3.6

GROUNDWATER AND SOILS

3.6.1 Introduction

This section describes the affected environment and regulatory setting for groundwater and soils, as well as the impacts on groundwater and soils that would result from the proposed Project and its alternatives, and the mitigation measures that would reduce these impacts. The contents of this section are based on the *Preliminary Hazardous Materials Assessment, San Pedro Waterfront Project* prepared by Ninyo & Moore in 2008, which is included as Appendix H to this report.

3.6.2 Environmental Setting

A site assessment report prepared on behalf of LAHD (Appendix H)) describes baseline conditions as of Fall 2007, based on identified site contamination caused by long-term operations at the facility since before World War II. Those conditions were used to define baseline conditions for this analysis under both CEQA and NEPA and best represent the conditions that currently exist on site. The proposed project area is predominantly underlain by a shallow unconfined aquifer, which is present at a depth ranging from 8 to 16 feet below ground surface (bgs). Spills of petroleum products and hazardous substances from long-term industrial land uses have resulted in contamination of some localized onshore soils and shallow groundwater.

3.6.2.1 Groundwater

The information described in this section is based on review of previous EIRs prepared by LAHD (LAHD and USACE 2007) and the hazardous materials assessment included as Appendix H. Four major aquifers—the Silverado, Lynwood, Gage, and Gaspur—are present within the Los Angeles Basin and are used for industrial and municipal water supply outside of the harbor area. The two major water-bearing zones that occur beneath the proposed project area are the Gaspur and

Gage aquifers (LAHD and USACE 2007). Both of the aquifers are composed of fine- to medium-grained sand and silty sand. Shallow groundwater beneath the site is saline, not currently considered potable water, and would not likely be considered a potable or beneficial water source in the future. Drinking water is provided to the area by the City of Los Angeles Department of Water and Power (LADWP).

Depth to groundwater in the northern portion of the proposed project area ranges from approximately 7.5 to 14 feet bgs. Based on groundwater sampling results for the former Union Oil Company Tank Farm area (Area D), groundwater beneath the southern portion of the proposed project area ranges from approximately 8 to 16 feet bgs.

3.6.2.2 Soil Conditions

The soil information described in this section is based on review of previous EIRs prepared by LAHD (LAHD and USACE 2007) and the hazardous materials assessment included as Appendix H. Prior to development of the Los Angeles Harbor, extensive estuarine deposits were present at the mouth of Bixby Slough, Dominguez Channel, and the Los Angeles River. The organic tidal muds were dredged extensively and mostly covered with artificial fill. Underlying the surface soils are subsurface soils consisting of dredged fill material, underlain by naturally deposited alluvial soils that overlay the Malaga mudstone of the Miocene Monterey Formation.

Dredging and filling operations have modified these native sediments to create extensive land masses of dredged fill material that support numerous harbor facilities. Consequently, most of the harbor facilities at the proposed project area have been constructed on dredged fill material. Both the fill and the native sediments overlie older late-Pleistocene age deposits. These older deposits are exposed in the bluffs that border the westerly side of the proposed project area and include the San Pedro Sand, comprised primarily of sand and pebbly gravel, and the San Timms Point Silt, consisting largely of siltstone. Detailed descriptions of geology and hydrology are presented in Sections 3.5 and 3.14, respectively of this EIR.

3.6.2.3 Investigations of Contaminated Soil and Groundwater

The existing conditions, potential impacts, and mitigation measures related to contaminated sites described in this draft EIS/EIR are based on the Hazardous Material Assessment (HMA) described in Appendix H). The purpose of the HMA was to evaluate the likelihood that hazardous materials may be present in soil or groundwater beneath the proposed Project as a result of existing and former onsite activities.

The following sections provide a summary the land uses at the proposed Project as they relate to potential contaminated sites. The proposed project area was divided into geographic areas, Areas A–G, as discussed in the following sections (Figure 3.6-1).

3.6.2.3.1 Area A

Area A is bound to the north by the Vincent Thomas Bridge, to the east by the Main Channel, to the south by Area B, and to the west by North Palos Verdes Street and South Harbor Boulevard. Area A includes Slip 93, Fire Station 112 (Berth 86), the World Cruise Center complex and existing surface parking at Berths 87–93 (formerly the Pasha Terminal which occupied Berths 87–90), Island Express (Berth 93E), the S.S. Lane Victory (Berth 95), the Catalina Express (Berth 96), the LADWP substation, and a portion of the Red Car Line.

3.6.2.3.2 Area B

Area B is bound to the north by Area A, to the east by the Main Channel, to the south by Area C, and to the west by South Harbor Boulevard. Area B includes the Maritime Museum (Berth 84), Crowley Tugboat Service (Berth 85), Los Angeles Maritime Institute Top Sail Program, John S. Gibson Park and memorials, surface parking along Sampson Way, and a portion of the Red Car Line.

3.6.2.3.3 Area C

Area C is bound to the north by Area B, to the east by the Main Channel, to the south by Areas E and D, and to the west by South Harbor Boulevard. Area C includes restaurants and shops located within the Ports O' Call Village, docks and facilities for commercial fishing, Jankovich & Son fueling station in the SP Slip area, and a portion of the Red Car Line.

3.6.2.3.4 Area D

Area D is bound to the north by Area C, to the east by the Main Channel, to the south by East 22nd Street, and to the west by Crescent Avenue. Area D includes vacant land (formerly occupied by Union Oil Company Tank Farm), Warehouses Nos. 9 and 10, the Double Tree Hotel, and a portion of the Red Car Line.

3.6.2.3.5 Area E

Area E is bound to the north by Area D, to the east by the Main Channel, to the south by the Los Angeles Harbor, and to the west by the San Pedro Community. Area E

includes the Westway Terminal along Signal Street (Berths 70–71) that leases to several different company names and addresses, including Hyctane Corporation, Pennzoil Company, and Westway Terminal Co. Area E includes vacant land (formerly occupied by the GATX facility), Red Car Line station and maintenance facility, Pacific Performance Racing, RS Marine Engine Service, Los Angeles Department of Fish and Game, the Fish Market, Warehouse No. 1, US Water Taxi, and the Port of Los Angeles Pilot Station. Area E also includes San Pedro Boat Works, Los Angeles Fire Department Station No. 110, Cabrillo Way Marina, the Dill Pickle Yacht Club, and the Buccaneer Yacht Club (Berths 52–60) along Miner Street.

3.6.2.3.6 Area F

Area F is bound to the north by Area D, to the east and south by the Pacific Ocean (Los Angeles Harbor), and to the west by the San Pedro Community. Area F includes Salinas De San Pedro Saltwater Marsh, Cabrillo Beach recreation area, Cabrillo Beach Bathhouse, the LACFD Lifeguard Operations, Cabrillo Marine Aquarium, Cabrillo Beach Boat Launch Facility, and the Boy/Girl Scout Camp and Cabrillo Beach Youth Camp.

3.6.2.3.7 Area G

Area G consists of an existing upland next to Berth 240 in PA 7 (Parcel 3), across the channel from Areas C and E.

3.6.2.4 Methodology for Hazardous Material Assessment

The HMA evaluated the characteristics of existing and historical contaminated sites by completing the following processes (Appendix H):

- FirstSearch regulatory database review,
- evaluation of "orphan sites" not mapped by the FirstSearch database,
- review of historical Sanborn Fire Insurance Company maps,
- review of historical aerial photographs,
- review of historical topographical maps,
- review of historical oil and gas maps,
- site reconnaissance,
- interviews with site operators, and
- review of previous hazardous materials reports prepared by site operators, in response to site investigation and remediation of contaminated sites.

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Figure 3.6-1
Project Areas

3.6.2.4.1 Results of Contaminated Sites Database Review

Table 3.6-1 presents a brief summary of properties of concern revealed by the review of the database reports. The locations of the listed facilities are shown on Figure 3.6-2.

Table 3.6-1. Summary of Reported Contaminated Sites Listed in the FirstSearch™ Database Reports

Business Name and Address	*Case Summary*
AREA A	
No properties listed	
AREA B	
No properties listed	
AREA C	
No properties listed	
AREA D	
GATX Annex Terminal 208 East 22nd Street	Listed on the ERNS database that groundwater contamination had been confirmed. Remediation activities included treating approximately 30,000 cubic yards of contaminated soil to a depth of 9 feet bgs and placing a soil cover over the remediated soil. Remediation was completed in 1993. In 2002, the DTSC certified that all appropriate removal/remedial actions were completed and ongoing monitoring is required. The DTSC has restricted land use and requires operation and maintenance activities for the soil cover, continued groundwater monitoring, and 5-year review evaluations. Any modification to the required soil cover, if required as part of the proposed action or other alternatives, would require consultation and approval by DTSC. According to the database listing, "the remedy implemented at the site appears to remain effective in protecting human health and the environment."
Warehouse No. 12 260 East 22nd Street	Listed on this database as having a release of "PET, SVOC, TCE, and VOC."
Westway Terminal (Berths 70–71)	Listed on ERNS database with several listings for unauthorized releases. A release was reported in 2005, when an AST was overfilled releasing 638 gallons of tetrahydrofuron into a secondary containment area. A release of 100 gallons of perchloroethylene was reported in 2004, when a rail car was being unloaded into a storage tank and the storage tank overflowed. A release of 50 gallons of tetrachoroethylene was reported in 1998 due to a valve leak on a storage tank.
Hyctane Corporation (within the Westway Terminal) 2186 Signal Place	Listed on ERNS database and had two listings for a single release discovered in 1994, when a storage tank was overfilled. The facility experienced an unauthorized

Business Name and Address	*Case Summary*
	release of 3,000 gallons of "oils, fuel, no. 2-D" to the soil.
Pennzoil Company (within the Westway Terminal) 2220 Signal Street	Listed on ERNS database as experiencing an unauthorized release in January 1993 of 15,000 gallons of "neutral based oil-non hazardous", to the soil as a result of a "valve cracked on tank."
GATX Terminal (within the Westway Terminal) Berths 70–71	Listed on ERNS database as having a release affecting soil and groundwater in 1995, and free product was found.
AREA E	
Foss Maritime (within the Westway Terminal) Berths 70–71	Foss Maritime at Berths 70–71 (at the Westway Terminal in Area E) is listed as having a release in 1998 that was contained on a barge.
AREA F	
No properties listed	
AREA G	
No properties listed	

Notes:

AST—aboveground storage tank

ERNS—emergency response notification system

DTSC—Department of Toxic Substances Control

LUST—leaking underground storage tank

PET—petroleum

SVOC—semi-volatile organic compound

TCE—trichloroethylene

VOC—volatile organic compound

3.6.2.4.2 Results of Review of Historical Information

The following sections summarize the review of historical sources including general photographs, Sanborn Fire Insurance maps, historical city directories, topographic maps, and oil and gas maps.

Sanborn Fire Insurance Maps

Sanborn Maps were compiled by the Sanborn Fire Insurance Company for use by all insurance companies in setting fire insurance rates based on building construction types. Sanborn maps were compiled from the late 1800s to the late 1960s, and they include a wealth of detail regarding site development features at a specific moment in

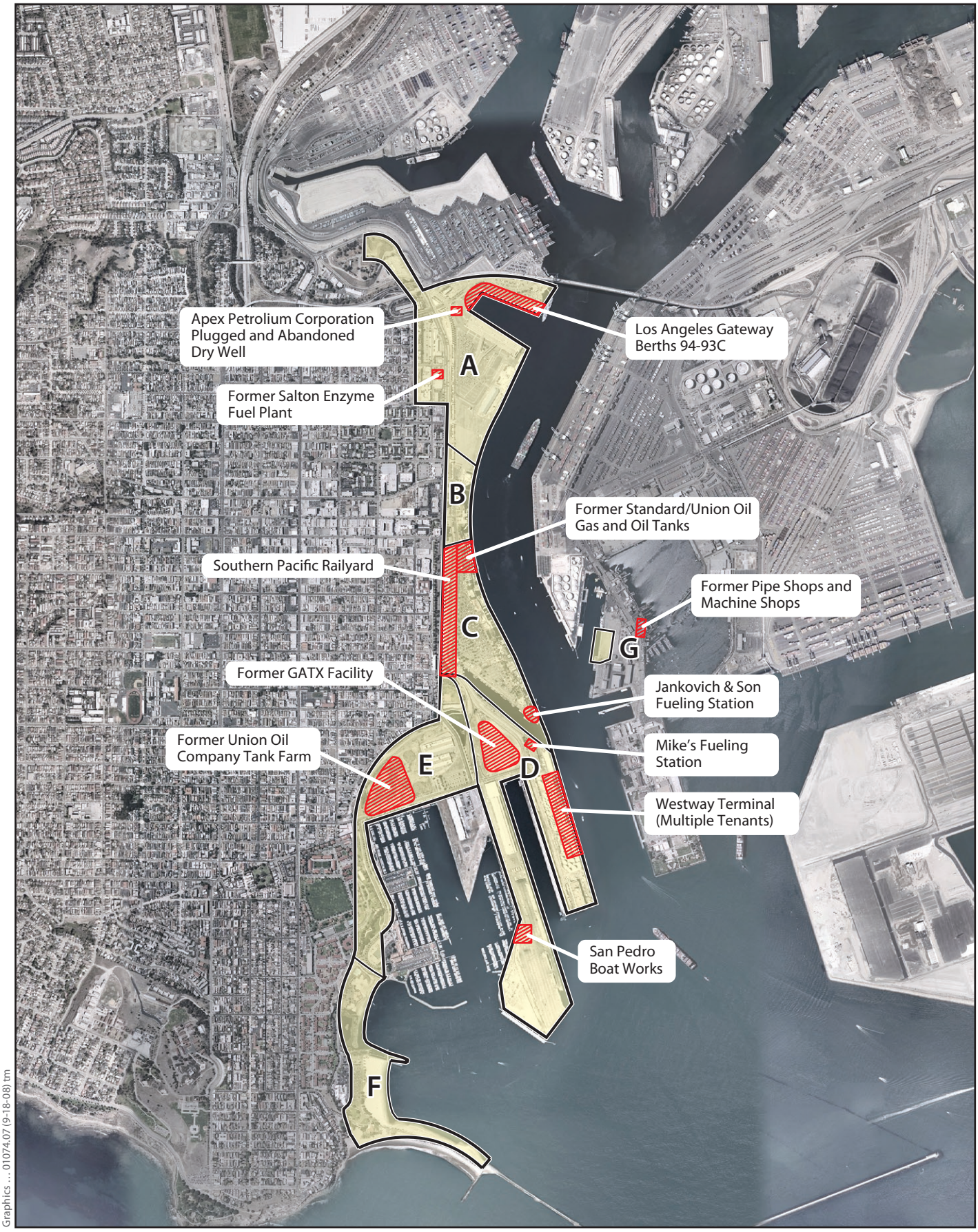

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Figure 3.6-2
Reported Contaminated Sites Listed in FirstSearch Database Report

time. Sanborn maps are particularly useful because in many cases they predate aerial photographs and environmental records and often provide the only source of information regarding site development and use. The results of the Sanborn Fire Insurance Map review are summarized in Table 3.6-2. The general locations of sites where the historical review indicted potential contamination are shown on Figure 3.6-3.

