the No Federal Action/No Project Alternative Marine Terminal could impact marine vessel safety within the Port.

In the No Federal Action/No Project Alternative, the total number of additional tankers calling at the San Pedro Bay Ports annually (for quantitative analysis purposes) would be about 229 in 2010 (versus 129 for the proposed Project), and 267 in 2025 (versus 201 for the proposed Project). This represents approximately an 9.8 percent increase over the current number of the 2,715 vessels that call at the Port annually even in the absence of the proposed Project due to increased demand for imported crude oil. The Port Pilots have indicated that scheduling and safe navigation of these additional tankers through the Port would not introduce any new vessel navigation concerns (Morgan 2004).

Impacts would be similar in type but slightly higher than those described for the proposed Project, as the number of vessels entering the San Pedro Bay Ports would be increased to a peak capacity of 267 rather than 201, resulting in an 9.8 percent increase in overall harbor vessel traffic even in the absence of the proposed Project due to increased demand for imported crude oil. The increase would result from a greater number of trips by the smaller Panamax tankers to other bulk liquid marine terminals in the San Pedro Bay Ports than during the baseline year. While there would be no vessel calls at Berth 408, an additional 267 vessel trips at other existing marine terminals would be required to carry the amount of crude oil that would bring the existing terminals to full future capacity. Additional vessel or barge calls may also occur due to demand for crude oil deliveries that exceeds the capacity of existing terminals. However, as noted in the introduction to Section 3.9.4.3.2, these additional potential calls were not analyzed quantitatively. The projected vessel calls analyzed quantitatively under this alternative would still be within previously observed and projected vessel traffic levels; thus, vessel safety impacts due to operation would be less than significant.

In 2004, the number of vessel calls at the Port was lower than it was in 1991 – only 2,715 vessels per year. Based on today's ship traffic levels, the addition of 10 to 20 vessel calls per month would result in fewer total vessel calls than the San Pedro Bay Ports have already experienced and safely handled in 1991. Accordingly, the No Project operations would not reduce the existing level of safety for vessels navigating in the areas affected by the Project.

The available statistical data on accidents that involve ships and tankers (see Table 3.9-3) lead to the conclusion that Project tankers are likely to have one or more ACG incident during the life of the Project. At peak capacity of 267 vessel calls per year, the probability of a No Federal Action/No Project Alternative-related ACG would be 8.33 x 10^{-2}/year, or once every 12 years for open ocean transit. Within Port waters at a peak capacity of 267 vessel calls per year, the probability of a Project-related ACG would be 1.23 x 10^{-1}/year, or once every 8.1 years.

CEQA Impact Determination

For the above reasons, the vessel transportation impacts due to No Federal Action/No Project Alternative operation would be considered less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Because the No Federal Action/No Project Alternative is identical to the NEPA Baseline in this project, under NEPA the No Federal Action/No Project Alternative would have no impact.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no residual impact.

Impact MT-1.3: Support vessels and waterside berth facilities associated with the Marine Terminal in the No Federal Action/No Project Alternative could impact marine vessel safety within the Port.

Under this alternative, there would be no facilities constructed in Port waters at Berth 408. In addition, no new facilities would be constructed at the existing San Pedro Bay Port's bulk liquid marine terminals. However, there would be increased support vessel activity at the existing bulk liquid marine terminals.

CEQA Impact Determination

Port pilots would be briefed on all existing marine terminal operational activities and could easily avoid this semi-stationary hazard. As standard safety precautions would be utilized by the Port (see sections above) in piloting larger vessels through harbor waters and adjacent to the operational support vessels, the short-term presence of support vessels would not reduce the existing level of safety for vessel navigation in the Port. Therefore, operational impacts to vessel traffic would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Because the No Federal Action/No Project Alternative is identical to the NEPA Baseline in this project, under NEPA the No Federal Action/No Project Alternative would have no impact.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no residual impact.

3.9.4.3.3 Reduced Project Alternative

Under the Reduced Project Alternative, as described in Section 2.5.2.2, construction and operation at Berth 408 would be identical to the proposed Project with the exception of the lease cap limiting throughput in certain years. However, as explained in Section 2.5.2.2, the lease cap would not change the amount of crude oil demanded in southern California, and therefore the analysis of the Reduced Project Alternative also includes the impacts of marine delivery of incremental crude oil deliveries to existing liquid bulk terminals in the San Pedro Bay Ports in years where demand exceeds the capacity of the lease-limited Berth 408.

As described in Section 2.5.2.2, the impact assessment for the Reduced Project Alternative also assumes existing terminals would eventually comply with the MOTEMS, that the LAHD and the Port of Long Beach would renew the operating leases for existing marine terminals, and that existing terminals would comply with CAAP measures as of the time of lease renewal (i.e., 2008 for Port of Long Beach Berths 84-87, 2015 for LAHD Berths 238-240, and 2023 for Port of Long Beach Berths 76-78).

3.9.4.3.3.1 Construction Impacts

Impact MT-1.1: Reduced Project Alternative construction-related marine traffic could impact marine vessel safety within the Port.

