APPENDIX J

DRAFT BIOLOGICAL ASSESSMENT

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PACIFIC L.A. MARINE TERMINAL CRUDE OIL TERMINAL PROJECT

~~May~~ November 2008

Prepared for:

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and

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1.0 INTRODUCTION

Three species listed under the federal Endangered Species Act are known to be present, at least seasonally, in the Los Angeles-Long Beach Harbor: California least tern (*Sterna antillarum browni*), California brown pelican (*Pelecanus occidentalis californicus*), and western snowy plover (*Charadrius alexandrinus nivosus*). Several listed species of sea turtle and whale are also present in offshore waters. This Biological Assessment (BA) is prepared in support of the application of the Los Angeles Harbor Department (LAHD, also called the Port of Los Angeles or the Port) to the U.S. Army Corps of Engineers (USACE) for permits to construct a crude oil marine terminal on Face C of Pier 400. The project was originally described in the 1992 Deep Draft Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR) (USACE and LAHD 1992), and a Supplemental EIS and Subsequent EIR (SEIS/SEIR) to that document is being prepared for the proposed Pacific L.A. Marine Terminal LLC (PLAMT) Crude Oil Marine Terminal, Tank Farms, and Pipelines Project (proposed Project). In the interim period, California least tern monitoring has been ongoing on Pier 400 and in nearby areas. This BA describes the proposed Project, presents biological information about the federally-listed species in the area, assesses the potential effects of the proposed Project (construction and operations) on those species, provides conservation measures to be implemented as part of the proposed Project, and recommends effect determinations for each species.

2.0 PROJECT DESCRIPTION

The following sections describe the components of the proposed Project, construction activities involved with installing the proposed Project, and operational characteristics of the proposed Project. In June, 2005 the Corps of Engineers Regulatory Branch, Port of Los Angeles, and Plains All American met with the U.S. Fish and Wildlife Service (USFWS) to discuss proposed Project construction and operational activities relative to the California least tern, which nests on a 15-acre site on the southeast corner of Pier 400. As a result of that meeting, the terminal layout was modified to minimize tanks at the site; locate the tanks as far as possible from the site; lower lighting standards near the site and use directional and shielded lighting; locate the shipping pumps/facilities as far as feasible from the nesting site; and provide noise abatement through construction of a sound barrier wall around the south and east sides of the shipping pumps and relocation of Project air conditioners to the west side of the motor control building. The facilities at Tank Farm 1, as shown in Figure 7, resulted from those discussions.

2.1 PROJECT COMPONENTS

The proposed Project includes construction of a new deepwater liquid bulk marine terminal on Pier 400 (Berth 408 on Face C and Marine terminal on Face D); pipelines necessary to transfer crude oil and partially refined crude oil; and two new tank farm facilities (Tank Farm Site 1 and Tank Farm Site 2) with a total storage capacity of up to 4.0 million barrels (bbl) (Figure 1). Both new tank farms would be located on Terminal Island, one on Pier 400 (Tank Farm Site 1) and the other on Pier 300 (Tank Farm Site 2) at Seaside Avenue/Terminal Way. The following components are associated with one or more elements of the proposed Project and are not repeated in sections describing those elements.

Process Oil Recovery System. A process oil recovery system consisting of a sump, sump pump, associated piping, electrical, instrumentation, and controls is proposed to recover liquid from equipment process drains within the Marine Terminal and at each of the tank farm sites. The oil recovery system would serve the shipping pumps areas, the distribution manifold areas, the pipeline meter areas, and the pipeline scraper launcher/receiver areas at the tank farm sites. Each containment sump would have instruments to detect fluid levels.

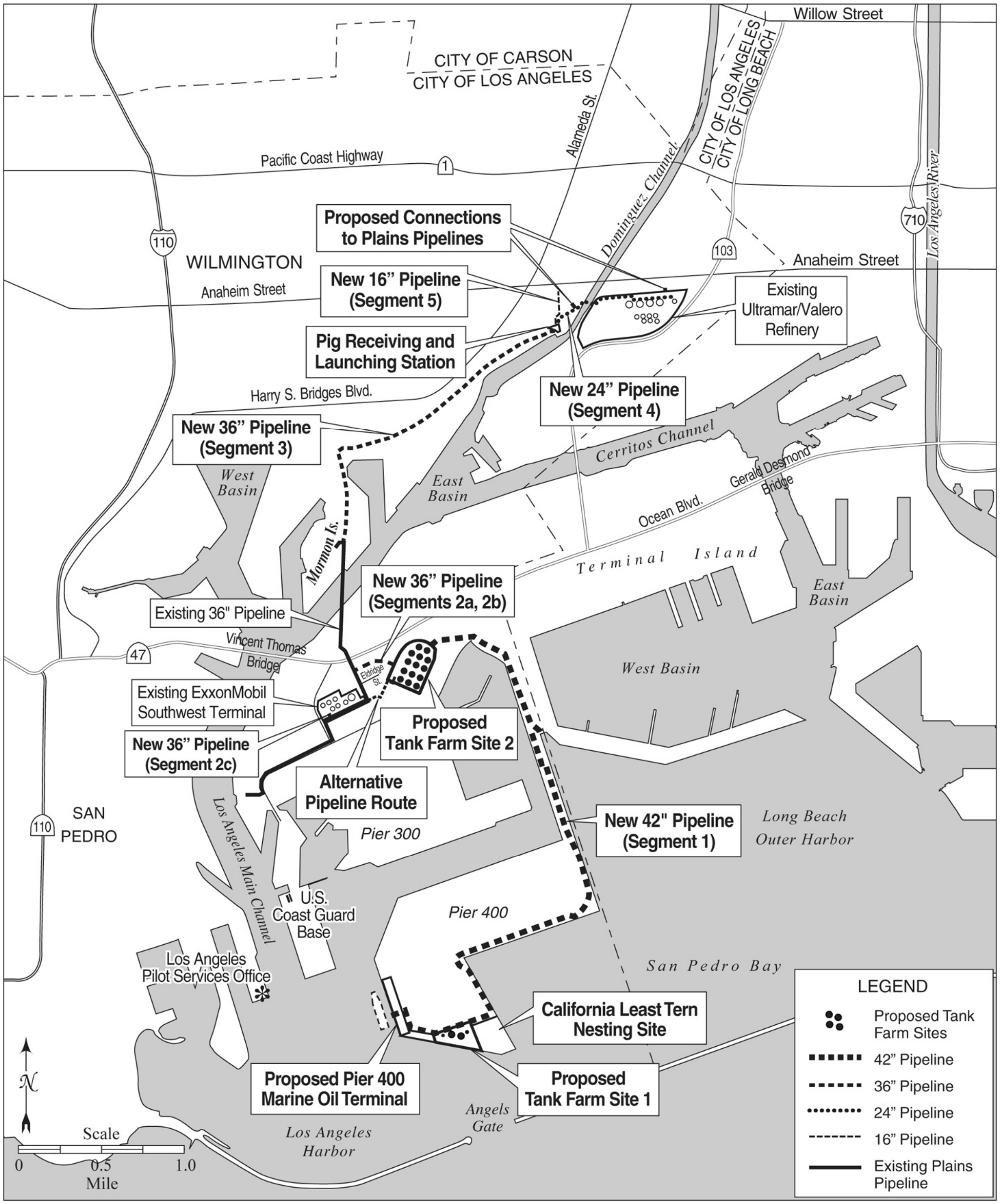

Figure 1. Project Site Location and Regional Vicinity

Electrical Power. The proposed Marine Terminal would also include 34.5 kilovolt (kV) electrical transmission service, provided by the Los Angeles Department of Water and Power (LADWP); electrical switch gear and motor control centers; power and control conduits and cables; terminal and building lighting systems; terminal grounding system; and miscellaneous associated electrical equipment. This equipment would be necessary to power the electric shore side pumps, provide general facility load, and accommodate potential future electrical loads associated with "cold ironing" of tankers, i.e., AMP system (if the AMP system is used as a mitigation measure).

Electrical power at Tank Farm Site 1 would be provided by the same system that would service the Marine Terminal, as previously described. Tank Farm Site 2 would be served by a 34.5-kV electrical transmission service provided by the LADWP. The service would include the extension of the existing 34.5-kV transmission line, a substation, and associated metering.

The proposed electrical facilities at the tank farm sites would include electrical switchgear, step-down transformers, motor control centers, ground systems, conduit, wire, lighting, and associated electrical equipment.

Utilities. A permanent potable water supply would be provided by the LADWP to the Marine Terminal, and. A Sanitary sewer connection would be provided by the Los Angeles Sanitation Department. Potable water and sanitary sewer services would be provided to both tank farm sites by the Port.

Buildings. The following five buildings are proposed for construction within the Project areas:

- *Motor Control Center Building*: The Motor Control Center at Tank Farm Site 1 would be an approximately 4,800-sq ft (446-sq m) single or two-story building, and would contain the electrical switchgear, low voltage step down transformers, and the motor control center that would service all electrical equipment within the tank farms.

- *Office/ Motor Control Buildings*: Tank Farm Site 2 would include a building to house both a motor control center and an office/control center. The building would be approximately 15,000 sq ft (1,394 sq m) and is expected to be two stories. It would be designed to accommodate the terminal operator and control system, including operator interface monitors, communications equipment, security monitoring system, maintenance facilities, and fire protection control system. The building would also include worker change rooms, restrooms, a lunchroom, and worker training and briefing facilities.

- *Marine Terminal Control Building*: The Terminal Control building would be an approximately 6,000-sq ft (557-sq m), single or two-story building that would provide space for the terminal operator and company personnel associated with the operation of the Marine Terminal, the tank farm distribution system, and the terminal security system. The control building would also house the motor control centers for the offloading arms, restroom and locker facilities for the operators and visitors, and monitoring and control equipment for the offloading arms, stripping pumps, valves, fire detection and firefighting systems, and storm water management system.

- *Administration Building*: The Administration Building would be an approximately 15,000-sq ft (1,394-sq m), two-story or three-story building located at Tank Farm Site 2 that would provide offices, meeting spaces, restroom facilities, and a lunchroom ~~at the Marine Terminal~~.

- *Security Building*: The Security Building, located at the Marine Terminal, would be single-story, and have a footprint of approximately 1,500 sq ft (140 sq m). The building would provide space for the terminal security personnel and site monitoring equipment.

Site Access and Security. The proposed Project would operate in accordance with its Facilities Assessment Plan and Facilities Security Plan. Both plans have been approved by the US Coast Guard (USCG), as the primary regulatory authority over the security, design, and operational parameters of the Marine Terminal; the State Fire Marshal, as the state's representative to the U.S. Department of Transportation; and the California State Lands Commission (CSLC), as the State of California's lead agency for oil terminal design and security. The specifics of these plans cannot be released to the public.

The Marine Terminal and tank farm sites would be secure areas that would require traveling though gates that would be controlled and opened remotely by terminal security personnel. The Marine Terminal would also have a guard check-in building that would be staffed 24 hours a day, 365 days a year. The Marine Terminal and tank farms would have perimeter security barriers/fences around the entire property areas (with the exception of the ocean-front working areas).

The control consoles in the Marine Terminal Control Building would be manned 24 hours a day by system controllers. Throughout the Project facilities, pumps, blowers, air compressors, and other electric motor-driven equipment would be equipped with various safety devices such as pressure sensors, electrical current and temperature measuring devices, flow-rate and gravity monitoring devices, and safety relief valves to assure safe operation.

All field devices would integrate with the main control system, located in the control room at the Marine Terminal. The system would, at a minimum, be capable of receiving and sending information between all manufacturer-supplied process control systems, performing real-time polling and integration of safety process control systems, and monitoring and controlling pipeline operations, including pipeline leak detection.

Communications throughout the Project would include a hard-wired system to provide outside communication through the public telephone system and secure internal phone communication. Handheld radios would be the key mode of communications during docking, initiation of offloading, securing offloading, and ship departure. Marine frequency radios would also be required.

2.1.1 Marine Terminal

The proposed Marine Terminal portion of this Project would be located on vacant land on the western side (Face C) and southern side (Face D) of Pier 400. The APM~~P~~ Container Terminal (Maersk Sealand) is east and north of the proposed Face C portion of the Marine Terminal. ~~The proposed Face D portion of the Marine Terminal would be used for location of an Administration Building and parking area (see Figure 1).~~ The liquid bulk Marine Terminal would consist of Berth 408 and a 5.0-acre (2.0-ha) parcel. Table 1 summarizes the facilities that would be constructed as part of the Pier 400 Marine Terminal.

Berth Dock Structures and Mooring System. All structures and Marine Terminal-related facilities would be designed to meet the new standards of the CSLC Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS). These regulations were adopted by the CSLC and are the most advanced of their kind (CSLC 2004). In addition, the new facility would be designed in accordance with appropriate recognized design standards.

Table 1. Operational Details and Physical Elements of the Berth 408 Marine Terminal

Component	*Description*
Parcel Size	5.0 acres (2.0 ha)
Berth Depth	81 ft (24.7 m) at MLLW
Berth Height	15 ft (4.6 m) above MLLW
Design Vessel Size	325,000 DWT, 1,100 ft (335 m) long, 200 ft (61 m) wide
Berth and Offshore Structures	Mooring dolphins with quick release hooks and powered capstans, breasting dolphins with unit fenders, firefighting system, unloading platform, north and south trestles, and walkways.
Offloading Arms	Four vessel offloading arms and one fuel loading and offloading arm.
Expected Offload Rate (Crude Oil)	50,000 to 125,000 bph
Expected Onload Rate (MGO)	3,500 bph
Pumping Equipment	Shore-side assist cargo offloading pumps and dock-side oil stripping pumps for vacating the offloading arms and dock piping.
Buildings	Terminal Security Office and~~,~~ Dock-Side Marine Terminal Control Building ~~and Administration Building~~
Fire-fighting System	Firewater main, foam storage tanks & mixing skids, fire monitors, hose reels, portable extinguishers, fire detection system, electric-driven firewater pump, diesel firewater pump, and seawater intake system
Lighting	Terminal lighting designed to minimize glare from the property and navigation lighting to define limits of the dock
Process oil recovery system	Sumps with sump pumps, piping, and controls
Oil Spill Containment System	Spill Boom Launch Boat, Spill Boom Reels, Remote spill recovery boom storage and launch facilities, and Concrete-curbed platforms and equipment foundations
Storm Water System	Storm Water Collection and Transportation to the site 1 tank farm for treatment and discharge
Parking	Near Berth ~~and Administration Building~~
Site Security	Perimeter security fence, 24-hour guard service, cameras with local or remote monitoring and control, perimeter security system
Alternative Marine Power (AMP) Platform[1]	Pile-supported platform at the south end of the berth to accommodate the AMP electrical connection system.
AMECS Platform[1]	Pile-supported platform to support Advanced Cleanup Technologies, Inc.'s (ACTI) Advanced Maritime Emission Control System (AMECS) crane, should this alternative emissions control system eventually be used. ~~This system could eventually include a vessel exhaust stack "bonnet", conduit, and treatment unit to treat vessel emissions while hoteling; see the text for more information.~~
Note: 1. AMP is a mitigation measure and AMECS represents a potential future mitigation measure~~s~~; the piles to support the required infrastructure are part of the proposed Project.	

The proposed berth platform structure would be supported with steel and/or pre-stressed concrete piles and include an unloading platform; platforms to support infrastructure for AMP and AMECS; breasting dolphin platforms; a fendering system; and north and south trestles with roadways, pipeways, walkways, a floating utility boat dock, and a gangway tower. The berth would also include six mooring dolphin systems with quick release hooks and power capstans, an electric motor-driven derrick cargo crane, a davit crane (boat lowering crane), 4,000 ft (1,219 m) of spill boom storage, a foam based remotely operated firefighting system, low-impact area lighting systems, cathodic protection corrosion prevention systems, and navigational lighting systems.

Subject to certain requirements, another technology for emissions reduction may eventually be used in combination with or in place of ~~as an alternative to~~ AMP. One such technology is the Advanced Cleanup

Technologies, Inc. (ACTI) Advanced Maritime Emissions Control System (AMECS). To facilitate its eventual implementation should AMECS be determined to be usable and approved for use at Berth 408, the proposed Project includes construction of the support infrastructure for AMECS (i.e., a pile-supported platform and approach). Installation of AMECS would require separate environmental analysis if added in the future.

Oil Spill Containment System. The dock platform would be constructed with a concrete curb around its outer edge to prevent any liquids, including rainfall, which might accumulate on the dock surface from entering harbor waters. This area would drain into a containment sump sized to contain rainwater from a 50-year rain event.

All marine terminals handling crude oil cargos are required by law to have an approved oil spill response plan. An Oil Spill Response Plan (OSRP) would be in place for Pier 400 prior to the start of operations. This plan must be approved by the USCG, California Department of Fish and Game (CDFG), and Office of Spill Prevention and Response, as well as other federal and state agencies.

Fire-Fighting System. The fire-fighting systems for each area of the Marine Terminal would be designed to meet applicable City of Los Angeles fire codes. Fireboat hose connections would be provided at the berth, as required by the Los Angeles City Fire Department.

Stormwater Collection and Treatment System. The proposed berth areas not served by the oil spill containment system would be equipped with a stormwater collection and treatment system. Storm water from non-process areas such as parking lots, roads, and building and vacant or landscaped areas would be collected into drainage systems that are routed into the Port storm drain.

Site Access. Access to the Marine Terminal would be as described under Site Access and Security in Section 2.1.

2.1.2 Tank Farms

Two Project tank farm locations have been identified (Figure 1). The Project proponent, PLAMT, requires a minimum crude oil tank capacity of 4 million barrels to support an economically viable operation. Tank Farm Site 1 and Tank Farm Site 2 would accommodate a combined total of 4 million bbl of crude oil. Facilities to be constructed at the tank farms are summarized in Table 2, and the layout for Tank Farm Site 1 is shown in Figure 2.

All tanks would be designed in accordance with the American Petroleum Institute (API) Standard for Welded Steel Tanks for Oil Storage, API-650. Each tank would be equipped with secondary leak detection systems, overfill protection, and instrumentation to monitor and control level and to monitor temperature.

Table 2. Tank Farm Site Descriptions

Site	*Tanks*[1]	
	No.	*Size (bbl)*
Site 1 – Pier 400 (10.7 ac, 4.3 ha)	2	250,000
	1	50,000[2]
	1	15,000[3]
Site 2 – Terminal Island (3~~7~~8.~~0~~1 ac, 15.~~0~~4 ha)	14	250,000

Notes:
1. Floating roof crude oil storage tanks except as noted
2. Offload/back-flush (surge) tank
3. Marine diesel storage tank for marine gas oil (MGO)

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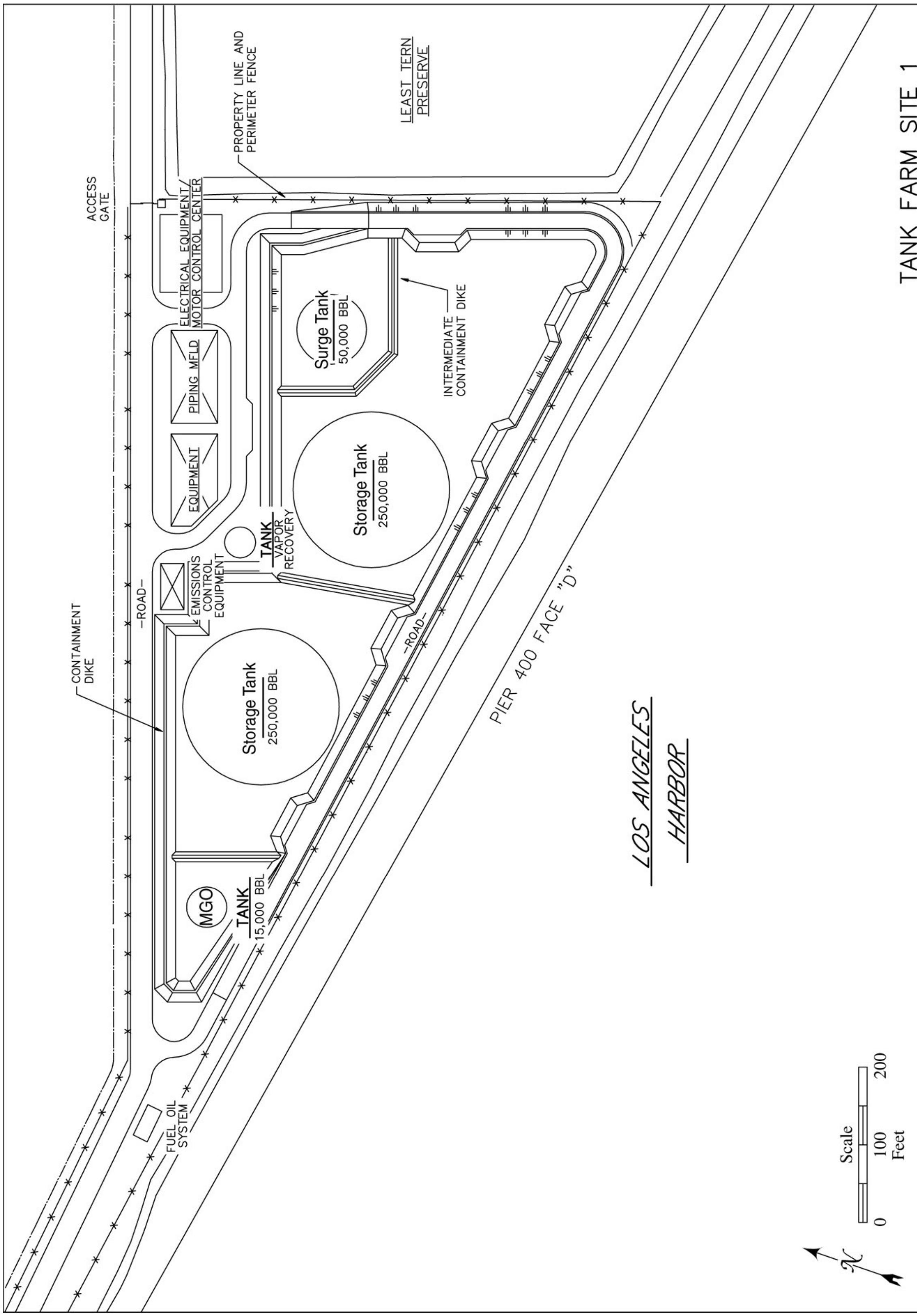

Source: PLAMT 2007; SPEC Services 2007

Figure 2. Layout of the Proposed Crude Oil Marine Terminal on Pier 400

Pipeline Shipping Pumps. Shipping pumps with electric motors are proposed for installation at Tank Farm Site 1 and Tank Farm Site 2.

Oil Spill Containment. Each tank area would be enclosed by a dike wall with the capacity to provide for full containment of the entire volume of the largest tank in the diked area, plus the volume equal to the 24-hour rainfall associated with a 25-year rain event, in the event of a spill or tank breach, in accordance with state and local codes and guidelines. Additionally, intermediate dikes designed to contain 10 percent of the tank volume would be constructed around individual tanks.

Tank Vapor Collection and Incineration. Tank farms would be equipped with a tank vapor collection system to collect emissions generated during tank filling operations when the tank roofs are being floated. The floating roof, with the primary and secondary seals, would be used to control emissions at all other times. Each system would consist of vapor collection pipe headers, a vapor blower, vapor bladder tank, vapor discharge headers, and associated controls. The collection systems would transport the vapors to incineration systems. The floating roof, primary and secondary seals, and vapor collection and control are considered to be BACT for crude oil storage tanks and meet the requirements of the South Coast Air Quality Management District (SCAQMD) for such tanks.

Stormwater Collection System. Storm water from non-process areas such as parking lots, roads, and building and vacant or landscaped areas would be collected into drainage systems that are routed into the Port storm drain. Storm water from process areas within the tank farms (e.g., manifold and equipment areas, equipment wash-down areas) would be collected in a tank. The tank would feed a treating system that would remove oil from the water to meet the requirements for discharge under an NPDES permit. The treated water would be discharged to the Port storm drain. The collected oil would be returned to the oil storage system.

Storm water and fire-fighting water from each tank farm intermediate dike area would be collected through an isolation valve installed outside of each dike area to oil/water separators. The oil/water separators would remove oil from the water to meet the requirements for discharge under an NPDES permit. The water would be discharged to the Port storm drain. The collected oil would be returned to the oil storage system.

Fire-Fighting System. The fire-fighting systems for each area of the proposed Project would be designed in accordance with applicable City of Los Angeles fire codes. Each tank farm would be protected by a firewater loop line and equipped with a foam storage tank and proportioning skid. The crude oil tanks would be equipped with a foam ring and foam chambers. The fire-fighting system for Tank Farm Site 1 would be part of the same system as previously described for the Marine Terminal. Firewater for Tank Farm Site 2 would be provided through a connection to the LADWP water main. Two pumps would be installed in each tank farm: the primary pump would be driven by an electric motor and the secondary pump would be driven by a diesel engine equipped with its own diesel fuel storage tank.