Table 3.6-2. Summary of Sanborn Fire Insurance Maps

Sanborn Map Date or Range of Dates	*Descriptions*	*Specific Concerns*
AREA A		
1921	The Kerchoff-Cuzner Mill & Lumber Company appeared on the northern portion of Area A, east of Harbor Boulevard.	Mill & Lumber Company: wood preservatives and fuels.
1950–1969	From 1950 to 1969, the northern portion of Area A was occupied by lumber yards and associated sheds, storage, and warehouses; wharfs, and lumber in transit. Properties along Harbor Boulevard consisted of residential, welding yard and machine shop, restaurants, and "gas & oil." The southern portion of Area A, west of the main channel, included Marine Hardware Company, which included three marine supply warehouses, SP Railroad Freight Yard, and rights-of-way.	Mill & Lumber Company: wood preservatives, fuels. Welding yard and machine shop: metals, petroleum, lubricants, and coolants. Gas and oil: likely USTs, petroleum, and battery servicing. SP Freight Yard and right-of-way: herbicides, fuels, and metals.
AREA B		
1886–1908	Area B contains railroad rights-of-ways, a coal wharf, freight depot, the WH Perry Lumber and Mill Co, the Kerchoff-Cuzner Mill & Lumber Co with three associated crude oil ASTs, and a sawdust and shavings dump. The area is also occupied by storage facilities, residences, stores, restaurants, and other service providers.	SP railroad: herbicides and fuels. Coal wharf: metals and PAHs. Lumber yards: wood preservatives, fuels, three crude oil ASTs, and sawdust and shavings dump.
1921	The area appeared to be developed with Pacific Electric (PE) Ry Co.'s passenger freight station and the Southern Pacific Company's Freight Station and associated structures. Residential properties are observed along 6th and 7th Street.	Passenger freight station: possible fuels and lubricants. SP Railroad: herbicides/pesticides.
1950–1969	The site appeared to be developed with PE Ry Co.'s passenger freight station, the Port of Los Angeles Municipal Ferry Building and associated structures including a boiler room, and the Los Angeles Fire Department.	Passenger freight station: herbicides and possible fuels and lubricants. Boiler room at ferry berth: fuels.

Sanborn Map Date or Range of Dates	*Descriptions*	*Specific Concerns*
AREA C		
1891	The site is not shown in this map. Vacant lots and residential properties appeared west of the site.	
1902–1908	The site contained Southern Pacific Railroad tracks, retail shops, residential properties, and a public library along Beacon Street. Residential properties appeared west of the site.	SP Railroad: herbicides, fuels, and metals.
1921	The site appeared to be developed east of Harbor Boulevard with EK Wood Lumber Co., which included a lumber shed, rack, office, hydraulic lumber loading area, welding sheds, shavings vault, planning mill, and a steam dry kiln. The site was also occupied by wooden molasses tanks, Globe Grain and Milling Co., and Southern Pacific Railroad tracks. The area along the Main Channel appeared as vacant and residential properties.	Grain Elevator at Globe Grain and Milling Co: herbicides/pesticides and fuels. Railroad tracks and section house at SP Railroad Co: pesticides/herbicides. Planning mill and hydraulic lumber loading area at EK Wood Lumber Company: wood preservatives and lubricants.
1950	The site appeared to be developed with the Southern Pacific freight yard, Southern Pacific Electric Company right-of-way, Union Oil Company marine gas and oil station, and a 100,000-gallon water tank.	SP Freight Yard: hydrocarbons and herbicides. SP Electric Company right-of-way: several oil and gas tanks Machine shop at Union Oil Company marine gas and oil station: fuels, oils, and lubricants.
1969	The Ports O' Call Village appeared developed along the Main Channel and included shops and restaurants. Standard Oil Company of California appeared on the northern portion of Area C and included four gas and oil tanks, two oil tanks, marine gas and oil station, warehouse, office, and a pump house. Union Oil Company is located adjacent to the Standard Oil, and includes two oil tanks. The Shell Oil Company appeared on the southern portion of Area C (facility is currently Jankovich & Son fueling station), and included marine gas and oil station, small boat oiling dock (at Berth 74), six oil and gas tanks oil drum platform, and an oil waste house. A component systems repair shop appeared west of Timms Way.	Standard Oil Company: fuels. Union Oil Company: fuels. Shell Oil Company: fuels. Component Systems Repair: fuels, lubricants, and chemicals.

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Figure 3.6-3
Sites of Potential Concern Based on Historical Reviews and Site Interviews

Sanborn Map Date or Range of Dates	*Descriptions*	*Specific Concerns*
AREA D		
1902–1921	The site appeared to be developed generally with dwellings, stables contractors' barn, retail, South Coast Yacht Club, and Van Camp Sea-Food Companies, which included a fish cannery, canned storage warehouse, cold storage, and a wharf.	A fuel tank noted on the top of the bluff and northeast of the intersection between South Beacon and East 14th Street: fuels. Union Ice Company: ice production, machinery room, and ammonia Cylinders noted at 1836 S Mesa: fuels, ammonia, and metals.
1950–1969	The site appeared to be developed by supply warehouses, a lime warehouse, auto sales and repair shops, paint retail, machine shops, boat buildings, sheet metal shop, auto wheel service, and a gas and oil station. A notation indicates "Union Oil Companies Harbor Pumping Station" located west of the warehouses and north of 22nd Street (this if the former Union Oil Company Tank Farm).	Sheet metal shop, gas and oil station, auto repair and machine shops: fuels, lubricants, and metals. Union Oil Company Tank Farm: fuels.
AREA E		
1921–1950	The site appeared developed with a hospital, warehouses, US Navy barracks and offices, lumber companies.	Engine maintenance and repair shops, carpenter shops, blacksmith, and printing shops: fuels, chemicals, and metals. A 50-foot, 30 "bbls" oil tank: fuels Steel gas and oil tanks, machine shops, open transformers, auto repair, sheet metal shop, storage tanks, and incinerator: fuels, lubricants, and metals.
1969	The site appeared developed with loading docks, freight and cargo sheds, general warehouses, container storage yard, and maintenance shops.	San Pedro Boat Works: lead melting, battery shop, machine shop, paint stock room, and storage. Berths 70-71 show the current tank farm including Pennzoil Company, Marine Tank Farm, Hyctane Corporation, Chemical Bulk Plant. Tank farm includes steel chemical storage tanks, machine shops, carpenter shops, drum storage, naval fuel depot, and transformers: fuels, lubricants, metals, PCBs, and chemicals.
AREA F		
N/A	No Sanborn coverage was available for Area F.	N/A

Sanborn Map Date or Range of Dates	*Descriptions*	*Specific Concerns*
AREA G		
1921	The Berth 240 area appears to be developed with a pipe shop.	Pipe shop: metals, lubricants, and solvents.
1950	The Berth 240 area appeared to be developed with a pipe shop, store room, machine shop, and office.	Pipe and machine shop: metals, fuels, lubricants, and solvents.
Note: SP—Southern Pacific UST—underground storage tank AST—aboveground storage tank PAH—polynuclear hydrocarbons PCBs—polychlorinated biphenyls		

Historical Aerial Photographs

Aerial photographs have been collected for the continental United States since the 1920s, with variable coverage and frequency (generally based on an area's importance to national defense). Aerial photographs offer an opportunity for direct observation of the proposed project conditions across a period of time. These observations may include the locations of tank pits, drums, pits, ponds, lagoons, stained/stressed vegetation, or other development features that can indicate potential contaminant sources.

Ninyo & Moore (Appendix H) reviewed aerial photographs taken in 1937, 1952, 1963, 1972, 1985, 1997, and 2004. The photographs reviewed varied in scale and clarity, and were taken from various altitudes.

The aerial photograph review served to verify information gained from other sources, and in some cases, served as the primary source of information. Information that was gathered from aerial photographs is summarized in Table 3.6-3 below. Since the proposed project area includes a large area, the table includes limited data in the interest of brevity. The data are limited primarily to parcels of potential concern as revealed by regulatory data or site reconnaissance. Historical features of potential environmental concern noted that were not revealed by other sources are also described in the table.

Table 3.6-3. Summary of Historical Aerial Photographs

Map Year	*Area A*	*Area B*	*Area C*	*Area D*	*Area E*	*Area F*	*Area G*
1937	The harbor cut (Slip 93) appears different than the current harbor cut. The site appears to be occupied by lumber yards and other warehouse and storage facilities. Small residential and retail structures are along Harbor Boulevard.	The site appears to be occupied by lumber yards, railroad tracks, shops, residences, and boat slips in the Main Channel.	The site and site vicinity appear to be used for warehouses and storage. Harbor Boulevard and the SP railroad tracks appear to the west of the site.	The site and vicinity appear to be industrial operations and undergoing construction.	Three structures appear in the GATX Annex Terminal. A tank farm appears along Signal Street. Warehouses also appear along Signal Street (currently Westway Terminal). Warehouses and boat storage appear along Miner Street.	The site and site vicinity appear to be undeveloped or under construction.	The site appears to be developed with several structures.
1952	The site and site vicinity appear similar to that observed in the 1937 aerial photograph. Additional residential and retail structures appear along Harbor Boulevard.	The site appears similar to that observed in the 1937 with the addition a structure which appears near Berth 86 and additional boat slip storage.	The site appears to be vacant; the warehouses and storage areas are no longer visible at the site. A structure appears near Berth 86.	The site and vicinity appear to be industrial operations. Two structures have appeared on the Union Oil Company Tank Farm (west of Miner Street). Warehouses Nos. 9 and 10 appear on the site.	The GATX Annex Terminal appears similar to that observed in the 1937 photograph. The tanks seen in the 1937 photograph (within the current Westway Terminal) are no longer visible and have been replaced with rectangular storage or warehouse structures. Miner Street appears similar to the 1937 photograph except more boat docks and storage are visible.	The site and site vicinity appear to be under construction with areas of boat storage.	The site appears similar to that observed in the 1937 aerial photograph.

Map Year	*Area A*	*Area B*	*Area C*	*Area D*	*Area E*	*Area F*	*Area G*
1963	The Vincent Thomas Bridge and off-ramps appear on the northern portion of the site, similar to that observed currently. The harbor cut (Slip 93) appears similar to that observed currently. The former lumber yard, warehouse, and storage areas have been demolished and are occupied by the World Cruise Center and associated parking, similar to that observed currently.	Due to the quality and scale of this photograph, it is hard to identify specific structures in Area B.	The site appears similar to that in the 1952 photograph, with the addition of several structures along the water edges.	The site and vicinity appear to be industrial operations. More warehouse structures and 5 ASTs appear on the Union Oil Company Tank Farm west of Miner Street.	The GATX Annex Terminal appears similar to that observed in the 1952 photograph. The structure along Signal Street (in the current Westway Terminal) appears similar to the 1952 photograph. Berths 45–50 appear to have been constructed on the southern end of Miner Street.	The site and vicinity appear generally as it did in the 1952 photograph, with an increase in residential areas.	The site appears similar to that observed in the 1952 aerial photograph.
1972	The site appears similar to that observed in the 1963 photograph, with the exception of an additional building at the World Cruise Center.	The site appears similar to that observed in the 1952 photograph.	The site appears developed with the Ports O' Call Village and includes restaurants and shops on Nagoya Way. A fueling station was visible in the SP Slip area (currently the Jankovich fueling station) near Berth 74. Increased boat slips in the water.	The site and vicinity appear generally as they did in the 1963 photograph, with the addition of two tanks on the northern portion of the Union Oil Company Tank Farm facility.	The GATX Annex Terminal appears similar to that observed in the 1963 photograph. The structures along Signal Street (in the current Westway Terminal) appear similar to those observed in the 1963 photograph. Additional tanks appear. The area	The site and vicinity appear generally as they did in the 1963 photograph, with an increase of residential areas.	The site appears similar to that observed in the 1963 aerial photograph.