Construction of the Marine Terminal at Pier 400 would require use of marine-based construction equipment (e.g., primarily tugs and barges to support pile driving and installation of structures. Marine vessels would include a derrick barge, workboat/crewboat, heavy-lift derrick barge and work tug. During construction activities these vessels would essentially be stationary at the Berth 408 construction site.

CEQA Impact Determination

Port pilots would be briefed on all Berth 408 construction activities, and by following standard safety procedures while piloting larger vessels through harbor waters adjacent to the construction site would avoid the relatively fixed hazard that the construction activities at Berth 408 would represent. The construction contractor would be required by standard conditions of the USACE permit and by the Port contract to follow standard safety precautions and notification procedures. Accordingly, the short-term presence of construction vessels at the proposed Berth 408 would not reduce the existing level of safety for vessel navigation in the Port. Therefore, construction impacts to vessel traffic would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Impacts under NEPA are identical to the CEQA impact determination. Per conditions of the USACE permit, all construction activities would be well marked and limited to the immediate vicinity of Berth 408. Port pilots would be briefed on all Berth 408 construction activities and could easily avoid this semi-stationary hazard. As standard safety precautions would be utilized by the Port (see sections above) in piloting larger vessels through harbor waters and adjacent to the construction vessels at Berth 408, the short-term presence of construction vessels at the proposed Berth 408 would not reduce the existing level of safety for vessel navigation in the Port. Therefore, construction impacts to vessel traffic would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

3.9.4.3.3.2 Operational Impacts

Impact MT-1.2: Tankers transporting oil to the Reduced Project Alternative Marine Terminal could impact marine vessel safety within the Port.

The Reduced Project Alternative would increase the total number of additional tankers calling at the San Pedro Bay Ports by about 129 (in 2010) to 372 (in 2040) vessels per year (approximately 11 to 31 per month). (The 372 vessel calls includes 263 at the Port [132 at Berth 408 and 131 at LAHD Berths 238-240] and 109 at the Port of Long Beach [31 at Port of Long Beach Berths 76-78 and 78 at Port of Long Beach Berths 84-87].) The 263 vessel calls at the Port represents approximately a 9.7 percent increase over the

2,715 vessels that call at the Port annually. The Reduced Project Alternative would also require local barge deliveries of MGO for refueling of tankers visiting Berth 408. Barge deliveries would range from six per year in 2010 to eight per year in 2015 through 2040. The Port Pilots have indicated that scheduling and safe navigation of these additional vessels through the Port would not introduce any new concern (Morgan 2004).

Impacts would be similar in type but greater than those described for the proposed Project, as the number of vessels entering the harbor would be increased by a peak capacity of 372 (in the Reduced Project Alternative) rather than 201 (in the proposed Project). The increase results from a greater number of trips by the smaller Panamax and Aframax tankers to other bulk liquid marine terminals in the San Pedro Bay Ports. While the number of vessel calls at Berth 408 would be only 132, versus 201 for the proposed Project, an additional 240 vessel trips at other existing marine terminals would be required to meet projected crude oil demand. However, the total number of projected vessel calls under this alternative would still be within previously observed and planned vessel traffic levels and, therefore, vessel safety impacts due to operation of the Reduced Project Alternative would be less than significant.

In 2004, the number of vessel calls at the Port was lower than it was in 1991 at 2,715 vessels per year. Based on today's ship traffic levels, the addition of 11 to 31 vessel calls per month would result in fewer total vessel calls than the San Pedro Bay Ports has already experienced and safely handled. Accordingly, the Reduced Project operations would not reduce the existing level of safety for vessels navigating in the areas affected by the Project. As noted in Appendix E, the operations of PLAMT at Berth 408 would adhere to the International Safety Guide for Oil Tankers and Terminals (ISGOTT) and the Oil Companies International Marine Forum (OCIMF) Tanker Mooring Guidelines for tanker mooring and operations at the terminal. While the increased ship size may affect maneuverability, the risk of accident is largely based on the number of vessels present; accordingly, the larger size of the vessels would therefore not have significant impacts on safety within the Port.

The available statistical data on accidents that involve ships and tankers (see Table 3.9-3) suggest that Project tankers are likely to have one or more ACG incidents during the life of the Project. At peak capacity of 372 vessel calls per year, the probability of a Project-related ACG would be 1.16×10^{-1}/year, or once every 8.6 years for open ocean transit. Within Port waters at a peak capacity of 372 vessel calls per year, the probability of a Project-related ACG would be 1.71×10^{-1}/year, or once every 5.8 years. However, the potential for this to happen is minimized by the location of Berth 408, which requires minimal transit time from the Angels Gate entry to Pier 400 and is away from the Main Channel where the highest level of ship traffic occurs. In addition, PLAMT would have an Oil Spill Contingency Plan that would identify and plan as necessary for contingency measures that would minimize damage to water quality and provide for restoration to pre-spill conditions in the event that an accident involving marine vessels does occur (see Section 3.12.4.3).

CEQA Impact Determination

For the above reasons, the vessel transportation impacts due to Reduced Project Alternative operation would be greater than for the proposed Project, but still less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

For the above reasons, the vessel transportation impacts due to Reduced Project Alternative operation would be greater than for the proposed Project, but still less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impacts are anticipated.