Site Access. See Site Access and Security in Section 2.1.

2.1.3 Pipelines

The new Marine Terminal on Pier 400 would be designed to receive crude oil from marine vessels and transfer the oil to the two new tank farm facilities via a new 42-inch diameter, high volume pipeline (Figure 1). The Project's new tank farm facilities would be connected to the existing Exxon/Mobil Southwest Terminal on Terminal Island, the existing Ultramar/Valero Refinery on Anaheim Street near the Terminal Island Freeway, and other Plains pipeline systems near Henry Ford Avenue and Alameda Street via new and existing 36-inch, 24-inch, and 16-inch pipelines.

Proposed Pipeline Segment 1. Pipeline Segment 1, a 42-inch pipeline that would be ~~20,650~~ 23,010 ft (~~6,294~~7,013 m) in length, would transport crude oil from the Berth 408 unloading operations to the tank farms. Pipeline Segment 1 would originate at the Marine Terminal approximately 4 to 8 ft (1.2 to 2.4 m) underground on the southwestern side of Pier 400 (Face 'C'). The buried pipeline would run south and then east along the Marine Terminal access road for approximately 2,400 ft (731 m) to Tank Farm Site 1 on Face D of Pier 400. From the pump and meter area at Tank Farm Site 1 the pipeline would run east, north, and then east along Navy Way to the east end of Face F where the Navy Way roadway is elevated.

At that point the pipeline would leave Navy Way and run north in the unimproved area to the east of Navy Way, paralleling the elevated roadway on the east to an aboveground crossing of the causeway bridge. After crossing the bridge, the line would return below ground and continue north in the unimproved area east of Navy Way to Reeves Avenue and then west until entering the northeastern corner of Tank Farm Site 2. In the underground area, this line would be installed (via trench or bore) approximately 3 to 4 ft (0.9 to 1.2 m) below ground (except in its origin at the Marine Terminal, where it could be 4 to 8 ft [1.2 to 2.4 m] underground).

The applicant anticipates installing remotely operated mainline block valves at the beginning and end of the 42-inch pipeline, along with the connections to the tank farm sites. Each valve would be monitored and controlled from a yet-to-be-determined, project-related building.

Proposed Pipeline Segments 2a, 2b, and 2c. Segments 2a and 2b would be 36-inch diameter pipelines running 1,800 ft (549 m) from Tank Farm Site 2 to an existing 36-inch diameter pipeline located in Ferry Street. Both segments would originate from a manifold on the west side of Tank Farm Site 2 and connect to the existing 36-inch pipeline west of the U.S. Customs House on Terminal Island and would be buried about 3 to 4 ft (0.9 to 1.2 m) below ground, by trenching (to Ferry Street) and boring (under Ferry Street). At this point, Pipeline Segment 2a would turn north and connect to an existing 36-inch diameter pipeline that crosses the Cerritos Channel to a tank farm at Berth 174 on Mormon Island (and then connect to another new pipeline segment, Segment 3, described below). Pipeline Segment 2b would connect to the existing 36-inch pipeline that runs south down Ferry Street to Pilchard Street near the ExxonMobil Southwest Terminal.

An alternate alignment for segments 2a and 2b could be employed depending upon the ultimate location and configuration of the proposed Joint Container Inspection Facility. A possible location of that facility is the U.S. Customs House property, and if that proves to be the case, segments 2a and 2b would be re-routed to the south of the current U.S. Customs House property and would connect to the existing 36-inch pipelines at the intersection of Ferry Street and Pilchard Street.

Pipeline Segment 2c would be a short (100 ft, ~~31~~ 30 m) tie-in connecting the existing Plains pipeline to the ExxonMobil Southwest terminal, north of Pilchard Street near Earle Street. This segment would be trenched and would be located almost entirely on land owned by ExxonMobil.

Each of these pipelines would have remotely operated mainline block valves at the beginning and end (i.e., including at the connections to the tank farm sites). Each valve would be monitored and controlled from the Marine Terminal Control Building.

Proposed Pipeline Segments 3, 4, and 5. These proposed pipelines would connect the existing 36-inch pipeline described above to the Ultramar/Valero Refinery and to other pipeline connections. The proposed 36-inch Segment 3 pipeline would proceed north about ~~2,800~~ 3,500 linear ft (~~853~~ 1,067 m) to Alameda Street and then northeast another ~~11,200~~7,700 linear ft (~~3,412~~2,347 m) roughly along Alameda Street to Site A.

From Site A, a new proposed 24-inch pipeline (Segment 4) would connect to the Ultramar/Valero Refinery. This pipeline route would traverse north to a bored crossing of the railroad tracks, turn east to a cut or bored crossing of Henry Ford Avenue, near the Air Products facility's southern driveway, then leave LAHD property. It would continue northeast in the Air Products driveway and plant area, then turn east to connect to a pipe tunnel under the railroad tracks, and run along a trestle over the Dominguez Channel. On the east side of the channel the pipeline would enter the Ultramar/Valero Refinery and connect to other pipeline systems nearby.

Also from Site A, a new proposed 16-inch pipeline (Segment 5) would extend about ~~1,000~~990 linear ft (~~303~~ 302 m) north to an existing Plains All American pipeline located in Henry Ford Avenue near the corner of Alameda Street and Henry Ford Avenue. This existing pipeline extends north to the ConocoPhillips refinery in Carson.

Site A could be unavailable at the time of proposed Project construction, as some of the site is included for potential development as an alternative in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project (CalTrans 2007a). Should Site A be unavailable, the new pigging station would be sited at an ~~alternative~~optional location, called Site B. Site B would encompass approximately 0.61 acres (0.25 ha) and would be located directly east of Henry Ford Avenue, south of Anaheim Street, and west of the Air Products facility. If used instead of Site A, Site B would be used as a transition point for connections to the same set of new and existing pipelines as noted above for Site A.

2.2 CONSTRUCTION

Construction would consist of three primary activities: Marine Terminal construction, Tank Farm construction, and Pipeline construction.

2.2.1 Marine Terminal Construction

The marine terminal at Berth 408 would be constructed by the Port and PLAMT using a combination of water-borne and landside equipment. Construction would include: site preparation; installation of pilings and dolphins; fabrication of the unloading platforms, unloading arms, fendering system, trestles, roadways, pipeways, walkways, boat dock, and gangway tower; installation of the cargo and davit cranes, spill boom storage facility, firefighting system, lighting systems, cathodic protection systems, and navigational lighting systems; fabrication of the control systems; and construction of the buildings, utilities, fencing, paving, and lighting. At the current design stage it is not certain whether the mooring dolphins would require steel or pre-stressed concrete piles. If steel piles are used for the mooring dolphins, proposed Project components (including the AMP and AMECS platforms) would require approximately ~~150~~ 136 piles in water (~~110~~ 92 steel and ~~40~~ 44 concrete). ~~If concrete piles are used for the mooring dolphins, proposed Project components including the AMP and AMECS platforms would require approximately 258 piles in water (74 steel and 184 concrete).~~ The concrete piles would be 24-inch diameter, and the steel piles would be a combination of 48-inch and 54-inch diameter. The berth platform structure is shown in Figure 3.

The pilings supporting the berth platform structure, the AMP platform, and the AMECS platform, as well as the mooring dolphins, would be installed by barge-mounted cranes and a pile driver, maneuvered by a tugboat and supported by small workboats. Pilings would likely be delivered by barge~~, although rail or truck delivery is a possibility~~. The steel, concrete, piping, and other building materials needed for the platform structures, control buildings, fencing, lighting, ~~and~~ utilities, and the AMP and/or AMECS infrastructure would be delivered by heavy-duty trucks or rail cars, and concrete trucks would deliver concrete. Welding-unit trucks would be needed to support the assembly of equipment and piping. Mechanical components such as electrical gear, pumps, control units, treatment system components, light

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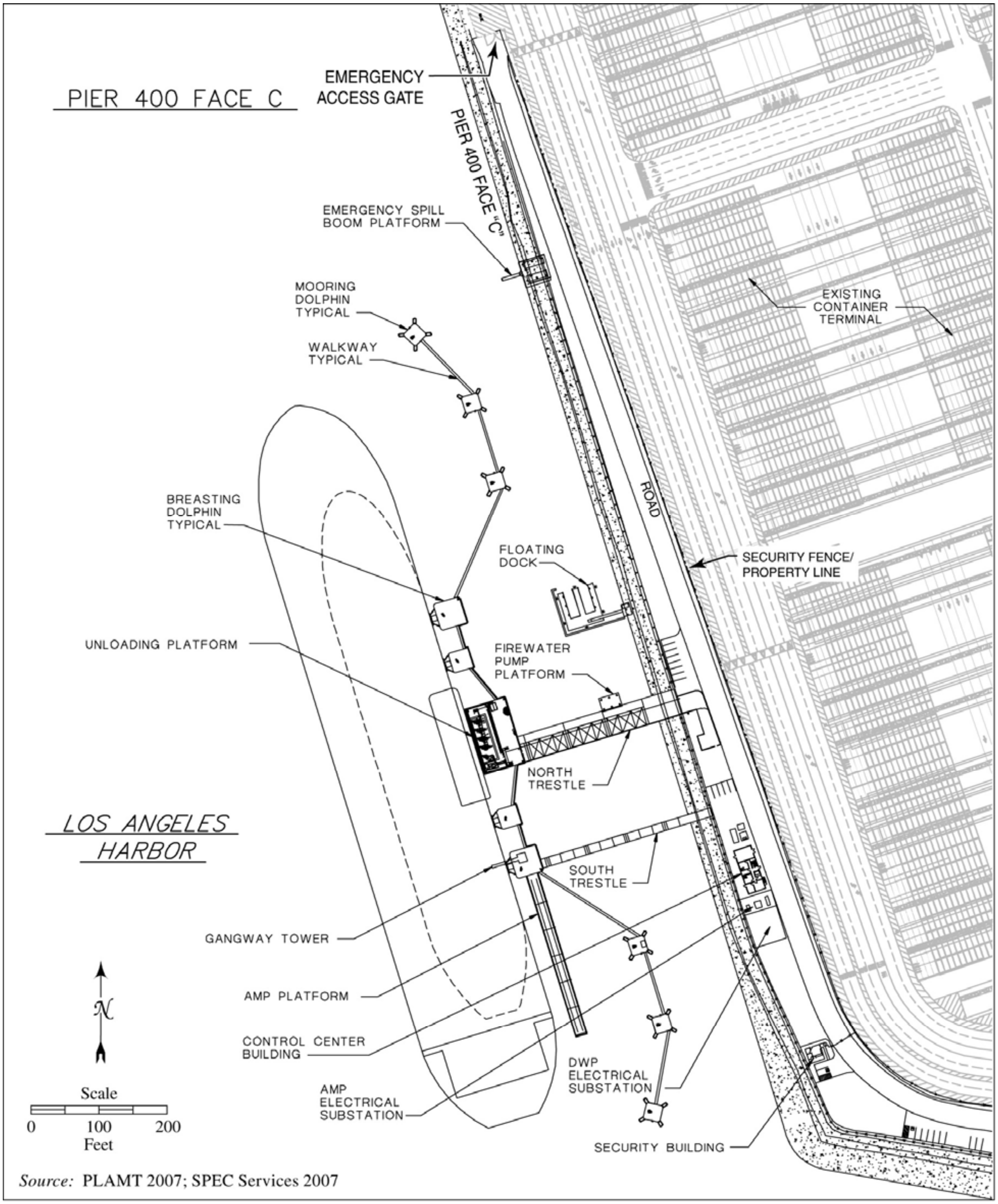


Figure 3. Face C of the Proposed Crude Oil Marine Terminal on Pier 400

standards, valves, etc. would be delivered by trucks and assembled into their respective systems on site. Asphalt trucks and specialized paving machinery would install the roadways and parking lots. Excavators and backhoes would be used to prepare the site for foundations, roadbed, and footings, and dump trucks would haul excess soil off site. Most of this equipment would be diesel-powered.

Construction of marine terminal facilities on land would involve grading, excavation/trenching, pile driving, pouring concrete, fencing, and paving. Landscaping would be installed ~~at the administration building, along the parking area, and~~ in the narrow strip at the north end of the marine terminal on Face C.

2.2.2 Tank Farm Construction

The applicant would construct the tank farms and associated equipment using land-based equipment. Construction of the tank farms would include site preparation, installation of stone columns (made from compacted gravel) for support under the tanks, construction of the containment berms and drainage systems, construction of the control buildings and assembly of the control systems, construction of roads and parking areas, fabrication of the tanks themselves, and installation of valves, manifolds, piping, utilities, lighting, fencing, and security systems.

Construction would require the use of excavators and backhoes, dump trucks, cranes, forklifts, paving equipment, and welding units. Steel plates, piping, building materials, control and monitoring equipment, pumps, and other elements would be delivered by heavy-duty trucks or rail cars, asphalt by specialized trucks, and cement by cement trucks. Most of this equipment would be diesel-powered.

Excavation would be needed for tank, building, containment dike, and heavy equipment foundations/footings and infrastructure such as pipelines (oil, water, sewer), drains, and sumps. Foundations and footings would require pouring concrete. Access roads within the tank farm sites would be paved, but the area around the tanks within the containment dikes would not.

2.2.3 Pipeline Construction

Conventional trenching would be used to install the pipelines and Supervisory Control Analog Data Acquisition (SCADA) system fiber optic cable on Pier 400, across Navy Way, through the Customs House parking lot, and at the pig launching area. In other locations, boring and drilling would be the primary method of placing the pipelines and fiber optic cable underground. Other construction activities associated with the pipelines include welding, installing cathodic protection, backfilling, and restoration of the ground surface. Construction would require the use of excavators, hoes, dump trucks, welding trucks, cement trucks, and specialized drilling equipment. Piping and other materials would be delivered by heavy-duty haul trucks or rail cars and offloaded by cranes and forklifts. Most of this equipment would be diesel-powered.

2.2.4 Testing and Inspection

System inspection of the completed pipelines would include hydrostatic testing to check for pipeline leakage and to confirm that the pipe, fittings, and welded sections can maintain mechanical integrity without failure or leak under pressure, as required by DOT. The tests would involve filling the pipelines with water under pressures higher than the maximum allowable operating pressure for at least 8 hours. Following the test, the water would either be transferred to the next pipeline section or discharged into an existing storm drain in accordance with a NPDES permit issued by the Los Angeles Regional Water Quality Control Board (LARWQCB). The pipelines would be cleaned using abrasive and/or cleaning foam (hard polyurethane) pigs driven by compressed air or water. Any dirt, scale, or debris would be captured at the end of the pipe and properly disposed. No chemicals would be used to perform these procedures.

2.2.5 Schedule

The Marine Terminal, both tank farms, all pipelines, and all ancillary components would be completed within about 30 months of project approval (Figure 4). The construction project would not be divided into phases; all elements of the project would be built out simultaneously, although some would be completed before others.

Construction of the Marine Terminal would start approximately three months after Project approval and last for a period of approximately 16 months. ~~Foundation improvements for t~~Tank farm construction would start within a month of Project approval. Pipeline construction would start approximately three months after project approval and take approximately 15 months. The Marine Terminal, Tank Farm Site 1, the pipelines, and eight tanks on Tank Farm Site 2 would be completed within about 20 months from approval of the proposed Project, and the proposed Project would be ready to receive tanker vessels. Construction of the remaining six tanks on Tank Farm Site 2 would be completed approximately ten months later. Thus, construction and operation would occur simultaneously for a period of approximately ten months.

During construction, property within and outside the project footprint would be used for various activities, including receipt of bulk materials by barge and rail, equipment laydown and staging areas, warehousing, construction worker parking, construction field office trailers, and pipeline construction material storage and equipment staging.

2.2.6 Labor Force

Construction of the proposed Project facilities would require construction labor equivalent to approximately 732 full-time equivalent employees over the course of the construction period (i.e., an average of 293 jobs lasting for 30 months). During peak construction of each element, the construction workforce would include approximately 90 personnel for the Marine Terminal; 151 personnel for Tank Farm Site 1 and Pipeline Segment 1; 192 personnel for Tank Farm Site 2 and Pipeline Segments 2a, 2b, and 2c; and 90 personnel for Pipeline Segments 3, 4, and 5.

For each construction site, most construction personnel would meet in one of the staging areas and go to the construction site in work trucks and buses. For the Marine Terminal, about 50 percent of the construction workforce would go to Temporary Construction Yard (TCY) 417, and the remainder would go directly to the Berth 408 area. For the other construction sites, about 80 percent of the construction personnel would meet at a TCY and the remainder would go directly to the individual work areas.

2.2.7 Equipment and Materials

Construction equipment and practices would conform to the Port's Sustainable Construction Guidelines. Specifically, all construction equipment would be fitted with mufflers and all engines would be maintained regularly. Additional controls, such as exhaust controls, may be required as mitigation. Welding machines would be electric, if available, or diesel, if not. Wastes generated from construction would generally be in the form of short sections of line pipe, wastes from welding and coating, scrap lumber and cardboard, and boxes and crates used in the shipment of materials. These materials would typically be hauled to the local recycling centers. Trash containers would be provided for daily refuse

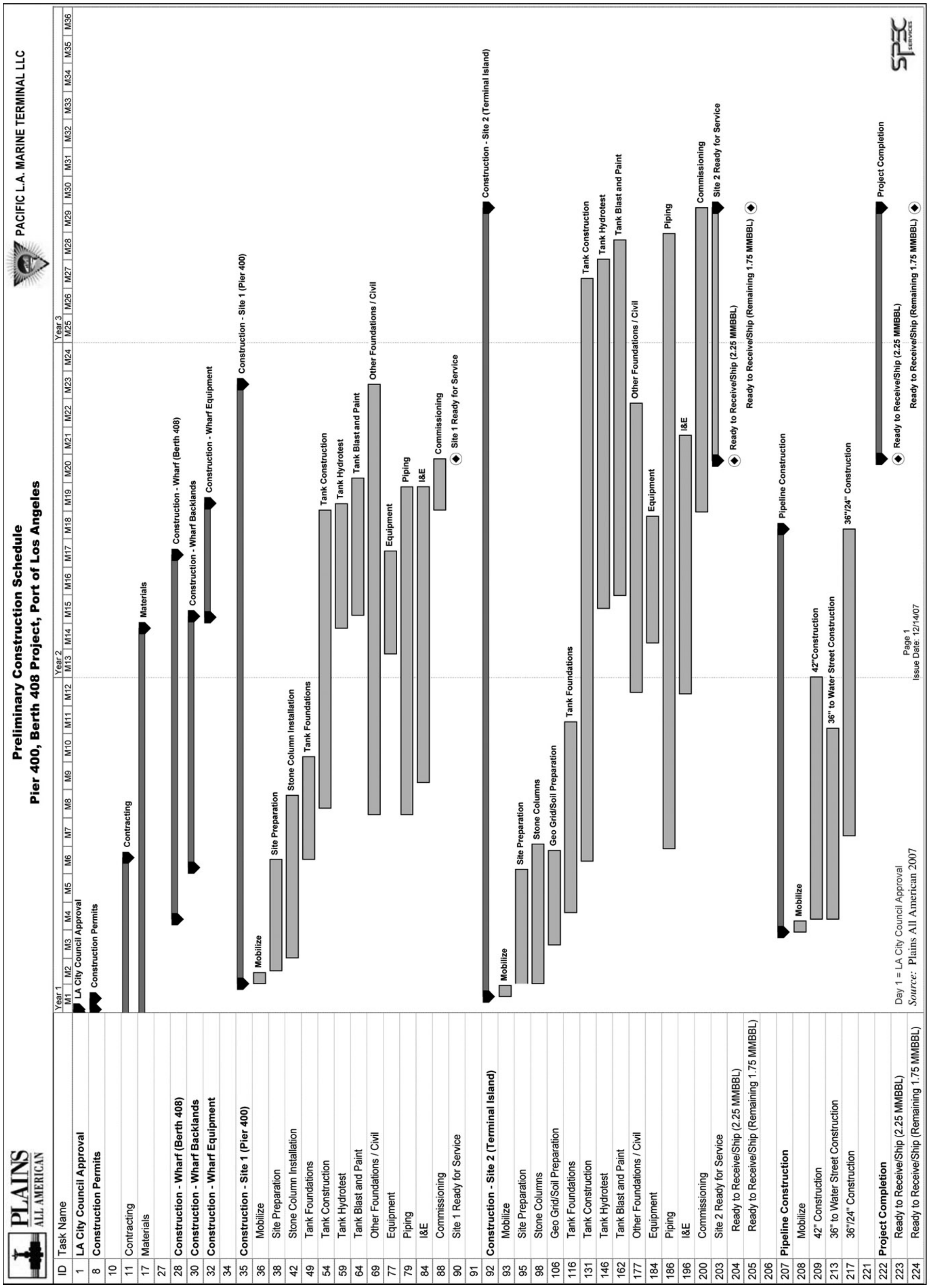


Figure 4. Proposed Project Construction Schedule

from construction workers. Other construction wastes might include contaminated soils, asphalt, concrete, and contaminated water used in hydrostatic testing of the pipelines. The non-hazardous wastes would be hauled to a sanitary landfill or recycler. The used hydrostatic test water would be treated as required and discharged under permit, and hazardous wastes would be sent to a permitted treatment or disposal facility. Construction crews would use portable chemical toilets.

All field welding would be performed by welders to the applicant's specifications and in accordance with all applicable ordinances, rules, and regulations. As a safety precaution, a minimum of one 20-pound dry chemical unit fire extinguisher would accompany each welding truck on the job.

2.2.8 Staging and Storage Areas

PLAMT and the Port have identified a number of potential sites outside the construction footprint for equipment laydown, material storage, construction management, and worker parking and staging (see Figure 5). Most of these are on Terminal Island and Pier 400 and include waterside sites, to allow delivery and staging for in-water construction, and sites with rail access. Two of the potential sites are on Port-owned property convenient to the pipeline routes on the mainland. Construction material would also be stored at the contractors' existing facilities as well as those of suppliers providing equipment, materials, or labor to the Project. In addition, the proposed Pier 400 site and proposed tank farm sites would be used for construction staging and laydown, and staging areas for pipeline construction would be located along the pipeline routes. Aggregate, concrete, asphalt, sand, and slurry materials would be purchased locally (when available), and storage would be provided by local suppliers or in one of the designated storage areas. Staging and storage areas would be protected with storm water controls in accordance with the Project's construction storm water permit and SWPPP.

Additional staging areas, such as an empty warehouse, parking area, or developed lot areas, may also be required. Areas to be used for staging and storage yards would be resolved between the PLAMT, project contractors, and the Port at the time of construction. A typical storage yard or staging area would be on a lot that has already been improved, with access to large commercial streets to allow easy movement of personnel and equipment. It is anticipated that the majority of materials would be brought in during off-peak traffic hours, with the primary exception being concrete, which must be mixed and delivered within a limited window of time.

2.2.9 Equipment Transportation

A majority of the heavy construction equipment and material would be delivered to the construction sites from local contractors' yards on lowboy trucks or trailers using modern trucks that would be required to use ultra-low-sulfur fuel. Mobile cranes and dump trucks would be driven in as well and will also be using the most appropriate low sulfur fuels available.

2.2.10 Utility and Services Requirements

Most construction equipment would require either gasoline or diesel fuel. Welding machines would mostly use electric power, but ultra low sulfur diesel or CARB unleaded Phase III fuel may be necessary in areas where electric welding machines are not applicable.

Water would be used, as necessary, to control fugitive dust and to wash streets as a supplement to sweeping streets. In addition to the daily construction water needs, hydrostatic testing of the pipeline segments would also require water (see Section 2.2.4).

Each construction site would require onsite diesel fuel generators for temporary supply of electricity. <u>However, wherever possible,</u> ~~If available,~~ temporary connections to the existing power distribution system would ~~also~~ be used.

2.2.11 Pollution Control Measures

The Port includes regulatory requirements in their construction contracts (Section 01410) that include specifications for handling hazardous substances (e.g., fuels, solvents, and paints), stormwater pollution control, compliance with regulatory permit conditions (e.g., USACE and California Regional Water Quality Control Board), and compliance with the project mitigation monitoring and reporting program. The stormwater pollution control specifications include methods to retain concrete wastes, prevent sediment and other construction-related pollutants from entering drainage ways to harbor waters, control of trash, and containment of non-stormwater runoff. The Project would disturb more than 1.0 acre of soil, and a Stormwater Pollution Prevention Plan (SWPPP) would need to be prepared prior to initiation of construction.