Map Year	*Area A*	*Area B*	*Area C*	*Area D*	*Area E*	*Area F*	*Area G*
					along Miner Street appears similar to that observed in the 1963 photograph. Berths 47–49 appear to be different, and possibly covered by dirt. Because of the scale and quality of the photographs, it is hard to depict specific features.		
1985	The site appears generally as it does the 1972 aerial photograph, except the additional building observed in 1972 is no longer at the site.	The site appears similar to that observed in the 1972 photograph.	The site appears generally as it does the 1972 aerial photograph.	The site and vicinity appear generally as they do in the 1963 photograph.	The GATX Annex Terminal appears similar to that observed in the 1972 photograph. The structures along Signal Street (in the current Westway Terminal) appear similar to those observed in the 1972 photograph. The areas along Miner Street appear similar to those in the 1972 photograph.	The site and site vicinity appear generally as it does in the 1972 aerial photograph with an increase of retail shops, residences, restaurants, and boat storage facilities.	The area appears as vacant land with a building foundation on the southern portion and a small structure on the west, near the water.
1997	The site appears generally as it does the 1985 aerial photograph, except one of the World Cruise Center buildings is no	The site appears generally as it does the 1985 aerial photograph. Harbor Boulevard appears as a two-lane road.	The site appears generally as it does the 1985 aerial photograph.	The Union Oil Company Tank Farm no longer exists on the site. The warehouses remain on the site.	The GATX Annex Terminal to the east of Miner Street is now vacant. The tank farm and warehouses along Signal Street (at the	The site appears generally as it does in the 1985 aerial photograph.	The area appears as vacant land with a small building on the southern portion.

Map Year	*Area A*	*Area B*	*Area C*	*Area D*	*Area E*	*Area F*	*Area G*
	longer observed.				Westway Terminal) appear similar to those observed during the site reconnaissance. The warehouses, properties, and berths along Miner Street appear similar to those observed at the time of the site reconnaissance.		
2004	The site appears similar to that observed at the time of the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).	The site appears similar to that observed at the time of the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).	The site appears similar to that observed at the time of the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).	The site appears similar to that observed at the time of the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).	The site appears similar to that observed at the time of the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).	The site appears similar to that observed at the time of the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).	The area appears vacant and similar to that observed during the 2007 site reconnaissance (see Section 3.6.2.4.4, "Results of Site Reconnaissance," below).

Historical Topographical Maps

Ninyo & Moore (Appendix H) obtained historical topographic maps for the years 1896, 1925, 1951, 1964, 1972, and 1981. United States Geological Survey (USGS) 7.5-minute series maps for the San Pedro, Wilmington, and Long Beach vicinity included the proposed project area. The following is a brief description of the proposed project area based on review of the historical topographic maps.

Area A

Area A is generally flat and has an approximate elevation ranging from 0 to 50 feet above mean sea level (MSL). These topographic maps show the SP Railroad tracks traversing the proposed project area. A few structures were noted in Area A in the 1896 through 1951 topographic maps, likely associated with the lumber yards noted on the Sanborn maps and aerial photographs. The cruise ship terminal buildings were noted on the 1964 through 1981 topographic maps in their current location.

Area B

Area B is generally flat and has an approximate elevation ranging from 0 to 50 feet above MSL. The SP tracks are shown traversing Area B. Several structures are shown in these topographic maps at the current location of the freight rail station and the former Los Angeles Municipal Ferry building, also noted in the Sanborn maps (see Table 3.6-2).

Area C

Area C is generally flat and has an approximate elevation ranging from 0 to 50 feet above MSL. Structures were noted throughout the existing Ports O' Call area consistent with structures noted on Sanborn maps (see Table 3.6-2).

Area D

Area D is generally flat and has an approximate elevation ranging from 0 to 50 feet above MSL. Structures were noted in 1951 consistent with structures noted on the Sanborn maps. From 1964 through 1981, five to nine tanks were noted on the western and central portion of the area (likely associated with the former Union Oil Company). These are also consistent with those noted in the Sanborn maps.

Area E

Area E is generally flat and has an approximate elevation ranging from 0 to 10 feet above MSL. Structures were noted in 1951 consistent with structures noted on the Sanborn maps. From 1964 through 1981, numerous tanks were noted on Berths 70–71, consistent with those noted in the Sanborn maps and with what was observed at the time of the site reconnaissance.

Area F

Area F is generally flat and has an approximate elevation ranging from 0 to 50 feet above MSL. Structures were noted throughout the Area F consistent with structures noted on Sanborn maps. Specific features of environmental concern were not revealed on these maps.

Area G

The site is mostly developed in the earliest available 1937 photograph, with little change between 1937 and 1972. Starting with the 1985 photograph, portions of the site are vacant.

Review of Historical Oil and Gas Maps

Ninyo & Moore (Appendix H) reviewed the State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) Regional Wildcat Map W1-6 and Map 128. Based on these maps, the northern portion of Area A appears to lie within the Wilmington Oil Field. One well (Apex Pet Corp. Ltd "Hards-Warnock"), shown as a plugged and abandoned dry hole, appears on the proposed project site in the vicinity of the existing cruise ship terminals. The existence of an abandoned dry hole represents a potential concern, and proposed mitigation is described later in this section. In addition, Area C from the SP Slip and south to Area F at the beach is shown within an oil field, which extends into the San Pedro Bay. However, no active or abandoned oil or gas wells are shown on or adjacent to the proposed project area within Area C through Area F. The remaining areas of the proposed Project do not lie within an active oil field.

Results of Site Interviews

Ninyo & Moore (Appendix H) interviewed LAHD staff and reviewed previous reports regarding the status of properties of concern. Ninyo & Moore interviewed Chris Foley and Ken Ragland from the LAHD Environmental Management Division. The following is a summary of the interviews.

Area A—Former Pasha Terminal, Berths 87–90: Mr. Foley is not aware of any environmental sampling, current or previous groundwater monitoring wells, or ongoing remediation in this area.

Area B—No properties of concern were discussed.

Area C—No properties of concern were discussed.

Area D—Former Union Oil Company Tank Farm: According to Mr. Foley, the facility received "case closure" status from the RWQCB in the 1990s and is not the subject of ongoing monitoring or regulatory agency action.

Area E—Westway Terminal: According to Mr. Foley, this area is underlain by a plume resulting from the release of approximately 200,000 gallons of diesel. Both Mr. Foley and Mr. Ragland indicated that the area is undergoing ongoing remediation and groundwater monitoring that is being overseen by the RWQCB.

Former GATX Annex Terminal: According to both Mr. Foley and Mr. Ragland, this area underwent remediation in the early 1990s and is currently undergoing ongoing groundwater monitoring that is being overseen by the Department of Toxic Substances Control (DTSC).

San Pedro Boat Works: Mr. Foley indicated that 3,000 to 4,000 tons of material has been disposed of during remedial surface cleanup. Mr. Foley and Mr. Ragland indicated that this area is undergoing ongoing subsurface remediation that is being overseen by the DTSC.

Berths 45–47: These berths were previously used as a supertanker terminal. Mr. Ragland indicated that limited assessment was completed, but he was not aware of any major problems.

Berths 49–50: Mr. Foley and Mr. Ragland indicated that this area was previously used as a bulk loading terminal for import and export of goods such as Coca-Cola and copper. In the late 1990s, the facility was demolished and copper was detected in soil at hazardous levels. According to Mr. Foley, the copper was left in place, and paved over with a concrete cap.

Area F—This area was previously used for navy housing, a youth center, and a bath house. Mr. Foley was not aware of any environmental issues in this area.

Area G—According to the Former Southwest Marine Parcel 3 Environmental Summary provided by Ken Ragland, the proposed project area was occupied by Southwest Ship Building from as early as 1918–1921 (Appendix H). From 1921 to 1981, the area was occupied by Bethlehem Shipbuilding Corporation Ltd., Bethlehem Steel Company Shipbuilding Division—San Pedro Yard, and Bethlehem Pacific Coast Steel Corporation. From 1981 to 1995, the site was occupied by Southwest Marine. According to the summary, metals (including arsenic with concentration up to 40.7 milligram per kilogram [mg/kg]), polychlorinated biphenyls (PCBs) with concentrations up to 240 mg/kg, and total petroleum hydrocarbons (TPH) with concentrations greater than 1,000 mg/kg were found in soil. Groundwater was affected with both metals (including lead, chromium, nickel, thallium, barium, arsenic, antimony, beryllium, and cadmium above their respective maximum contaminant levels [MCLs]) and TPH with concentrations up to 590 micrograms per liter (µg/l). Based on this information, this area represents an environmental concern.

3.6.2.4.3 Results of Review of Previous HMA Reports for Known Contaminated Sites

Ninyo & Moore reviewed site investigation and cleanup reports prepared by the owners of sites that have undergone site characterization and remediation (Ninyo & Moore 2008). The results are summarized below.

Tetra Tech, Inc., 2004, Phase II Soil and Groundwater Investigation Report for Port of Los Angeles Waterfront Gateway Development Project, Berths 94 to 93C, Harbor Boulevard From Swinford Street South to 5th Street, San Pedro, California

This report presents the results of the soil sampling and groundwater investigation at Area A. The work was performed for the LAHD Environmental Management Division by Tetra Tech, Inc. The area was reportedly occupied by railroad and industrial facilities (including lumber yards) as well as limited residential housing from the 1920s to the 1960s. In the 1960s, the area was redeveloped with the Cruise Center and associated parking lots. The objective of the investigation was to characterize the current environmental condition of the area prior to redevelopment. Potential sources of contamination that were investigated by Tetra Tech included an underground pipeline, a former gasoline station, a four-stage clarifier, and former car wash station.

Twenty-eight soil borings were advanced, and six grab groundwater water samples were collected. The borings were advanced to depths of up to 16 feet bgs, and groundwater was encountered from 7.5 to 14 feet bgs. The soil and groundwater samples were analyzed for volatile organic compounds (VOCs), TPH by carbon chain analysis, Title 22 Metals, and polynuclear hydrocarbons (PAHs). The soil samples were reportedly below the Los Angeles RWQCB soil screening levels for TPH, below the State of California Total Threshold Limit Concentrations (TTLCs), below the State of California Soluble Threshold Limit Concentrations (STLCs) for Title 22 Metals, and below the EPA Industrial Preliminary Remediation Goals (PRGs) for VOCs and PAHs. Based on the results, Tetra Tech, Inc. concluded that there was no need for soil remediation at the facility. Tetra Tech, Inc. indicated soils removed for construction could be reused on site except for one location near Berth 93C.

One groundwater sample from the Waterfront Red Car Parking Lot 4 and future Gateway Plaza was collected near a U.S. Navy pipeline and had "low" concentrations of TPH gasoline (TPHg) and PAHs. Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations exceeded the State of California Department of Health Services and the EPA Primary MCLs for drinking water, and concentrations of benzene, ethylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene exceeded the "USEPA groundwater screening levels (GSLs), as listed in EPA Subsurface Vapor Intrusion Guidance, 2002." Tetra Tech, Inc. concluded the groundwater

beneath the facility had been impacted by VOCs, but the groundwater would not impact the future development unless dewatering was required. Tetra Tech, Inc. recommended that if dewatering was required, additional groundwater sampling be conducted.

VOCs are likely present in the groundwater beneath Area A. Based on the review of this document, there is a low-to-moderate likelihood that significant soil contamination is present in this area as well.

CH2MHill, 2005, Site Investigation at the Former Unocal Tank Farm, prepared for LAHD

The former Unocal tank farm (Union Oil Company Tank Farm in Area D) was used for crude oil storage and delivery operations by Unocal from 1958 to 1988. Several site investigations were conducted at the property prior to site closure in 1994. At the time of this report, CH2MHill conducted additional site investigation to assess the current environmental condition of the soil, groundwater, and soil gas.

Soil samples contained concentrations of TPH diesel and motor oil (TPHd and TPHo) above the LAHD-provided screening criteria of 1,000 mg/kg. It does not appear that the TPH screening criteria were based on any regulatory source. Arsenic, cadmium, and lead were detected in samples and exceeded their respective California Human Health Screening Levels (CHHSLs) for both residential and industrial exposure scenarios. Concentrations of VOCs were detected below residential and industrial PRGs. "Trace to low" levels of semi-VOCs were detected. Seven PAHs exceeded the residential PRGs, and five exceeded the industrial PRGs. Pesticides were detected in the soil, but only Aroclor-1260 was detected above the residential PRG.

TPHd was detected in four groundwater samples. TPHo was detected in one groundwater sample. Five VOCs and one SVOC (semi-volatile organic compound) were detected in groundwater samples. None of the groundwater samples exceeded the "San Francisco RWQCB Environmental Screening Levels" (February 2005).

Soil gas samples detected methane exceeding the DTSC methane screening level of 1,000 parts per million (ppm). Benzene was also detected above the "USEPA ambient air PRG in soil gas samples."

Based on the sampling results, CH2MHill indicated that no significant human health risk exists at the former Union Oil Company Tank Farm. However, based on the analytical data presented, there is a moderate likelihood that concentrations of contaminants left in place at this facility may be significant if disturbed or excavated, including, but not limited to, methane and benzene in soil gas and metals and PAHs in soil.