Impact MT-1.3: Support vessels and waterside berth facilities associated with the Marine Terminal in the Reduced Project Alternative could impact marine vessel safety within the Port.

Numerous vessels would be associated with normal terminal operations, including tugboats to assist the tankers and support vessels for activities such as oil spill boom deployment. These vessels could contribute to vessel navigation hazards. In addition, the terminal would include several structures on the waterside of the dock, including the mooring dolphins, AMP platform, and loading arms. All of these facilities would be constructed within the established berth footprint and would include navigational aids to mark the potential hazard.

CEQA Impact Determination

Port pilots would be briefed on all Berth 408 operational activities and would easily avoid the potential hazards posed by dockside activities. As standard safety precautions would be utilized by the Port (see sections above) in piloting larger vessels through harbor waters and adjacent to the operational support vessels at Berth 408, the short-term presence of support vessels at the proposed Berth 408 would not reduce the existing level of safety for vessel navigation in the Port. Therefore, operational impacts to vessel traffic are anticipated to be less than significant.

Mitigation Measures

No mitigation is required. However, **MM 4E-8** from the Deep Draft FEIS/FEIR (Shield Terminal Lights) would apply. As discussed in Section 3.9.1.1, this measure was developed to mitigate the problem of distinguishing navigation lights from background lights on Pier 400. Under this mitigation measure, the seaward sides of terminal lights would be shielded to reduce their interference with aids to navigation lights.

Residual Impacts

Less than significant impacts are anticipated.

NEPA Impact Determination

Potential impacts under NEPA would be identical to impacts identified in the CEQA analysis, and would therefore be less than significant.

Mitigation Measures

No mitigation is required. However, **MM 4E-8** from the Deep Draft FEIS/FEIR (Shield Terminal Lights) would apply. As discussed in Section 3.9.1.1, this measure was developed to mitigate the problem of distinguishing navigation lights from background lights on Pier 400. Under this mitigation measure, the seaward sides of terminal lights would be shielded to reduce their interference with aids to navigation lights.

Residual Impacts

Less than significant impacts are anticipated.

3.9.4.3.4 Summary of Impact Determinations

The following Table 3.9-6 summarizes the CEQA and NEPA impact determinations of the proposed Project and alternatives related to Marine Transportation, as described in the detailed discussion in Sections 3.9.4.3.1 through 3.9.4.3.3. This table is meant to allow easy comparison between the potential impacts of the proposed Project and alternatives with respect to this resource. Identified potential impacts may be based on Federal, State, or City of Los Angeles significance criteria, Port criteria, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA and NEPA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table. Note that impact descriptions for each of the alternatives are the same as for the proposed Project, unless otherwise noted.

3.9.4.4 Mitigation Monitoring

As significant impacts to vessel navigation safety are not anticipated during proposed Project or alternative construction and operations, no mitigation or mitigation monitoring is required. However, **MM 4E-8** from the 1992 Deep Draft FEIS/FEIR is still applicable to the proposed Project and alternatives.

Impact MT-1.3: Support vessels and waterside berth facilities associated with the Project Marine Terminal could impact marine vessel safety within the Port.	
MM 4E-8: Shield Terminal Lights.	
Mitigation Measure	Seaward sides of terminal lights shall be shielded to reduce their interference with aids to navigation lights.
Timing	Prior to completion of construction.
Methodology	The LAHD should incorporate a terminal light shielding plan into the proposed Project plans.
Responsible Parties	LAHD.

Table 3.9-6. Summary Matrix of Potential Impacts and Mitigation Measures for Marine Transportation Associated with the Proposed Project and Alternatives

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.9 Marine Transportation				
Proposed Project	**MT-1.1:** Project construction-related marine traffic could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	MT-1.2: Tankers transporting oil to the Project Marine Terminal could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	MT-1.3: Support vessels and waterside berth facilities associated with the Project Marine Terminal could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	**MM 4E-8:** Shield Terminal Lights **MM 4E-8**	CEQA: Less than significant impact NEPA: Less than significant impact
No Federal Action/No Project Alternative	**MT-1.1:** No Federal Action/No Project Alternative construction-related marine traffic would not impact marine vessel safety within the Port.	CEQA: No impact NEPA: No Impact	Mitigation not required Mitigation not required	CEQA: No impact NEPA: No impact
	MT-1.2: Tankers transporting oil to the No Federal Action/No Project Alternative Marine Terminal could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: No Impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	MT-1.3: Support vessels and waterside berth facilities associated with the Marine Terminal in the No Federal Action/No Project Alternative could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
Reduced Project Alternative	**MT-1.1:** Reduced Project Alternative construction-related marine traffic could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	MT-1.2: Tankers transporting oil to the Reduced Project Alternative Marine Terminal could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	MT-1.3: Support vessels and waterside berth facilities associated with the Marine Terminal in the Reduced Project Alternative could impact marine vessel safety within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	**MM 4E-8** **MM 4E-8**	CEQA: Less than significant impact NEPA: Less than significant impact

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