2.3 OPERATIONS

The proposed Project is expected to begin vessel-unloading operations in 2010 with the first full year of operations expected in 2011. In the operation phase, the proposed Project includes the unloading of tanker vessels at the Marine Terminal, the transfer of MGO between vessels docked at the Marine Terminal and the MGO tank at Tank Farm Site 1, the transfer of crude oil into the surge tank at Tank Farm Site 1 and storage tanks at Tank Farm Sites 1 and 2, and the transfer of crude oil via Proposed Pipeline Segments 1, 2a, 2b, 2c, 3, 4, and 5. The operation of equipment in each facility would be controlled by human operators and/or automatic control systems installed at each site.

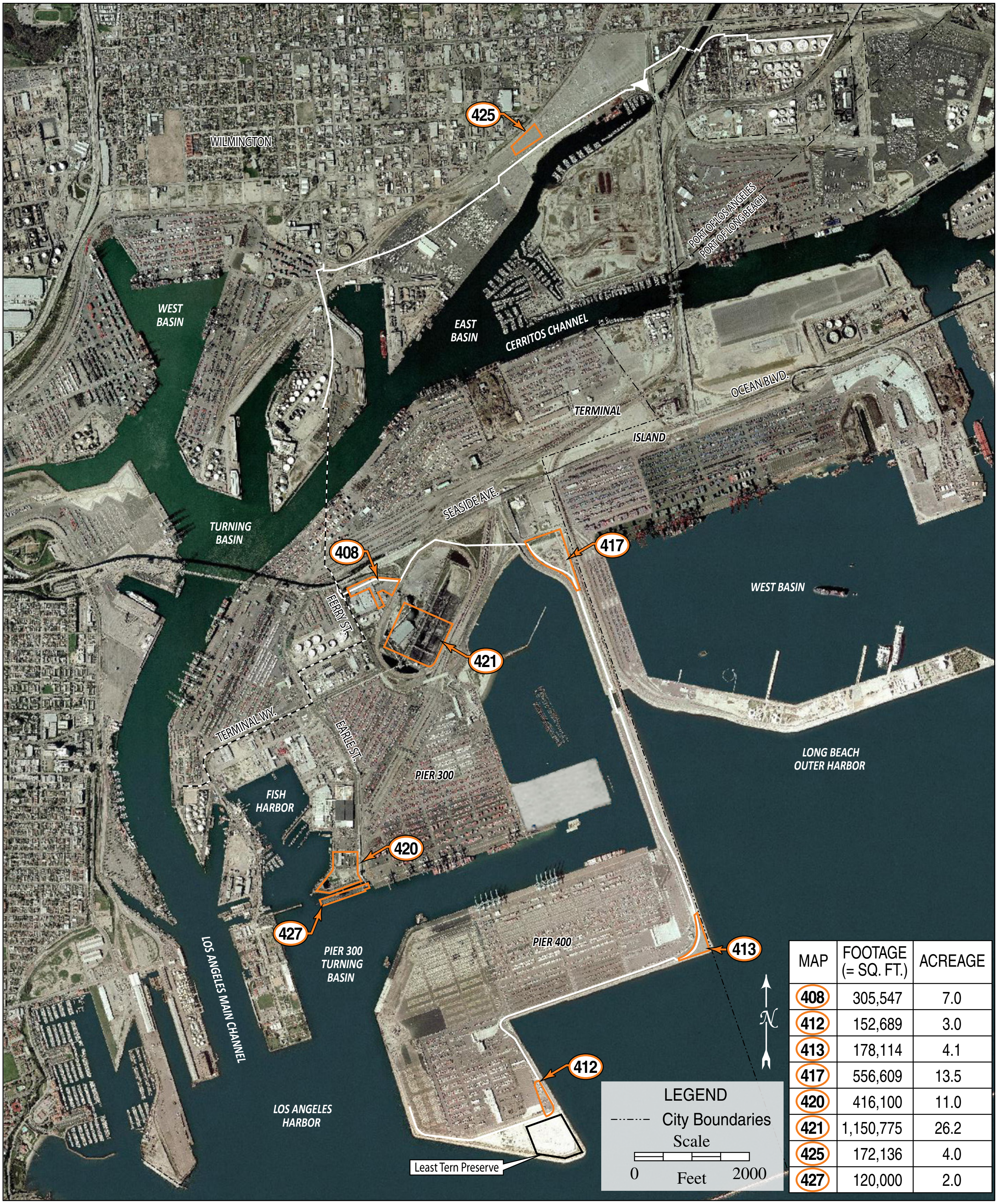
2.3.1 Tanker Operations

Tanker mooring. The facility would be designed so that tankers would be moored starboard (right) side to the mooring facility, although it is possible that some vessels could be moored port side to. Once mooring is complete, the AMP system would be connected to the vessel and placed in operation (note that implementation of AMP would be phased in gradually over the life of the proposed Project). Before the start of cargo discharge operations the vessel would be completely encircled by a spill containment boom.

Vessel Unloading. To ensure environmental protection and safety, discharge from the vessel to the shore tanks would occur only after required exchanges of general and emergency information and ship inspections. The ship would use its pumps to move the cargo from the vessel's tanks to the surge and storage tanks at Tank Farm Site 1. From Tank Farm Site 1 to Tank Farm Site 2, electric shore-side pumps would be used. The discharge would begin at a slow rate so all systems could be checked for leakage. Once all the cargo was discharged from the ship, the ship's pumps would be stopped by the ship's officers, and the offloading arms would be drained and disconnected from the ship. After required information and records were exchanged between the ship and the terminal, the ship would be ready to leave the berth.

Once unloading was completed and the vessel was cleared for departure, the spill containment boom would be retracted, the emissions control system would be disconnected, the tanker would be unmoored, and tugboats would arrive to escort the vessel out of the harbor.

Emergency Shutdown. During the pre-operational information exchange, emergency shutdown systems and communication would be discussed via radio or telephone communication. If an emergency shutdown were to be required, either terminal personnel or ship personnel must inform each other that emergency shutdown is needed. This communication would be by radio or telephone. Once a shutdown is ordered, the



MAP	FOOTAGE (= SQ. FT.)	ACREAGE
408	305,547	7.0
412	152,689	3.0
413	178,114	4.1
417	556,609	13.5
420	416,100	11.0
421	1,150,775	26.2
425	172,136	4.0
427	120,000	2.0

Figure 5. Proposed Project Temporary Construction Yards

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ship would first stop its pumps and then all valves in the terminal and ship's cargo systems would be closed, thereby isolating the various segments of the system to prevent spillage. If the emergency were such to require the disconnection of the offloading arms, the arms would be drained, the hydraulic connector activated, and the arms disconnected.

2.3.2 Marine Terminal, Tank Farm, and Pipeline Operations – Common Features

Site Access and Security. See Section 2.1.

System Control and Safety Features. Within the Marine Terminal and tank farms, pumps, blowers, air compressors, and other electric motor-driven equipment would be equipped with various safety devices such as pressure sensors, electrical current and temperature measuring devices, and safety relief valves to assure safe operation. Tanks would be equipped with safety devices including level indicators, level alarms, and level shutdown instruments to prevent overfill. Pipelines would be equipped with pressure, temperature, flow-rate, and gravity monitoring devices to maintain operations within design limits.

Supervisory Control and Data Acquisition (SCADA) System. The proposed SCADA system would provide continuous real-time operational data. The SCADA system would also provide the pipeline controllers with the ability to remotely control systems operation and respond to alarms that are initiated when operating conditions fall outside established parameters. Upon detection of an irregularity, the pipeline system controllers would have the capability to shut down the affected terminal equipment or pipeline by remotely stopping pumps and closing block valves.

Storm Water Management. See Section 2.1.1 for the Marine Terminal and Section 2.1.2 for the tank farms.

Waste Management. Wastes such as oily rags and miscellaneous non-hazardous trash would be collected on site in containers and transported from the site periodically by approved methods. It is anticipated that very few hazardous materials would be used on-site -- the petroleum in the tanks and pipes would be the major hazardous substances on the site. Other potentially hazardous materials may include those which are typically used for maintenance activities only, such as cleaners, paints, coatings and various lubricants. These materials would not be stored on site, but would be brought to the site on an as-needed basis by company maintenance personnel and removed after the maintenance work is completed.

Lighting. Lighting would be provided at all sites to provide for security, as well as to provide a safe working environment. The fixtures selected would have refractors and corresponding photometric light curves that are designed with the goal of minimizing the spillage of any light from the property or to the surface of the water. Lights along the east side of Tank Farm Site 1 would be directional beams pointing away from the California least tern nesting area. In addition, navigation lighting would be installed to define limits of the dock.

Seismic Hazard Design. The proposed Marine Terminal, Tank Farm facilities, and pipelines shall be designed per the CSLC MOTEMS to protect against potential seismic hazards that could occur. The Port of Los Angeles Code for Seismic Design, Upgrade and Repair of Container Wharves (5/18/2004) would supersede MOTEMS, in case of conflict, only if proven to be more severe or restrictive. This is to ensure a conservative design approach compatible with both codes. In addition to MOTEMS and the Port's code, the new facility would be designed in accordance with all other appropriate recognized engineering, safety, and seismic hazard design standards. The most severe or restrictive design code in effect at the time would apply.

2.3.3 Marine Terminal Operations

Marine Terminal operation would consist primarily of managing the flow of crude oil from the tankers; managing the vessel fuel transfer and storage; monitoring the unloading systems for leaks of oil or hydrocarbon vapors; and managing the spill detection and containment, fire suppression, oily water treatment, and storm water systems.

Hydrocarbon detection, shutdown, and alarm systems would monitor the ambient hydrocarbon vapor levels and trigger automatic shutdown of equipment if necessary. If oil should be observed on the water within the vessel containment boom, all operations would be stopped and the facility's Oil Spill Response Plan (OSRP) would be activated. In accordance with USCG requirements, PLAMT would have a contractual agreement with a regional spill response cooperative that would serve as the emergency response contractor with primary responsibility for containment, cleanup, and health and safety at the Marine Terminal. These contractors are located in the San Pedro Bay area. In addition, operations personnel would be trained in the Incident Command System and oil spill containment and cleanup procedures.

Flame detectors would monitor strategic areas, such as pumping areas and the marine loading dock, and if a fire were detected the flame detectors would automatically trigger a fire alarm signal. Terminal operators would confirm that the alarm is an active fire, notify the Los Angeles Fire Department, and begin fire suppression activities.

The containment sump on the berth platform structure would have instruments to detect fluid level. When a high sump level is detected, for example following rain or a spill, a pump (or pumps) would automatically start, transferring the contents of the sump into the terminal oily water treatment system. If the pump(s) could not keep up with increasing fluid level, an alarm would shut down the terminal and trigger inspection of the facility by an operator and remedial actions.

Once the final terminal is constructed and all of the equipment and final materials are in place, a Terminal Operational Manual would be developed that would address a wide range of operational requirements and operating standards and procedures. The manual would be subject to review and final approval by a number of regulatory oversight groups including USCG, State Fire Marshal, State Lands Facilities Inspection Group, LAFD, Port Homeland Security, OSPR, and other similar groups. Very specific operating and monitoring requirements are set and observed by each of these groups.

In addition to tanker calls, Berth 408 would also receive approximately one barge per month carrying MGO, a vessel fuel with 0.05 percent sulfur content that is available in the local market. These barges would originate at other liquid bulk terminals within the Port of Los Angeles or the Port of Long Beach. Procedures for offloading MGO from the barge would also entail safety precautions similar to those used for offloading crude oil from tankers. MGO would be offloaded from barges using the same 8-inch diameter unloading arm that would be used to load MGO onto tanker vessels. The MGO would be pumped to the MGO tank at Tank Farm Site 1 and stored there until it is needed to refuel tanker vessels that call at the berth. The ability to offload, store, and refuel tankers is essential for implementation of the fuel replacement strategy proposed by PLAMT.

2.3.4 Tank Farm Operations

Tank farm operations would consist of managing the storage of crude oil, oily water (from the sumps and containment areas), and vessel fuel in the tanks; monitoring and maintaining the various control systems (leaks, vapor, storm water); and monitoring and maintaining the tanks, pumps, manifolds, and piping in the tank farms. The operations would be monitored and controlled from the Marine Terminal Control Building, but routine inspection and maintenance would take place on site.

2.3.5 Pipeline Operations

Pipeline operations would include monitoring and inspecting the pipelines, including the valves, the leak detection, pressure detection, and corrosion prevention systems, conducting periodic hydrostatic testing, and conducting periodic cleaning.

PLAMT would create an Inspection and Maintenance (I&M) Program to address programmed I&M requirements and requirements to monitor hydrocarbon emissions, i.e., volatile organic compounds (VOC) and reactive organic compounds (ROC). The I&M Program would be constructed to meet applicable requirements of the SCAQMD regulations. The pipeline routes would be visually inspected at least biweekly by line rider patrol in accordance with DOT requirements (49 CFR Part 195) to spot third-party construction or other factors that might threaten the integrity of the pipelines. Additionally, inspection of highway, utility, and pipeline crossing locations would be conducted in accordance with state and federal regulations. Pipelines would be inspected annually at all test locations, quarterly at control points, and more than quarterly at cathodic protection systems to ensure corrosion control. Internal inspection pigs ("smart pigs") would be used to inspect and record the condition of the pipe. Smart pigs detect where corrosion or other damage has affected the wall thickness or shape. All pipeline valves would be inspected twice annually, not to exceed 7 months between inspections, and maintained as necessary to ensure proper operation.

Pipeline inspection and maintenance would include periodic hydrostatic testing to check for pipeline leakage and structural integrity, as required by DOT. Following the test, the water would either be transferred to the next pipeline section or discharged into an existing storm drain with the prior approval of the LARWQCB.

Pipelines would be cleaned periodically by pigging them. Pigging is a process that involves inserting a scraper or "pig" into a pipeline at a pig launcher point and retrieving it at a receiving point called a pig receiver or scraper trap. Pigs would be used to clean and/or inspect the pipelines.

All underground pipelines would have factory-applied external pipe coating with field applied joints that would provide the primary protection against external corrosion. In addition, all buried pipelines would have cathodic protection systems installed to provide secondary protection against corrosion. (Cathodic protection of pipelines and equipment is a method of preventing the corrosion of metals by passing an electric current through an electrolyte to the metal surface. This flow of electricity opposes the normal corrosion flow of electrons, thus protecting the metal.)

The pipeline safety system would rely upon a Supervisory Control and Data Acquisition (SCADA) system, which would gather data from remote points for use by automatic controls and safety systems. Pumps would be equipped with various safety devices such as pressure sensing devices, vibration monitors, seal failure monitors, over and under pressure monitors, no flow monitors, electrical current and temperature measuring devices, and safety release valves to assure reliable and safe operation at the pumps. Pressure control valves, pressure measuring devices, and pressure relief valves would protect the pipelines. The computerized SCADA system would constantly gather operational data from the critical sources throughout the system and automatically adjust the pressure and flow rate of the pipeline to provide for safe operation of the system. The system would also provide for continuous leak detection monitoring.

PLAMT would subscribe to the Underground Service Alert "one call" system that provides a single toll-free number for contractors and individuals to call prior to digging in the vicinity of any pipeline. Upon notification that a contractor or property owner intended to dig in the vicinity of a pipeline, the pipeline operator would mark the horizontal location of the pipeline. Additionally, a warning tape with the pipeline name would be buried approximately 18 inches (46 cm) above the new pipelines.

2.3.6 Emergency Response

PLAMT would prepare an Emergency Response Plan to specify measures to be taken in emergency scenarios. These documents would identify the responsible parties for the incident command and the supporting organizations/agencies. An emergency shutdown system would protect the marine terminal and tank farm systems in case of problems during operations or other natural or manmade disasters or abnormal events. Clearly marked and strategically located emergency shutdown stations would allow operators to terminate transfer operations. The shutdown of the system would be programmed to occur in safe sequence to prevent surges in flow during the shutdown. Automatic shutdown would also be initiated due to a fire alarm, a high-high level alarm in a receiving tank, detection of a system leak, or other critical alarms detected in the central alarm panel. After shutdown has been completed, the system would be reset once the alarm condition has been cleared.

2.3.7 Ports of Los Angeles and Long Beach Oil Spill Response Capability

The responsibility for onshore and offshore spill containment and cleanup lies with the owner/operator of the facility or vessel involved in the spill (40 CFR, Part 112). All Port marine terminals and all vessels calling at the marine terminals are required to have oil spill response plans and a certain level of initial response capability. As it is not economically feasible or practical for terminal operators and vessels to each have their own equipment to respond to more than minor spills, operators rely on pooled or contract capabilities. Most spills at the Ports of Los Angeles and Long Beach are small and handled by commercial contractors. Most major oil companies are members of Marine Spill Response Corporation (MSRC), an oil spill cooperative established to respond to marine spills in Los Angeles and Orange counties, including the proposed Project area.

The vessel and terminal owners use various companies and organizations to provide their response capability. The USCG has created the Oil Spill Removal Organization (OSRO) classification program so that facility and tank vessel operators can contract with and list OSRO in their response plans in lieu of providing extensive lists of response resources to show that the listed organization can meet the response requirements. Organizations looking to receive a USCG OSRO classification submit an extensive list of their resources and capabilities to the USCG for evaluation. The State of California has a similar OSRO classification program to allow facility and tank vessel operators to list OSROs in meeting State oil spill response requirements.

Organizations that provide oil spill removal in the proposed Project area include: Advanced Cleanup Technology; ANCON Marine, Inc.; Clean Seas, LLC; NRC Environmental Services Inc.; Heritage Environmental Services; Marine Spill Response Corporation (MSRC); National Response Corporation; Oil Mop, LLC; Patriot Environmental Services; SoCal Ship Services; and Tractide Marine Corporation. The 1992 Deep Draft FEIS/FEIR Mitigation Measure 4I-2 requires that the proposed Project be a member of MSRC or similar cooperative.

The MSRC has the largest, dedicated, standby oil spill response program in the U.S., including open water, shoreline, and mid-continent river operations. MSRC response services are available to all Marine Preservation Association (MPA) members, companies that have contracted with MSRC, and on a reimbursable basis.

MSRC responds to oil spills of any size, shoreline cleanup and, as appropriate, hazardous material spill response and response to spills outside the U.S. MSRC can provide additional response capabilities through a network of contractors that make up MSRC's Spill Team Area Responders (STARs). The following MSRC response equipment is present at the Ports of Los Angeles and Long Beach (Table 3):

Table 3. MSRC Response Equipment Present at the San Pedro Bay Ports

Description	*Quantity or Length*	*Location*
Booms – various Simplex Boom, Expandi, ReelPack, Solid Fill	up to 13,000 ft (3,960 m)	Long Beach (Berth 57 & 59)
Skimmers (recovery capacity in bbl/day) WP 1 (3,017) Lori Lors (29,724) Lori Bow Collect (2,477) GT-185 (5,416) Multi-Model 24 (2,500)	 1 6 1 4 1	
Vessels Shallow Water Barge (400 bbl) 18' Small boat Shallow Water Push Boat Lori Barges (100 bbl on each, total 300 bbl)	 1 2 1 3 barges	
Additional Recovery Capacity – on the boats Clean Waters I, Recovery 1, Recovery 2, and Response 3	up to 6,000 bbl total	
Skimmers (recovery capacity in bbl/day) Walosep WM, (336) Desmi Terminator (3,019) GT-185 (3,990) Lori Side Collectors (2,477) Lori Bow Collectors (4,954)	 1 1 3 1 2	Yard and Warehouse, Port of Long Beach
Booms – various Kepner, Amer Marine, Maer Marine, Expandi, Parker, and Cont Sys	up to 15,300 FT (3,750 M)	
Vessels 16' Small Boats Fast Tanks (62 bbl each, total 124 bbl) Drancones (29 bbl each, total 87 bbl) Kepner Sea Bag (29 bbl) 8 bbl tanks, total 16 bbl	 2 2 3 1 2	
Booms – various Amer Marine, Solid Fill, Kepner	up to 11,240 ft (3,425 m)	Fire Boat Stations No.20 & 5, Berth 35, Long Beach; Berth 120 and 46 in Port of LA
FORMER CCW RESPONSE EQUIPMENT AT PORT OF LONG BEACH (MERGED WITH MSRC)		
Oil Spill Response Vessels (OSRVs) Clean Waters 1, Recovery 1, and Recovery 2 (4,908 bbl/day each, with nearly 6,000 bbl total storage capacity)	3	3 OSRVs have 2 Lori 4 Brush skimming systems & open-ocean boom.
Fast Response Boats (FRB) Work boats Oil storage barges (100 bbl capacity each)	7 6 3	3 FRBs have hydraulic boom reels (over 1,000 ft of boom).
Vessel dedicated skimmers Vessel of opportunity skimming systems Additional skimmers	17 3 3	Skimming system: Walosep W-1 Skimmer, hydraulic power pack, hydraulic crane, & 15-bbl oil/water sep. storage tank.
Containment boom	54,912 ft (16,737 m)	
Source: MSRC 2006		

3.0 SITE SPECIFIC INFORMATION

3.1 LOCAL SETTING

Marine habitats within Los Angeles Harbor (Harbor) near Pier 400 primarily comprise deep soft bottom, hard substrates (shallow and deep rock riprap and pilings), and water column. Two designated shallow soft bottom habitats are also located near Pier 400: Cabrillo Shallow Water Habitat over 2,000 ft (610 m) to the southwest and Pier 300 Shallow Water Habitat over 1,800 ft (549 m) to the north (Figure 1). The Pier 300 Shallow Water Habitat is over 2.3 mi (3.7 km) from the proposed Marine Terminal at Berth 408 by water channel. Upland habitats on Pier 400 include developed terminal areas, undeveloped areas, and the California least tern nesting habitat. Upland habitats on Terminal Island in the proposed Project area include developed and undeveloped lands. The biological resources within each of these habitat types are summarized below and described in more detail in Section 3.3 of the SEIS/SEIR. Information provided for the marine habitats in the SEIS/SEIR is not always specific to the southwest portion of Pier 400 because (1) many organisms can move throughout the Harbor, particularly those in the water column, (2) data are only available from specific sampling locations, and (3) proposed Project effects could extend beyond Pier 400 (e.g., oil spills or pollutant runoff); and (4) use of existing oil terminals under the No Federal Action/No Project Alternative could affect biological resources in the Main Channel and in Long Beach Harbor.

Marine Habitats

Benthic habitats are primarily soft bottom with hard substrate represented by the riprap associated with landfill containment dikes, sheetpiles, and pilings.

Soft Bottom Habitats. Organisms that live in (benthic infauna) and on (benthic epifauna) the soft bottom sediments provide a food source for fish, invertebrates, and other organisms. The density and species composition of these organisms are influenced by sediment grain size, nutrient levels, water depth, pollutant levels in the sediments and overlying water, and/or the time since dredging. Harbor-wide, quarterly sampling indicated ~~the~~ benthic infauna communities in 2000 were~~as~~ dominated by polychaete worms with crustaceans moderately abundant and mollusks, plus other taxa, least abundant (MEC and Associates 2002). The most common epibenthic invertebrates collected were black spotted shrimp (*Crangon nigromaculata*), tuberculate pear crab (*Pyromaia turberculata*), and spotwrist hermit crab (*Pagurus spilocarpus*).

Hard Substrate Habitats. Hard substrates provide surfaces for attachment of invertebrates and algae as well as shelter for mobile invertebrates and fish. Organisms growing on hard substrates in the harbor show vertical zonation similar to that on rocky shores. Substrate type (e.g., vertical concrete or sloping rock riprap) as well as shading by wharves influence the species composition and abundance at specific locations. Species present include barnacles, mussels, crustaceans, polychaete worms, limpets, snails, anemones, and algae (MEC and Associates 2002).

Water Column Habitats. The water column provides habitat for plankton (small floating animals and plants) and fish. The species composition and abundance of ichthyoplankton in the Harbor has been shown to be similar to that of the juvenile and adult fish community (Brewer 1983), suggesting that the harbor is a nursery for nearly all of the fish species found there as adults (MEC 1988, MBC 1984). The Harbor complex is a habitat for over 130 species of juvenile and adult fish, some of them transient visitors and some permanent residents (Horn and Allen 1981, MEC 1988, USACE and LAHD 1980). Seventy-four species of juvenile/adult fish were collected in the harbor during the 2000 baseline study (MEC and Associates 2002). Of these, northern anchovy (*Engraulis mordax*), white croaker (*Genyonemus lineatus*), and queenfish (*Seriphus politus*) were the dominant species. Abundance was greater in summer than in winter. Deep open water of the Outer Harbor was dominated by northern anchovy and white croaker in both otter trawl and lampara net samples, with Pacific sardine (*Sardinops sagax*) and queenfish also abundant in lampara samples.

Water Birds. Numerous water-associated birds use the harbor as residents and as seasonal visitors. They use the water surface for resting and forage over or in the water. Some species also rest or roost on breakwaters and other man-made structures in the harbor. The year 2000 baseline study found 69 species that are dependent on marine habitats and another 30 species that are not (MEC and Associates 2002). In the Outer Harbor near Pier 400 (north, west, and south sides), aerial foragers and gulls were the most abundant bird guilds with waterfowl also common. The California least tern (*Sternula antillarum browni*), an endangered species, is discussed below in Section 3.3.1.