Summary of Environmental Status of Former GATX Site, provided by LAHD, January 2008

This report gives a brief summary of the history of the GATX facility within Area E. According to the report, after an industrial fire in 1972, a remedial investigation (RI) was conducted to determine the extent of soil and groundwater impacted. A feasibility study (FS) was conducted to evaluate remedial alternatives for cleaning the affected soil in the area. A remedial action plan (RAP) was implemented between 1987 and1993. The RAP was modified in 1991 on the condition that a 1-foot-thick clean soil cover with a 2 percent grade be placed over the area. The soil cover was completed in 1993. Although LAHD currently owns the area, GATX is liable and obligated to incur all costs due to environmental cleanup. LAHD is responsible for maintaining the soil cover and to conduct soil cover inspections twice per year and submit an annual report to the DTSC. GATX prepared an operation and maintenance plan (OMP) in 1996. The OMP required submittal of remediation groundwater monitoring on a 5-year interval to the DTSC. GATX submitted the report in 2000 and 2004, and no explicit decisions or comments have been made by the DTSC. In 2002, LAHD received a violation from the DTSC when it inadvertently damaged the soil cover for utility trenches for the adjacent Waterfront Red Car Maintenance Facility. The DTSC agreed with the Environmental Management Division (EMD) to have the site de-listed from its hazardous waste site status, but only after the RI/FS or removal action workplan (RAW) process.

Summary of Former Southwest Marine Berth 240 Environmental Summary, Provided by LAHD, February 2008

Site History

Since 1981, Southwest Marine has operated ship repair, retrofit, and demolition operations at Berth 240, 985 Seaside Avenue, Terminal Island, California. Prior to its tenancy at the property, the site was used as early as 1918 by Southwest Shipbuilding Company. Southwest Shipbuilding Company occupied the site until 1921. From 1921 to 1981, the site was occupied by Bethlehem Shipbuilding Corporation Ltd.; Bethlehem Steel Company, Shipbuilding Division, San Pedro Yard; and Bethlehem Pacific Coast Steel Corporation.

The Southwest Marine property has historically been subdivided into four parcels. Parcels 1, 2, and 3 were used for ship repair, machining, sand-blasting and painting, woodwork, pipefitting, and other related support activities. Parcel 4 is the dry-dock area of the property. Parcel 3 is located north of Parcels 1 and 2 and was leased by Southwest Marine between 1981 and 1995. Parcel 3 currently contains two structures (a former compressor building and a former administration building). Parcel 4, located south of Parcels 1 and 2, contains three piers.

Site Characterization Findings

Metals

Although arsenic was reported above the 0.25 mg/kg industrial PRG in soil samples collected throughout Parcel 3, the majority of the arsenic present in site soils can be considered background. However, the highest reported concentrations (up to 40.7 mg/kg) exceeded documented background concentrations, and may be attributable to past site operations on Parcel 3. Also reported above industrial PRGs were antimony (3 samples), lead (5 samples), and vanadium (2 samples). Several metals were present in Parcel 3 soils at concentrations exceeding TTLCs, including antimony, copper, lead, mercury, and zinc. Analyses revealed concentrations in excess of the STLC for lead, copper, chromium, vanadium, and zinc. The areas that are the greatest concern for metals are located in the western half of Parcel 3.

The metals concentrations reported in Parcel 3 groundwater samples were compared with instantaneous maximum concentrations (from SWRCB's 2005 California Ocean Plan) and MCLs. Instantaneous maximum concentrations for chromium, copper, lead, and nickel were exceeded in all 11 samples. Additional metals reported above their respective instantaneous maximum concentrations were zinc (10 samples), mercury (2 samples), and arsenic (1 sample). Metals reported above MCLs were lead, chromium, nickel, thallium, barium, arsenic, antimony, beryllium, and cadmium. Note that groundwater samples were collected using push-probe sampling methodology, and the generally high-turbidity groundwater samples were not filtered prior to analysis. Therefore, it is possible some of the measured groundwater concentration was the result of unusually high turbidity in the samples.

Polychlorinated Biphenyls

Sixteen soil samples from 13 direct-push locations exceeded the 0.74 mg/kg industrial PRG for PCBs. PCB concentrations ranged up to 240 mg/kg.

Petroleum Hydrocarbons

TPH was reported throughout the site at concentrations above 1,000 mg/kg during the 2006 investigation of Parcel 3. The majority of the reported hydrocarbons were detected in the heavier carbon ranges (motor oil and diesel fuel ranges). The greatest impact was found in the near-surface (3-inch) samples, indicating widespread surface contamination, but TPH was also reported above 1,000 mg/kg in samples collected as deep as 20 feet below grade. TPH was also reported in 8 of the 12 groundwater samples collected throughout Parcel 3 ranging from 140 to 590 µg/l. All of the groundwater samples were collected using push-probe methods.

Tributyltin, VOCs, and Asbestos

Based upon the data collected during this investigation, tributyltin and VOCs (including fuel oxygenates and BTEX compounds) do not appear to be a concern for Parcel 3 soil and groundwater. Because asbestos was only reported at a very low

concentration (less than 0.1 percent) in one of the 9 analyzed samples, it does not appear to be a concern for Parcel 3.

Much of Parcel 3 is currently fenced off due to the PCB contamination. As required by CalEPA's Brownfield's Memorandum of Agreement, LAHD is in the process of submitting a request of oversight to DTSC and RWQCB. Although the oversight agency has not been determined for the remediation of this site, LAHD would remediate it to meet applicable regulatory standards per the oversight agency's instructions prior to constructing the fueling facility on it. (Foley pers. comm.)

3.6.2.4.4 Results of Site Reconnaissance

A site reconnaissance was conducted in December 2007 to provide specific, current information about the proposed project area that is not obtainable through an environmental records review or aerial photograph review. The inspection included a reconnaissance of the proposed project area from public right-of-way. The site reconnaissance involved observation of several indicators of potential environmental impacts to the proposed Project including, but not limited to, significant staining or degraded pavement, underground storage tanks (USTs), aboveground storage tanks (ASTs), storage of hazardous materials and wastes, groundwater monitoring wells and remediation systems, dry cleaning facilities, transformers, pesticide use, industrial facilities, current or historic gasoline stations, distressed vegetation, and the presence of pits, ponds, or lagoons. The presence of features such as ASTs, USTs, or chemical storage areas alone is not cause to classify a property as moderate or high risk.

The following sections summarize observations at properties where environmental risk indicators were noted by the field assessor. In general, properties were viewed from public rights-of-way; interviews with property personnel were not conducted. Table 3.6-4 describes the properties of concern.

Table 3.6-4. Summary of Site Reconnaissance

Area	*Address/ General Location*	*Business Name*	*Site Use*	*Chemical Storage Areas*	*Dumped, Burned Material*	*Hydraulic Equipment (Lifts)*	*Bermed, Recessed, or Diked Areas*	*Chemical/Pesticide Mixing Areas*	*Sumps, Pits, Ponds, Lagoons, Clarifiers*	*Discharges/Disposal Areas*	*Groundwater Monitoring Wells or Other Wells*	*Remediation Equipment/Evidence or Remediation*	*Discolored or Polluted Water*	*Storage Tanks (Underground or Aboveground)*	*Drums*	*Stressed Vegetation*	*Discolored/Stained Soils*	*Degraded/Heavy Stained Pavement*
A	327 North Harbor Boulevard	Unmarked building (Formerly the Salton Enzyme Fuel Treatment)	Excavation, possible UST removal: excavation covered and bermed	N	N	N	N	N	N	U	N	Y	N	Y[2]	N	N	N	N
B	No properties of concern	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C	Nagoya Way and Timms Way	Fire Station No. 112	Fire station	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
	Berths 73–82	Jankovich & Son fueling station in the SP Slip area	Tank farm/fueling	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
	East of Harbor Boulevard/ South of 7th Street	SP Railyard	Railyard	Y[1]	N	N	N	N	N	N	N	N	N	U	N	N	N	N
D	No properties of concern	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Area	*Address/ General Location*	*Business Name*	*Site Use*	*Chemical Storage Areas*	*Dumped, Burned Material*	*Hydraulic Equipment (Lifts)*	*Bermed, Recessed, or Diked Areas*	*Chemical/Pesticide Mixing Areas*	*Sumps, Pits, Ponds, Lagoons, Clarifiers*	*Discharges/Disposal Areas*	*Groundwater Monitoring Wells or Other Wells*	*Remediation Equipment/Evidence or Remediation*	*Discolored or Polluted Water*	*Storage Tanks (Underground or Aboveground)*	*Drums*	*Stressed Vegetation*	*Discolored/Stained Soils*	*Degraded/Heavy Stained Pavement*
E	Northeast of the intersection between Signal Place and East 22nd Street	Mike's Main Channel Chevron Lubricants	Refueling	Y[1]	N	N	N	N	N	N	U	U	N	Y[1]	U	N	N	Y
	Southeast of the intersection between Signal Place and East 22nd Street	Mike's Main Channel fueling station	Storage	Y	N	U	N	N	U	N	U	U	N	Y	Y[1]	N	N	N
	Berths 70–71	Westway Terminal Company Inc.	Storage	Y	N	U	N	N	U	N	U	U	N	Y	Y[1]	N	N	N
	2945 South Miner Street/ Berth 44A	Los Angeles Fire Department Station No. 110	Fire station	Y[1]	N	U	N	N	U	N	U	U	N	Y[1]	U	N	N	N
	Berth 44	San Pedro Boat Works	Boat repair	Y[1]	N	U	N	N	U	U	U	U	Y[1]	Y[1]	Y[1]	N	N	N
F	No properties of concern	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Berth	No properties of	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Area	*Address/ General Location*	*Business Name*	*Site Use*	*Chemical Storage Areas*	*Dumped, Burned Material*	*Hydraulic Equipment (Lifts)*	*Bermed, Recessed, or Diked Areas*	*Chemical/Pesticide Mixing Areas*	*Sumps, Pits, Ponds, Lagoons, Clarifiers*	*Discharges/Disposal Areas*	*Groundwater Monitoring Wells or Other Wells*	*Remediation Equipment/Evidence or Remediation*	*Discolored or Polluted Water*	*Storage Tanks (Underground or Aboveground)*	*Drums*	*Stressed Vegetation*	*Discolored/Stained Soils*	*Degraded/Heavy Stained Pavement*
240	concern																	

Notes:

Y—Yes
N—No
U—Unknown

Y[1]—Not directly observed, but assumed to be present.

Y[2] – Evidence or possible UST removal.
The existence of, for example, tanks or chemical storage areas alone is generally not cause to classify a property as moderate or high with regard to risk. Evidence of a release, such as significant staining, groundwater monitoring wells or remediation equipment, would be cause to classify a property as Moderate or High.

3.6.2.4.5 Specific Properties of Concern

Based on the results of historical research, review of the environmental database, regulatory agency inquiries, and site reconnaissance, properties were evaluated and classified as high, moderate, or low with regard to the potential for detrimental impacts during construction activities for the proposed Project. Specific properties of high or moderate risk are presented in Table 3.6-5. Specific properties that have reported historical releases are shown on Figure 3.6-2. General areas where historical industrial activity could have caused unreported historical releases are shown on Figure 3.6-3.

The likelihood of specific areas of the proposed project area being contaminated by hazardous materials was ranked as high, moderate, or low based on the following descriptions:

High—Property with known or probable contamination within the proposed project area. An example of a property in this category would be leaking UST facilities where remediation had not been started or was not yet finished.

Moderate—Property with potential or suspected contamination within the proposed project area. Examples of properties in this category would be leaking UST facilities in final stages of remediation or in post-remediation monitoring. A second example would be a property with known use and storage of hazardous materials that had received violation notices from an inspecting agency or where visual evidence of inadequate chemical and storage practices (such as significant staining) were observed but where no environmental assessments had occurred. Also included in this category are facilities where USTs are likely present and/or facilities that have used significant quantities of hazardous materials but appear to be abandoned by their former operators.

Low—Property that uses or stores hazardous materials but with no significant violations, known releases, or evidence of inadequate chemical handling practices. Example properties would be UST or dry cleaning facilities with no documented releases or where remediation of previous releases had been completed.

Properties categorized as high or moderate risk in the table were evaluated based on the information obtained and the likelihood that hazardous materials that might impact soil and/or groundwater are likely to be disturbed during construction.

Table 3.6-5. Identified Specific Properties of Concern

Area	*Property Name/Address*	*Site Operations - Reason for Risk Class*[1]	*Data Source*[2]	*Risk Class*[3]	*Properties included in Each Listed Alternative*						
					Proposed Project	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*	*Alternative 6*
A	Former lumber yards	Wood preservatives	H	M	X	X	X	X	X	X	
	18 inch naval fuel surge line	To be abandoned prior to North Harbor cuts and Inner Harbor cruise parking lot construction	I	M	X	X	X	X			
	Former railroad facilities	Herbicides/fuels, metals	H	M	X	X	X	X	X	X	
	Former Salton Enzyme Fuel Treatment Plant	Likely UST removal (excavation covered and bermed)	R	M	*	*	*	*	*	*	*
	Apex Pet Corp. Ltd. (Hards-Warnock)	Abandoned dry oil well	H	M	X	X	X	X	X	X	
	Los Angeles Gateway Berths 94–93C	VOCs in groundwater; possible VOCs, TPH, PAHs, metals in soil	H	M	X	X	X	X	X	X	
B	Former lumber yards	Wood preservatives	H	M	X	X	X	X	X	X	
	Former railroad facilities	Herbicides/fuels, metals	H	M	X	X	X	X	X	X	
C	Jankovich & Son fueling station in the SP Slip area	TPH	R H	M	X	X	X	X	X	X	
	SP Railyard	Herbicides fuels, metals	R	M	X	X	X	X	X	X	
	Former Standard/union oil gas and oil tanks/northern area C	Berth fuel/oil storage	H	M	X	X	X	X	X	X	
D	Former Union Oil Company Tank Farm	Chemical storage: TPH, crude oil, metals, VOCs	D H I	H	X	X	X	X	X	X	

Area	*Property Name/Address*	*Site Operations - Reason for Risk Class*[1]	*Data Source*[2]	*Risk Class*[3]	*Properties included in Each Listed Alternative*						
					Proposed Project	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*	*Alternative 6*
E	Mike's Main Channel Chevron Lubricants	TPH, lubricants	R	M	X	X	X	X	X	X	
	Westway Terminal Berths 70–71/Signal Street	Chemical storage: TPH, lubricants, VOCs	R D H I	H	X	X	X	X	X	X	X
	Westway Terminal: Mike's Main Channel fueling station	Chemical storage: TPH	R	M	X	X	X	X	X	X	X
	Westway Terminal: Hyctane Corporation, 2186 Signal Place	Release: oil, fuel, no2-D	R D H	H	X	X	X	X	X	X	X
	Westway Terminal: Pennzoil Company, 2220 Signal Street	Release: oil	R D H	H	X	X	X	X	X	X	X
	Westway Terminal: GATX Terminal, Berths 70–71	Release: fuels	R D H I	H	X	X	X	X	X	X	X
	Westway Terminal Foss Maritime, Berth 70–71	Release: unspecified	R D H I	H	X	X	X	X	X	X	X
	Former GATX Annex Terminal Facility	Chemical storage: TPH, metals, VOCs	D H I	H	X	X	X	X	X	X	
	Warehouse No. 12, 260 East 22nd Street	Known contamination: petroleum, SVOCs, TCE, VOCs	D	H	X	X	X	X	X	X	
	San Pedro Boat Works	TPH, metals, PAHs, VOCs (on-going remediation)	R D H I	M	*	*	*	*	*	*	*
	Berths 45–47	TPH	H I	M	X	X	X	X			
	Berths 49–50	Copper/metals	H	H	X	X	X	X	X	X	

Area	*Property Name/Address*	*Site Operations - Reason for Risk Class*[1]	*Data Source*[2]	*Risk Class*[3]	*Properties included in Each Listed Alternative*						
					Proposed Project	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*	*Alternative 6*
		Contamination left in place	I								
F	No Properties of Concern	—	—	—	—	—	—	—	—	—	—
G	Former Southwest Marine Parcel 3 (Berth 240)	Historical ship building operations with soil contamination by PCBs, TPH, and trace metals. Potential groundwater contamination by trace metals.	R D H	H	X	X	X	X	X	X	X

Notes:

LUST—leaking underground storage tank

PAH—polynuclear hydrocarbons

SVOC—semi-volatile organic compound

TPH—total petroleum hydrocarbons

VOC—volatile organic compound

[1] Description of site operations/primary reasons for risk class

[2] Indicates primary information sources for listing: R=Reconnaissance, D=Database, H=Historical Documentation, I= Interviews with LAHD staff

[3] Risk Class: H = high, M = moderate, L = low

X Indicates listed property is included in listed alternative.

* Not a part of the proposed Project or alternatives. No construction or excavation would occur in this area.

3.6.2.4.6 Non-Specific Areas of Concern

The following are non-specific concerns within the proposed project areas, related to potential issues that were not specifically identified by the site-specific evaluations. These concerns include widespread industrial-type operations that occurred throughout the noted areas over several decades.

Area A—Widespread and varied historical industrial usage. Uses include the former Pasha Terminal, lumber yards, railroad right-of ways, machine shops, and repair shops.

Area B—Varied historical industrial uses including lumber yards, railroad right-of ways, machine shops, and repair shops.

Area C—Varied historical industrial and retail uses. Uses included gas and oil companies, lumber yards, railroad right-of ways, machine shops, and repair shops.

Area D—Industrial and retail uses including warehousing, retail shops, and railroad rights of ways, and offices.

Area E—Widespread varied historical industrial usage. Uses included chemical bulk storage, warehousing, repair shops, engine service, and railroad right-of-way.

Area F—None.

Area G—None.

3.6.3 Applicable Regulations and Site-Specific Restrictions

Applicable federal, state, and local laws each contain lists of hazardous materials or hazardous substances that may require special handling if encountered in soil or groundwater during construction of the proposed Project.

3.6.3.1 Federal Regulations

Proper site characterization and site remediation of hazardous materials is regulated by the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the state Hazardous Substances Account Act (Health and Safety Code Section 25300, et seq.). Additional requirements for hazardous materials are specified under Health and Safety Code Section 25501; hazardous substances under 40 CFR Part 116; and priority toxic pollutants under CFR Part 122.

In July 2002, EPA amended the Oil Pollution Prevention regulation at Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112). The regulation incorporated revisions proposed in 1991, 1993, and 1997. Subparts A through C of the Oil Pollution Prevention regulation are often referred to as the *SPCC Rule* because they describe the requirements for certain facilities to prepare, amend, and implement spill prevention, control, and countermeasure (SPCC) plans. These plans ensure that facilities include containment and other countermeasures that would prevent oil spills that could reach navigable waters. In addition, oil spill contingency plans are

required as part of this legislation to address spill cleanup measures after a spill has occurred.

3.6.3.2 State and Local Regulations

Generally speaking, *hazardous materials* means any material that because of its quantity, concentration, or physical or chemical characteristics poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials that are commonly found in soil and groundwater include petroleum products, fuel additives, heavy metals, and VOCs. *Hazardous substances* are defined by state and federal regulations as substances that must be regulated in order to protect the public health and the environment. Hazardous materials are characterized by certain chemical, physical, or infectious properties. CCR Title 22, Chapter 11, Article 2, Section 66261 defines a hazardous material as a substance or combination of substances that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed.

According to Title 22 (Chapter 11, Article 3, CCR), substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous. *Hazardous wastes* are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, or contaminated, or that is being stored prior to disposal.

In addition, hazardous materials are frequently defined under local hazardous materials ordinances, such as the Uniform Fire Code. Depending on the type and degree of contamination that is present in soil and groundwater, any of several governmental agencies may have jurisdiction over the proposed project site. Generally, the agency with the most direct statutory authority over the affected media is designated as the lead agency for purposes of overseeing any necessary investigation or remediation. Typically, sites that are nominally contaminated with hazardous materials remain within the jurisdiction of local hazardous materials agencies, such as the Los Angeles Fire Department. Sites that have more heavily contaminated soils are more likely to fall under the jurisdiction of DTSC, which is authorized to administer the federal hazardous waste program under the Resource Conservation and Recovery Act and is also responsible for administering the state Superfund Program under the Hazardous Substance Account Act.

Sites that have contaminated groundwater fall within the jurisdiction of the Los Angeles RWQCB and are subject to the requirements of the Porter-Cologne Water Quality Control Act. Contaminated groundwater that is proposed to be discharged to surface waters or to a publicly owned treatment works would be subject to the applicable provisions of the CWA, including permitting and possibly pretreatment requirements. A NPDES permit is required to discharge pumped groundwater to

surface waters, including local storm drains, in accordance with California Water Code Section 13260. Additional restrictions may be imposed upon discharges to water bodies that are listed as impaired under Section 303(d) of the CWA, including San Pedro Bay.

3.6.3.3 Site-Specific Restrictions on GATX Site in Area E

The formal site remediation agreement signed by Los Angeles Health District and DTSC expressly restricts the use of the former GATX site in Area E. DTSC has imposed a deed restriction prohibiting the following land uses: residential, park, hospital, school, or child day-care uses. Written approval by DTSC is required before any improvements to the site are made that require the complete removal of the 1-foot soil cap currently in place at the site. Finally, the agreement requires the approval of DTSC for the delisting of the site as a hazardous waste site and a removal of the land use restrictions. It describes the process and the data and information required to delist the site and remove the land use restrictions. (City of Los Angeles 1994.)

3.6.4 Impacts and Mitigation Measures

3.6.4.1 Methodology

The existing conditions, potential impacts, and mitigation measures related to contaminated sites described in this draft EIS/EIR are based on the Preliminary Hazardous Materials Assessment, San Pedro Waterfront Project report (Ninyo & Moore 2008). This analysis evaluates consistency or compliance for the proposed Project and alternatives and associated infrastructure improvements from the Vincent Thomas Bridge to Cabrillo Beach within LAHD property and includes a variety of land uses (e.g., public waterfront and open space areas, commercial development, transportation and parking facilities, and expansion of the cruise ship facilities and operations.

3.6.4.1.1 Analytical Framework

Groundwater and onshore soils impacts have been evaluated with respect to several general parameters, including groundwater quality, groundwater quantity, and soil contaminants. The impact of the proposed Project and its alternatives on each of these parameters has been evaluated with respect to the significance criteria listed below. The assessment of impacts is also based on regulatory controls and on the assumptions that the proposed Project would include the following:

- An individual NPDES permit for storm water discharges or coverage under the General Construction Activity Storm Water Permit would be obtained for the proposed Project.
- The contractors would prepare a SPCC plan and an oil spill contingency plan (OSCP), which would be reviewed and approved by the DFG Office of Spill Prevention and Response, in consultation with other responsible agencies. The SPCC Plan would detail and implement spill prevention and control measures to prevent oil spills from reaching navigable waters. The OSCP would identify and plan as necessary for contingency measures that would minimize damage to water quality and provide for restoration to prespill conditions.
- All contaminated soil and groundwater occurring as a result of oil spills related to the proposed Project would be remediated, in accordance with LAHD lease conditions and all federal, state, and local regulations.
- In accordance with standard LAHD lease conditions, the future tenants would implement a source control program, which provides for the inspection, control, and cleanup of leaks from aboveground tank and pipeline sources, as well as requirements related to groundwater and soil remediation.

Potential impacts to surface water, off-shore sediments, and marine water quality are addressed in Section 3.14, "Water Quality, Sediments, and Oceanography."

3.6.4.2 Thresholds of Significance

3.6.4.2.1 CEQA Criteria

Significance criteria used in this assessment are based on the *L.A. CEQA Thresholds* (City of Los Angeles 2006), LAHD criteria, and the scientific judgment of the report preparers. The following factors are used to determine significance for impacts on groundwater and soils resources.

GW-1: A project would have a significant impact if it would expose soils containing toxic substances and petroleum hydrocarbons associated with prior operations, which would be deleterious to humans, based on regulatory standards established by the lead agency for the site.

GW-2: A project would have a significant impact if it would result in changes in the rate or direction of movement of existing contaminants; expand the area affected by contaminants; or increase the level of groundwater contamination, which would increase risk of harm to humans.

GW-3: A project would have a significant impact if it would result in a change in potable water levels sufficient to:

- reduce the ability of a water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or to respond to emergencies and drought;
- reduce yields of adjacent wells or well fields (public or private); or
- adversely change the rate or direction of groundwater flow.

GW-4: A project would have a significant impact if it would result in demonstrable and sustained reductions in potable groundwater recharge capacity.

GW-5: A project would have a significant impact if it would violate regulatory water quality standards at an existing production well, as defined in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15 and in the Safe Drinking Water Act.

3.6.4.2.2 NEPA Criteria

To evaluate potential impacts to groundwater and soil, the NEPA significance criteria were assumed to be the same as the CEQA significance criteria listed above.

3.6.4.3 Impacts and Mitigation

3.6.4.3.1 Proposed Project

Impact GW-1a: Construction activities for the proposed Project would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.

Soil and groundwater in limited areas of the proposed Project have been impacted by hazardous substances and petroleum products as a result of spills during historic industrial land uses. These areas are in various stages of contaminant site characterization and remediation, as described above. For example, the historical review indicated the presence of an abandoned oil production well in Area A. LAHD would mitigate contaminated soil and groundwater where necessary prior to construction as required by Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, and MM GW-1c for previously identified contaminated sites. In addition, LAHD would implement Mitigation Measure MM GW-2 to address the potential to encounter unanticipated contaminated soil and groundwater during construction in areas outside currently identified contaminated sites.

CEQA Impact Determination

Grading and construction could expose construction personnel, existing operations personnel, and future occupants of the site to contaminated soil. Similarly, grading in the proposed park and open space areas could expose construction personnel and future recreational users to contaminated soil. Human health and safety impacts would be significant pursuant to exposure levels established by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA).

Mitigation Measures

MM GW-1. Complete site remediation. Unless otherwise authorized by the lead regulatory agency for any given site, the LAHD will remediate all contaminated soils within proposed project boundaries prior to or during demolition and grading activities. Remediation will occur in compliance with local, state, and federal regulations as described in Section 3.6.3 and as directed by the LACFD, DTSC, and/or RWQCB.

Soil remediation will be completed such that contamination levels are below health screening levels established by OEHHA and/or applicable action levels established by the lead regulatory agency with jurisdiction over the site. Use of localized soil capping/paving, combined with agency-approved deed restrictions, may be an acceptable remediation measure in upland areas and/or risk-based soil assessments, but would be subject to the discretion of the lead regulatory agency.

Existing groundwater contamination throughout the proposed project boundary will continue to be monitored and remediated, simultaneous and/or subsequent to site redevelopment, in accordance with direction provided by the RWQCB.