Terrestrial Habitats

Pier 400 is mostly paved, and contains facilities such as buildings, lights, roads, and paved container storage areas with little or no vegetation. The California least tern nesting habitat, located to the east of the proposed Tank Farm Site 1, is described below in Section 3.3.1. Tank Farm Site 1 is currently undeveloped. The soil is sandy with shell fragments. Vegetation is moderate and weedy. Common species present include sea rocket (*Cakile maritima*), tree tobacco (*Nicotiana glauca*), Bermuda grass (*Cynodon dactylon*), puncture vine (*Tribulus terrestris*), and sow thistle (*Sonchus oleraceus*), all of which are not native to North America (SAIC 2004, 2007). Incidental pampas grass (*Cortaderia jubata*), also a non-native, as well as the native mulefat (*Baccharis salicifolia*), telegraph weed (*Heterotheca grandiflora*), western ragweed (*Ambrosia psilostachya*), and horseweed (*Conyza canadense*) also occur on the site (SAIC 2007). Vegetation was removed from Tank Farm Site 1 in March 2003 and 2004 to allow additional area for least tern nesting (Keane Biological Consulting 2003, 2005a). This was not part of mitigation requirements for LAHD projects in the Harbor. The weedy vegetation growing there has not been removed since that time. No natural or sensitive plant communities are present.

Tank Farm Site 2 is located on Pier 300 (Figure 1). Facilities at the site are scheduled to be removed as part of a separate project (LAXT Dome and Site Demolition, #18 in Table B-1 of Attachment B), and the unpaved portions of the site are barren or have predominantly non-native, weedy vegetation. Plant cover, where present, is low to moderately dense. The non-native species include smilo grass (*Piptatherum miliaceum*), fountain grass (*Pennisetum setaceum*), and tree tobacco. A few native plants are present at scattered locations. These include telegraph weed, mulefat, alkali heath (*Frankenia salina*), and a willow (*Salix* sp.) sapling (SAIC 2007). No natural or sensitive plant communities are present.

Most of pipeline segment 1 is located in paved or barren areas. On Pier 400 at the Marine Terminal and Tank Farm Site 1, the route passes through weedy vegetation as described above for Tank Farm Site 1. As it enters Terminal Island, the route passes through a disturbed site that is mostly barren, with telegraph weed and other weedy species at the northwest corner. The location of the eastern bore pit for the Navy Way crossing includes an area that has landscape plants (palm trees and shrubs) as well as scattered native and non-native plants. The native species include telegraph weed, salt heliotrope (*Heliotropium curassavicum*), and evening primrose (*Oenothera* sp.). The short segment between Navy Way and Terminal Way is typified by landscape and weedy species. The area between Terminal Way and the railroad tracks is mostly barren with a few weedy species. West of the railroad tracks to Tank Farm Site 2, the area has moderate cover of predominantly weedy species. A few non-native shrubs are present, and a non-native saltbush (*Atriplex semibacata*) occurs scattered over the site. No natural or sensitive plant communities are present along this pipeline segment.

Pipeline segments 2a and 2b would pass through paved areas, a few landscape trees, and a strip of vegetation east of the U.S. Customs building that includes bougainvillea (*Bougainvillea* sp.), lantana

(*Lantana* sp.), sweet clover (*Melilotis alba*), mulefat, rosea iceplant (*Drosanthemum floribundum*), and weedy annual species. Segment 2c would pass through street trees, represented by eucalyptus (*Eucalyptus* sp.) and bottlebrush (*Callistemon* sp.) along Pilchard Street, with the remainder in paved areas. No natural or sensitive plant communities are present along this pipeline segment.

Most of pipeline segment 3 would be installed using horizontal directional drilling (HDD). The laydown area for the southern section on Mormon Island is in disturbed areas that are either paved or unpaved with sparse cover of non-native grasses and forbs. From Fries Avenue east to near Henry Ford Avenue, the east and west HDD laydown areas are paved. The pigging station on the west side of Henry Ford Avenue (Site A) is unpaved but covered in gravel with no vegetation. The alternative pigging station (Site B) has non-native trees around the perimeter and the remainder of the site is primarily barren. Pipeline segment 4 is in paved areas to the east side of the Valero Refinery, where it would then be in an unpaved, barren area to future Pier B Street, continuing in paved areas to the PT Manifold site. No natural or sensitive plant communities are present along this pipeline segment.

The locations of the staging areas are shown in Figure 5. Staging area 408 is crossed by pipeline segments 2a and 2b, as described above for those pipelines. Staging areas 412 and 413 on Pier 400 are paved. The unpaved space between the pavement and the Pier 400 landfill containment riprap supports a sparse cover of horseweed, telegraph weed, tree tobacco, and mulefat. Staging area 417 is unpaved, but has large piles of gravel and little to no vegetation except adjacent to the west and north fences where the plants are primarily telegraph weed and non-native species. Staging area 420 is partly paved and partly unpaved. The unpaved areas are barren or have sparse weedy or landscape vegetation. Staging area 421 is paved and contains facilities that would be demolished as part of the LAXT Dome and Site Demolition Project. Staging area 425 is paved with no vegetation. Staging area 427 is an existing berth adjacent to Staging area 420. No natural or sensitive plant communities are present in these staging areas.

Wildlife use of developed and undeveloped areas within the proposed Project area, such as Tank Farm Site 1 and Tank Farm Site 2, are generally limited to feral cats, rats and mice, and birds commonly associated with development in the region such as gulls (*Larus* spp.), American crow (*Corvus brachyrhynchos*), rock dove (*Columba livia*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), northern mockingbird (*Euphagus cyanocephalus*), and swallows. Numerous house finches were observed at Pier 400 in December and January during the 2000 baseline surveys (MEC and Associates 2002). In November 2007 one burrowing owl (*Athene cunicularia*) was observed on Tank Farm Site 1 (SAIC 2007). The weedy areas provide cover and forage for small animals (e.g., rodents, lizards, and birds).

3.2 METHODS

Information for federally-listed species in the project area was obtained primarily from biological surveys and monitoring activities that have been conducted in the Los Angeles-Long Beach Harbor in recent years. These surveys included the biological baseline studies for each of the harbors in the 1980s (MBC 1984, MEC 1988), the Year 2000 Baseline Study for both harbors (MEC Analytical Systems 2002), California least tern foraging studies (Keane Biological Consulting 1997, Keane Biological Consulting 1998, Keane Biological Consulting and Aspen Environmental Group 2004), and annual monitoring for California least terns in the Harbor. Descriptions of recent conditions at the proposed facility sites and potential staging areas are from an SAIC field reconnaissance conducted in November 2007. Impact assessment information was also used from the Deep Draft FEIS/FEIR (USACE and LAHD 1992) and the Channel Deepening EIS/EIR (USACE and LAHD 2000). The assessment of impacts is based on the assumption that the proposed Project will include the following:

- An individual NPDES permit for construction stormwater discharges or coverage under the General Permit for Storm Water Discharges Associated with Construction Activity will be obtained for the onshore portions of the proposed Project;
- A sound wall around the shipping pumps at Tank Farm Site 1;
- Containment berms around all oil storage tanks;
- Oil spill containment booms to be deployed around tankers during offloading of crude oil;
- Agency approval and implementation by the tenant of appropriate stormwater discharge permits for operation of the sites;
- Compliance by the tenant with Port Marine Oil Terminal lease conditions that include provisions for the inspection, control, and cleanup of leaks from aboveground tank and pipeline sources; and
- Compliance with requirements under SPCC regulations to develop plans that would detail and implement spill prevention and control measures.

3.3 LISTED SPECIES

Several federally-listed threatened or endangered bird species are known to be present, at least seasonally, in the Harbor. Table 4 lists these species, their status, and habitat used in the Harbor. The American peregrine falcon and gray whale (eastern north Pacific population) are no longer federally listed as endangered and are not discussed in this document.

Table 4. Federally-Listed Bird Species in the Project Area

Common Name	*Scientific Name*	*Status[1]* *Federal*	*Habitat Use*
California least tern	*Sternula antillarum browni*	E	Nests at designated site on Pier 400; forages over shallow water near nest site; present April-August
California brown pelican	*Pelecanus occidentalis californicus*	E	Roosts on breakwaters; forages over open water; rests on water or structures; present all year
Western snowy plover	*Charadrius alexandrinus nivosus*	T	Several migrants at Pier 400 but no nesting in 2003-2007

Note: 1. E = endangered; T = threatened;
Sources: MEC Analytical Systems, Inc. 2002; Keane Biological Consulting 2003; Keane Biological Consulting 2005b

3.3.1 California Least Tern

The California least tern was federally listed as endangered in 1970 and state listed as endangered in 1971 (CDFG 2000). Loss of nesting and nearby foraging habitat due to human activities caused a decline in the number of breeding pairs (USFWS 1992). The biology of this species in the harbor area has been described previously (USACE 1990; USACE and LAHD 1992; Channel Deepening EIS/EIR (USACE and LAHD 2000); Keane Biological Consulting 2003, 2005a) and is summarized below along with information from nesting and foraging studies in the Harbor.

The least tern is a migratory species that is present and breeds in California from April through August. The species has been nesting during the summer on Terminal Island (including Pier 300) since at least 1974 (Keane Biological Consulting 1999a). In 1979, the Los Angeles Harbor Department began providing nesting habitat for the species and entered into a Memorandum of Agreement (MOA) with the U.S. Fish and Wildlife Service (USFWS), U.S Army Corps of Engineers (USACE), and California Department of Fish and Game (CDFG) for management of a 15-acre (6.1-ha) least tern nesting site in 1984. This MOA sets forth the responsibilities of the signing parties for management of the designated least tern nesting site within the Harbor, and it is renewed every three to five years. The most recent MOA was approved by the Board of Harbor Commissioners in June 2006. The MOA also allows the designated nesting site to be relocated under specific conditions. The location of this nesting site has changed over time due to port development activities and is now on the southeastern tip of Pier 400 (Keane Biological Consulting 2003), immediately east of proposed Tank Farm Site 1. In 1997 the only successful nesting occurred on the newly constructed Pier 400, and in 1998 the Pier 300 nesting site was decommissioned (Keane Biological Consulting 1999a). Least tern nesting in the Harbor has been monitored annually since 1973 (Keane Biological Consulting 2003), and the annual nesting activity is shown in Figure 6. The number of nests in the Harbor varied from 0 to 134 between 1973 and 1994 and then steadily increased, from 16 in 1995 to 565 in 2000 with decreases in 2001 and 2002 and increases to 963 in 2003, 1,071 in 2004, and 1,332 in 2005 (Keane Biological Consulting 2005b). The number of nests decreased to 906 in 2006 (Keane Biological Consulting 2007a) and further decreased to 710 in 2007 (Keane Biological Consulting 2007b). Most of the 2003, 2004, and 2005 nests were within the 15.7-acre (6.4-ha) fenced nesting site although 67 in 2003, 29 in 2004, and 25 in 2005 were located in the adjacent area to the west (part of proposed Project, Tank Farm Site 1).

A comparison of the Los Angeles Harbor 1998 nesting success with that from other areas in Los Angeles and Orange counties showed that the Harbor produced 19 percent of the total number of fledglings and the highest number of fledglings per pair (Keane Biological Consulting 1999a). In 2003, the Harbor produced 55 percent of the total number of fledglings in Los Angeles and Orange counties and 25 percent of the statewide fledglings (Keane Biological Consulting 2003). In 2005 these numbers increased to 71.4 percent of the total fledglings in Los Angeles and Orange counties and 45 percent of the statewide number of fledglings (Keane Biological Consulting 2005b). The number of fledglings produced on Pier 400 in 2006 decreased to 44.3 percent of those in Los Angeles and Orange counties and 20 percent of the state total (Keane Biological Consulting 2007a). In 2007, the number of fledglings at the Pier 400 nesting site decreased further to 20.8 percent of those in Los Angeles and Orange counties and 8 percent of the state total (Keane Biological Consulting 2007b). Nesting success at the Pier 400 site is dependent on a number of factors, many of which are unrelated to Port activities~~, such as annual variations in abundance and distribution of prey (primarily anchovies) within and adjacent to the Harbor that are caused by changes in oceanographic conditions (e.g., water temperature and upwelling)~~. These factors are numerous and include (K. Keane, personal communication 2008a):

1. The creation in 2005 and 2006 of additional nesting sites for the least tern as part of the Bolsa Chica Lowlands Restoration Project in Huntington Beach (approximately 12 miles [19 km] south of the Port, where numbers of least tern nesting pairs have increased from approximately 130 in 2005 to 200 in 2007 (Marschalek 2005, 2006, 2007, 2008).

2. The increase in the number of least tern nesting pairs at Venice Beach, approximately 20 miles [32 km] north of the Port. Least tern nesting at Venice Beach, the only other least tern nesting site in Los Angeles County, had been unsuccessful due to recurrent predation by American crows. More effective management of the American crow population preying on least tern eggs and chicks beginning in 2006 resulted in an increase in least tern nesting pairs from 17 in 2004 and 90 in 2005 to 302 in 2006 and 450 in 2007.

3. Fluctuations in the abundance and availability of least tern prey. Least terns preferred prey is northern anchovy and other small bait fish, which although populations can be highly variable, are the most common pelagic fish species in the Port (MEC and Associates 2002). Because information on local occurrence of bait fish populations may not be available, anecdotal evidence

(e.g., high observed chick mortality), increases in water temperatures during the chick-fledgling period (anchovies prefer cooler waters), and a decrease in observations of least tern parents bringing fish into the nesting site are all factors used by least tern biologists to infer at least a localized insufficiency in least tern prey.

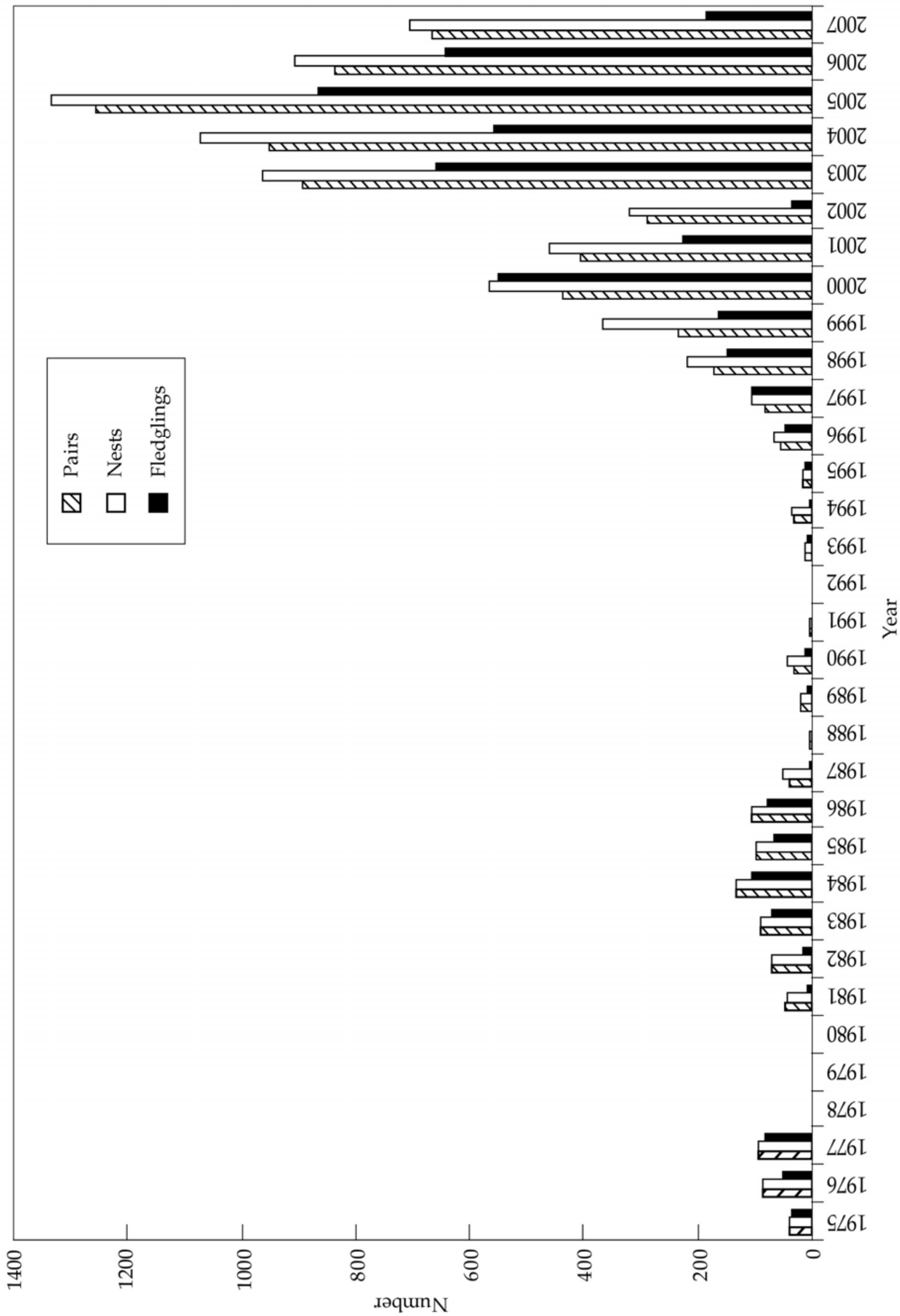
4. In addition to high observed chick mortality (see item 3 above), the Los Angeles Harbor nesting site has experienced a high number of potential avian predators, particularly peregrine falcon (*Falco peregrinus*) and burrowing owl during recent years. The recent increase in peregrine falcons and burrowing owls at the Los Angeles Harbor nesting site is likely not related to the proximity of the site to industrial uses, since both species are predators at nesting sites surrounded by open space as well as developed areas, and the APM container terminal adjacent to the nesting site provides no nesting and few foraging opportunities that would attract either species to the area.

5. An increase in avian chick predators including American kestrel (*Falco sparverius*), peregrine falcon and burrowing owl during recent years. For the latter species, only occasionally observed at the Los Angeles Harbor nesting site until 2005, 86 chick remains due to burrowing owl predation were observed in 2006, and 23 chick remains in 2007. However, the actual number of least tern chicks depredated by burrowing owls in 2007 is believed to be far higher, since burrowing owl observations were recorded at the Los Angeles Harbor nesting site from May through July, and five separate individual burrowing owls were live-trapped and removed from the site (Keane Biological Consulting 2007a, 2007b).

6. A statewide decline in the least tern population has been documented since 2005. This included a 4.7 percent decline in the number of nesting pairs in the San Diego region as well as a 46 percent decline at the Los Angeles Harbor nesting site. However, other factors discussed above have had a local influence on the decline in the number of least tern nesting pairs at the Los Angeles Harbor.

The factors discussed above are unrelated to the proximity of the Los Angeles Harbor nesting site to industrial uses because (1) California least terns have used the harbor nesting site since 1997, (2) numbers of California least tern nesting pairs increased (except for a decrease in 2002, when statewide numbers declined rapidly) from 80 in 1997 to 1,254 in 2005, and (3) the APM Container Terminal adjacent to the nesting site has been in operation since 2002. Nesting has increased at Pier 400 as a result of active management, site preparation and more consistent and effective predator management. However, nesting decreases have occurred due to several factors discussed in the list above, which are unrelated to the presence of industrial uses. In fact, several California least tern nesting sites statewide thrive adjacent to industrial uses and high levels of human disturbance, including the Lindbergh Field nesting site at the San Diego airport, and the Huntington Beach nesting site adjacent to Pacific Coast Highway.

Several foraging studies have been conducted in the Harbor. The 1982, 1984, and 1985 surveys found that least terns foraged over shallow water (generally less than 20 ft [6 m] deep) in the Outer Harbor, especially near the nesting site, especially near the Pier 300 California least tern nesting site, but not in the Inner Harbor (Keane Biological Consulting 1997). Surveys using radio-telemetry and observations in 1986 and 1987 showed that the least terns foraged both inside and outside the Harbor during egg incubation. More foraging occurred near the breakwater than adjacent to Terminal Island during incubation but this reversed after the eggs hatched (Keane Biological Consulting 1997). In the 1994-1996 surveys, least terns foraged around the east and south sides of Pier 300 with greater use of the Seaplane Lagoon in 1996 than in the other ~~2~~two years. After the south side of Pier 300 was dredged to deep water, use by the terns declined. The Cabrillo Beach and Cabrillo Saltmarsh areas were used to varying degrees (Keane Biological Consulting 1997). A study in 1997 and 1998 found that the least terns used the West Basin of Long Beach Harbor as well as the Pier 300 Shallow Water Habitat, Seaplane Lagoon, and the Gap (area between Naval Mole and Pier 400 Transportation Corridor). The foraging frequency (dives per acre) varied among



Note: Nesting has been on Pier 400 since 1997.

Figure 6. California Least Tern Nesting in the Los Angeles Harbor from 1975 through 2007

locations and between years. This variation may be related to changes in availability of prey and to distance from nest sites (Keane Biological Consulting 1998). A foraging study in 2001-2003 in Los Angeles Harbor (Keane Biological Consulting and Aspen Environmental Group 2004) found that foraging varied among locations and between years. Both shallow and deep water areas were used, probably in response to localized fish abundance within the size range suitable for least terns. In 2003, the Pier 300 Shallow Water Habitat accounted for 46 percent of least tern foraging dives. These studies have shown that shallow water areas (less than 20 ft [6 m] deep) provide important foraging areas for the California least tern.

Foraging by least tern at the Pier 300 Shallow Water Habitat increased even more than the number of nests in recent years. This suggests that least tern prey were more abundant over the period of 1994 to 1998. Thus, the increase in nesting may be related to increases in both amount of suitable nesting habitat and prey. Foraging by least terns in 1998 also occurred in the shallow waters of the incomplete Pier 400 Phase 2 fill area to the north of the Phase 1 area (Keane Biological Consulting 1999a). In 1999, least tern foraging was again very high in the Pier 300 Shallow Water Habitat with much of the activity in the waters immediately adjacent to Pier 300 (Keane Biological Consulting 1999b). Foraging was also very high there in 2001 and 2003, but in 2002 the highest foraging was on the north side of Pier 400 adjacent to the causeway (west side) and near Cabrillo Beach (Keane Biological Consulting and Aspen Environmental Group 2004). Foraging showed three peaks in 2003: early to mid May (egg-formation period), mid June (chick hatching period), and early to mid July (fledging period). In 2003, foraging outside the Harbor increased relative to that of the previous two years.

3.3.2 California Brown Pelican

The California brown pelican was federally listed as endangered in 1970 and was state listed as endangered in 1971 (CDFG 2000). Low reproductive success attributed to pesticide contamination that caused thinning of eggshells was the primary reason for their listing. After use of DDT was prohibited in 1970, the population began to recover (USACE and LAHD 1992). Abundance of this species has increased to 9.5 percent in 2000 (MEC and Associates 2002) since surveys in 1973 found they comprised only 3.8 percent of the total bird observations in the ports (HEP 1980). The USFWS published a 90-day finding for the California Brown Pelican delisting petition, initiated a status review to determine if delisting is warranted (see 71 FR 29908 dated 24 May 2006), and has now proposed to delist the species (USFWS 2008).

Brown pelicans use the Harbor year-round, but their abundance is greatest in the summer when post-breeding birds from Mexico arrive. The highest numbers are present between early July and early November, when several thousand can be present (MBC 1984). Pelicans use all parts of the Harbor, but they prefer to roost and rest on the harbor breakwater dikes, particularly the Middle Breakwater (MBC 1984, MEC 1988, MEC Analytical Systems 2002). Brown pelicans were observed adjacent to Pier 400 throughout the year during the 2000 baseline surveys (MEC Analytical Systems 2002) and during the 2004 least tern nesting monitoring (Keane Biological Consulting 2005a). They forage over open waters for fish such as the northern anchovy, and accounted for 9.5 percent of the total number of birds observed in the harbor during the 2000-2001 surveys. The brown pelican does not breed in the harbor area. The only breeding locations in the U.S. are at West Anacapa Island and Santa Barbara Island, although a few have begun nesting at the south end of the Salton Sea (CDFG 2005, Patten et al. 2003). Breeding also occurs at offshore islands and along the mainland of Mexico.

3.3.3 Western Snowy Plover

The Pacific coast population of the western snowy plover was federally listed as threatened in 1993 (USFWS 1993). This small shorebird nests on coastal beaches from southern Washington to southern Baja California and winters along the coast of California and Baja California (NatureServe 2005). The birds forage on invertebrates (crustaceans and worms) along the shore in or near shallow water (Bent 1929). Western snowy plovers were observed on Pier 400 during the least tern nesting surveys in 2003 through 2007. The plovers were not nesting and appear to have been stopping during migration (Keane Biological Consulting 2003, 2005a). Western snowy plovers also use Cabrillo Beach during the winter non-breeding season (L. Chilton, personal communication 2008). Critical habitat was designated for this species in September 2005 (USFWS 2005) and included four locations within coastal Los Angeles County, none of which is in the Los Angeles-Long Beach Harbor area.