Unless otherwise authorized by the lead regulatory agency for any given site, areas of soil contamination that will be remediated prior to or in conjunction with project demolition, grading, and construction would include, but not be limited to, the properties within and adjacent to the proposed Project as listed in Table 3.6-3 and 3.6-4.

MM GW-1a. Remediate the former GATX site in Area E. The GATX Annex Terminal Facility is subject to land-use restrictions imposed by the DTSC. Because of this, prior to implementing the previously listed mitigation measures, it will be necessary to negotiate with the DTSC conditions for remediation and construction at this property. The current proposed use of the GATX Annex Terminal Facility is a park. Currently, DTSC land-use restrictions exclude this use. If LAHD intends to redevelop the area as a park, it will be necessary to modify the land use restriction. If the land use restriction is to be modified, it will likely be necessary to follow DTSCs remedial investigation/feasibility study (RI/FS) or remedial action workplan (RAW) process under an environmental consultative oversight agreement. The work will likely involve additional site characterizations including preparation of a health-based risk assessment, removal of contaminated hot sports, and, possibly, an extensive public comment process. If LAHD is planning the construction of buildings and structures on the site, the requirement will be more extensive.

MM GW-1b. Remediate former oil wells in Area A. Locate the well using geophysical or other methods. Contact the DOGGR to review abandonment records and inquire whether re-abandonment is necessary prior to any future construction related to the proposed project alternatives. Implement corrective measures as directed by DOGGR.

MM GW-1c. Abandon and remove Navy fuel surge line Abandonment and removal of the pipeline would include the submittal of a work plan to the California State Fire Marshall (CSFM) and other applicable agencies, as appropriate. The portion of the fuel surge line to be excavated will be drained of all fluids, cleaned, flushed, and then capped. Materials from the purged fuel surge line will be characterized for disposal and disposed of at an appropriately certified hazardous waste facility. Testing will occur prior to the abandonment of the surge pipeline and prior to any excavation or construction within the alignment right of way. Should contamination be found, appropriate remedial or removal action will occur prior to or concurrent with construction of the North Harbor and Inner Harbor parking structure, under approval of the appropriate oversight agency.

MM GW-2. LAHD will prepare a contamination contingency plan for non-specific facilities. The project site has a long history of industrial activity, so it is possible that future construction activity could encounter historical soil or groundwater contamination that had not been previously reported to regulatory agencies. The following contingency plan will be implemented to address previously unknown contamination during demolition, grading, and construction:

a) All trench excavation and fill operations will be observed for the presence of chemicals of potential concern and petroleum products. Soils that are suspected to be impacted with chemicals of potential concern and/or petroleum products will be segregated from clean soil. Indications of contaminated/impacted soil may include but are not limited to: discolored soil, petroleum or organic odors, and/or visible sheen. In the event unexpected suspected chemically impacted material (soil or water) is encountered during construction, the contractor will notify LAHD's Chief Harbor Engineer, Director of Environmental Management, and Risk Management's Industrial Hygienist. LAHD will confirm the presence of the suspect material; direct the contractor to remove, stockpile, or contain the material; and characterize the suspect material identified within the boundaries of the construction area. Continued work at a contaminated site will require the approval of the Chief Harbor Engineer.

b) As warranted, appropriate air monitoring equipment (e.g., photoionization detector, combustible gas indicator, organic vapor analyzer, etc.) will be present during grading and/or excavation activities in soils that are suspected to be impacted with chemicals of concern and/or petroleum products.

c) Excavation of VOC-impacted soil will require obtaining and complying with a South Coast Air Quality Management District Rule 1166 permit.

d) The remedial option(s) selected will be dependent upon a number of criteria (including but not limited to types of chemical constituents, concentration of the chemicals, health and safety issues, time constraints, cost, etc.) and will be

determined on a site-specific basis. Both off-site and on-site remedial options will be evaluated.

e) The extent of removal actions will be determined on a site-specific basis. At a minimum, the chemically impacted area(s) within the boundaries of the construction area will be remediated to the satisfaction of the lead regulatory agency for the site. The LAHD Project Manager overseeing removal actions will inform the contractor when the removal action is complete.

f) Copies of hazardous waste manifests or other documents indicating the amount, nature, and disposition of such materials will be submitted to the Chief Harbor Engineer within 30 days of project completion.

g) In the event that suspected contaminated soil is encountered, all onsite personnel handling the suspected contaminated material must be trained in accordance with the federal Hazardous Waste Operations and Emergency Response (HAZWOPER) standard. This training provides precautions and protective measures for workers remediating contaminated sites. Workers not certified with HAZWOPER training will not be allowed to resume work in suspected contaminated areas until appropriate site characterization confirms that contaminated soil, groundwater, or soil vapor are not present.

h) As warranted, real-time perimeter and ambient air monitoring stations will be established during all grading, excavation, trenching, and/or soil handling activities associated with contaminated soil.

i) All excavations will be filled with structurally suitable fill material that is free from contamination.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

The proposed Project would include new wharf construction, excavation and dredging of new harbors, and other in-water construction activities that would not be part of the NEPA baseline. Excavations completed for new harbor and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2a: Proposed project construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.

As discussed for Impact GW-1a, soil and groundwater in limited portions of the proposed project site have been affected by hazardous substances and petroleum products as a result of spills during historic industrial land uses. Excavation and grading in contaminated soils, as well as dredging of potentially contaminated soil and marine sediments, could result in inadvertent spreading of such contamination to areas that were previously unaffected by spills of petroleum products or hazardous substances.

CEQA Impact Determination

Grading and construction in upland areas could inadvertently spread contaminated soil to noncontaminated areas, thus potentially exposing construction personnel, existing operations personnel, and future occupants of the site to contaminants. Human health and safety impacts would be significant pursuant to exposure levels established by OEHHA.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

The proposed Project would include harbor cuts, new wharf construction, and other in-water construction activities that would not be part of the NEPA baseline. Excavations completed for new wharf and harbor construction could encounter previously unknown soil and/or groundwater contamination, which could be inadvertently spread to noncontaminated areas. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3a: Proposed project construction would not result in a change to potable water levels.

Drinking water is provided to the proposed project area by LADWP. Although shallow groundwater may be locally extracted during construction dewatering, this perched groundwater is highly saline and non-potable. Localized groundwater withdrawal would have no impact on potential underlying potable water supplies. Water extracted during construction dewatering would be tested and disposed of in accordance with local and state water quality regulations, as described in Section 3.14, "Water Quality, Sediments, and Oceanography."

CEQA Impact Determination

Because drinking water is provided to the proposed project area by LADWP, no impacts would occur under CEQA with respect to changes in potable water levels beneath the site.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

In-water construction activities, as well as upland staging areas used to support in-water work, would have no impact on potential underlying potable water supplies. Impacts would be similar to those described under CEQA, and no impacts under NEPA would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4a: Proposed project construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Most of the proposed project area is currently paved and impermeable to groundwater recharge. Construction activities at the proposed project site would result in removal of pavement in select areas prior to repaving, thus resulting in a

temporary increase in groundwater recharge at the site. The proposed project area is underlain by highly saline, non-potable groundwater, and it is not a designated recharge area for potable groundwater. As such, any temporary increase in recharge would be inconsequential.

CEQA Impact Determination

Although proposed project construction would result in a temporary increase in groundwater recharge, the proposed project site is underlain by saline, non-potable groundwater. Because the water is non-potable, the amount of recharge is irrelevant with respect to potential utilization of the perched aquifer as a drinking water source. Therefore, any temporary increase in recharge would be inconsequential, and no impacts would occur under CEQA with respect to potable groundwater recharge.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

In-water construction activities, as well as upland staging areas used to support in-water work, would have no impact with respect to potential loss of potable groundwater recharge because the proposed project area is underlain by highly saline, non-potable groundwater. No impacts under NEPA would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5a: Proposed project construction would not result in violation of regulatory water quality standards at an existing production well.

Drinking water is provided to the proposed project area by LADWP. No existing production wells are located in the vicinity of the proposed project site.

CEQA Impact Determination

Because no existing production wells are located in the vicinity of the proposed project site, no impacts would occur under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because no existing production wells are located in the vicinity of the proposed project site, no impacts would occur under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-1b: Proposed project operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.

Soil and groundwater in limited portions of the proposed project site have been affected by hazardous substances and petroleum products as a result of spills during historic industrial land uses. These areas are in various stages of contaminant site characterization and remediation, as described above.

CEQA Impact Determination

While no excavations that might encounter contaminated soil would be completed as part of proposed Project operations, operations related to the proposed project on these sites would be significantly impacted. Therefore, impacts during operation would be significant under CEQA.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts during operation would be significant under NEPA as described for the proposed Project under CEQA.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2b: Proposed project operations would not result in expansion of the area affected by contaminants.

As discussed for Impact GW-1b, soil and groundwater in limited portions of the proposed project site have been impacted by hazardous substances and petroleum products as a result of spills during historic industrial land uses. These areas are in various stages of contaminant site characterization and remediation, as described above.

CEQA Impact Determination

While no excavations that might encounter contaminated soil and/or groundwater, and that could spread contamination, would be completed as part of proposed project operations, operations related to the proposed project on these sites would be significantly impacted. Therefore, impacts during operation would be significant under CEQA.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts during operation would be significant under NEPA as described above for the proposed Project under CEQA.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3b: Proposed project operations would not result in a change to potable water levels.

Drinking water is provided to the proposed project area by LADWP, which does not get its water from any wells within the project area.

CEQA Impact Determination

Because drinking water is provided to the proposed project area by LADWP, and not from wells within the project area, no impacts would occur under CEQA with respect to changes in potable water levels beneath the site.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

As with CEQA, because drinking water is provided to the proposed project area by LADWP, in-water and water-side construction activities would have no impact on potential underlying potable water supplies under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4b: Proposed project operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Most of the proposed project area is currently paved and impermeable to groundwater recharge. Most of the proposed project site would similarly be paved subsequent to construction, resulting in continued denied recharge at the majority of the site. However, the proposed project area is underlain by highly saline, non-potable groundwater such that any denied recharge would be inconsequential. Construction of new open space areas within the project area could result in fewer impermeable surfaces. However, the groundwater basin in the vicinity of the site does not contribute to recharge into potable groundwater. Therefore, the overall impact would be less than significant.

CEQA Impact Determination

Although paving across most of the site would substantially reduce any groundwater recharge of underlying groundwater, the proposed project site is underlain by saline, non-potable groundwater. Therefore, less than significant impacts would occur under CEQA with respect to potential loss of potable groundwater recharge.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Although paving across most of the site would reduce any recharge of underlying groundwater, the proposed project site is underlain by saline, non-potable groundwater. Therefore, less-than-significant impacts would occur under NEPA with respect to potential loss of potable groundwater recharge.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact GW-5b: Proposed project operations would not result in violation of regulatory water quality standards at an existing production well.

Drinking water is provided to the proposed project area by LADWP. No existing production wells are located in the vicinity of the proposed project site.

CEQA Impact Determination

Because no existing production wells are located in the vicinity of the proposed project site, no impacts would occur under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because no existing production wells are located in the vicinity of the proposed project site, no impacts would occur under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.6.4.3.2 Alternative 1—Alternative Development Scenario 1

In general, the potential impacts and mitigation measures would be similar to those for the proposed Project. Specific impacts and corresponding mitigation measures are described in the following sections.

Impact GW-1a: Construction activities for Alternative 1 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2a: Alternative 1 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project. Limited portions of the proposed project site have been contaminated by historical activity.

CEQA Impact Determination

Impacts would be significant under CEQA.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be similar to those for the proposed Project. Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3a: Alternative 1 construction would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impacts under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4a: Alternative 1 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5a: Alternative 1 construction would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-1b: Alternative 1 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2b: Alternative 1 operations would not result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3b: Alternative 1 operations would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4b: Alternative 1 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be the same as the proposed Project. Impacts would be less than significant under CEQA and NEPA.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact GW-5b: Alternative 1 operations would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.6.4.3.3 Alternative 2—Alternative Development Scenario 2

In general, the potential impacts and mitigation measures would be similar to those for the proposed Project. Specific impacts and corresponding mitigation measures are described in the following sections.

Impact GW-1a: Construction activities for Alternative 2 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2a: Alternative 2 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3a: Alternative 2 construction would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4a: Alternative 2 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5a: Alternative 2 construction would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. Drinking water is provided to the proposed project area by LADWP. No existing production wells are located in the vicinity of the proposed project site. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-1b: Alternative 2 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2b: Alternative 2 operations would not result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3b: Alternative 2 operations would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4b: Alternative 2 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. Impacts would be less than significant under CEQA and NEPA.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact GW-5b: Alternative 2 operations would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.6.4.3.4 Alternative 3—Alternative Development Scenario 3 (Reduced Project)

The potential impacts and mitigation measures would be similar to those for the proposed Project. Specific impacts and corresponding mitigation measures are described in the following sections.

Impact GW-1a: Construction activities for Alternative 3 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland sites used to support in-water construction, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2a: Alternative 3 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3a: Alternative 3 construction would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4a: Alternative 3 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5a: Alternative 3 construction would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-1b: Alternative 3 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2b: Alternative 3 operations would not result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3b: Alternative 3 operations would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4b: Alternative 3 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. Impacts would be less than significant under CEQA and NEPA.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact GW-5b: Alternative 3 operations would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.6.4.3.5 Alternative 4—Alternative Development Scenario 4

The potential impacts and mitigation measures would be similar to those for the proposed Project. Specific impacts and corresponding mitigation measures are described in the following sections.