3.3.4 Sea Turtles

No sea turtles have been observed within the San Pedro Bay Ports during more than 20 years of biological surveys (MEC 1988, MEC and Associates 2002). However, several species have regional distributions in southern California. Therefore, it is possible that sea turtles may be occasional visitors to the offshore and Outer Harbor areas of the San Pedro Bay Ports.

Several turtle species are found in the eastern Pacific Ocean, including loggerhead, green, leatherback, and olive ridley sea turtles. Loggerhead sea turtles (*Caretta caretta*), federally listed as threatened, are found in all temperate and tropical waters throughout the world and are the most abundant species of sea turtle found in U.S. coastal waters (NMFS 2007a).

Green sea turtles (*Chelonia mydas*), federally-listed as threatened, are found in all temperate and tropical waters throughout the world. They primarily remain near the coastline and around islands and live in bays and protected shores, especially in areas with seagrass beds. In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south (NMFS 2007a). They are rarely observed in the open ocean.

Leatherback sea turtles (*Dermochelys coriacea*), federally-listed as endangered, are the most widely distributed of all sea turtles and are found worldwide with the largest north and south range of all the sea turtle species. The Pacific Ocean leatherback population is generally smaller in size than that in the Atlantic Ocean (NMFS 2007a).

Olive ridley sea turtles (*Lepidochelys olivacea*), federally listed as threatened, are found in tropical regions of the Pacific, Indian and Atlantic Oceans. They typically forage off shore in surface waters or dive to depths of 500 ft (150 m) to feed on bottom dwelling crustaceans (NMFS 2007a).

3.3.5 Whales

Several species of whales that are federally listed as endangered are present in waters along the coast of California. These include blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), and killer whale (*Orcinus orca*). These whales generally are found as single individuals or in pods of a few individuals (Leatherwood and Reeves 1983).

Vessel Collisions with Marine Mammals and Sea Turtles

Ship strikes involving marine mammals and sea turtles, although uncommon, have been documented for the following listed species in the eastern North Pacific: blue whale, fin whale, humpback whale, loggerhead sea turtle, green sea turtle, olive ridley sea turtle, and leatherback sea turtle (NOAA Fisheries and USFWS 1998a, 1998b, 1998c, 1998d; Stinson 1984; Carretta et al. 2001). Ship strikes have also been documented involving killer (*Orcinus orca*) whales. Determining the cause of death for marine mammals and sea turtles that wash ashore dead or are found adrift is not always possible, nor is it always possible to determine whether propeller slashes were inflicted before or after death. In the case of a sea otter, for example, wounds originally thought to represent propeller slashes were determined to have been inflicted by great white sharks (Ames and Morejohn 1980). In general, dead specimens of marine mammals and sea turtles showing injuries consistent with vessel strikes are not common.

While vessel collisions with all marine mammals and sea turtles have been reported, the majority of incidences involve whales. The National Marine Fisheries Service (NMFS) has records of vessel strikes with whales in California coastal waters for 1982 through 2007 (NMFS 2007b). Of the 65 recorded strikes in the MNFS database, most of the identified listed species were blue whales (15 percent) with a few fin whales and humpback whales. The number of strikes per year (listed, non-listed, and not identified to species) ranged from none to seven and averaged 2.6 along the entire coast of California, but the actual number is likely to be greater because not all strikes are reported. Although ~~T~~the types of vessels involved in whale strikes may not always be reported, they have ~~often were not known but~~ included freighters/container vessels going to the Los Angeles-Long Beach Harbor. For coastal waters of the U.S. (Jensen and Silber 2003), 8 of 134 whale/ship strikes (6 percent) involved tankers.

For whales in southern California, potential strikes to blue whales are of concern because the north-south migration patterns of blue whales along the California coast cross (are perpendicular to) the established shipping channels in and out of California ports and because the blue whale population numbers are low relative to historic numbers. In the North Pacific, the pre-whaling population size is estimated at approximately 4,900 blue whales, while the current population estimate is approximately 3,300 blue whales with 1,700 in the eastern North Pacific (NMFS 2008). Along the California coast, blue whale abundance has increased over the past two decades (Calambokidis et al. 1990; Barlow 1995; Calambokidis 1995). However, the increase is too large to be accounted for by population growth alone and is more likely attributed to a shift in distribution. Incidental ship strikes and fisheries interactions are listed by NMFS as the primary threats to the California population. According to NMFS records, the average number of blue whale mortalities in California attributed to ship strikes was 0.2 per year from 1991-1995 and from 1998-2002. In September 2007, however, a larger number (3) of blue whale mortalities occurred. These mortalities were confirmed to be caused by ship strikes in the Santa Barbara Channel but declared to be part of an "Unusual Mortality Event" (NMFS undated). The cause(s) of the unusual mortality event is undeclared at this time but may have been associated with biotoxins from harmful algal blooms along the southern California coast.

Vessel speed seems to influence the incidence of whale/ship collision. The Jensen and Silber Whale Strike Database (Jensen and Silber 2003) reported 134 cases of known vessel strikes in U.S. coastal waters, and vessel speed was known for 58 of these cases. Most vessels were traveling at speeds of 13 to 15 knots or higher. According to a report from NOAA, which was based on information in the Jensen and Silber (2003) whale strike database and Laist et al. (2001), the majority of vessel collisions with whales occurred at speeds between 13 and 15 knots. When vessel speed exceeds 10 knots, strikes are usually fatal (J. Cordaro, personal communication 2008).

NOAA recommends:

> *"Overall, most ship strikes of large whale species occurred when ships were traveling at speeds of 10 knots or greater. Only 12.3% of the ship strikes in the Jensen and Silber database occurred when vessels were traveling at speeds of 10 knots or less. While vessel speed may not be the only factor in ship/whale collisions, data indicate that collisions are more likely to occur when ships are traveling at speeds of 14 knots or greater. This strongly suggests that ships going slower than 14 knots are less likely to collide with large whales. Therefore, NOAA Fisheries recommends that speed restrictions in the range of 10-13 knots be used, where appropriate, feasible, and effective, in areas where reduced speed is likely to reduce the risk of ship strikes and facilitate whale avoidance" (*NOAA Undated).

4.0 EFFECTS OF THE ACTION

Construction activities would result in short-term disturbances that have the potential to affect listed species while operation activities could have effects in the long term. Noise and vibration, human presence, and other disturbances associated with construction could affect behavior of individuals but would not remove any habitat for listed species. Facility lighting, presence of structures that could be used as perches by predators, noise or vibration, and oil spills could affect listed species continuously or at intervals within the Harbor during operations, and project-related vessel traffic and oil spills could affect listed whales outside the Port. Predicted effects on each of the listed species present in the project area are discussed below.

4.1 CALIFORNIA LEAST TERN

Construction

Facilities to be constructed on Pier 400 include Tank Farm Site 1, the Marine Terminal, and a portion of the 42-inch pipeline (see Figure 1), and a temporary staging area (412 in Figure 5). Tank Farm Site 1, staging area 412, and the 42-inch pipeline are adjacent to the California least tern nesting area.

Tank Farm Site 1

Proposed Project facilities on Tank Farm Site 1, an unpaved area, and the necessary utility line extensions on Pier 400 would be constructed adjacent to the California least tern nesting area. A portion of the site has been used by least terns, as well as Caspian terns, elegant terns, and black skimmers, for nesting in the past. In 2003 and 2004, vegetation was cleared from a portion of Tank Farm Site 1 to provide additional area for California least tern nesting. This area was not cleared in 2005 through 2007. This made the site less attractive for nesting by all of these species, with no nesting observed in 2006 or 2007 (Keane Biological Consulting 2007a, b). Proposed Project site preparation and construction activities would be unlikely to harm any nesting California least terns, or other birds, because none are expected to nest there prior to proposed Project construction. A condition of the proposed Project will require the California least tern biologist to survey Tank Farm Site 1 prior to construction activities. If any nests are found, they would be protected by a buffer (see Measure #8 in Section 5).

Construction activities within about 200 ft (61 m) of the nesting area have the potential to adversely affect the reproductive success of California least terns if such activities occurred during the nesting season. The 200-ft (61-m) distance has historically been accepted as an appropriate set-back from the least tern nesting site for construction lay-down areas[1] (USACE and LAHD 1992.) This distance is not an exclusion zone or an absolute distance that prohibits all activities but rather is a reasonable buffer distance that would apply to construction activities that have the potential to adversely affect the California least tern. This distance can be modified through consultation with the CDFG and USFWS under the MOA for the California Least Tern Nesting Site (City of Los Angeles et al. 2006), but is assumed to be 200 ft (61 m) for this analysis.

Construction activities that would occur within 200 ft (61 m) of the nesting site include most of the 50,000 bbl surge tank, the motor control center building and transformers, an access road, the eastern portion of the 8-ft (2.4-m) high containment dike, an 8-ft (2.4-m) security fence, approximately five 30-ft

[1] The 200 feet (61 m) was originally established as an initial protective setback for construction activities when a least tern nest was found outside the designated nesting area. It is therefore felt to be a protective distance for the nesting site which is protected by a fence and in most portions is at a higher elevation then surrounding topography.

(9-m) high light poles, a 24-inch water line, a 34.5-kV electrical line, a communication line, a gas line, and a storm drain line (see Figure 7, Tank Farm Site 1 details). Temporary piles would be driven adjacent to staging area 412 as a mooring for ships delivering stone column gravel. The eastern side of the 50,000 bbl surge tank would be 120 ft (36.6 m) from the security fence adjacent to the least tern nesting site. For the impact analysis, it is assumed that some of these facilities would be constructed during the California least tern nesting season. Construction of the other oil tanks (excluding stone column installation discussed below), the remaining containment dikes and security fence, parking, and perimeter access road; other equipment; and the Marine Terminal facilities (see below) would occur at a distance greater than 200 ft (61 m) from the least tern nesting site.

Noise from at least some of the construction equipment and human presence adjacent to (within approximately 200 ft, 61 m of) nesting least terns could cause adults to abandon nests or to leave the nests long enough that the eggs or chicks become chilled or are preyed upon. Because the western side of the California least tern nesting site is at a higher elevation than Tank Farm Site 1, human presence alone within 200 ft (61 m) is not likely to adversely affect the least terns. However, temporary lighting structures, equipment, stockpiles of materials, or large pieces of equipment could provide perches for predatory birds near the nesting site during construction. Food wastes from construction workers that are not placed in sealed trash receptacles could attract predators that would disturb or prey upon least terns. Construction near the least tern nesting site would occur during two nesting seasons. These activities have the potential to adversely affect the least tern.

Stone columns made from compacted gravel would be installed for support under each of the tanks (prior to tank construction) at Tank Farm Site 1 and Tank Farm Site 2. This would involve the use of a vibrating probe to penetrate into the ground and to install the gravel columns. Testing to determine if the stone columns have sufficiently strengthened the soil would also occur. Both noise and vibration are produced by these activities. Installation of stone columns at Tank Farm Site 1, particularly those closest to the nesting site when the least terns are nesting, has the potential to disturb or stress the birds and thereby reduce reproductive success. A study of the existing noise levels at the west edge of the least tern nesting site in August 2005 (see Attachment A) found noise to be directly related to activities at the existing terminals on Pier 400. The average noise level at the northwest corner of the nesting site was approximately 50 dB(A) with the maximum level exceeding 88 dB(A). At the southwest corner of the nesting site the average noise level was approximately 48.5 dB(A) with the maximum level above 83 dB(A). Construction activities at the Project Marine Terminal and Tank Farm Site 1 would add to those noise levels, particularly when Project noise is more than 10 dB(A) higher than the background noise level. The California least tern would not be affected, if the stone column installation at Tank Farm Site 1 is scheduled for September through March when the least terns would not be present. Figure 4 shows that stone column installation would take six months and, thus, could occur when the least terns are present. Noise and vibration from stone column construction at Tank Farm Site 1 during the least tern nesting season would have the potential to adversely affect this species. Installation of stone columns at Tank Farm Site 2 would not affect the least tern due to distance from the nesting area.

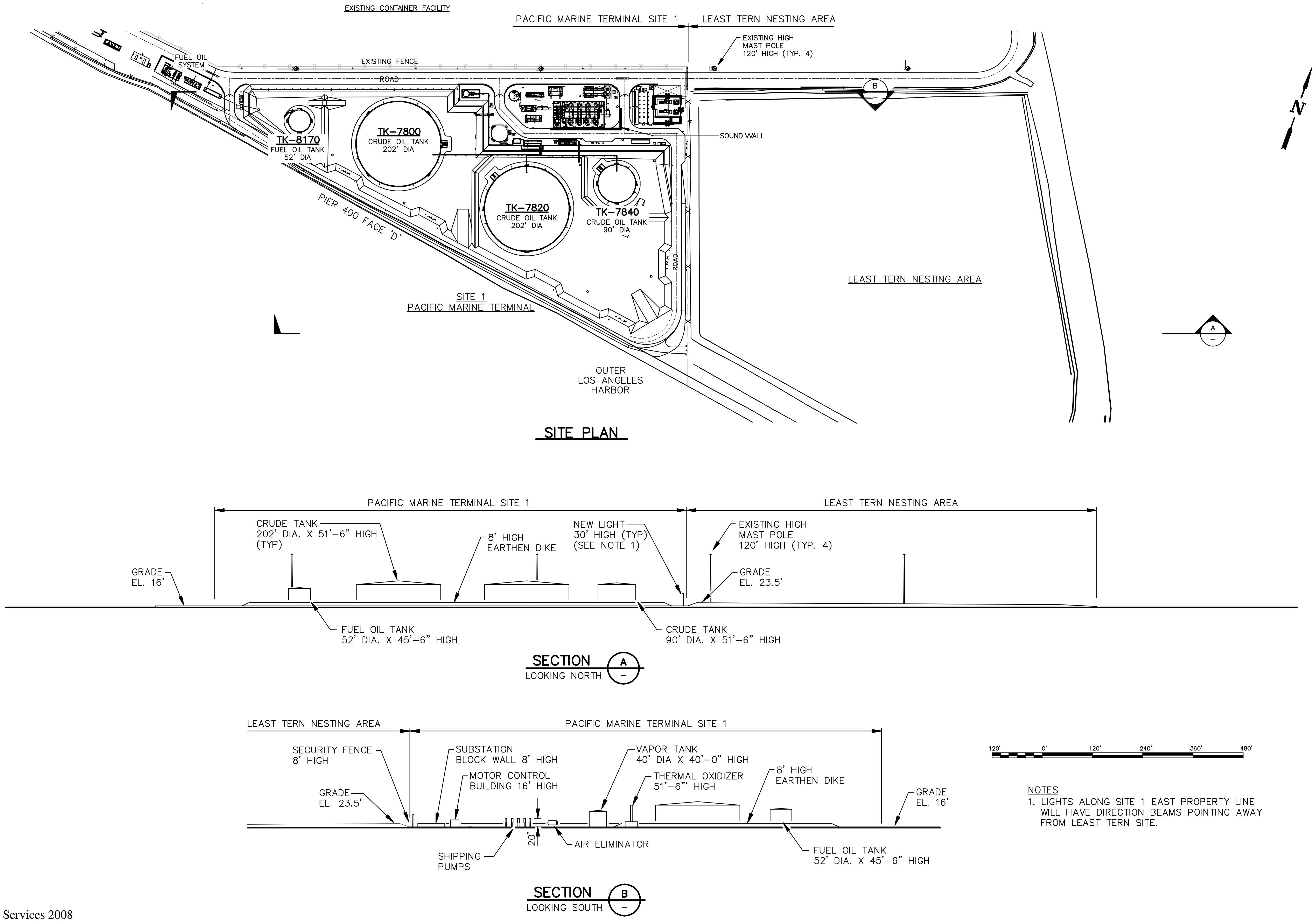
Construction of proposed Project Tank Farm Site 1 facilities on Pier 400 would not interfere with the aerial migration of the least tern because the birds would be able to fly over or around the construction activities. Movement to and from foraging areas in the Harbor also would not be affected by construction at this site. Direct flights of least terns from the nesting area to the Pier 300 Shallow Water Habitat for foraging would not pass over Tank Farm Site 1, although some individual terns could fly over Tank Farm Site 1 to reach the Cabrillo Shallow Water Habitat for foraging or en route to other areas in the Harbor.

Marine Terminal

The ambient noise measured at the western edge of the nesting site averaged 50 dB(A) over 24 hours (based on measurements taken once every hour for 7 days), with a maximum of 88 dB(A) (Navcon Engineering 2005b – see Attachment A). Construction of the Marine Terminal facilities on Face C of Pier 400 would be at least 2,400 ft (730 m) from the least tern nesting site. This includes the ~~operators'~~ security office and marine terminal control building~~ and the administration building~~. Construction noise is not constant, and the peak onshore construction noise (excluding pile driving, which is discussed below) would be less than 65 dB(A) at the nesting site based on a standard noise attenuation analysis. The attenuation analysis is based on the typical noise level of a complement of construction equipment of 91 dB(A) at 50 ft (15 m) (City of Los Angeles 2006), with noise attenuating by 6 dB per doubling of distance. This is within the range of existing noise at the nesting site: ambient existing noise (in year 2005) measured at the western edge of the nesting site averaged 50 dB(A) over 24 hours (based on measurements taken once every hour for 7 days), with the highest recording during the measurement period being 88 dB(A) (Navcon Engineering 2005b – see Attachment A). Therefore, on-land c~~C~~onstruction activities ~~at that distance from the nesting site~~at the Marine Terminal are unlikely to affect least terns while at the nesting site. Least tern flights to the Cabrillo Shallow Water Habitat and Pier 300 Shallow Water Habitat for foraging would be unlikely to pass over the construction site, although some individual terns could fly over the construction site en route to other areas in the Harbor.

Noise and vibration from pile driving for construction of the berth facilities at the Marine Terminal could affect least terns directly through startle responses and indirectly through changes in the distribution or abundance of prey species of fish in response to the vibration or sound pressure waves. Pile driving for the Marine Terminal would occur more than 2,400 ft (730 m) from the western edge of the least tern nesting site. Peak noise levels from pile driving would range from 95 to 107 dB(A) at a distance of 50 ft (15 m) (City of Los Angeles 2006). Using the maximum value for the proposed Project pile driving (largest steel piles), the maximum pile driving noise level at the western edge of the California least tern nesting site would be ~~less than~~at most approximately 74 dB, which is based on a value of 95 to 107 dB at 50 ft (15 m) and attenuation of 6 dB per doubling of distance, due to attenuation of the sound by more than 33 dB over the 2,400-ft (732-m) distance between the ~~work~~ pile driving locations and the western edge of the nesting site. ~~The ambient noise measured at the western edge of the nesting site averaged 50 dB(A) during the day, with a maximum of 88 dB(A) (Navcon Engineering 2005b – see Attachment A).~~ Peak noise levels (ambient noise plus that from proposed Project construction) of up to 76 dB(A) would occur at the California least tern nesting site during driving of large, steel pilings, depending on ambient noise levels. ~~Pile driving would not increase the maximum noise level at the least tern nesting site but would increase the average noise level by up to 24 dB(A) while the largest piles were being driven.~~ The increase in noise at the nesting site would be less ~~for~~ during driving of the smaller concrete piles. Therefore, maximum (peak) noise levels during construction would be within the range of values measured at the site under existing conditions.

The average noise level at the California least tern nesting site would likely be increased during pile driving, compared to the current ambient noise. (As noted above, measurements at the western edge of the nesting site taken once every hour for 7 days in 2005 averaged 50 dB(A) over 24 hours, with the highest recording during the measurement period being 88 dB(A) (Navcon Engineering 2005b – see Attachment A)). However, pile driving would not be a continuous operation and noise levels would vary depending on type of piling (steel, concrete), piling size, daily schedule of construction activities, duration of pile driving, and pile driving method. During days in which pile driving would occur, the average daytime noise level at the nesting site is estimated to be approximately 66 dB(A), but the nighttime level would not be changed compared to existing conditions (because no pile driving, nor any other construction, would occur during nighttime). Although no thresholds exist for average noise level effects on the California least tern, the potential to disturb California least terns during pile driving activities would be



Source: SPEC Services 2008

Figure 7. Tank Farm Site 1 Layout and Cross Sections

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low because this species is tolerant of a variety of very high average-noise-level environments while nesting, including airfield operations, highway traffic, military operations (with helicopters), and construction activities (K. Keane, personal communication 2008b). Construction of container terminal facilities on both Pier 300 and Pier 400 has occurred adjacent to the nesting site while the California least terns were nesting with no observed adverse affects related to noise. In addition, piles were driven for the berths along the south side of Pier 300 at a distance of less than 1,200 to 2,300 ft (366 to 701 m) from the nesting site (located on Pier 300 at that time). No disturbance of nesting of the California least terns was observed during these events. ~~Because pile driving noise would be less than existing maximum noise levels at the nesting site, noise (in air) from the pile driver for the steel pilings would have a low potential to startle least terns at the nesting site~~Consequently, no adverse effects on the least tern are expected.

Pile driving also causes sound pressure waves in the water that could result in the dispersal of fish schools, at least temporarily, and consequently could affect the ability of least terns to find and feed on small schooling fish. The size (diameter and length) and type of piles, type and maximum energy level of the hammer, and specific site characteristics influence the level of sound produced and its attenuation with distance from the pile driving. Results from a study site in Canada indicated that driving closed-end steel piles 36 inches (91 cm) in diameter with a peak sound pressure approaching 150 kPa resulted in mortality of several species of fish ~~at an unspecified distance from the noise source~~"around the pile" (Vagle 2003). Hastings and Popper (2005) reported no statistically significant mortality (i.e., no difference from control groups) for sound exposure levels (SELs) as high as 181 dB (re 1 μPa^2-s) for surfperch and SELs as high as 182 dB (re 1 μPa^2-s) for steelhead. In contrast, for large hammers driving steel piles over 8 ft (2.4 m) in diameter, ~~only~~ temporary behavioral effects on juvenile salmonids were predicted at distances greater than 575 ft (175 m) from the noise source (NMFS 2003). ~~As indicated in Section 2.2.1 of this assessment and in Section 2.4.2.1 of the Draft SEIS/SEIR, at the current design stage it is not certain whether the mooring dolphins would require steel or pre-stressed concrete piles. "Option 1" as used in this assessment corresponds to the use of steel piles for the mooring dolphins, while "Option 2" corresponds to the use of pre-stressed concrete piles for the mooring dolphins.~~ The ~~110~~ 92 ~~(Option 1) or 74 (Option 2)~~ steel piles planned for Berth 408 would range from 48 to 54 inches (122 to 137 cm) in diameter. Impact driving for these steel piles could generate levels as high as 210 dB_{peak}, 195 dB_{rms}, and 185 dB_{sel} at a distance of 33 feet (10 m) from the pile (Caltrans 2007b). In addition, 44 ~~40 (Option 1) or 184 (Option 2)~~ 24-inch (61-cm) diameter concrete piles would be installed in the water for the berth. Impact driving for the concrete piles could generate levels as high as 188 dB_{peak}, 176 dB_{rms}, and 166 dB_{sel} at a distance of 50 feet (15 m) from the pile (Caltrans 2007b). An additional ~~Another~~ 34 concrete piles would be installed on land. The number of piles includes those needed to support ~~for~~ the AMP platform and a platform for potential future installation of an ACTI AMECS system.

Shallow water foraging areas for the California least tern at the Cabrillo Shallow Water Habitat are located more than 2,000 ft (610 m) from the Marine Terminal, and effects of pile-driving sound on fish in that habitat are expected to be minimal. This is because the distance from the berth to the foraging area would be more than twice the 575-ft (175-m) distance at which effects on fish behavior would be expected and because the size of piles to be used would be smaller. California least terns also forage extensively at the Pier 300 Shallow Water Habitat that is over 2.3 mi (3.7 km) away (via water) from Berth 408. Pier 400 lies between Berth 408 and that foraging area. Due to this distance and the intervening landfill, impacts to forage fish used by least terns at the Pier 300 Shallow Water Habitat would not be expected to occur. ~~These~~ Underwater sound effects also would be of short duration and greatest along Face C of Pier 400 that is deep water not heavily used for California least tern foraging. Further, the area affected by pile-driving sound pressure waves would be a small portion of Harbor waters, and installation of the piles may or may not occur when the California least terns are present. No effects would occur in the absence of least terns.