Impact GW-1a: Construction activities for Alternative 4 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2a: Alternative 4 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Excavations for new harbors and wharf construction, as well as upland staging areas used to support in-water work, could encounter previously unknown soil and/or groundwater contamination. Such discoveries could result in adverse impacts to construction and operations personnel. Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3a: Alternative 4 construction would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4a: Alternative 4 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5a: Alternative 4 construction would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-1b: Alternative 4 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-2b: Alternative 4 operations would not result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts and mitigation would be similar to those for the proposed Project. Impacts during operation would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

Impact GW-3b: Alternative 4 operations would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4b: Alternative 4 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. Impacts would be less than significant under CEQA and NEPA.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact GW-5b: Alternative 4 operations would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.6.4.3.6 Alternative 5—No-Federal-Action Alternative

As listed in Table 3.6-5, the same sites of concern that could impact the proposed Project would be of concern for this alternative.

Impact GW-1a: Construction activities for Alternative 5 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-2a: Alternative 5 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project. Impacts would be significant. Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 would address potential concerns with contaminated sites.

CEQA Impact Determination

Impacts would be significant without mitigation.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-3a: Alternative 5 construction would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4a: Alternative 5 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5a: Alternative 5 construction would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-1b: Alternative 5 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-2b: Alternative 5 operations would not result in expansion of the area affected by contaminants.

Impacts and mitigation would be similar to those for the proposed Project.

CEQA Impact Determination

Impacts would be significant.

Mitigation Measures

Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-3b: Alternative 5 operations would not result in a change to potable water levels.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-4b: Alternative 5 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Impacts would be similar to those for the proposed Project. Impacts would be less than significant under CEQA.

CEQA Impact Determination

Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact GW-5b: Alternative 5 operations would not result in violation of regulatory water quality standards at an existing production well.

Impacts would be similar to those for the proposed Project. There would be no impact under either CEQA or NEPA.

CEQA Impact Determination

No impacts would occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Because the No-Federal-Action Alternative is identical to the NEPA baseline, this alternative would have no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

3.6.4.3.7 Alternative 6—No-Project Alternative

Impact GW-1a: Alternative 6 would not cause toxic substances or other contaminants associated with historical uses of the Port to be encountered, potentially resulting in exposure to construction/operations personnel and/or long-term exposure to future site occupants.

Soil and groundwater in limited portions of the proposed project site have been affected by hazardous substances and petroleum products as a result of spills during historic industrial land uses. These areas are in various stages of contaminant site characterization and remediation, as described for the proposed Project (refer to Tables 3.6-4 and 3.6-5).

CEQA Impact Determination

No new construction or development associated with Alternative 6 would occur, and existing groundwater/soil quality and characteristics would remain the same. Therefore, under CEQA, no construction-related impacts associated with groundwater and soils would occur, and no toxic substances or contaminated soils would be exposed that would increase health and safety risks.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-2a: Alternative 6 would not result in expansion of the area affected by contaminants.

As discussed for Impact GW-1a, soil and groundwater in limited portions of the proposed project site have been affected by hazardous substances and petroleum products as a result of spills during historic industrial land uses. However, because no excavation and grading would occur under this alternative, no encounters with contaminated soils would occur.

CEQA Impact Determination

Because no construction, grading, or excavations would occur in backland or other areas, inadvertent spreading of historic soil contamination to areas that were previously unaffected by spills of petroleum products or hazardous substances would not occur. Therefore, personnel and recreation users would not be exposed to contaminated soils, and there would be no health and safety impacts under this alternative.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-3a: Alternative 6 would not result in a change to potable water levels.

Drinking water is provided to the proposed project area by LADWP. No construction or dewatering operations would occur under this alterative.

CEQA Impact Determination

Because drinking water is provided to the proposed project area by LADWP and because no construction would take place under this alternative, no impacts would occur under CEQA with respect to changes in potable water levels beneath the site.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-4a: Alternative 6 would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Most of the proposed project area is currently paved and impermeable to groundwater recharge. Because no construction activities would occur under this alternative, no removal or addition of pavement would occur that could result in changes to groundwater recharge at the site.

CEQA Impact Determination

No changes to groundwater recharge levels would occur; therefore, no impacts would occur under CEQA with respect to potable groundwater recharge.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-5a: Alternative 6 would not result in violation of regulatory water quality standards at an existing production well.

Drinking water is provided to the proposed project area by LADWP. No existing production wells are located in the vicinity of the no-project site.

CEQA Impact Determination

Because no existing production wells are located in the vicinity of the no-project site, no impacts would occur under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-1b: Alternative 6 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel or recreational users.

Soil and groundwater in limited portions of the proposed project site have been affected by hazardous substances and petroleum products as a result of spills during historic industrial land uses. These areas are in various stages of contaminant site characterization and remediation, as described for the proposed Project.

CEQA Impact Determination

Because no excavations that might encounter contaminated soil/or groundwater would occur as part of no-project operations, there would be no health and safety impacts under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-2b: Alternative 6 operations would not result in expansion of the area affected by contaminants.

As discussed for Impact GW-1b, Mitigation Measure MM GW-1c, soil and groundwater in limited portions of the proposed project site have been affected by hazardous substances and petroleum products as a result of spills during historic industrial land uses. These areas are in various stages of contaminant site characterization and remediation, as described for the proposed Project.

CEQA Impact Determination

No project-related excavations that might encounter contaminated soil, which could be inadvertently spread to noncontaminated areas, would be completed as part of Alternative 6 operations. Therefore, there would be no health and safety impacts associated with contaminated soil and groundwater under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-3b: Alternative 6 operations would not result in a change to potable water levels.

Under this alternative, no new construction or development would occur; therefore potable water levels would not be affected. Drinking water would continue to be provided to the proposed project area by LADWP.

CEQA Impact Determination

Drinking water would continue to be provided to the proposed project area by LADWP. Under this alternative, no impacts would occur with respect to changes in potable water levels beneath the site under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-4b: Alternative 6 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.

Most of the proposed project area is currently paved and impermeable to groundwater recharge. Under this alternative, no new development would occur. Therefore, there would be no change in permeable surfaces or reduction in groundwater recharge under Alternative 6 operations. Since the proposed project area is underlain by highly saline, non-potable groundwater, any continued denied recharge would be inconsequential.

CEQA Impact Determination

Although paving across most the site would continue to substantially reduce any recharge of underlying groundwater, no new development would occur under this alternative. Therefore, there would be no change in permeable surfaces or reduction in groundwater recharge under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

Impact GW-5b: Alternative 6 operations would not result in violation of regulatory water quality standards at an existing production well.

Drinking water would continue to be provided to the proposed project area by LADWP. No existing production wells are located in the vicinity of the proposed project site.

CEQA Impact Determination

Because no existing production wells are located in the vicinity of the proposed project site, no impacts would occur under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

This alternative is not applicable to NEPA.

Mitigation Measures

Not applicable.

Residual Impacts

Not applicable.

3.6.4.3.8 Summary of Impact Determinations

Table 3.6-6 summarizes the CEQA and NEPA impact determinations of the proposed Project and its alternatives related to groundwater and soils, as described in the detailed discussion in Sections 3.6.4.3.1 through 3.6.4.3.7. This table is meant to allow easy comparison between the potential impacts of the proposed Project and its alternatives with respect to groundwater and soils. Identified potential impacts may be based on federal, state, and City of Los Angeles significance criteria, LAHD criteria, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA and NEPA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table.

Table 3.6-6. Summary Matrix of Potential Impacts and Mitigation Measures for Groundwater and Soils Associated with the Proposed Project and Alternatives

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.6 Groundwater and Soils				
Proposed Project	**GW-1a:** Construction activities for the proposed Project would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.	CEQA: Significant	**MM GW-1. Complete site remediation**. Unless otherwise authorized by the lead regulatory agency for any given site, the LAHD will remediate all contaminated soils within proposed project boundaries prior to or during demolition and grading activities. Remediation will occur in compliance with local, state, and federal regulations as described in Section 3.6.3 and as directed by the LACFD, DTSC, and/or RWQCB. Soil remediation will be completed such that contamination levels are below health screening levels established by OEHHA and/or applicable action levels established by the lead regulatory agency with jurisdiction over the site. Use of localized soil capping/paving, combined with agency-approved deed restrictions, may be an acceptable remediation measure in upland areas and/or risk-based soil assessments, but would be subject to the discretion of the lead regulatory agency. Existing groundwater contamination throughout the proposed project boundary will continue to be monitored and remediated, simultaneous and/or subsequent to site redevelopment, in accordance with direction provided by the RWQCB. Unless otherwise authorized by the lead regulatory agency for any given site, areas of soil contamination that will be remediated	CEQA: Less than significant

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
			prior to or in conjunction with project demolition, grading, and construction would include, but not be limited to, the properties within and adjacent to the proposed Project as listed in Table 3.6-3 and 3.6-4. **MM GW-1a. Remediate the former GATX site in Area E**. The GATX Annex Terminal Facility is subject to land-use restrictions imposed by the DTSC. Because of this, prior to implementing the previously listed mitigation measures, it will be necessary to negotiate with the DTSC conditions for remediation and construction at this property. The current proposed use of the GATX Annex Terminal Facility is a park. Currently, DTSC land-use restrictions exclude this use. If LAHD intends to redevelop the area as a park, it will be necessary to modify the land use restriction. If the land use restriction is to be modified, it will likely be necessary to follow DTSCs remedial investigation/feasibility study (RI/FS) or remedial action workplan (RAW) process under an environmental consultative oversight agreement. The work will likely involve additional site characterizations including preparation of a health-based risk assessment, removal of contaminated hot sports, and, possibly, an extensive public comment process. If LAHD is planning the construction of buildings and structures on the site, the requirement will be more extensive. **MM GW-1b. Remediate former oil wells in Area A.** Locate the well using geophysical or other methods. Contact the DOGGR to	

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
			review abandonment records and inquire whether re-abandonment is necessary prior to any future construction related to the proposed project alternatives. Implement corrective measures as directed by DOGGR. **MM GW-1c. Abandon and remove Navy fuel surge line.** Abandonment and removal of the pipeline would include the submittal of a work plan to the California State Fire Marshall (CSFM) and other applicable agencies, as appropriate. The portion of the fuel surge line to be excavated will be drained of all fluids, cleaned, flushed, and then capped. Materials from the purged fuel surge line will be characterized for disposal and disposed of at an appropriately certified hazardous waste facility. Testing will occur prior to the abandonment of the line and prior to any excavation of the North Harbor. Should contamination be found, appropriate remedial or removal action will occur prior to or concurrent with construction, under approval of the appropriate oversight agency. **MM GW-2. LAHD will prepare a contamination contingency plan for non-specific facilities**. The project site has a long history of industrial activity, so it is possible that future construction activity could encounter historical soil or groundwater contamination that had not been previously reported to regulatory agencies. The following contingency plan will be implemented to address previously unknown contamination during demolition, grading, and construction: a) All trench excavation and fill operations	

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
			will be observed for the presence of chemicals of potential concern and petroleum products. Soils that are suspected to be impacted with chemicals of potential concern and/or petroleum products will be segregated from clean soil. Indications of contaminated/impacted soil may include but are not limited to: discolored soil, petroleum or organic odors, and/or visible sheen. In the event unexpected suspected chemically impacted material (soil or water) is encountered during construction, the contractor will notify LAHD's Chief Harbor Engineer, Director of Environmental Management, and Risk Management's Industrial Hygienist. LAHD will confirm the presence of the suspect material; direct the contractor to remove, stockpile, or contain the material; and characterize the suspect material identified within the boundaries of the construction area. Continued work at a contaminated site will require the approval of the Chief Harbor Engineer. b) As warranted, appropriate air monitoring equipment (e.g., photoionization detector, combustible gas indicator, organic vapor analyzer, etc.) will be present during grading and/or excavation activities in soils that are suspected to be impacted with chemicals of concern and/or petroleum products. c) Excavation of VOC-impacted soil will require obtaining and complying with a South Coast Air Quality Management	

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
			District Rule 1166 permit. d) The remedial option(s) selected will be dependent upon a number of criteria (including but not limited to types of chemical constituents, concentration of the chemicals, health and safety issues, time constraints, cost, etc.) and will be determined on a site-specific basis. Both off-site and on-site remedial options will be evaluated. e) The extent of removal actions will be determined on a site-specific basis. At a minimum, the chemically impacted area(s) within the boundaries of the construction area will be remediated to the satisfaction of the lead regulatory agency for the site. The LAHD Project Manager overseeing removal actions will inform the contractor when the removal action is complete. f) Copies of hazardous waste manifests or other documents indicating the amount, nature, and disposition of such materials will be submitted to the Chief Harbor Engineer within 30 days of project completion. g) In the event that suspected contaminated soil is encountered, all onsite personnel handling the suspected contaminated material must be trained in accordance with the federal Hazardous Waste Operations and Emergency Response (HAZWOPER) standard. This training provides precautions and protective measures for workers remediating	