Pipeline Segment 1 Route

A portion of Pipeline Segment 1 would be located adjacent to the north side of the California least tern nesting site (see Figure 1). The portion of that pipeline in the causeway bridge from Pier 400 to Terminal Island~~,~~ would pass near the shallow water habitat on the east side of Pier 400 and the Pier 300 Shallow Water Habitat. However, no construction activities would take place in shallow water foraging habitat for the California least tern. The potential for effects on the least tern would depend on the timing of the construction activities. If all construction within approximately 200 ft (61 m) of the nesting site and foraging areas was completed when least terns were not present, then no effects to that species would occur. Construction when California least terns are present (April through August) would have the potential to adversely affect some individuals, depending on the type of activity and its location and duration.

Staging and Storage Areas

Staging area 412 on Pier 400 just north of the California least tern nesting site (see Figure 5) could be used for delivery and storage of gravel for stone column installation. Staging area 412 is paved and, thus, would not provide any suitable nesting habitat for the California least tern. Installing and removing temporary mooring piles at this location within 200 ft (61 m) of the nesting site would have the potential to disturb least tern nesting if these activities occurred between April and late August. Unloading, stock piling, and transport of gravel to the tank construction locations at Tank Farm Site 1 would also have the potential to disturb least tern nesting in the northeast portion of the nesting site if such activities occurred during the nesting season (April to September). The construction schedule (Figure 4) shows stone column work lasting six months, and this could overlap with the least tern nesting season, depending on when the work starts and ends. These activities would be unlikely to adversely affect least tern nesting because they would be similar to other activities that currently occur at the adjacent container terminal (e.g., vehicle movement, human presence, and noise associated with those activities). Activities at the container terminal occur as close as 120 ft (37 m) to the least tern nesting site while staging area 412 extends over 800 ft (244 m) away from the nesting site, allowing space for activities away from the nesting site. Storage and movement of rock at any of the other potential staging areas would not affect the California least tern due to distance from the nesting site.

All Construction Sites

Runoff of sediment and pollutants from construction activities at the proposed Project facility sites has the potential to adversely affect water quality, particularly at storm drain outlets. Such runoff would be most likely to occur during the rainy season (October through April) when the least tern is not present. Runoff of pollutants such as concrete wash water, especially during the least tern nesting season, has the potential to cause mortality of forage fish used by least terns. The proposed Project would be required to comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity, which includes preparation of a SWPPP and implementation of Best Management Practices (BMPs) to control stormwater runoff of pollutants. In addition, Port construction specifications (Section 01410) require containment of all concrete wastes and other pollutants so that no runoff occurs. Thus, no reduction in forage fish availability for California least terns would occur.

Operations

Tank Farm Site 1 and Marine Terminal on Pier 400

Noise and Vibration. Operation of the Project tank farm facilities at Site 1 on Pier 400 would locate noise and vibration sources (i.e., pumps and transformers) near the California least tern nesting site. However, the locations of noise-generating equipment have been sited to minimize effects on the California least tern. Large transformers would be located on the east side of the Motor Control Building. Air conditioning units would be located on the west side of the Motor Control Building, smaller VFD transformers would be located on the north and south sides of that building, and shipping pumps would be just west of that location. The shipping pumps would be 200 ft (61 m) or more from the western edge of the least tern nesting area (see Figure 7). These pumps would run continuously for 20 to 30 hours while tankers are unloading at the berth (about twice a week) and then run intermittently, except for a 24-hour period when the transfer tank would be cleared. A noise contour study showed that noise from the shipping pumps and other project equipment would extend into the least tern nesting area, ~~resulting~~ producing ~~in~~ noise levels ranging from 45 to 70 dB(A) (Navcon 2005b, see Attachment A). The highest noise levels were in the northwest part of the nesting area. Relocation of some equipment and placement of a 20-ft (6-m) high sound wall barrier on the east and south sides of the shipping pumps reduced the noise level range to 40 to 60 dB(A). Further changes in the Project layout resulted in p~~P~~lacement of a 26-foot (7.9-m) high sound wall barrier around the east and south sides of the shipping pumps and a 6-ft (1.8-m) block wall around the large transformers ~~are part of the Project~~ to reduce the noise levels at the California least tern nesting area. The resulting noise levels are described below. Noise from the large transformers was included in the noise contour study (Navcon Engineering 2005b). The VFD transformers produce a low level of sound that is not expected to increase the overall noise from the Project in the least tern nesting area.

Ambient noise was measured at one-hour intervals over a 7-day period in August 2005 at the north and south ends of the western least tern nesting site boundary (Navcon Engineering 2005a in Attachment A). These measurements showed the average noise level to vary between 50 and 60 dB(A) during the day (about 7 AM to 12 AM) and between 40 and 45 dB(A) at night. The maximum noise recorded was 88.2 dB(A).

A 3D noise modeling study (Navcon Engineering 2006 – see Attachment A) combined the ambient and predicted proposed Project noise levels, and noise contour maps were generated using the Community Noise Exposure Level (CNEL). The results of this modeling showed that operation of facilities at Tank Farm Site 1 would increase ambient noise at the least tern nesting site by less than 1 dB(A) over most of the site and by less than 2 dB(A) in a small area along the western side of the nesting site. When the shipping pumps are not running, the terns would be exposed only to background ambient noise. Short term noise events at the existing adjacent marine container terminal currently exceed the average ambient noise level of 50 to 60 dB(A). Noise from container loading and unloading and trucks (including horns and gate activities) does not deter least tern nesting at Pier 400. The small, intermittent increase in noise resulting from operation of Tank Farm Site 1 would not adversely affect the California least tern. The species has continued to nest at this location, even with periodic high noise levels associated with existing activities on Pier 400.

With the barrier in place, noise and vibration from the shipping pumps, combined with other Project equipment noise, would not adversely affect the least terns, when present. Project noise would be relatively constant while background noise would fluctuate with peaks and dips related to other activities on Pier 400.

Lighting. Lighting along the eastern security fence would be adjacent to the California least tern nesting area. These lights would have directional beams pointing away from the nesting area but would add an increment to the general night light levels at the nesting site from the existing lighting for the APM Container Terminal to the north. Tank stairs, platforms, and instrument locations would have lights with shields and deflectors to direct light at the work area only. These lights would be smaller, located at distances of 120 ft (36.6 m) or greater from the nesting site, and unlikely to affect light levels at the nesting site. Proposed Project lighting along the eastern side of Tank Farm Site 1 would not result in an substantial increase in nighttime light levels at the California least tern nesting site. ~~in the western part of the nesting site that would range from negligible in the north where the larger container terminal lights are located to small in the south near the Pier 400 Face D dike.~~ This small increase in light levels ~~w~~could ~~only~~ extend a short distance into the least tern nesting site, primarily at the southwestern corner. However, ~~T~~the nesting site is approximately 850 ft (259 m) wide, and a low level of increased light along the western edge would have a low potential to disturb least tern roosting at night or to increase predation on the least terns. Monitoring indicates that California least terns have adapted to artificial lighting at Pier 400 without adverse effects on nesting success (K. Keane, personal communication 2008a).

Predation. The buildings, containment dikes, security fence, light poles, sound barrier wall, and closest tanks (50,000 bbl and one 250,000 bbl) all could provide perches for birds, such as American crow, common raven, American kestrel, black-crowned night heron, and gulls, that may prey upon least tern eggs, young, or adults (Keane Biological Consulting 2003). The locations of structures that could be used as perches have been discussed with biological resource agencies during the proposed Project planning process and some structures were relocated to minimize effects. The least tern nesting site (see Figure 7) is approximately 7.5 ft (2.3 m) higher (elevation 23.5 ft MSL) than the ground surface at Tank Farm Site 1 (elevation 16 ft MSL), and the tanks would have a height of 51.5 ft (15.7 m) above ground level (elevation 67.5 ft MSL at top). The closest of these tanks would be 120 ft (36.6 m) from the least tern nesting site and 44 ft (13.4 m) higher than the nesting site. The light poles would be 30 ft (9.1 m) tall, making them 22.5 ft (6.9 m) higher than the nesting site. Approximately five of these poles would be within 200 ft (61 m) of the nesting site. The Motor Control Building would be 16 ft (4.9 m) high, or 8.5 ft (2.6 m) higher than the nesting site. The sound barrier wall around the pumps would be 20 ft (6 m) tall, and only a portion of it would allow perching predators to have direct visibility of the least tern nesting site (Motor Control Building and 50,000 bbl tank are between the wall and the nesting site). Thus, the proposed project could increase predation on the least tern that could affect their population size. The security fence and containment dikes would be only 0.5 ft (0.2 m) higher than the least tern nesting site and, thus, would not provide perching vantage points for predators, considering that the chick fence is about 3 ft (0.9 m) high along the western edge of the nesting site. The project will include placement of anti-perching devices (e.g., Nixalite) on all structures that could provide predator perches and predator monitoring (see Measures #9 and 10 in Section 5).

Human Presence. During operations of the Marine Terminal and Tank Farm Site 1, the level of human presence would be low with little activity near the least tern nesting site. Vehicular traffic on the perimeter access road in Tank Farm Site 1 would be infrequent. PLAMT personnel would also periodically inspect the tanks, and this activity would be of short duration (a few hours at the most) and would be over 120 ft (61 m) away from the nesting site. This level and location of human activity is unlikely to have any effect on the least tern. The Port has an existing worker education program regarding the California least tern that would be implemented for the PLAMT personnel (see Measure #15 in Section 5).

Vessel Traffic. Project-related vessel traffic entering the Outer Harbor would use the existing Glenn Anderson Ship Channel to reach the berth on Pier 400. The increase of up to 201 vessel calls per year would represent a 7 percent increase over the CEQA Baseline (2004 conditions) entering Los Angeles Harbor and a 3 percent increase over the CEQA Baseline for Los Angeles-Long Beach Harbor. Compared to the NEPA Baseline (future conditions without the proposed Project), which assumes that a maximum of 267 new vessels calls would occur to satisfy demand and could be accommodated by existing facilities, project-related vessel traffic would be 66 calls per year less than that baseline. The small increase compared to the CEQA Baseline would have a low potential to adversely affect foraging by a few individual least terns since this species primarily uses shallow water areas that are not in the main vessel transit routes for foraging, although some deeper water areas, both inside and outside the Harbor, are sometimes used for foraging (Keane Biological consulting and Aspen Environmental Group 2004). Project-related vessel calls would have no effects on California least tern foraging compared to the NEPA Baseline.

Visual. The visual presence of the tanks and other facilities at Tank Farm Site 1 has the potential to affect California least terns. A visual simulation of the views from the ground level at the southeastern corner, center, and northwest corner of the nesting site shows what the tanks would look like to least terns on the nesting site (see Figure 8). When close to the chick fence along the west side of the nesting site, the fence screens the view of the tanks with the exception of the top edge of the 50,000 bbl and 250,000 bbl tanks. From the center of the nesting area both tanks are visible but only take up a small fraction (less than 4 percent) of the skyline. Containers at the terminal to the north of the proposed Project site are also visible. From the southeast corner of the nesting site, the two tanks appear small and low and take up only a fraction of the skyline. In general, least terns do not nest in the direct vicinity of high structures such as solid walls and buildings. The distance of the tanks from the nesting site and the low elevation of the containment berms around the tanks (0.5 ft [0.2 m] higher relative to the elevation of the nesting site) would not infringe on the open vista of nesting sites normally occupied by least terns (see Figure 7).

Tank Farm Site 2

Operation of the proposed storage tanks on Terminal Island at Tank Farm Site 2 would not affect least terns since none are known to be present at or near this site. The heights of the 14 storage tanks at Tank Farm Site 2 would be 50 ft (15 m), which is similar to other facilities in the area. The Administration Building at Tank Farm Site 2 would be two to three stories tall. Neither t~~T~~he~~se~~ storage tanks nor the Administration Building would ~~not~~ cause a barrier or impediment to least tern flights to foraging areas, due to their location and size.

Oil Spills

Small (less than 238 bbl) crude oil spills into harbor waters during vessel transit within the Port of Los Angeles could occur with a frequency of one per 217 years, ~~assuming~~ since all proposed Project vessels are double hulled (see Section 3.12, Hazards, Table 3.12-7, in the SEIS/SEIR). Moderate spills (238-1,200 bbl) would occur with a frequency of one per 108,155 years. Spills greater than 1,200 bbl would occur less than once in two million years and the likelihood of occurrence during the proposed Project is remote. Spills of petroleum hydrocarbons into Harbor waters from the berth during unloading of crude oil would occur at a frequency of one per 460 years for spills less than 238 bbl and at a frequency of one per 17,100 years for spill of 238-2,380 bbl. The frequency of MGO spills during barge transit from the Inner Harbor to the Outer Harbor would be one per 750 years (less than 238 bbl) and less than one per seven million years for a large spill. Small to moderate spills of oil into Harbor waters during vessel transit to Berth 408 would be in the Outer Harbor and could drift into the Cabrillo Shallow Water Habitat before being contained and cleaned up. If such an accident were to occur when California least terns are present and foraging in that area, oil could adhere to their feathers and cause mortality or sublethal effects by changing the insulation qualities of the feathers, through ingestion during preening, or by rubbing off onto eggs or chicks. Such effects could reduce survival of affected individuals, including eggs or chicks, and thus the southern California nesting population size. Spills of crude oil or MGO during unloading at Berth 408 would be contained within the boom deployed around the vessel/barge and would not reach the shallow water foraging areas used by the least terns.

Spills from Pipeline Segment 1 suspended on the causeway bridge could enter the Pier 300 Shallow Water Habitat, the Seaplane Lagoon, or the channel adjacent to the Pier 400 causeway (west side) due to pipeline rupture. Spills from Pipeline Segment 4 where it crosses over Dominguez Channel could also result in oil reaching harbor waters. Spills from proposed Project pipelines that could reach harbor waters would occur at a frequency of less than one per one million years and, thus, the likelihood of occurrence during the proposed Project is remote. Oil spills from the tanks or pipelines on land would be contained and cleaned up before reaching harbor waters in accordance with SPCC requirements and the proposed Project oil spill response plan. The California least tern nesting site is also at a higher elevation than Tank Farm Site 1. Thus, the California least tern nesting site would not be affected by those oil spills.

The only substances containing volatile chemicals that would be stored (at least temporarily) at Tank Farm Site 1 would be crude oil and Marine Gas Oil (MGO). MGO would be stored in a 15,000-bbl tank at the far western side of Tank Farm Site 1 at a distance of 920 ft (280 m) from the western edge of the California least tern nesting site, and the tank would be surrounded by a containment dike. Crude oil would be held in two 250,000-bbl tanks, both surrounded by containment dikes. The probability of an MGO or crude oil spill from the tanks is very low and, if such a spill were to occur, it would be contained with the dike around the tank and cleaned up immediately. The probability for vapor emissions from such a spill to adversely affect California least terns at the nesting site would be low. This conclusion is based on mitigation measures to contain accidental spills and environmental factors that would lower risk, such as rapid dispersion of emissions due to typical wind conditions at the exposed site, as well as the seasonal occurrence of least terns.

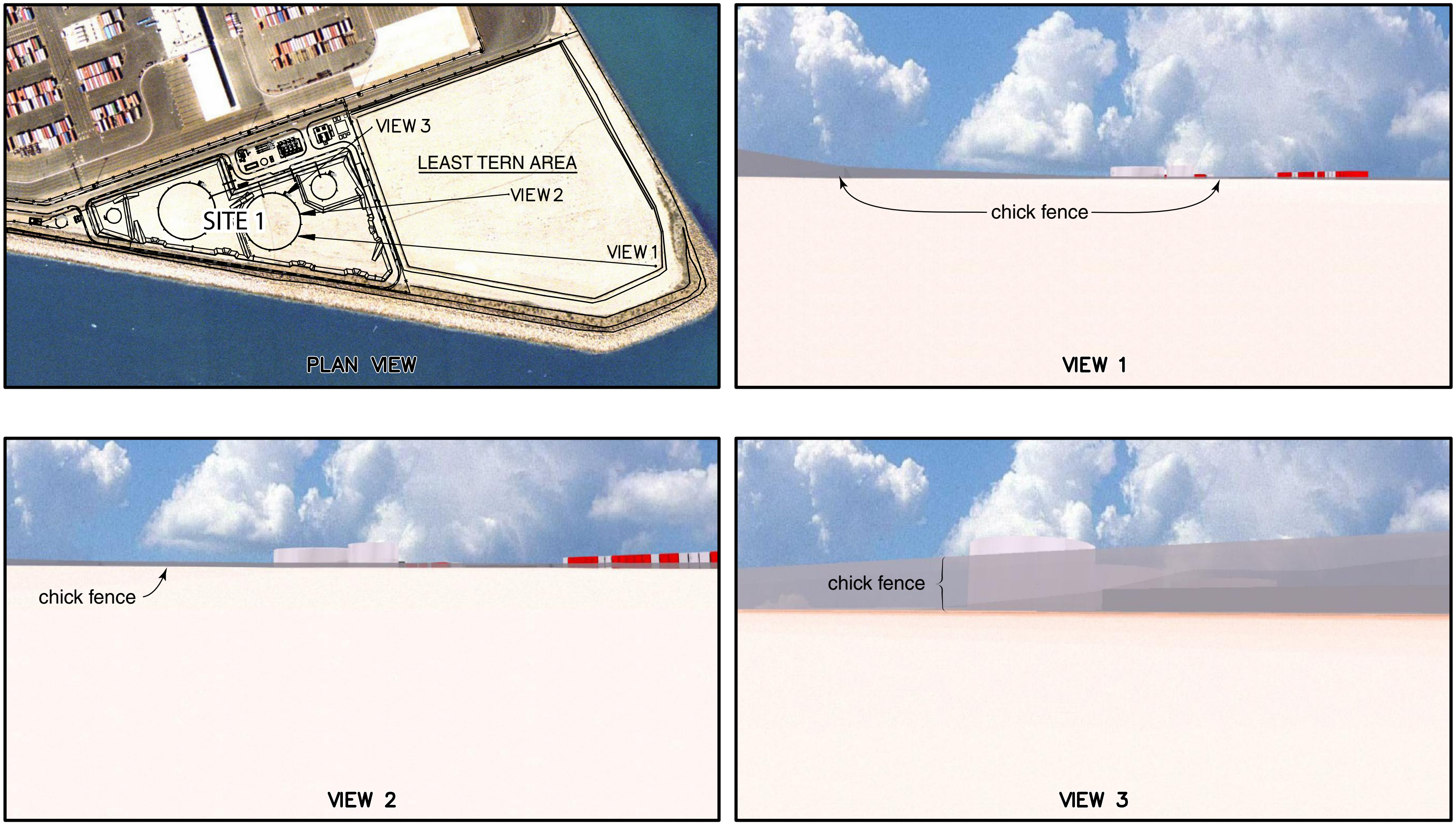
Oil spills could also occur during proposed Project vessel transit in offshore waters. Small spills of less than 238 bbl would occur with a frequency of one per 319 years while 10 to 30 percent of the vessel cargo could be spilled once in 911 years. Spillage of the entire cargo (maximum of 2,500,000 bbl) could occur once in 1,063 years (see Table 3.12-5 in **Impact RISK-2.1** of the SEIS/SEIR). Offshore spills during vessel transit to the Port would not affect the California least tern because none would be present.

The above oil spill analysis is based on proposed Project effects relative to the CEQA Baseline (no new oil deliveries to the Port). The NEPA Baseline includes future increases in oil deliveries to existing liquid bulk terminals in both San Pedro Bay Ports, and the number of vessels and frequency of oil spills would be greater than for the proposed Project. However, the risk of an oil spill that could affect the California least tern would still be greater for the proposed Project than for the NEPA Baseline because more oil tankers would transit the Outer Harbor near the Cabrillo Shallow Water Habitat. Oil spills into Harbor waters during vessel transits that occur from April through August would have a low potential to affect California least terns, however, because the frequency of such spills would be low; one small spill per 217 years for the proposed Project compared to one per 184 years for the NEPA Baseline, and one moderate spill per 108,155 years for the proposed Project versus one per 91,726 years for the NEPA Baseline.

4.2 CALIFORNIA BROWN PELICAN

Construction

Construction activities at the proposed Project sites on Pier 400 (Marine Terminal, Tank Farm Site 1, and a portion of Pipeline Segment 1 Route) are unlikely to adversely affect California brown pelicans. This species appears to have adapted to harbor activities because their abundance has not declined as harbor activity has increased, based on bird surveys conducted in the Harbor (MBC 1984, MEC 1988, MEC and Associates 2002). No roosting areas on the breakwaters would be directly or indirectly affected by the proposed Project, and the species does not nest in the harbor area. The Middle Breakwater, where the pelicans prefer to roost, is located about 0.5 mile (0.8 km) or more from the proposed Project sites. Furthermore, much of the construction activity would occur during the day when the pelicans are not roosting.



Note: Camera height = 6” above ground level

Source: SPEC Services 2005

Figure 8. Simulated Views of Tank Farm Site 1 from the Least Tern Nesting Site

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Foraging by brown pelicans can occur throughout harbor and nearshore waters. The only construction activity that would occur in or immediately adjacent to the water would be construction of the Marine Terminal and installation/removal of temporary mooring piles at staging area 412, if this site is used for delivery of stone column gravel. However, this would only affect a small area of potential brown pelican foraging habitat, relative to the amount of comparable habitat present in the Outer Harbor and nearby nearshore waters, for a short time. Brown pelicans may avoid this project region during construction, although some may continue to forage in that area. No adverse effects to the species would result due to the small area affected, the short duration of the disturbance, and availability of other foraging areas nearby.

Operations

Normal operation of the proposed Project facilities is not likely to adversely affect brown pelicans in the Harbor because no foraging, roosting, or resting habitat would be lost or disturbed. Movement of tankers to and from the berth could briefly interfere with foraging, but this would not be any different than disturbances caused by other vessel traffic in the Harbor. About two vessels per week are expected to use the proposed Marine Terminal. This level of activity would not adversely affect pelican foraging. Operation of the tank farm sites and pipelines would have no effects on brown pelicans or their habitat.

As described above for the California least tern, oil spills are unlikely to occur due to the safety measures that are part of the proposed Project. If a spill were to occur that enters harbor waters, however, oil could adhere to the feathers of brown pelicans as they dive into the water or while resting on the water surface. This could affect their thermoregulation and cause physiological stress when ingested during preening. Brown pelicans do not nest in the harbor area so the oil would not affect their eggs, chicks, or breeding success. The number of brown pelicans that could be affected would depend on the time of year that the spill occurred, the size of the spill, and the time for cleanup to be completed. The abundance of brown pelicans in the harbor is greatest in the summer with a maximum of 1,181 observed in July 2000 (MEC and Associates 2002). California brown pelicans have a large range (west coast of the U.S. and into Mexico, with breeding at offshore islands in southern California and Mexico) so only a small proportion of the population might be affected by an oil spill in the Port. In addition, not all the brown pelicans in the Harbor would be affected by an oil spill because the oil would not spread over the entire water surface in the Harbor before being contained and cleaned up, and spill containment and cleanup activities would minimize brown pelican use of the spill area. For spills in open water away from the coast and coastal islands, few if any California brown pelicans would be affected due to their sparse distribution over open waters. Oil spills on land would not affect this species. As noted for the California least tern, the frequency of oil spills for the NEPA Baseline is greater than for the CEQA Baseline and for the proposed Project.

4.3 Western Snowy Plover

Construction

Western snowy plovers are not known to nest in the harbor, so there would be no potential for impacts to nesting by this species. Additionally, since construction activities associated with the proposed Project would not directly affect the California least tern nesting site and Cabrillo Beach, habitat used by western snowy plovers that occasionally visit the California least tern nesting site and those that winter at Cabrillo Beach also would not be affected. Western snowy plovers appear to be tolerant of human presence and noise and typically do not flush from resting spots on the beach when a person approaches much closer than 200 feet (personal observations by SAIC biologists during surveys for this species on beaches of Santa Barbara). However, a 200-ft buffer zone is generally used for mechanized beach grooming when western snowy plovers are present on Santa Barbara City beaches. Based on that information, measures to protect the California least tern on Pier 400 would also protect western snowy plover that sometimes stop there during migration. Cabrillo Beach is more than 1.5 mi (2.4 km) from any construction activities associated with the proposed Project and, due to the distance, western snowy plovers on that beach would not be affected by Project-related construction noise. Further, noise from construction associated with the Marine Terminal and Tank Farm Site 1 would not adversely affect the snowy plovers migrating through the area and stopping at the least tern nesting site. This is because current peak noise levels can be as high as 88 dB(A) and construction activities would not increase that peak level.