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
			contaminated sites. Workers not certified with HAZWOPER training will not be allowed to resume work in suspected contaminated areas until appropriate site characterization confirms that contaminated soil, groundwater, or soil vapor are not present. h) As warranted, real-time perimeter and ambient air monitoring stations will be established during all grading, excavation, trenching, and/or soil handling activities associated with contaminated soil. i) All excavations will be filled with structurally suitable fill material that is free from contamination.	
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-2a: Proposed project construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-3a: Proposed project construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4a: Proposed project construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	GW-5a: Proposed project construction would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-1b: Proposed project operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-2b: Proposed project operations would not result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-3b: Proposed project operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4b: Proposed project operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	GW-5b: Proposed project operations would not result in violation of regulatory	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	water quality standards at an existing production well.			
Alternative 1	**GW-1a:** Construction activities for Alternative 1 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-2a: Alternative 1 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-3a: Alternative 1 construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4a: Alternative 1 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-5a: Alternative 1 construction would not result in violation of	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	regulatory water quality standards at an existing production well.			
	GW-1b: Alternative 1 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-2b: Alternative 1 operations would not result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-3b: Alternative 1 operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4b: Alternative 1 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	GW-5b: Alternative 1 operations would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
Alternative 2	**GW-1a:** Construction	CEQA: Significant	Implement Mitigation Measures MM GW-1,	CEQA: Less than

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	activities for Alternative 2 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.		MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-2a: Alternative 2 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-3a: Alternative 2 construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4a: Alternative 2 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-5a: Alternative 2 construction would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	GW-1b: Alternative 2 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-2b: Alternative 2 operations would not result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-3b: Alternative 2 operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4b: Alternative 2 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	GW-5b: Alternative 2 operations would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
Alternative 3	**GW-1a:** Construction activities for Alternative 3 would not encounter toxic	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.	NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-2a: Alternative 3 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-3a: Alternative 3 construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4a: Alternative 3 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-5a: Alternative 3 construction would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-1b: Alternative 3 operations would not result	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and	CEQA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.		MM GW 2.	
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-2b: Alternative 3 operations would not result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-3b: Alternative 3 operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4b: Alternative 3 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	GW-5b: Alternative 3 operations would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
Alternative 4	**GW-1a:** Construction activities for Alternative 4 would not encounter toxic substances or other contaminants associated with historical uses of the	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and	NEPA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.		MM GW-2.	
	GW-2a: Alternative 4 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	NEPA: Less than significant
	GW-3a: Alternative 4 construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4a: Alternative 4 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-5a: Alternative 4 construction would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-1b: Alternative 4 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and	NEPA: Less than significant

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	Port that might result in exposure to operations personnel.		MM GW 2.	
	GW-2b: Alternative 4 operations would not result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	CEQA: Less than significant
		NEPA: Significant	Implement Mitigation Measures MM GW 1, MM GW 1a, MM GW-1b, MM GW-1c, and MM GW 2.	NEPA: Less than significant
	GW-3b: Alternative 4 operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4b: Alternative 4 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: Less than significant	No mitigation is required.	NEPA: Less than significant
	GW-5b: Alternative 4 operations would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
Alternative 5	**GW-1a:** Construction activities for Alternative 5 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: No impact	No mitigation is required.	NEPA: No impact

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	personnel and/or long-term exposure to future site occupants.			
	GW-2a: Alternative 5 construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-3a: Alternative 5 construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4a: Alternative 5 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-5a: Alternative 5 construction would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-1b: Alternative 5 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.	CEQA: Significant	Implement Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	CEQA: Less than significant
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-2b: Alternative 5	CEQA: Significant	Implement Mitigation Measures MM GW-1,	CEQA: Less than

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	operations would not result in expansion of the area affected by contaminants.		MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2.	significant
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-3b: Alternative 5 operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-4b: Alternative 5 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: Less than significant	No mitigation is required.	CEQA: Less than significant
		NEPA: No impact	No mitigation is required.	NEPA: No impact
	GW-5b: Alternative 5 operations would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: No impact	No mitigation is required.	NEPA: No impact
Alternative 6	**GW-1a:** Construction activities for Alternative 6 would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-2a: Alternative 6 construction would not alter contaminant transport	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	pathways and result in expansion of the area affected by contaminants.			
	GW-3a: Alternative 6 construction would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-4a: Alternative 6 construction would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-5a: Alternative 6 construction would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-1b: Alternative 6 operations would not result in uncovering of toxic substances or other contaminants associated with historical uses of the Port that might result in exposure to operations personnel.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-2b: Alternative 6 operations would not result in expansion of the area affected by contaminants.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-3b: Alternative 6 operations would not result in a change to potable water levels.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable

Alternative	*Environmental Impacts**	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
	GW-4b: Alternative 6 operations would not result in a demonstrable and sustained reduction in potable groundwater recharge capacity.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable
	GW-5b: Alternative 6 operations would not result in violation of regulatory water quality standards at an existing production well.	CEQA: No impact	No mitigation is required.	CEQA: No impact
		NEPA: Not applicable	Not applicable	NEPA: Not applicable

Notes:

* Impact descriptions for each of the alternatives are the same as for the proposed Project, unless otherwise noted.

† The term *not applicable* is used in cases where a particular impact is not identified as a CEQA- or NEPA-related issue in the threshold of significance criteria, or where there is no federal action requiring a NEPA determination of significance.

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3.6.4.4 Mitigation Monitoring

Table 3.6-7. Mitigation Monitoring for Groundwater and Soils

Impact GW-1a: Construction activities for the proposed Project would not encounter toxic substances or other contaminants associated with historical uses of the Port, resulting in short-term exposure (duration of construction) to construction/operations personnel and/or long-term exposure to future site occupants. *(Also applies to Impact GW-1a for Alternatives 1–5.)*	
Mitigation Measure	**Mitigation MM GW-1: Complete site remediation**. Unless otherwise authorized by the lead regulatory agency for any given site, the LAHD will remediate all contaminated soils within proposed project boundaries prior to or during demolition and grading activities. Remediation will occur in compliance with local, state, and federal regulations as described in Section 3.6.3 and as directed by the LACFD, DTSC, and/or RWQCB. Soil remediation will be completed such that contamination levels are below health screening levels established by OEHHA and/or applicable action levels established by the lead regulatory agency with jurisdiction over the site. Use of localized soil capping/paving, combined with agency-approved deed restrictions, may be an acceptable remediation measure in upland areas and/or risk-based soil assessments, but would be subject to the discretion of the lead regulatory agency. Existing groundwater contamination throughout the proposed project boundary will continue to be monitored and remediated, simultaneous and/or subsequent to site redevelopment, in accordance with direction provided by the RWQCB. Unless otherwise authorized by the lead regulatory agency for any given site, areas of soil contamination that will be remediated prior to or in conjunction with project demolition, grading, and construction would include, but not be limited to, the properties within and adjacent to the proposed Project as listed in Table 3.6-3 and 3.6-4.
Timing	All identified contaminated sites will be remediated under the schedule directed by the responsible lead agencies. At a minimum, appropriate interim remedial actions will be implemented to remove contaminated soil and groundwater from the construction zones before regular construction contractors (i.e., those not HAZWOPER trained and not directly working on site remediation) are allowed into the contaminated areas.
Methodology	Remedial actions will be specified by the appropriate lead agency responsible for remediation of each site.
Responsible Parties	Responsible parties for each contaminated site will be determined by the site's lead agency.
Mitigation Measure	**Mitigation MM GW-1a. Remediate the former GATX site in Area E**. The GATX Annex Terminal Facility is subject to land-use restrictions imposed by the DTSC. Because of this, prior to implementing the previously listed mitigation measures, it will be necessary to negotiate with the DTSC conditions for remediation and construction at this property. The current proposed use of the GATX Annex Terminal Facility is a park. Currently, DTSC land-use restrictions exclude this use. If LAHD intends to redevelop the area as a park, it will be necessary to modify the land use restriction. If the land use restriction is to be modified, it will likely be necessary to follow DTSCs remedial investigation/feasibility study (RI/FS) or remedial action workplan (RAW) process under an environmental consultative oversight agreement. The work will likely involve additional site characterizations including preparation of a health-based risk

	assessment, removal of contaminated hot sports, and, possibly, an extensive public comment process. If LAHD is planning the construction of buildings and structures on the site, the requirement will be more extensive.
Timing	LAHD will coordinate with DTSC prior to finalizing design of grading activity.
Methodology	Consult with DTSC to define how to maintain integrity of required soil cap, prior to designing the grading activity.
Responsible Parties	LAHD will coordinate with DTSC.
Mitigation Measure	**Mitigation MM GW-1b. Remediate former oil wells in Area A.** Locate the well using geophysical or other methods. Contact the DOGGR to review abandonment records and inquire whether re-abandonment is necessary prior to any future construction related to the proposed project alternatives. Implement corrective measures as directed by DOGGR.
Timing	Prior to beginning design of facilities in Area A.
Methodology	Consult with DOGGR to define requirements for re-abandonment of former oil production wells.
Responsible Parties	LAHD will coordinate with DOGGR.
Mitigation Measure	**Mitigation MM GW-1c. Abandon and remove Navy fuel surge line.** Abandonment and removal of the pipeline would include the submittal of a work plan to the California State Fire Marshall (CSFM) and other applicable agencies, as appropriate. The portion of the fuel surge line to be excavated will be drained of all fluids, cleaned, flushed, and then capped. Materials from the purged fuel surge line will be characterized for disposal and disposed of at an appropriately certified hazardous waste facility. Testing will occur prior to the abandonment of the line and prior to any excavation of the North Harbor. Should contamination be found, appropriate remedial or removal action will occur prior to or concurrent with construction, under approval of the appropriate oversight agency.
Timing	During construction of the North Harbor and Inner Harbor parking structure.
Methodology	Prepare a work plan for the abandonment and removal of the pipeline and submit to the California State Fire Marshal for approval. No work will proceed until California State Fire Marshal has approved the work plan, then all work related to the abandonment and removal of the plan will follow the approved work plan.
Responsible Parties	LAHD will coordinate with the California State Fire Marshall.
Mitigation Measure	**Mitigation MM GW-2: LAHD will prepare a contamination contingency plan for non-specific facilities**. The project site has a long history of industrial activity, so it is possible that future construction activity could encounter historical soil or groundwater contamination that had not been previously reported to regulatory agencies. The following contingency plan will be implemented to address previously unknown contamination during demolition, grading, and construction: a) All trench excavation and fill operations will be observed for the presence of chemicals of potential concern and petroleum products. Soils that are suspected to be impacted with chemicals of potential concern and/or petroleum products will be segregated from clean soil. Indications of contaminated/impacted soil may include but are not limited to: discolored soil, petroleum or organic odors, and/or visible sheen. In the event unexpected suspected chemically impacted material (soil or water) is encountered during construction, the contractor will notify LAHD's Chief Harbor Engineer, Director of Environmental Management, and Risk Management's Industrial Hygienist. LAHD will confirm the presence of the suspect material;

	direct the contractor to remove, stockpile, or contain the material; and characterize the suspect material identified within the boundaries of the construction area. Continued work at a contaminated site will require the approval of the Chief Harbor Engineer. b) As warranted, appropriate air monitoring equipment (e.g., photoionization detector, combustible gas indicator, organic vapor analyzer, etc.) will be present during grading and/or excavation activities in soils that are suspected to be impacted with chemicals of concern and/or petroleum products. c) Excavation of VOC-impacted soil will require obtaining and complying with a South Coast Air Quality Management District Rule 1166 permit. d) The remedial option(s) selected will be dependent upon a number of criteria (including but not limited to types of chemical constituents, concentration of the chemicals, health and safety issues, time constraints, cost, etc.) and will be determined on a site-specific basis. Both off-site and on-site remedial options will be evaluated. e) The extent of removal actions will be determined on a site-specific basis. At a minimum, the chemically impacted area(s) within the boundaries of the construction area will be remediated to the satisfaction of the lead regulatory agency for the site. The LAHD Project Manager overseeing removal actions will inform the contractor when the removal action is complete. f) Copies of hazardous waste manifests or other documents indicating the amount, nature, and disposition of such materials will be submitted to the Chief Harbor Engineer within 30 days of project completion. g) In the event that suspected contaminated soil is encountered, all onsite personnel handling the suspected contaminated material must be trained in accordance with the federal Hazardous Waste Operations and Emergency Response (HAZWOPER) standard. This training provides precautions and protective measures for workers remediating contaminated sites. Workers not certified with HAZWOPER training will not be allowed to resume work in suspected contaminated areas until appropriate site characterization confirms that contaminated soil, groundwater, or soil vapor are not present. h) As warranted, real-time perimeter and ambient air monitoring stations will be established during all grading, excavation, trenching, and/or soil handling activities associated with contaminated soil. i) All excavations will be filled with structurally suitable fill material that is free from contamination.
Timing	LAHD already has the contingency plan in place, and will require all construction contractors to abide by its conditions.
Methodology	Applicable contractors are required to train staff to take appropriate action to report suspected contaminated soil or groundwater.
Responsible Parties	All construction contractors who could come into contact with historical soil or groundwater contamination.
Residual Impacts for Impact GW-1a	Less than significant
Impact GW-2a: Proposed project construction would not alter contaminant transport pathways and result in expansion of the area affected by contaminants. *(Also applies to Impact GW-2a for Alternatives 1–5.)*	

Mitigation Measure	See Mitigation Measures MM GW-1, MM GW-1a, MM GW-1b, MM GW-1c, and MM GW-2 above.
Residual Impacts for Impact GW-2a	Less than significant

3.6.5 Significant Unavoidable Impacts

The proposed Project and alternatives would have no significant unavoidable impacts. Identification, characterization, and remediation of known historical contaminated sites (as well as any currently unknown contaminated sites encountered during construction) will ensure that contaminated sites will pose no significant risks to soil, groundwater, worker exposure, or public exposure.