Operations

Operation of the proposed Project facilities on Pier 400 and Terminal Island would not interfere with western snowy plover migration. The storage tanks, associated facilities, and low level of human presence would not impede migration flights, and noise from the facilities at Tank Farm Site 1 on Pier 400 would not adversely affect the few individuals that would stop at the California least tern nesting site during their migration. This species is as tolerant or more tolerant of noise than the California least tern, as discussed above. Measures to protect the California least tern would also protect the western snowy plover. The shipping pumps would be the primary source of noise, but the sound wall around them would reduce noise to levels that would not affect the birds. Furthermore, the pumps may not be running when the western snowy plovers are present. Oil spills into Harbor waters would not affect individuals of this species while at the California least tern nesting site because the plovers do not use the water surface during their migration stop, and no beach is available for foraging at the water's edge. For the individuals wintering at Cabrillo Beach, oil spills into Harbor waters from vessels in transit to Berth 408 are unlikely to reach the beach due to rapid containment and cleanup of such spills.

4.4 SEA TURTLES

Construction

Construction activities would have no effects on sea turtles because none would be expected to occur in the Harbor.

Operations

During operations, the increase in vessel calls to the Port would increase the potential for an oil spill in offshore waters and in the Harbor. Oil spills in the Harbor would not affect sea turtles because none would be expected to be present. Oil spills in offshore waters would be unlikely to affect sea turtles because few, if any, would encounter such a spill and no foraging or breeding habitat would be affected. (Sea turtles are rare visitors along the coast.) Project-related vessel strikes to sea turtles would not be expected to occur due to the small increase in vessel traffic (compared to CEQA Baseline) relative to the total amount of traffic in offshore waters and the sparse distribution of sea turtles in the region. The number of vessels is lower for the proposed Project than the NEPA Baseline, and the lower amount of project-related vessel traffic would lead to a net reduction in the potential for a vessel strike.

4.5 WHALES

Construction

Vessel traffic outside the Port related to proposed Project construction would include four Panamax vessels to deliver stone column gravel and barges to deliver piles for the Marine Terminal wharf. Whale strikes by these vessels would be unlikely due to the small number of large vessels and the slow speed of the barges.

Operations

~~The addition of 201 proposed Project vessel calls to the Port, relative to the CEQA Baseline, would have a low probability of harming individuals of listed whale or sea turtle species, particularly considering that the large amount of vessel traffic along the coast of California has resulted in few (less than three per year on average) reported whale strikes over the past 25 years.~~ Relative to the NEPA Baseline (i.e., condition expected in the absence of federal action), the number of vessel calls is lower for the proposed Project than the NEPA Baseline, and this would reduce the already low probability of a vessel strike with a listed whale or sea turtle, particularly considering that the large amount of vessel traffic along the coast of California has resulted in few (less than three per year on average) reported whale strikes (for all species, including unlisted species) over the past 25 years. The blue whale would be more likely to be struck than the fin or humpback whale, but the probability of project-related strikes to any species would be unlikely. Most strikes from tankers would likely be fatal to the whales because the vessel speeds are generally above 13 knots in the coastal shipping lanes. NOAA Fisheries recommends that speed restrictions in the range of 10 to 13 knots be used, where appropriate, feasible, and effective, in areas where reduced speed is likely to reduce the risk of ship strikes and facilitate whale avoidance. Oil spills within the Harbor would not affect any of the listed species of whales because none are known to enter the Harbor.

One vessel trip every one to two days for the proposed Project in offshore waters would be a small increase compared to the CEQA Baseline and, as noted, the proposed Project would have less vessel traffic in offshore waters than the NEPA Baseline. This level of traffic would not add substantially to noise from vessels in those waters under CEQA and would not add any noise under NEPA, and few, if any, listed whales would be affected by the sound. Large oil spills in offshore waters would occur at a frequency of one per 911 to 1,063 years. At this low frequency (under CEQA and less than the NEPA Baseline), few whales would come in contact with the oil. Oil can have temporary effects on their skin and baleen with rapid recovery (Geraci and St. Aubin 1980), and the toxic components of oil are rapidly (within hours) lost during weathering. Thus, offshore oil spills could have minor, temporary effects on a few individuals.

4.6 CUMULATIVE EFFECTS

The region of influence for cumulative effects to listed species is the Los Angeles/Long Beach Harbor (inner and outer harbor areas). Projects considered for the cumulative effect analysis are shown in Attachment B. All of the projects that involve dredging, filling, and other construction activities in harbor waters involve federal permitting while many of the projects on land have no federal involvement. Most of these projects would have minimal to no direct effects on listed species or their habitat due to their location and/or type of activity.

Effects of Past, Present, and Reasonably Foreseeable Future Projects

Construction of past landfill projects in the Harbor has reduced the amount of marine surface water present and thus foraging area for the California least tern and California brown pelican, but these projects have also added more land and structures that can be used for brown pelican perching near the water. Construction of Terminal Island, Pier 300, and then Pier 400 provided new nesting sites for the California least tern, and the Pier 400 site is still being used. Shallow water areas that provide foraging habitat for the California least tern and California brown pelican have been constructed on the east side of Pier 300 and inside the San Pedro breakwater as mitigation for loss of such habitat from past projects, and more such habitat is to be constructed as part of the Channel Deepening Project (#4).

California Least Tern

Construction of the Cabrillo Shallow Water Habitat Expansion ~~and Eelgrass Habitat Area~~ as part of the Channel Deepening Project (#4) has ~~the~~ a low potential to adversely affect California least tern foraging by causing a decline in forage fish availability or ability of least terns to find forage fish during the nesting season due to construction-related turbidity because a small part (less than two percent) of the existing Cabrillo Shallow Water Habitat would be affected at a time. The Channel Deepening Project will have permit conditions that will avoid or minimize the effects of turbidity on least tern foraging. Construction of the Cabrillo Shallow Water Habitat would create more shallow water suitable for California least tern foraging, a long-term benefit.

All of the cumulative projects would have the potential to indirectly affect listed species through runoff of sediments and pollutants during construction activities on land, and through disturbance of bottom sediments during dredging and filling for those projects with such activities. Construction activities would occur over varying lengths of time, including in the past, as each project is completed, and runoff from these projects would not occur simultaneously but rather would be spread over time so that total runoff to harbor waters would be dispersed, both in frequency and location. Runoff from construction on land would not increase pollutant concentrations in harbor waters to levels that could adversely affect prey species, or result in bioaccumulation in those species, used by California least tern due in part to the dispersal of inputs over time and because runoff control measures would be implemented as required in project permits, such as SWPPPs. Runoff of pollutants during operations could occur from all of the cumulative projects, but existing requirements at the Ports of Los Angeles and Long Beach as well as regulatory permits would reduce the amount to levels that would not adversely affect the California least tern.

A long-term increase in the transport of crude oil and/or petroleum products through the Port area would result from projects Ultramar (#12), Sound Energy Solutions (#76), and Chemoil (#79) (assuming that petroleum product throughput and number of vessels would increase), as well as the proposed Project. This would increase the potential for accidental spills of these products into harbor waters in proportion to the number of vessels and products transfers. Small spills of less than 238 bbl are unlikely to adversely affect the California least tern because the water area affected by such a spill would be localized, few if any individuals are likely to be affected (least terns are only present part of the year), and containment and cleanup procedures would reduce the extent and severity of effects. Moderate spills (238 to 1,200 bbl) could occur very infrequently during vessel transit in the Port to any of the cumulative project facilities. However, if one did occur the California least tern could be adversely affected depending on the time of year, location of the spill, whether it entered harbor waters used by foraging least terns, weather conditions at the time of the spill, and length of time for containment and cleanup to be completed.

It should be noted that the California least tern nesting history at Pier 400 has been very successful even during years with substantial project construction and increased operations in the Harbor. This includes years when the Channel Deepening Project was underway, during construction of Pier 400 itself, and during the increase in activities due to operation of the adjacent (to the north) APM container terminal.

California Brown Pelican

The loss of water surface due to the completed landfills apparently has not adversely affected the brown pelican (see Section 3.3.2), and completion of the other cumulative project landfills, particularly those in Inner Harbor areas (Berths 136-147 [#2], Channel Deepening [#4], Berths 97-109 [#15], Middle Harbor [#69], Piers G & J [#70], and Pier T TTI [#73]) that are not considered important foraging areas for this species, would not be expected to either.

In-water construction activities for other cumulative projects (e.g., Berths 136-147 Marine Terminal [#2], San Pedro Waterfront [#3], Channel Deepening Project [#4, other than land fill creation], Cabrillo Way Marina [#5], Berths 226-236 Improvements [#7], Berths 97-109 [#15], Berths 212-214 YTI [#28], Berths 121-131 [#29], Berths 302-305 APL Improvements [#23], Middle Harbor [#69], Piers G & J Redevelopment [#70], Pier T TTI [#73], Pier S [#74], and Sound Energy Solutions [#76] (if eventually approved) could disturb or cause California brown pelicans to avoid the construction areas for the duration of the activities. In-water disturbances from these projects could also have temporary effects on the distribution of their prey (i.e., small fish) in the vicinity of each project. These projects would not adversely affect the California brown pelican because the projects would occur at different locations throughout the Harbor and only some are likely to overlap in time, the disturbances would be in a small area and temporary, the brown pelicans could use other undisturbed areas in the Harbor, and few individuals would be affected at any one time.

Runoff of pollutants during construction and operation of cumulative projects on land would not adversely affect California brown pelicans for the same reasons described above for the California least tern.

As described for the California least tern, oil spills from cumulative projects would have a low potential to occur, but if one did happen individuals of the California brown pelican could be affected. No nesting, however, would be affected.

Western Snowy Plover

No habitat used by the western snowy plover would be directly affected by any of the cumulative projects. Oil spills would not affect western snowy plovers that temporarily visit the least tern nesting site due to its location. Wintering western snowy plovers at Cabrillo Beach are unlikely to be affected by oil spills because oil spills would be unlikely to reach Cabrillo Beach before being contained and cleaned up and because booms could be deployed to prevent oil from stranding on the beach, if any snowy plovers were present at the time of a spill.

Sea Turtles

Sea turtles would not be affected by activities associated with any of the cumulative projects within the Harbor because none would be present. Increased vessel traffic in offshore waters and oil spills would be unlikely to affect any sea turtles due the low probability of an oil spill or a vessel strike and the sparse distribution of sea turtles in the region.

Whales

All of the cumulative projects that involve vessel traffic would increase the potential for whale strikes to occur in waters along the coast of California with adverse effects, particularly to the blue whale. These vessels would also increase the amount and frequency of sound in the water that would be unlikely to adversely affect whales. An increase in the number of vessels transporting petroleum products would increase the potential for an oil spill, but such spills would not adversely affect whales.

Contribution of the Proposed Project (Prior to Mitigation)

California Least Tern

As discussed in Section 4.1, construction and operation of the proposed Project would adversely affect the California least tern prior to mitigation. Therefore, the contribution of the proposed Project would be cumulatively considerable under CEQA and NEPA. A number of measures to avoid and minimize such effects have been incorporated into the Project (see Section 5). No critical habitat has been designated for this species.

California Brown Pelican

The California brown pelican would not be adversely affected by proposed Project construction (see Section 4.2). Operations activities, other than accidental oil spills, also would not adversely affect this species. Project-related oil spills could adversely affect the California brown pelican. Therefore, the contribution of the proposed Project would be cumulatively considerable under CEQA and NEPA.

Western Snowy Plover

The western snowy plover would not be affected by construction or operation of the proposed Project (see Section 4.3), and the proposed Project would have no effects on designated critical habitat for this species as a result of construction and operations because no critical habitat is present in the proposed Project area. Project-related oil spills within the Harbor would not affect the California least tern nesting site visited by migrating snowy plovers and are unlikely to reach Cabrillo Beach and affect wintering snowy plovers. Therefore, the contribution of the proposed Project would not be cumulatively considerable under CEQA and NEPA.

Sea Turtles

Construction and operation of the proposed Project within the Harbor would not affect sea turtles as none are expected to occur there. Increased vessel traffic in offshore waters would be unlikely to affect sea turtles through vessel strikes or oil spills due to their sparse distribution in the region. Therefore, the contribution of the proposed Project would not be cumulatively considerable under CEQA and NEPA.

Whales

Listed whales are unlikely to be struck by proposed Project vessels in transit to the Port, and any strikes that did occur would result in a cumulatively considerable contribution under CEQA. Under NEPA, the probability of a whale strike would be less than the NEPA B~~b~~aseline and would not contribute to cumulative impacts. Noise from project-related vessels in offshore waters and the low potential for oil spills would not result in a cumulatively considerable contribution under CEQA and would not contribute to cumulative impacts under NEPA.

5.0 CONSERVATION MEASURES

Construction

1. A qualified least tern biologist hired by the Port shall ~~be present and~~ monitor California least tern nesting during construction activities on Pier 400, including installation of Pipeline Segment 1 to Tank Farm Site 2 and use of staging area 412~~, which would occur from April through August~~. Monitoring shall occur from 2 weeks prior to the nesting season start (April) to the end of the nesting season (September or when the last bird has vacated the site and no birds return for at least two weeks). Monitoring shall occur at a minimum of three days a week during the nesting season which, for California least terns, generally extends from mid-May through the beginning of August. In the event of an imminent threat to nesting California least terns, and the Construction Manager is not immediately available, the monitor shall have the authority to

redirect construction activities. If construction activities need to be redirected to prevent adverse effects on the least tern, the monitor shall immediately contact the LAHD Environmental Management Division, Port Inspector, and Construction Manager. The Construction Manager has the authority to halt construction if determined to be necessary. (SEIS/SEIR **MM BIO-1.1a**)

2. At Tank Farm Site 1, no stone column construction shall occur at night (sunset to sunrise), and if possible, stone column construction during daytime hours should be conducted outside the least tern nesting season. If stone column installation is unavoidable during the nesting season, the work shall be phased so that installation nearest the nesting site is conducted prior to or after the nesting season, and a qualified biologist shall monitor the least terns at the nesting site during stone column installation to identify adverse reactions of the birds to this activity. If the terns react adversely to work at any of these sites, work will be temporarily stopped. The LAHD Environmental Management Division, least tern biologist, and Construction Manager shall confer with the USFWS and CDFG regarding necessary further actions. (SEIS/SEIR **MM BIO-1.1b**)

3. Construction activities that are within 200 ft (61 m) of the California least tern nesting site and foraging areas shall be scheduled to occur between September and March, unless otherwise approved by the USFWS and CDFG. This includes installation and removal of mooring piles as well as gravel delivery at staging area 412 (see Port brochure in Appendix J of the SEIS/SEIR). (SEIS/SEIR **MM BIO-1.1c**)

4. The Port shall provide environmental training by a qualified biologist to all construction contractor personnel working at the site. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and measures required to avoid or minimize the potential for adverse effects to the species. The latter measure shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals during construction; prohibition of pets or animals of any kind during work on Pier 400; limiting activities within 200 ft (61 m), or other established buffer distance, of the nesting site from March through August, to the extent feasible; and scheduling construction activities that would be near the nesting site for the period between September and March. (SEIS/SEIR **MM BIO-1.1d**)

5. When California least terns are present at the nesting site, idle construction equipment and stockpiles of materials exceeding approximately 8 ft (2.4 m) in height shall be placed so that they do not provide perches for birds that could prey on least terns. (SEIS/SEIR **MM BIO-1.1e**)

6. Night time construction at Tank Farm Site 1 and construction staging area 412 during the least tern nesting season should be avoided. All lighting (temporary and security) shall be directed away from the California least tern nesting site and shielded to minimize increased light in the nesting area. (SEIS/SEIR **MM BIO 1.1f**)

7. Vegetation growing at Tank Farm Site 1 shall only be cleared immediately prior to construction activities occurring from April through August to discourage and protect California least terns from nesting within the work area. Areas cleared at other times of the year will not be left barren and vacant during the nesting season. (SEIS/SEIR **MM BIO 1.1g**)

8. To avoid impacts to California least terns that might nest within in Tank Farm Site 1, a preconstruction survey shall be conducted by a qualified least tern biologist if construction commences during the normal nesting season (April through August) to determine if any are nesting there. If any nesting is found, a buffer area of 200 ft (61 m) shall be established and protective measures shall be finalized in coordination with USFWS and CDFG (and the USACE).

If any nesting is found, an initial buffer area of 200 ft (61 m) shall be established, and the biological monitor would work with the LAHD Environmental Management Division (EMD) and their California least tern consultant, Port Inspector, and Construction Manager to ensure protection of the least terns while nesting. As appropriate, the USACE, USFWS, and CDFG would be consulted regarding the safe distance setback requirements. Nesting birds shall be protected until nesting is complete or young have fledged as determined by a qualified biologist. (SEIS/SEIR **MM BIO-1.1h**)

9. During construction, no unauthorized vehicles or persons shall be allowed within ~~1~~200 ft (~~30~~ 61 m) of the east side and northeast corner of the least tern nesting site (the "at grade portion") during the nesting season. Signs shall be posted, and barriers (e.g., temporary fencing) shall be provided if signage is not adequate. (SEIS/SEIR **MM BIO 1.1i**)

10. Construction of the north-south oriented containment dikes at Tank Farm Site 1 should occur early in site development to aid as noise buffers during construction. (SEIS/SEIR **MM BIO 1.1j**)

Operations

11. The portions of all structures (buildings, lights, etc.) at the proposed Tank Farm Site 1 on Pier 400 that have a direct line of sight to the California least tern nesting site shall be designed to prevent birds from perching on them. The prevention measures cannot be specified at this time but shall be those approved by the USFWS at the time of installation (e.g., Nixalite currently used on high mast lights) and shall be monitored during the least tern nesting season to verify that predatory birds are not perching on proposed Project structures and to identify any repairs needed to keep the measures in good working order. Any such repairs shall be implemented immediately (i.e., within one day while least terns are present). (SEIS/SEIR **MM BIO-1.2a**)

12. A qualified biologist shall monitor the Tank Farm Site 1 for predators during the California least tern nesting season. Any predators found will be controlled in coordination with CDFG and USFWS. (SEIS/SEIR **MM BIO-1.2b**)

13. If a project-related oil spill occurs during the least tern nesting season and has the potential to enter the Pier 300 Shallow Water Habitat, booms shall be deployed to prevent oil from entering this important foraging area. The applicant shall ensure quick deployment of oil booms at the south entrance of the Pier 300 Shallow Water Habitat or at the causeway gap bridge, either through storage of booms at the south entrance to the Pier 300 Shallow Water Habitat and at the causeway gap bridge or through deployment at these locations in accordance with the approved oil spill response plan. (SEIS/SEIR **MM BIO-1.2c**)

14. Security lighting standards on the eastern side of Tank Farm Site 1 near the least tern nesting site shall be no greater than 30 ft (9.1 m) in height and directed away from the nesting site. (SEIS/SEIR **MM BIO 1.2d**)

15. The Port shall provide environmental training by a qualified biologist to all operational workers at the PLAMT Pier 400 Marine Terminal and Tank Farm Site 1. This shall include, but not be limited to, information about the California least tern (e.g., seasonal presence, pictures of the birds, and regulatory protections) and measures required to avoid or minimize the potential for adverse effects to the species. The latter measure shall include placement of food in sealed containers and daily disposal of all food wastes in sealed containers, with off-site disposal at regular intervals; prohibition on bringing pets or animals of any kind to work on Pier 400; and

scheduling significant maintenance/construction activities that would occur near the nesting site for the period between September and March. (SEIS/SEIR **MM BIO 1.2e**)

16. All ships calling (100 percent) at Berth 408 shall comply with the expanded VSR Program of 12 knots between 40 nm from Point Fermin and the Precautionary Area from Year 1 of operation. (SEIS/SEIR **MM BIO-1.2f**)

Implementation of measure #13 would reduce but not eliminate the potential for effects of small or large oil spills on the California least tern. There are no additional feasible measures that would reduce the potential for accidental oil spills to affect the least terns when they are present and foraging in the area (i.e., during April through August). A small (e.g., up to 238 bbl) or larger oil spill, even though associated with a low probability of occurrence, that was not contained could, therefore, result in unavoidable adverse effects. Use of these booms would also reduce but not eliminate the potential for oil spill effects on the California brown pelican.

6.0 DETERMINATION OF EFFECT

The following findings of effect are recommended based on the analyses in Section 4 and the conservation measures in Section 5.

- California least tern: may ~~adversely~~ affect (from construction, operations, and oil spills)
- California brown pelican: may affect (from oil spills)
- Western snowy plover: no effect
- Sea Turtles: no effect
- Blue whale: no effect
- Fin whale: no effect
- Humpback whale: no effect

An accidental oil spill into harbor waters from the Project is unlikely to occur over the life of the Project. However, if one did occur, California least terns could be adversely affected if the spill occurred when they are present and foraging in the Harbor, and California brown pelicans could be adversely affected at any time of year.

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ATTACHMENT A

NOISE STUDIES

Note: The content of Attachment A is identical to the content of Appendix L of the SEIS/SEIR.

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ATTACHMENT B

CUMULATIVE PROJECTS

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Table B-1. Related and Cumulative Projects

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
		Port of Los Angeles Projects	
1	Pier 400 Container Terminal and Transportation Corridor Project, Port of Los Angeles	Element of the 2020 Deep Draft Navigation Improvements Plan: dredging, land filling, and marine terminal construction. The entire Pier 400 site is on a recently constructed landfill in the Port of Los Angeles Outer Harbor. The project is a two-phase development of Pier 400 into a 484-acre (196-hectare) container terminal with rail, highway, and utility access. Phase I consisted of construction of rail and highway access and the first 334 acres (135 hectares) of a marine container terminal, including buildings, a wharf, and an intermodal rail yard. Phase II consisted of construction of the remaining 150 acres (61 hectares) into a container terminal. The EIR certified for the project and the Final EIS identified significant air, transportation, and noise and vibration impacts.	Approved project. Phase I construction completed and terminal opened August 2002. Phase II construction started in April 2003 and was completed in September 2004.
2	Berths 136-147 (TraPac) Marine Terminal, West Basin, Port of Los Angeles	Element of the West Basin Transportation Improvement Projects. Reconfiguration of wharves and backlands. Expansion and redevelopment of the TraPac Terminal.	FEIR certified by Board of Harbor Commissioners December 2007. Construction expected ~~mid/~~late 2008/early 2009 to 2010 and 2015 to 2020.
3	San Pedro Waterfront Project, Port of Los Angeles	The "San Pedro Waterfront" Project is a 5 to 7 year plan to develop along the west side of the Main Channel, from the Vincent Thomas Bridge to the 22nd Street Landing Area Parcel up to and including Crescent Avenue. Key components of the project include construction of a North Harbor Promenade, construction of a Downtown Harbor Promenade, construction of a Downtown Water Feature, enhancements to the existing John S. Gibson Park, construction of a Town Square at the foot of 6th Street, construction of a 7th Street Pier, construction of a Ports O' Call Promenade, development of California Coastal Trail along the waterfront, construction of additional cruise terminal facilities, construction of a Ralph J. Scott Historic Fireboat Display, relocation of the Catalina Cruises Terminal and the SS Lane Victory, extension of the Red Car line, and related parking improvements.	An NOP/NOI was released in August 2005. A revised NOP/NOI was released in December 2006. Draft EIR/EIS published September 2008~~being prepared~~. Construction expected 2010-2015.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
		Port of Los Angeles Projects (continued)	
4	Channel Deepening Project, Port of Los Angeles	Dredging and sediment disposal. This project deepened the Port of Los Angeles Main Channel to a maximum depth of –53 ft mean lower low water (MLLW; lesser depths are considered as project alternatives) by removing between approximately 3.94 million and 8.5 million cubic yards of sediments. The sediments were disposed at several sites for up to 151 acres (61 hectares) of landfill. The EIR/EIS certified for the project identified significant biology, air, and noise impacts. A Supplemental EIS/EIR is being prepared for new fill locations. The Additional Disposal Capacity Project would provide approximately 4 million cubic yards of disposal capacity needed to complete the Channel Deepening Project and maximize beneficial use of dredged material by constructing lands for eventual terminal development and provide environmental enhancements at various locations in the Port of Los Angeles.	SNOI/SNOP released in October 2005. SEIS/SEIR anticipated mid 2008. Construction expected 2009-2010.
5	Cabrillo Way Marina, Phase II, Port of Los Angeles	Redevelopment of the old marinas in the Watchorn Basin and development of the backland areas for a variety of commercial and recreational uses.	EIR certified December 2, 2003. Construction anticipated late 2008/early- 2009-2011.
6	Artificial Reef, San Pedro Breakwater, Port of Los Angeles	Development of an artificial reef site south of the San Pedro Breakwater. Provides opportunity for suitable reuse of clean construction materials and creates bottom topography to promote local sport fishing.	Negative Declaration issued and certified. Project proceeding (2006-2010).
7	Berth 226-236 (Evergreen) Container Terminal Improvements Project and Canners Steam Demolition.	Proposed redevelopment of existing container terminal, including improvements to wharves, adjacent backland, crane rails, lighting, utilities, new gate complex, grade crossings and modification of adjacent roadways and railroad tracks. Project also includes demolition of two unused buildings and other small accessory structures at the former Canner's Steam Plant in the Fish Harbor area of the Port.	EIR/EIS to be prepared. NOP/NOI anticipated in 2008. Construction expected 2010-2013.
8	Port of Los Angeles Charter School and Port Police Headquarters, San Pedro, Port of Los Angeles	Proposal to lease property for the Port of Los Angeles Charter School and to construct/develop a Port Police Headquarters and office. 330 S. Centre Street, San Pedro.	EIR certified in August 2005. Construction began in 2008 and expected to be complete in 2010.
9	SSA Outer Harbor Fruit Facility Relocation, Port of Los Angeles	Proposal to relocate the existing fruit import facility at 22nd and Miner to Berth 153.	On hold.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
		Port of Los Angeles Projects (continued)	
10	Crescent Warehouse Company Relocation, Port of Los Angeles	Relocate the operations of Crescent Warehouse Company from Port Warehouses 1, 6, 9, and 10 to an existing warehouse at Berth 153. Relocate Catalina Freight operations from Berth 184 to same building at Berth 153.	MND to be prepared. Release anticipated in 2008.
11	**Pacific LA Marine Terminal (formerly Pacific Energy) Oil Marine Terminal, Pier 400, Port of Los Angeles**	**Proposal to construct a Crude Oil Receiving Facility on Pier 400 with tanks at Pier 400 and on Terminal Island, as well as construct new pipelines between berth, storage tanks, and existing pipeline systems.** ***(Project evaluated in this SEIS/SEIR)***	**NOI/NOP released in June 2004.**
12	Ultramar Lease Renewal Project, Port of Los Angeles	Proposal to renew the lease between the Port of Los Angeles and Ultramar Inc., for continued operation of the marine terminal facilities at Berths 163-164, as well as associated tank farms and pipelines. Project includes upgrades to existing facilities to increase the proposed minimum throughput to 10 million barrels per year (mby), compared to the existing 7.5 mby minimum.	Project EIR under preparation; Final EIR expected in 2008. NOP released for public review in April 2004.
13	Westway Decommissioning	Decommissioning of the Westway Terminal along the Main Channel (Berths 70-71). Work includes decommissioning and removing 136 storage tanks with total capacity of 593,000 barrels (bbl).	Remedial planning underway. Decommissioning anticipated 2009.
14	Consolidated Slip Restoration Project	Remediation of contaminated sediment at Consolidated Slip at Port of Los Angeles. Remediation may include capping sediment or removal/disposal to an appropriate facility. Work includes capping and/or treatment of approximately 30,000 cubic yards of contaminated sediments.	Remedial actions are being evaluated in conjunction with Los Angeles Regional Water Quality Control Board (LARWQCB) and U.S. Environmental Protection Agency (USEPA).
15	Berths 97-109, China Shipping Terminal Development Project	Development of the China Shipping Terminal Phase I, II, and III including wharf construction, land fill and terminal construction and backland development.	Draft EIR/EIS released August 2006. Phase I construction completed in 2004. Re-circulated Draft EIR/EIS released April 2008. Construction expected 2009-2015.
16	Berths 171-181, Pasha Marine Terminal Improvements Project, Port of Los Angeles	Redevelopment of existing facilities at Berths 171-181 as an omni (multi-use) facility.	Project EIR on hold.
17	Berths 206-209 Interim Container Terminal Reuse Project, Port of Los Angeles	Proposal to allow interim reuse of former Matson Terminal while implementing green terminal measures.	Final EIR certified. Construction on hold.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
		Port of Los Angeles Projects (continued)	
18	LAXT Dome and Site Demolition	Demolition and clean up of existing storage dome and associated buildings on LAXT property.	Demolition began in 2007.
19	Southern California International Gateway Project (SCIG), Port of Los Angeles	Construction and operation of a 157 acre dock rail yard intermodal container transfer facility (ICTF) and various associated components, including the relocation of an existing rail operation.	Project EIR under preparation. NOP released September 30, 2005. DEIR expected in Fall 2008.
20	Pan-Pacific Fisheries Cannery Buildings Demolition Project, Port of Los Angeles	Demolition of two unused buildings and other small accessory structures at the former Pan-Pacific Cannery in the Fish Harbor area of the Port.	NOP released October 2005. Draft EIR released July 2006. Final EIR under preparation. Demolition expected mid to late 2008.
21	San Pedro Waterfront Enhancements Project, Port of Los Angeles	Project includes improving existing and development of new pedestrian corridors along the waterfront (4 acres), landscaping, parking, increased waterfront access from upland areas, and creating 16 acres of public open space.	MND approved in April 2006. Construction to begin in early 2008 and will be completed in 2009.
22	Joint Container Inspection Facility, Port of Los Angeles and Port of Long Beach	Construction and operation of a facility to be used to search and inspect random and suspicious containers arriving at the Ports of Los Angeles and Long Beach.	In planning. EIR to be prepared.
23	Berth 302-305 (APL) Container Terminal Improvements Project	Container terminal and wharf improvements project including a terminal expansion area and new berth on the east side of Pier 300. Currently includes 40 acres of fill that was completed as part of the Channel Deepening Project (number 4 above).	EIR/EIS to be prepared. NOP/NOI anticipated in 2008. Construction expected 2010-2012.
24	South Wilmington Grade Separation	An elevated grade separation would be constructed along a portion of Fries Avenue or Marine Avenue, over the existing rail line tracks, to eliminate vehicular traffic delays that would otherwise be caused by trains using the existing rail line and the new ICTF rail yard. The elevated grade would include a connection onto Water Street. There would be a minimum 24.5-foot clearance for rail cars traveling under the grade separation.	Conceptual planning. Current planning indicates summer 2011 completion.
25	Wilmington Waterfront Master Plan (Avalon Blvd. Corridor Project)	Planned development intended to provide waterfront access and promoting development specifically along Avalon Boulevard.	NOP issued March 2008. Draft EIR anticipated Summer 2008. Construction expected early 2009.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
		Port of Los Angeles Projects (continued)	
26	"C" Street/Figueroa Street Interchange	The "C" Street/ Figueroa Street interchange would be redesigned to include an elevated ramp from Harry Bridges Boulevard to the I-110 Freeway, over John S. Gibson Blvd. There would be a minimum 15-foot clearance for vehicles traveling on John S. Gibson Boulevard. An additional extension would connect from Figueroa Street to the new elevated ramp, over Harry Bridges Blvd.	Conceptual planning. Caltrans approval obtained on Project Study Report.
27	Port Transportation Master Plan	Port-wide transportation master plan for roadways in and around its facilities. Present and future traffic improvement needs are being determined, based on existing and projected traffic volumes. Some improvements under consideration include: I-110/SR-47/Harbor Blvd. interchange improvements; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge.	Conceptual planning completed by the end of 2006.
28	Berths 212-224 (YTI) Container Terminal Improvements Project	Wharf modifications at the YTI Marine Terminal Project involves wharf upgrades and backland reconfiguration, including new buildings.	EIR/EIS to be prepared. NOP/NOI anticipated in 2008. Construction expected 2010-2013.
29	Berths 121-131 (Yang Ming) Container Terminal Improvements Project	Reconfiguration of wharves and backlands. Expansion and redevelopment of the Yang Ming Terminal.	EIR/EIS to be prepared. NOP/NOI anticipated in 2008. Construction expected 2010-2013.
30	Southwest Marine Demolition Project	Demolition of buildings and other small accessory structures at the Southwest Marine Shipyard.	Draft EIR released September 2006. Final EIR under preparation. Demolition anticipated late 2008.
31	I-110 / SR 47 Connector Improvement Program	Program may include "C" Street/I-110 access ramp intersection improvements, I-110 NB Ramp/John S. Gibson Blvd. intersection improvements, and SR 47 On-and Off-Ramp at Front Street. These projects would reduce delays and emissions in the I-110/SR 47 area and improve safety and access.	Conceptual planning.
32	Inner Cabrillo Beach Water Quality Improvement Program	Phased improvements at Cabrillo Beach to reduce the wet and dry weather high concentrations of bacteria. Includes sewer and storm drain work, sand replacement, bird excluders, and circulation improvements (groin removal).	Sand replacement phase above high tide line completed in 2007. Additional sand replacement below high tide line anticipated in 2008.
33	Proposed Marine Research Center	Up to 28 acre site for potential marine research facility at City Dock No. 1.	Conceptual planning.

Table B-1. Related and Cumulative Projects (continued)

Number	Project Title and Location	Project Description	Project Status[1]
Port of Los Angeles and/or Port of Long Beach Potential Port-Wide Operational Projects			
34	Terminal Free Time	Industry supported program to reduce container storage time and use gates at off-peak travel times.	Program in progress.
35	Extended Terminal Gates (Pier Pass)	Industry supported program to use economic incentives to encourage cargo owners to use terminal gates during off-peak hours.	Program in progress.
36	Shuttle Train/Inland Container Yard	Alameda Corridor Transportation Authority (ACTA) program to encourage rail shuttle service between the ports' on-dock rail facilities and a rail facility in Colton (in the Inland Empire). The pilot program will consist of a daily train to and from Colton. The containers will be trucked between the Colton rail facility and the beneficial cargo owners' facility.	Preliminary study in progress.
37	Origin/Destination and Toll Study	Joint study of the Ports of Los Angeles and Long Beach to identify the origin and destination of international containers in the Los Angeles area, to determine the location of warehouses and identify the routes truck drivers use to move containers to and from the Ports. The bridges serving Terminal Island (Vincent Thomas, Gerald Desmond and Heim Bridge) are not currently designed to handle the trade volumes projected at the San Pedro Bay Ports. In order to identify funding mechanisms to replace/enhance these bridges, the Ports are conducting a toll study to explore potential funding sources for bridge replacement and truck driver behavior if tolls were assessed on the bridges.	Study in progress.
38	Virtual Container Yard	Joint program of ACTA and the Ports of Los Angeles and Long Beach to explore implementing a system that would match an empty container from an import move to one from an empty export move.	Conceptual planning.
39	Increased On-Dock Rail Usage	Joint program of ACTA, the Ports of Los Angeles and Long Beach, shipping lines, and terminal operators to consolidate neighboring terminals' intermodal volume to create larger trains to interior points, thereby reducing need for truck transportation.	Conceptual planning.
40	Union Pacific Railroad ICTF Modernization Project	UP proposal to modernize existing intermodal yard four miles from the Port.	Conceptual planning. Application submitted and the EIR is being completed by the Joint Powers Authority.

Table B-1. Related and Cumulative Projects (continued)

Number	Project Title and Location	Project Description	Project Status[1]
Port of Los Angeles and/or Port of Long Beach Potential Port-Wide Operational Projects (continued)			
41	Optical Character Recognition	Ports terminals have implemented OCR technology, which eliminates the need to type container numbers in the computer system. This expedites the truck driver through terminal gates.	Ongoing planning and implementation.
42	Truck Driver Appointment System	Appointment system that provides a pre-notification to terminals regarding which containers are planned to be picked up.	Conceptual planning.
Community of San Pedro Projects			
43	15th Street Elementary School, San Pedro	Los Angeles Unified School District construction of additional classrooms at 15th Street Elementary School.	Construction completed and school operating. Completed in 2006.
44	Pacific Corridors Redevelopment Project, San Pedro	Development of commercial/retail, manufacturing, and residential components. Construction underway of four housing developments and Welcome Park.	Project underway. Estimated 2032 completion year according to Community Redevelopment Agency of Los Angeles.
45	Cabrillo Marine Aquarium Expansion, San Pedro	Expansion of existing Cabrillo Marine Aquarium.	Construction complete.
46	Gas station and mini-mart	6-pump gas station and 1,390 sf mini-mart at 311 N. Gaffey Street, San Pedro (north of Sepulveda Street).	Project on hold. No construction has started.
47	Fast Food Restaurant w/drive-thru	Construct fast food restaurant with drive through (expand from existing 3000 sf to 4816 sf restaurant). 303 S. Gaffey Street (at 3rd Street), San Pedro.	Construction is complete and restaurant is operating.
48	Mixed use development, 407 Seventh Street	Construct 5,000 sf retail and 87-unit apartment complex. 407 W. Seventh Street (at Mesa St.), San Pedro.	In final stages of construction.
49	Condominiums, 28000 Western Ave.	Construct 140 condominium units. 28000 S. Western Avenue, San Pedro.	In final stages of construction. Building permit cleared March 2006; LADOT Planning Department has no estimated completion year.
50	Pacific Trade Center	Construct 220 housing unit apartments. 255 5th Street, San Pedro (near Centre Street).	In initial stage of construction. Building permit cleared August 2006, but LADOT Planning Department has no estimated completion year.
51	Single Family Homes (Gaffey Street)	Construct 135 single-family homes. About 2 acres. 1427 N. Gaffey St (at Basin St), San Pedro.	In construction. Estimated 2009 completion year according to LADOT Planning Department.

Table B-1. Related and Cumulative Projects (continued)

Number	Project Title and Location	Project Description	Project Status[1]
		Community of San Pedro Projects (continued)	
52	Mixed-use development, 281 W 8th Street	Construct 72 condos & 7,000 sf retail. 281 West 8th Street (near Centre Street), San Pedro.	No construction started. LADOT Planning Department has no estimated completion year.
53	Target (Gaffey Street)	Construct 136,000 sf discount superstore. 1605 North Gaffey Street, San Pedro (at W. Capitol Drive).	No construction has started Estimated 2009 completion year, according to LADOT Planning Department.
54	Palos Verdes Urban Village	Construct 251 condos & 4,000 sf retail space. 550 South Palos Verdes Street, San Pedro.	No construction has started. Estimated 2011 completion year, according to LADOT Planning Department.
55	Temporary Little League Park	Construction of temporary baseball fields for the Eastview Little League at top of Knoll Hill in San Pedro; Knoll Hill Dog Park moved to bottom of Knoll Hill.	Construction completed in fall 2007.
56	Condos, 319 N Harbor Blvd	Construction of 94 unit residential condominiums, 319 N Harbor Blvd, San Pedro.	LADOT Planning Department has no estimated completion year.
		Community of Wilmington Projects	
57	Banning Elementary School #1, 500 North Island Avenue, Wilmington	Banning Elementary School No. 1 is a two-building elementary school consisting of one two-story classroom building with subterranean parking garage and a one-story multipurpose building. The school also provides about 2 acres of playground and green space.	Construction completed and school operating. Completed in 2006.
58	East Wilmington Greenbelt Community Center, Wilmington	9,800-square-foot community building, a 25-space parking lot, and landscaped areas.	Construction complete; center opened in 2006.
59	Distribution center and warehouse	135,000 sf distribution center and warehouse on 240,000 sf lot w/47 parking spaces at 755 East L Street, (at McFarland Avenue) in Wilmington.	No construction has started; lot is vacant and bare. LADOT Planning Department has no estimated completion year.
60	Dana Strand Public Housing Redevelopment Project	The existing facility is being torn down and redeveloped to provide a 116-unit affordable housing complex with multifamily rental units, senior units and affordable homes for sale. The plans also include a day care center, lifelong learning center, parks and landscaped open space.	Under construction (construction started in 2005).
61	Vermont Christian School Expansion	Private school expansion to accommodate 72 additional students, for a total of 222 students.	LADOT Planning Department has no estimated completion year.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
Projects in Harbor City, Lomita, and Torrance			
62	1437 Lomita Boulevard Condominiums	Construct 160 condominium units and demolish existing closed hospital.1437 Lomita Boulevard (at Senator Avenue), Harbor City.	Construction is complete and in operation.
63	Harbor City Child Development Center	Conditional use permit to open 50-student pre-school at existing church building (25000 South Normandie Avenue, Harbor City, at Lomita Boulevard).	Public hearing in August 2006.
64	Kaiser Permanente South Bay Master Plan	Construct 303,000 sf medical office building, 42,500 sf records center / office / warehouse, 260 hospital beds. 25825 Vermont Street, Harbor City (at Pacific Coast Hwy).	In Construction. Estimated 2009 completion year, according to LADOT Planning Department.
65	Drive-through restaurant, Harbor City	Construct 2,448 sf fast food restaurant with drive-through. 1608 Pacific Coast Highway, Harbor City (at President Avenue).	In planning phase. Old building still in operation.
66	Ponte Vista	Construct 1725 condos, 575 senior housing units, and 4 baseball fields. 26900 Western Avenue (near Green Hills Park), Lomita. Rolling Hills Prep School being developed in an adjacent lot.	DEIR issued November 2006. LADOT Planning Department reports estimated 2012 completion year.
67	Warehouses, 1351 West Sepulveda Blvd	Construct warehouses with total capacity 400,000 sf. 1351 West Sepulveda Blvd. (at Western Ave.), Torrance.	Project building permit cleared 2/07. LADOT Planning Department estimates completion in 2007.
68	Sepulveda Industrial Park	Construct 154,105 sf industrial park (6 lots). Sepulveda Industrial Park (TT65665) 1309 Sepulveda Boulevard, Torrance (near Normandie Avenue).	No construction started. LADOT Planning Department has no estimated completion year.
Port of Long Beach Projects			
69	Middle Harbor Terminal Redevelopment, Port of Long Beach	Expansion of an existing marine container terminal in the Middle Harbor area of the Port of Long Beach. The project will involve consolidation of two existing container terminals into one 345-acre (138-hectare) terminal. Construction will include approximately 48 acres (19 hectares) of landfill, dredging, wharf construction; construction of an intermodal rail yard; and reconstruction of terminal operations buildings. The Initial Study prepared for this project identified significant air, public health, transportation, biological, and water quality impacts.	Project EIS/EIR released May 2008. NOP/NOI released December 20, 2005. Anticipated construction 2008-2025.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
		Port of Long Beach Projects (continued)	
70	Piers G & J Terminal Redevelopment Project, Port of Long Beach	Redevelopment of two existing marine container terminals into one terminal. The Piers G and J redevelopment project is in the Southeast Harbor Planning District area of the Port of Long Beach. The project will develop a marine terminal of up to 315 acres by consolidating two existing terminals on Piers G and J and several surrounding parcels. Construction will occur in four phases and will include approximately 53 acres of landfills, dredging, concrete wharves, rock dikes, and road and railway improvements. The EIR prepared for this project identified potentially significant impacts to air quality and geologic resources.	Approved project. Construction underway (anticipated construction period is 2005-2015).
71	Pier A West Remediation Project, Port of Long Beach	Remediation of approximately 90 acres of oil production land, including remediation of soil and groundwater contamination, relocation of oil wells, filling, and paving.	Project EIR/EIS under preparation. NOP/NOI released January 26, 2006. Expected duration through 2011.
72	Pier A East, Port of Long Beach	Redevelopment of 32 acres of existing auto storage area into container terminal.	EIR to be prepared.
73	Pier T, TTI (formerly Hanjin) Terminal, Phase III, Port of Long Beach	Development of a container terminal, liquid bulk facility and satellite launch facility. The Port of Long Beach is redeveloping the former Long Beach Naval Complex on Terminal Island. The project consists of expanding a 300-acre marine container terminal to 375 acres, including a wharf, terminal operations buildings, utilities, and rail yard. Construction includes 22 acres of landfill. The SEIS/EIR certified for this project identified significant air quality, transportation, public health and safety, cultural resources, biological resources, and vibration impacts.	Approved project. Final phase of construction underway.
74	Pier S Marine Terminal, Port of Long Beach	Development of a 150-acre container terminal and construction of navigational safety improvements to the Back Channel.	EIS/EIR to be prepared. Assessment/ construction expected 2007-2012.
75	Administration Building Replacement Project, Port of Long Beach	Replacement of the existing Port Administration Building with a new facility on an adjacent site.	EIR being prepared. Assessment/ construction expected 2009-2012.
76	Sound Energy Solutions-Pier T, Long Beach Liquefied Natural Gas (LNG) Terminal, Port of Long Beach	Construction of a 25-acre (10-hectare) liquefied natural gas (LNG) import terminal facility including pipeline and wharf construction on a portion of Pier T on Terminal Island within the Port of Long Beach.	Final EIR/EIS completed. Project disapproved by Board of Harbor Commissioners January 2007; legal challenge underway.
77	San Pedro Bay Rail Study	Port-wide rail transportation plan with multiple projects in and around Harbor District.	EIR to be prepared.

Table B-1. Related and Cumulative Projects (continued)

Number	Project Title and Location	Project Description	Project Status[1]
		Port of Long Beach Projects (continued)	
78	Gerald Desmond Bridge Replacement Project, Port of Long Beach and Caltrans/FHWA	Replacement of the existing 4-lane Gerald Desmond highway bridge over the Port of Long Beach Back Channel with a new 6- to 8-lane bridge.	NOP/NOI released in 2005. EIR/EA released in 2005; Recirculated EIR/EA being prepared. Anticipated construction 2008-2013.
79	Chemoil Marine Terminal, Tank Installation, Port of Long Beach	Construction of two storage tanks for refined petroleum products and associated relocation of utilities and reconfiguration of adjoining marine terminal uses between Berths F210 and F211 on Pier F.	NOP released June 2007. EIR to be prepared.
80	Port of Long Beach Installation Restoration Site 7 (West Basin) Dredging Project	Removal of about 700,000 cubic yards of contaminated sediments at the Port of Long Beach, with beneficial/sustainable reuse of the material in the Pier G landfill.	In planning stages. Dredging is expected in 2008-2009.
		Alameda Corridor Transportation Authority and Caltrans Projects	
81	Schuyler Heim Bridge Replacement and State Route (SR) 47 Terminal Island Expressway	ACTA/Caltrans project to replace the Schuyler Heim Bridge with a fixed structure and improve the SR 47/Henry Ford Avenue/Alameda Street transportation corridor by constructing an elevated expressway from the Heim Bridge to SR 1 (Pacific Coast Highway) and flyover from eastbound Ocean Boulevard to northbound SR 47.	ACTA and Caltrans issued Draft EIS/EIR August 2007. Final EIS/EIR expected spring 2008. Anticipated construction 2009-2011 (for SR47 and bridge) and 2015-2017 (for flyover).
82	I-710 (Long Beach Freeway) Major Corridor Study	Develop multi-modal, timely, cost-effective transportation solutions to traffic congestion and other mobility problems along approximately 18 miles of the I-710, between the San Pedro Bay ports and State Route 60. Early Action Projects include: a) Port Terminus: Reconfiguration of SR 1 (Pacific Coast Highway) and Anaheim Interchange, and expansion of the open/green space at Cesar Chavez Park. b) Mid Corridor Interchange: Reconfigurations Project for Firestone Blvd. Interchange and Atlantic/Bandini Interchange.	Conceptual Planning.
83	Edison Avenue Closure	Close a short section of Edison Avenue between Ninth and Pier B streets to improve public safety and traffic by rerouting cars and trucks away from three rail lines that cross Edison at Pier B Street.	Initial Study and Negative Declaration released June 2007.
		City of Long Beach Projects	
84	Renaissance Hotel Project, City of Long Beach	Development of a 374-room hotel on the southeast corner of Ocean Boulevard and the Promenade.	Approved project. Construction complete.

Table B-1. Related and Cumulative Projects (continued)

Number	*Project Title and Location*	*Project Description*	*Project Status*[1]
City of Long Beach Projects (continued)			
85	D'Orsay Hotel Project, City of Long Beach	Development of a hotel. The D'Orsay Project is a 162-room boutique style hotel on the northwest corner of Broadway and the Promenade.	Approved project. Construction underway. Anticipated completion in Fall 2008.
86	City Place Development, City of Long Beach	Development of commercial and residential space. The former Long Beach Plaza Mall, downtown between 3rd and 6th Streets and between Long Beach Boulevard and Pacific Avenue, is now under construction. The approved project will redevelop the former mall area and two blocks of vacant land east of Long Beach Boulevard with approximately 450,000 square feet of commercial space and up to 200 residential units. The EIR prepared for this project identified significant air quality impacts.	Construction complete. Completed in 2005.
87	The Pike at Rainbow Harbor, City of Long Beach	Commercial use development. This project site is south of Ocean Boulevard on the site of the former Pike Amusement Park between Pine and Magnolia Avenues in Long Beach. This approved project includes approximately 770 residential units, a 500-room hotel, and 25,000 square ft of commercial space. The EIR prepared for this project identified significant air quality, cultural resources, noise, public service, and transportation impacts.	Approved project. Construction complete.
88	Queensway Bay Master Plan, City of Long Beach	Construction of Long Beach Aquarium, new urban harbor, office building, and entertainment complex. This project, designed to create a major waterfront attraction in downtown Long Beach, includes a recreational harbor, 150,000-square-foot aquarium, 125,000-square-foot entertainment complex, 59,000 square feet of restaurant/retail space, an 800-room hotel, 95,000 square feet of commercial office space, and 487 boat slips in and around Queensway Bay. The recreational harbor and aquarium have been completed. The EIR certified for this project identified significant transportation impacts.	Approved project. Construction complete.
Note: 1. Construction date for Port projects based on an assumption that the project would be approved by the LAHD.			